EUROPEAN PATENT OFFICE U.S. PATENT AND TRADEMARK OFFICE

CPC NOTICE OF CHANGES 1795

DATE: AUGUST 1, 2025

PROJECT RP12170

The following classification changes will be effected by this Notice of Changes:

| <u>Action</u> | Subclass | Group(s) |
|-----------------------------------|----------|---|
| SCHEME: | | |
| Symbols Deleted: | B21C | 9/005 |
| • | B21C | 29/006 |
| Symbols New: | B21C | 23/009 |
| Titles Changed: | B21C | SUBCLASS |
| | B21C | 1/00, 1/16, 1/30 |
| | B21C | 3/00, 3/14 |
| | B21C | 23/08, 23/147 |
| | B21C | 26/00 |
| | B21C | 29/00, 29/02, 29/04 |
| | B21C | 31/00 |
| | B21C | 33/002 |
| | B21C | 35/00, 35/02, 35/023 |
| | B21C | 37/00, 37/04, 37/042, 37/045, 37/10, |
| | | 37/102, 37/121, 37/14, 37/15, 37/152, |
| | | 37/153, 37/155, 37/20, 37/298 |
| | B21C | 47/3458 |
| Warnings Deleted: | B21C | SUBCLASS |
| DEFINITIONS: | | |
| Definitions Deleted: | B21C | 37/0815 |
| (no frozen (F) symbol definitions | | |
| should be deleted) | | |
| Definitions New: | B21C | 3/02, 3/025, 3/04, 3/06, 3/08, 3/10, 3/12, |
| | | 3/14, 3/18 |
| | B21C | 5/003, 5/006 |
| | B21C | 9/02 |
| | B21C | 23/002, 23/004, 23/005, 23/007, 23/008, |
| | | 23/009, 23/01, 23/03, 23/035, 23/04, |
| | | 23/06, 23/147 |
| | B21C | 33/002 |
| | B21C | 35/02 |
| | B21C | 37/02, 37/04, 37/042, 37/045, 37/047, |
| | | 37/065, 37/0803, 37/0807, 37/0811, |
| | | 37/0818, 37/0822, 37/0826, 37/083, |
| | | 37/087, 37/09, 37/10, 37/101, 37/102, 37/104, 37/105, 37/107, 37/12, 37/121, |
| | | |
| | | 37/123, 37/124, 37/125, 37/126, 37/127, 37/128, 37/14, 37/15, 37/151, 37/152, |
| | | 37/153, 37/154, 37/155, 37/156, 37/157, |
| | | 37/158, 37/16, 37/18, 37/185, 37/298 |
| | | |
| | B21C | 43/04 |
| | B21C | 47/247, 47/3458 |

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| Action | Subclass | Group(s) |
|-----------------------|----------|---|
| Definitions Modified: | B21C | SUBCLASS |
| | B21C | 1/00, 1/003, 1/006, 1/02, 1/04, 1/06, 1/08, |
| | | 1/10, 1/12, 1/14, 1/16, 1/18, 1/20, 1/22, |
| | | 1/24, 1/26, 1/27, 1/28, 1/30, 1/305, 1/32, |
| | | 1/34 |
| | B21C | 3/00 |
| | B21C | 5/00 |
| | B21C | 9/00 |
| | B21C | 19/00 |
| | B21C | 23/00, 23/001 |
| | B21C | 25/00 |
| | B21C | 26/00 |
| | B21C | 27/00 |
| | B21C | 29/00 |
| | B21C | 31/00 |
| | B21C | 33/00 |
| | B21C | 35/00, 35/03 |
| | B21C | 37/00, 37/06, 37/08, 37/108, 37/122 |
| | B21C | 43/00 |
| | B21C | 45/00 |
| | B21C | 47/00 |
| | B21C | 49/00 |
| | B21C | 51/00 |
| | B23K | 35/40 |

The following subclasses/groups are also impacted by this Notice of Changes (indicate subclasses/groups outside of the project scope, such as those listed in the CRL): B21F, C21D 1/00, C21D 3/00, C21D 7/00, C21D 8/00, C21D 8/005, C21D 8/04, C21D 8/06, C21D 8/10, C21D 8/12, C21D 9/00, C22F, C23C 2/00, D07B 1/0666, F41A 21/20

This Notice of Changes includes the following [Check the ones included]:

| 1. CLA | ASSIF | FICATION SCHEME CHANGES |
|--------|-------------|--|
| | \boxtimes | A. New, Modified or Deleted Group(s) |
| | \boxtimes | B. New, Modified or Deleted Warning(s) |
| | | C. New, Modified or Deleted Note(s) |
| | | D. New, Modified or Deleted Guidance Heading(s) |
| 2. DEF | TINIT | TONS |
| | \boxtimes | A. New or Modified Definitions (Full definition template) |
| | \boxtimes | B. Modified or Deleted Definitions (Definitions Quick Fix) |
| 3. 🛛 | REV | VISION CONCORDANCE LIST (RCL) |
| 4. 🛛 | CHA | ANGES TO THE CPC-TO-IPC CONCORDANCE LIST (CICL) |

5. A CHANGES TO THE CROSS-REFERENCE LIST (CRL)

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1. CLASSIFICATION SCHEME CHANGES

A. New, Modified or Deleted Group(s)

SUBCLASS B21C - MANUFACTURE OF METAL SHEETS, WIRE, RODS, TUBES OR PROFILES, OTHERWISE THAN BY ROLLING; AUXILIARY OPERATIONS USED IN CONNECTION WITH METAL-WORKING WITHOUT ESSENTIALLY REMOVING MATERIAL

| Type* | Symbol | Indent | <u>Title</u> | Transferred to# |
|-------|-------------|-------------------------------|--|--|
| | | <u>Level</u> <u>Number</u> | "CPC only" text should normally be enclosed in {curly brackets}** | |
| | | of dots | | |
| | | (e.g. 0, 1, 2) | | |
| M | B21C | Subclass | MANUFACTURE OF METAL SHEETS, WIRE, RODS, TUBES, PROFILES OR LIKE SEMI- MANUFACTURED PRODUCTS OTHERWISE THAN BY ROLLING; AUXILIARY OPERATIONS USED IN CONNECTION WITH METAL- WORKING WITHOUT ESSENTIALLY REMOVING MATERIAL | |
| M | B21C 1/00 | 0 | Manufacture of metal sheets, wire, rods, tubes or like semi-manufactured products by drawing | |
| M | B21C 1/16 | 1 | Metal drawing by machines or apparatus in which the drawing action is effected by means other than drums, e.g. by a longitudinally-moved carriage pulling or pushing the work or stock for making metal sheets, rods or tubes | |
| M | B21C 1/30 | 3 | Drives, e.g. carriage-traversing mechanisms; Driving elements, e.g. drawing chains; Controlling the drive | |
| M | B21C 3/00 | 0 | Profiling tools for metal drawing; Combinations of dies and mandrels for metal drawing | |
| M | B21C 3/14 | 3 | Die holders combined with devices for guiding the drawing material or combined with devices for cooling, heating, or lubricating | |
| D | B21C 9/005 | 1 | {Cold application of the lubricant (when combined with heating steps B21C 9/00)} | <administrative 00="" 9="" b21c="" to="" transfer=""></administrative> |
| U | B21C 23/008 | 2 | {Continuous extrusion} | |
| N | B21C 23/009 | 1 | {Gas treatment of work (for heating or cooling only B21C 29/003)} | |
| M | B21C 23/08 | 3 | Making wire, rods or tubes | |
| M | B21C 23/147 | 4 | {Making drill blanks} | |

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| 3.5 | D0100100 | - | | |
|-----|-------------|---|---|--|
| M | B21C 26/00 | 0 | Rams or plungers for metal extruding; Discs therefor | |
| M | B21C 29/00 | 0 | Cooling or heating extruded work or parts of the extrusion press | |
| U | B21C 29/003 | 1 | {Cooling or heating of work} | |
| D | B21C 29/006 | 1 | {Gas treatment of work, e.g. to prevent | <administrative td="" to<="" transfer=""></administrative> |
| | 2210 277000 | - | oxidation or to create surface effects} | |
| M | B21C 29/02 | 1 | of containers for metal to be extruded | |
| M | B21C 29/04 | 1 | of press heads, dies, or mandrels | |
| M | B21C 31/00 | 0 | Control devices for metal extruding, | |
| | | | e.g. for regulating the pressing speed or | |
| | | | temperature of metal (B21C 25/08 takes precedence); Measuring devices, e.g. | |
| | | | for temperature of metal, combined | |
| | | | with or specially adapted for use in | |
| | | | connection with extrusion presses | |
| M | B21C 33/002 | 1 | {Encapsulated billet} | |
| M | B21C 35/00 | 0 | Removing work or waste from | |
| | | | extruding presses; Drawing-off extruded work (in connection with the | |
| | | | extruded work (in connection with the extruding of bent tubes or rods | |
| | | | B21C 23/12); Cleaning dies, ducts, | |
| | | | containers, or mandrels for metal | |
| | | | extruding | |
| M | B21C 35/02 | 1 | Removing or drawing-off work | |
| M | B21C 35/023 | 2 | {Work treatment directly following extrusion, e.g. further deformation or | |
| | | | surface treatment (B21C 35/03 takes | |
| | | | precedence; gas | |
| | | | treatment B21C 23/009)} | |
| M | B21C 37/00 | 0 | Manufacture of metal sheets, rods, wire, | |
| | | | tubes, profiles or like semi- | |
| | | | manufactured products, not otherwise provided for; Manufacture of tubes of | |
| | | | special shape | |
| M | B21C 37/04 | 1 | of rods or wire | |
| M | B21C 37/042 | 2 | {Manufacture of coated wire or rods} | |
| M | B21C 37/045 | 2 | {Manufacture of wire or rods with | |
| | | | particular section or properties} | |
| M | B21C 37/10 | 2 | Making tubes with {seams being neither | |
| | | | welded nor soldered, e.g. riveted | |
| | | | seams {(with helically arranged seams B21C 37/121)} | |
| M | B21C 37/102 | 3 | {of coated strip material; Making multi- | |
| 1,1 | 3210 37/102 | 3 | wall tubes} | |
| M | B21C 37/121 | 3 | {with seams being neither welded nor | |
| | | | soldered} | |
| M | B21C 37/14 | 2 | Making tubes from doubled flat | |
| | | | material | |

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| М | B21C 37/15 | 2 | Making tubes of special shape; Making {tube} fittings {(B21C 37/0803, B21C 37/104, B21C 37/124 take precedence)} | |
|---|-------------|---|--|--|
| M | B21C 37/152 | 3 | {Making rifle or gun barrels} | |
| M | B21C 37/153 | 4 | {Making tubes with inner or outer guides} | |
| M | B21C 37/155 | 3 | {Making tubes with non-circular section (B21C 37/151, B21C 37/154 take precedence)} | |
| M | B21C 37/20 | 3 | Making helical or similar guides in or on tubes without removing material, e.g. by drawing same over mandrels, by pushing same through dies {; Making tubes with angled walls, ribbed tubes or tubes with decorated walls} | |
| U | B21C 37/283 | 4 | {Making U-pieces (B21C37/286 takes precedence)} | |
| M | B21C 37/298 | 5 | {Forming collars by flow-drilling} | |
| M | B21C47/3458 | 3 | {Endlessly revolving chain systems} | |

*N = new entries where reclassification into entries is involved; C = entries with modified file scope where reclassification of documents from the entries is involved; Q = new entries which are firstly populated with documents via administrative transfers from deleted (D) entries. Afterwards, the transferred documents into the Q entry will either stay or be moved to more appropriate entries, as determined by intellectual reclassification; T = existing entries with enlarged file scope, which receive documents from C or D entries, e.g. when a limiting reference is removed from the entry title; M = entries with no change to the file scope (no reclassification); D = deleted entries; F = frozen entries will be deleted once reclassification of documents from the entries is completed; U = entries that are unchanged.

NOTES:

- **No {curly brackets} are used for titles in CPC only <u>subclasses</u>, e.g. C12Y, A23Y; 2000 series symbol titles of groups found at the end of schemes (orthogonal codes); or the Y section titles. The {curly brackets} <u>are</u> used for 2000 series symbol titles found interspersed throughout the main trunk schemes (breakdown codes).
- U groups: it is obligatory to display the required "anchor" symbol (U group), i.e. the entry immediately preceding a new group or an array of new groups to be created (in case new groups are not clearly subgroups of C-type groups). Always include the symbol, indent level and title of the U group in the table above.
- All entry types should be included in the scheme changes table above for better understanding of the overall scheme change picture. Symbol, indent level, and title are required for all types.
- "Transferred to" column <u>must</u> be completed for all C, D, F, and Q type entries. F groups will be deleted once reclassification is completed.
- When multiple symbols are included in the "Transferred to" column, avoid using ranges of symbols in order to be as precise as possible.
- For administrative transfer of documents, the following text should be used: "<administrative transfer to XX>", "<administrative transfer to XX and YY simultaneously>", or "<administrative transfer to XX, YY, ...and ZZ simultaneously>" when administrative transfer of the same documents is to more than one place.
- Administrative transfer to main trunk groups is assumed to be the source allocation type, unless otherwise indicated.
- Administrative transfer to 2000/Y series groups is assumed to be "additional information".

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- If needed, instructions for allocation type should be indicated within the angle brackets using the abbreviations "ADD" or "INV": <administrative transfer to XX ADD>, <administrative transfer to XX INV>, or <administrative transfer to XX ADD, YY INV, ... and ZZ ADD simultaneously>.
- In certain situations, the "D" entries of 2000-series or Y-series groups may not require a destination ("Transferred to") symbol, however it is required to specify "<no transfer>" in the "Transferred to" column for such cases.
- For finalization projects, the deleted "F" symbols should have <no transfer> in the "Transferred to" column.
- For more details about the types of scheme change, see CPC Guide.

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B. New, Modified or Deleted Warning notice(s)

SUBCLASS B21C - MANUFACTURE OF METAL SHEETS, WIRE, RODS, TUBES OR PROFILES, OTHERWISE THAN BY ROLLING; AUXILIARY OPERATIONS USED IN CONNECTION WITH METAL-WORKING WITHOUT ESSENTIALLY REMOVING MATERIAL

| Type* | Location | Old Warning notice | New/Modified Warning |
|-------|-----------------|--|----------------------------|
| D | B21C | WARNING In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme. | Delete the entire Warning. |

^{*}N = new warning, M = modified warning, D = deleted warning

NOTE: The "Location" column only requires the symbol PRIOR to the location of the warning. No further directions such as "before" or "after" are required.

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2. A. DEFINITIONS (new)

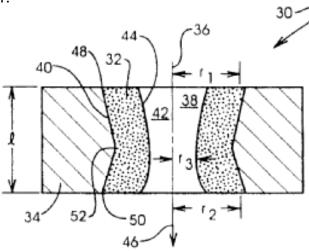
B21C 3/02

Definition statement

This place covers:

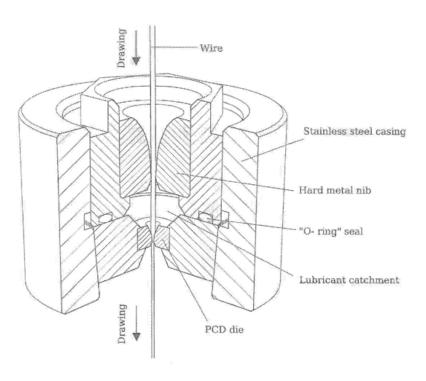
Illustrative examples of subject matter classified in this place:

1.



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References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Alloys based on carbides, oxides, nitrides, silicides or other | C22C 29/00 |
|--|------------|
| metal compounds | |

B21C 3/025

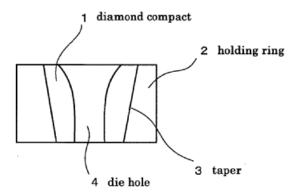
Definition statement

This place covers:

Illustrative example of subject matter classified in this place:

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References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| High-pressure synthesis processing of diamond | B01J 2203/062 |
|---|----------------|
| High-pressure synthesis production of diamond | B01J 2203/0655 |
| Alloys containing diamond | C22C 26/00 |

B21C 3/04

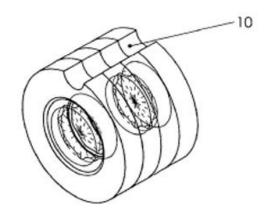
Definition statement

This place covers:

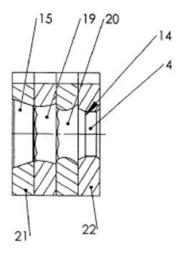
Illustrative examples of subject matter classified in this place:

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2.



References

Limiting references

This place does not cover:

| Profiling dies for metal drawing with section defined by | B21C 3/08 |
|--|-----------|
| rollers, balls or the like | |

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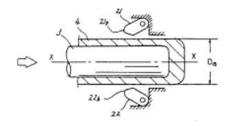
B21C 3/06

Definition statement

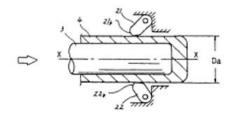
This place covers:

Illustrative examples of subject matter classified in this place:

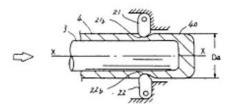
1a.



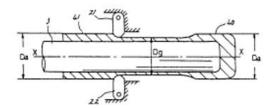
1b.



1c.



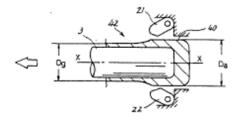
1d.



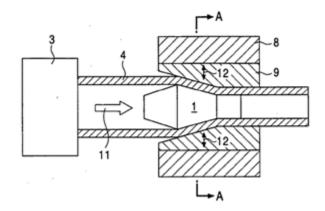
1e.

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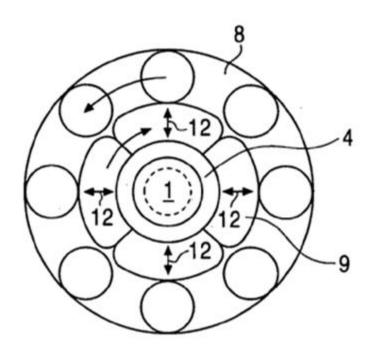
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2a.



2b.



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Figure 2b illustrates a cross-sectional view along line A-A of Figure 2a.

References

Limiting references

This place does not cover:

| Profiling dies for metal drawing with section defined by | B21C 3/08 |
|--|-----------|
| rollers, balls or the like | |

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Rolling metal wire | B21B 1/16 |
|---|----------------|
| Drawing combined with metal-rolling mills | B21B 2015/0028 |

B21C 3/08

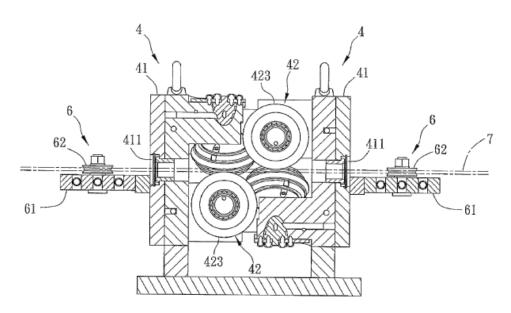
Definition statement

This place covers:

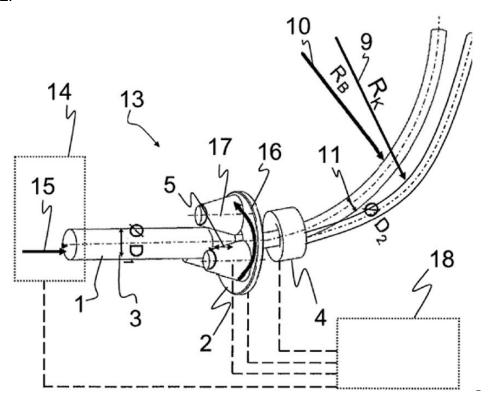
Illustrative examples of subject matter classified in this place:

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2.



References

Informative references

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Attention is drawn to the following places, which may be of interest for search:

| Rolling metal wire | B21B 1/16 |
|---|----------------|
| Drawing combined with metal-rolling mills | B21B 2015/0028 |
| Metal die making not otherwise provided for | B23P 15/24 |

B21C 3/10

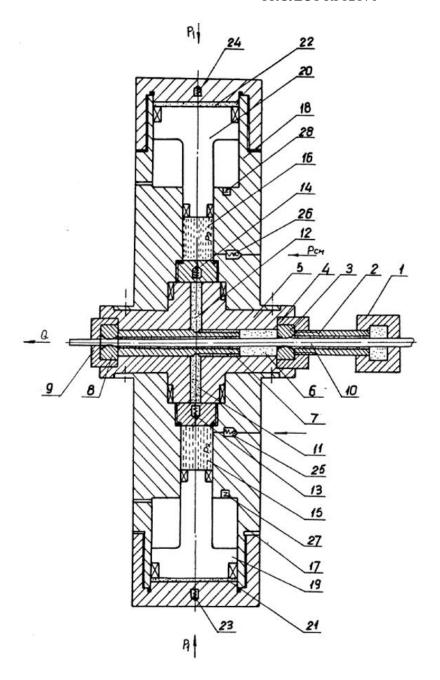
Definition statement

This place covers:

Illustrative example of subject matter classified in this place:

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B21C 3/12

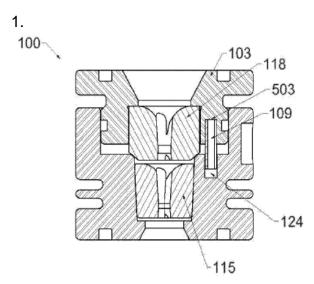
Definition statement

This place covers:

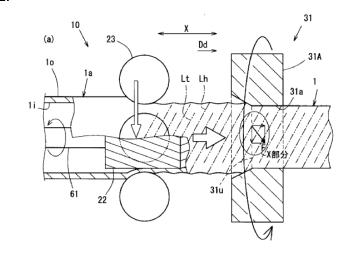
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2.



References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Rolling metal wire | B21B 1/16 |
|---|----------------|
| Drawing combined with metal-rolling mills | B21B 2015/0028 |

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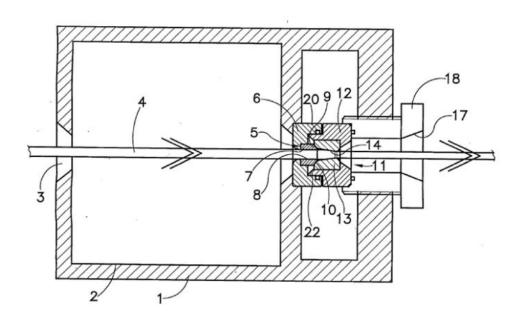
B21C 3/14

Definition statement

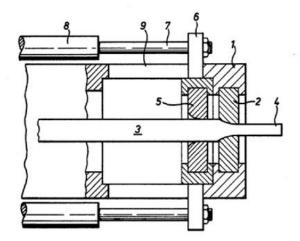
This place covers:

Illustrative examples of subject matter classified in this place:

1.

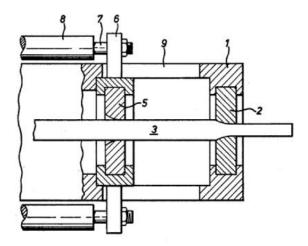


2a.



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References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Cooling, heating or lubricating drawing material | B21C 9/00 |
|--|------------|
| Occurring, reading of labricating drawing material | DZ 10 3/00 |

B21C 3/18

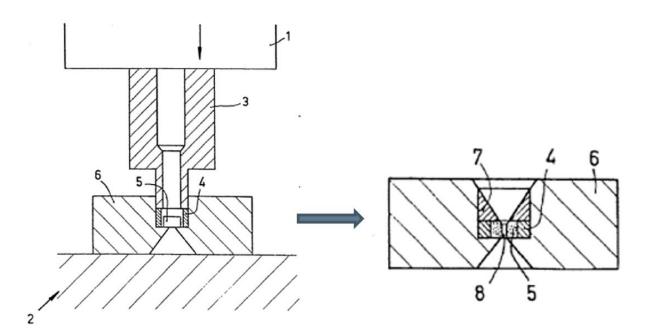
Definition statement

This place covers:

Illustrative example of subject matter classified in this place:

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References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Making working faces of dies, either recessed or | B21K 5/20 |
|--|------------|
| outstanding | |
| Metal die making not otherwise provided for | B23P 15/24 |

B21C 5/003

Definition statement

This place covers:

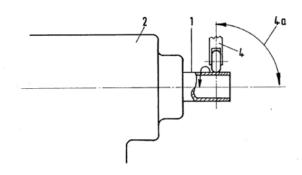
Reducing the cross-section of the hollow material's leading end for easing its insertion into the drawing die prior to drawing.

Illustrative examples of subject matter classified in this place:

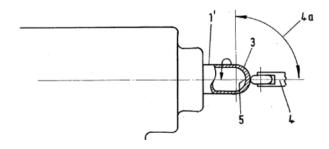
1a.

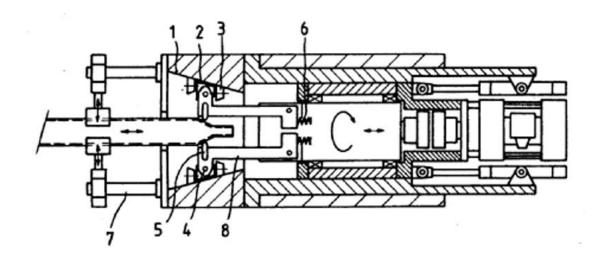
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1b.





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References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Application of procedures in order to reduce or close the diameter of metal tube ends | B21D 41/04 |
|---|------------|
| Forging or pressing end portions of hollow metal articles | B21K 21/12 |

B21C 5/006

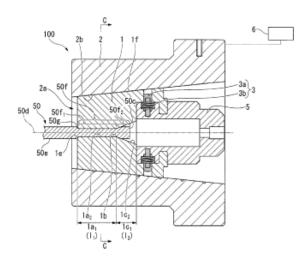
Definition statement

This place covers:

Reducing the cross-section of the solid material's leading end for easing its insertion into the drawing die prior to drawing.

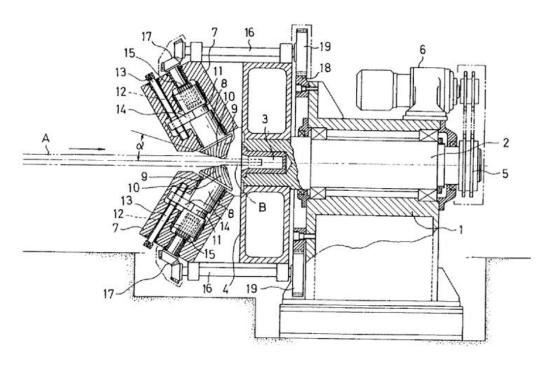
Illustrative examples of subject matter classified in this place:

1.



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References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Pointing of pins, nails or the like, with or without cutting | B21G 3/16 |
|--|-----------|

B21C 9/02

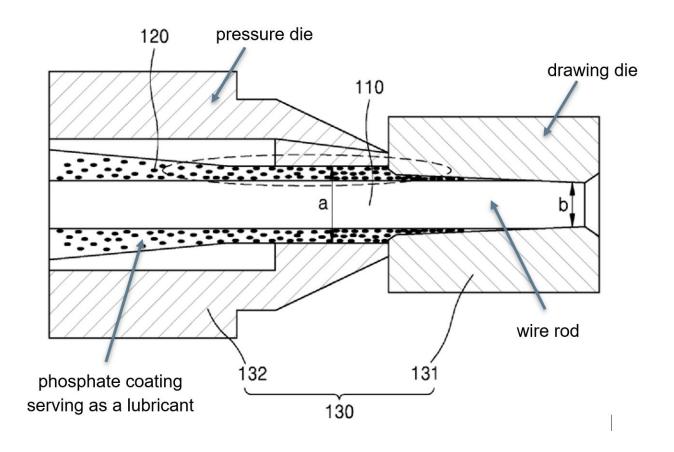
Definition statement

This place covers:

Illustrative example of subject matter classified in this place:

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References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| L | Lubricating compositions for metal working | C10N 2040/20 |
|---|--|--------------|

B21C 23/002

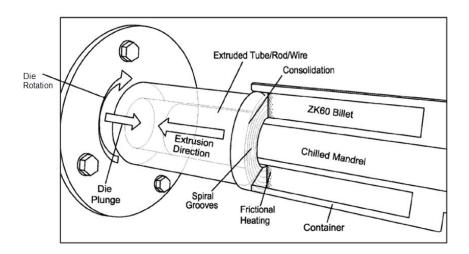
Definition statement

This place covers:

Illustrative example of subject matter classified in this place:

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References

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

| Changing the physical structure of non-ferrous metals or | C22F 1/00 |
|--|-----------|
| alloys by heat treatment or by hot or cold working | |

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Manufacture of workpieces or articles from metallic powder | B22F 3/20 |
|--|------------|
| characterised by extrusion as the manner of compacting or | |
| sintering | |
| Alloys based on aluminium | C22C 21/00 |

B21C 23/004

Definition statement

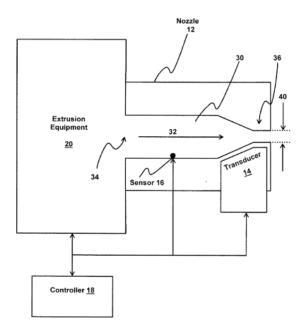
This place covers:

Extruding metal using vibratory sequences.

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Illustrative example of subject matter classified in this place:



References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Methods or apparatus for generating mechanical vibrations | B06B 1/00 |
|---|-----------|
| of infrasonic, sonic or ultrasonic frequency | |

B21C 23/005

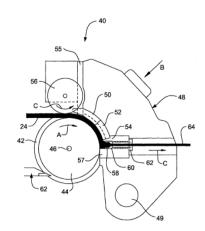
Definition statement

This place covers:

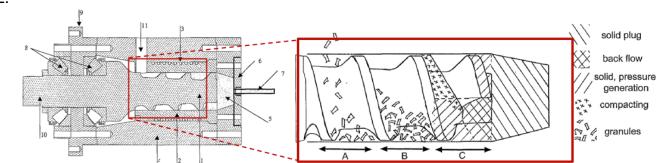
Illustrative examples of subject matter classified in this place:

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2.



References

Limiting references

This place does not cover:

| Continuous hydrostatic extrusion of metal | B21C 23/008 |
|---|-------------|

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Pressure die casting or injection die casting | B22D 17/00 |
|--|------------|
| Manufacture of workpieces or articles from metallic powder | B22F 3/20 |
| characterised by extrusion as the manner of compacting or | |
| sintering | |

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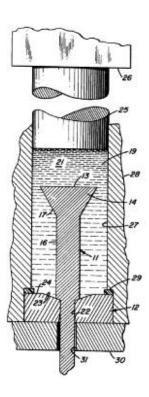
PROJECT RP12170

B21C 23/007

Definition statement

This place covers:

Illustrative example of subject matter classified in this place:



B21C 23/008

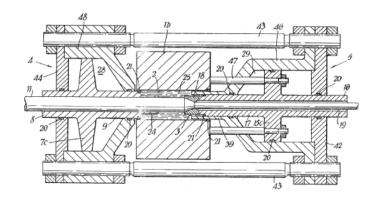
Definition statement

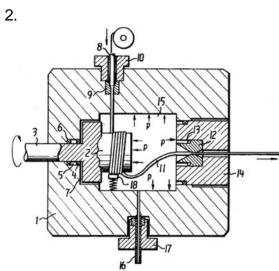
This place covers:

Illustrative examples of subject matter classified in this place:

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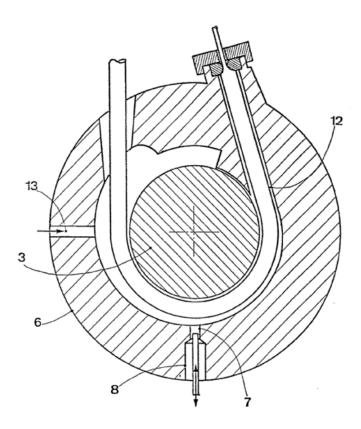
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B21C 23/009

Definition statement

This place covers:

Gas treatment of work, e.g. to prevent oxidation or to create surface effects.

References

Limiting references

This place does not cover:

| Gas treatment of work for heating or cooling only B21C 29/003 |
|--|
|--|

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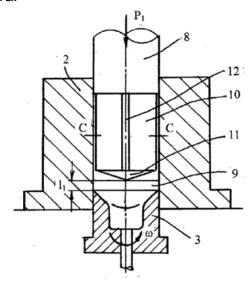
B21C 23/01

Definition statement

This place covers:

Illustrative examples of subject matter classified in this place:

1a.



1b.

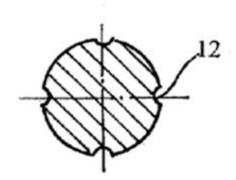
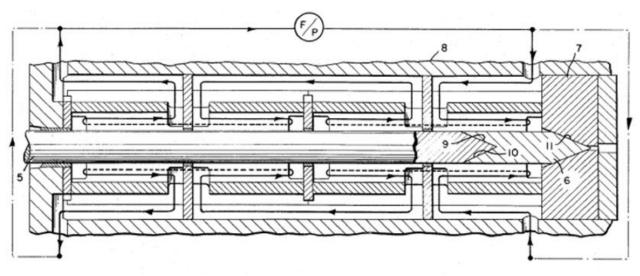


Figure 1b illustrates the cross-section along line C-C of Figure 1a.

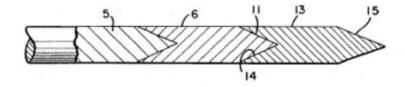
2a.

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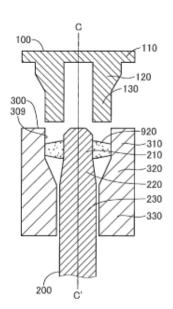
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2b.

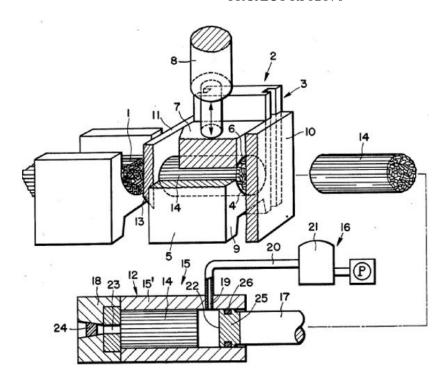


3.

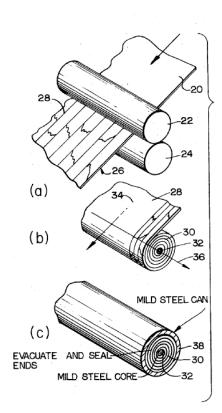


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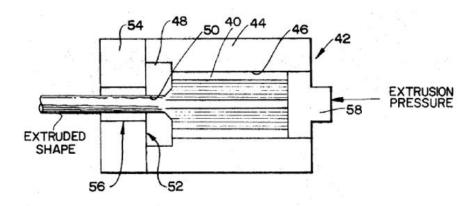


5.



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References

Limiting references

This place does not cover:

| Making metal-coated products by extrusion; Making | B21C 23/22 |
|---|------------|
| products from two or more metals by extrusion | |

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Extruding metal to improve the material properties, e.g. | B21C 23/001 |
|--|-------------|
| lateral extrusion | |
| Feeding extrusion presses with metal to be extruded | B21C 33/00 |
| Manufacture of workpieces or articles from metallic powder | B22F 3/20 |
| characterised by extrusion as the manner of compacting or | |
| sintering | |

B21C 23/03

Definition statement

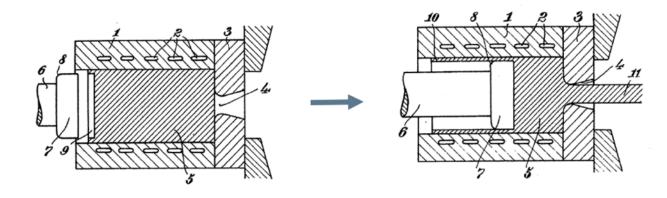
This place covers:

Illustrative examples of subject matter classified in this place:

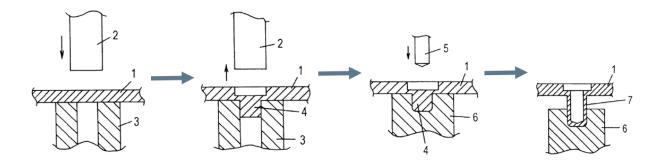
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1.



2.



References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Making uncoated products by impact extrusion | B21C 23/18 |
|--|------------|
| Making uncoated products by backward extrusion | B21C 23/20 |

B21C 23/035

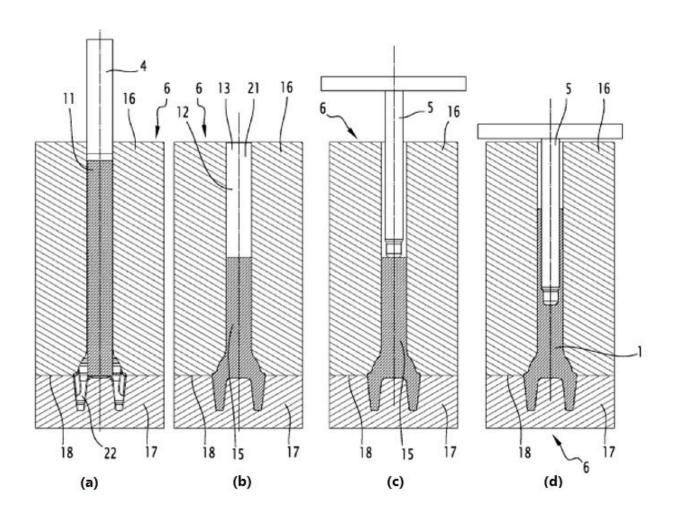
Definition statement

This place covers:

Illustrative example of subject matter classified in this place:

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References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Making uncoated products of generally elongated shape by | B21C 23/205 |
|--|-------------|
| backward extrusion | |

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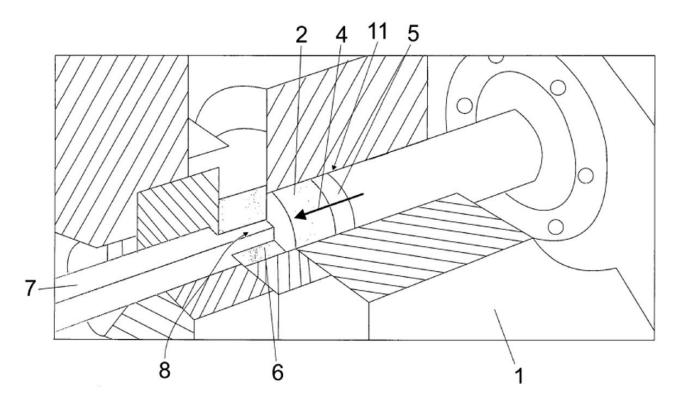
PROJECT RP12170

B21C 23/04

Definition statement

This place covers:

Illustrative example of subject matter classified in this place:



B21C 23/06

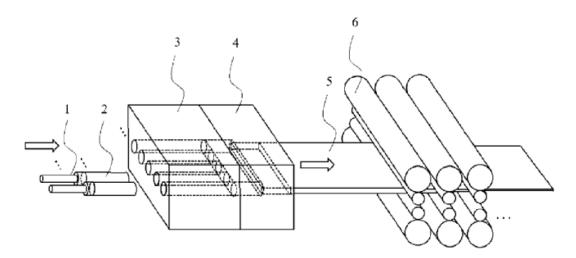
Definition statement

This place covers:

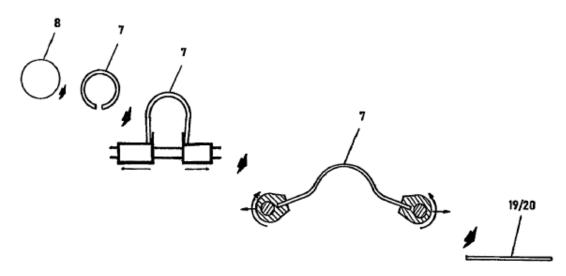
Illustrative examples of subject matter classified in this place:

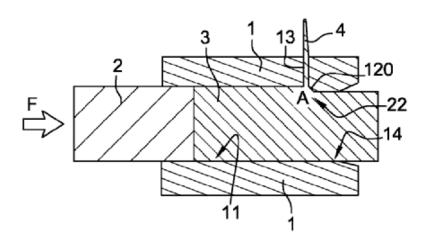
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2.





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References

Informative references

Attention is drawn to the following places, which may be of interest for search:

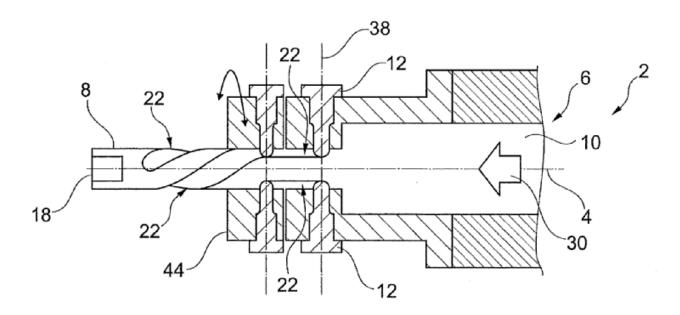
| Manufacture of metal sheets | B21C 37/02 | |
|-----------------------------|-------------|--|
| Manaraotaro di motaronoto | DZ 10 01/02 | |

B21C 23/147

Definition statement

This place covers:

Illustrative example of subject matter classified in this place:



References

Informative references

Attention is drawn to the following places, which may be of interest for search:

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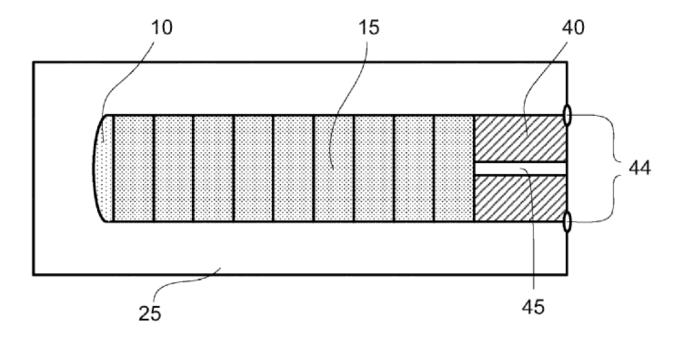
| Making twist-drills | B23P 15/32 |
|---------------------|------------|

B21C 33/002

Definition statement

This place covers:

Illustrative example of subject matter classified in this place:



References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Manufacture of metal wires with particular section or properties | B21C 37/045 |
|--|-------------|
| Manufacture of metal fine wires | B21C 37/047 |

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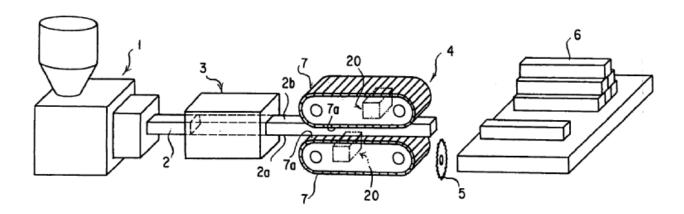
B21C 35/02

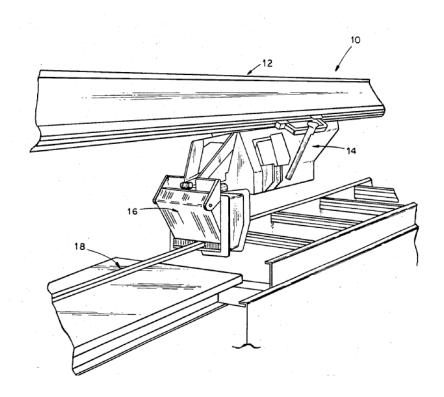
Definition statement

This place covers:

Illustrative examples of subject matter classified in this place:

1.





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References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Linear motor pulling | dovices in machines for drawing motal | R21C 1/205 |
|----------------------|---------------------------------------|-------------|
| Linear motor pulling | devices in machines for drawing metal | DZ IC 1/303 |

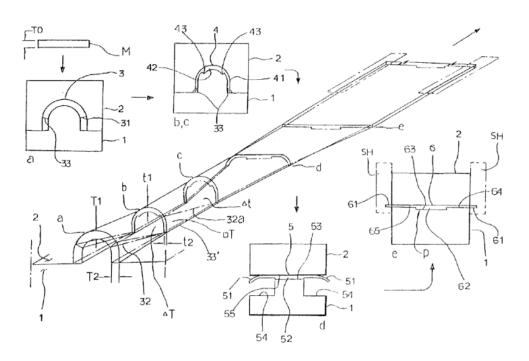
B21C 37/02

Definition statement

This place covers:

Illustrative examples of subject matter classified in this place:

1.



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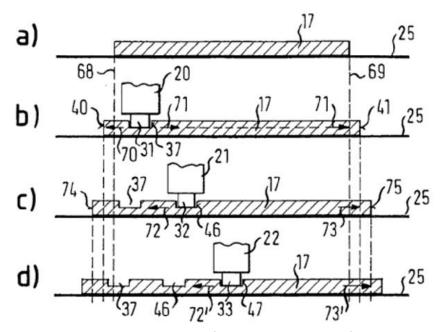
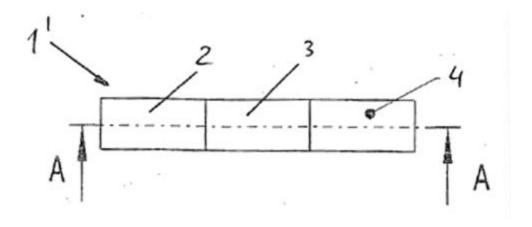


Figure 2 illustrates the pressing of a heated blank to form varying thicknesses.

3a.



3b.

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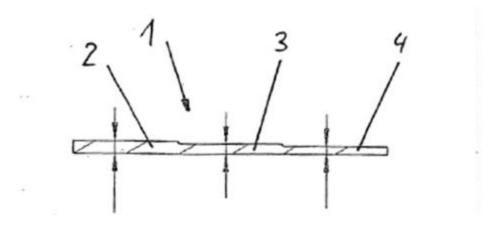


Figure 3b illustrates a cross-sectional view along line A-A of Figure 3a.

References

References out of a residual place

Examples of places in relation to which this place is residual:

| Making metal sheets by extrusion | B21C 23/06 |
|----------------------------------|------------|
|----------------------------------|------------|

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Rolling metal sheets of indefinite length | B21B 1/22 |
|--|------------|
| Rolling metal sheets of limited length | B21B 1/38 |
| Embossing metal sheets or rolls by rolling | B21H 8/005 |

B21C 37/04

Definition statement

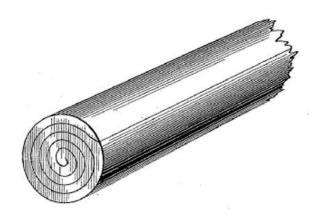
This place covers:

Manufacture of metal rods, bars or wire by metal working not otherwise provided for.

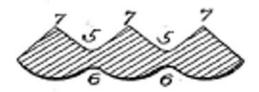
Illustrative examples of subject matter classified in this place:

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2a.

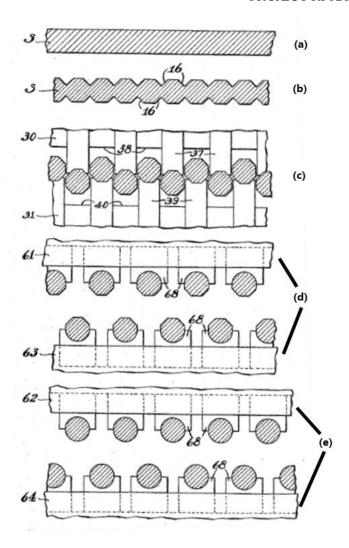


2b.

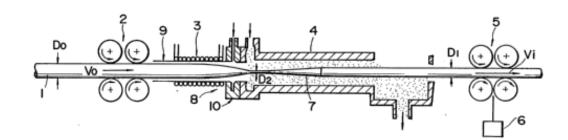


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4.



Relationships with other classification places

Modifying the physical properties by deformation combined with, or followed by, heat treatment during the manufacture of wires is classified in C21D 8/06. Manufacture of rods or wire not otherwise provided for is classified in B21C 37/04.

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References

References out of a residual place

Examples of places in relation to which this place is residual:

| Manufacture of metal wire by drawing | B21C 1/00 |
|--|------------|
| Making uncoated wire by direct extrusion | B21C 23/08 |
| Working or processing of metal wire | B21F |

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Rolling metal wire | B21B 1/16 |
|---|------------|
| Wire electrical connectors in or for semiconductor devices; | H01L 24/42 |
| Manufacturing methods related thereto | |

B21C 37/042

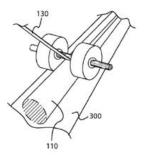
Definition statement

This place covers:

Manufacture of coated wire, rods or bars not otherwise provided for.

Illustrative examples of subject matter classified in this place:

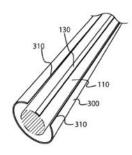
1a.



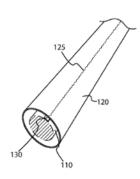
1b.

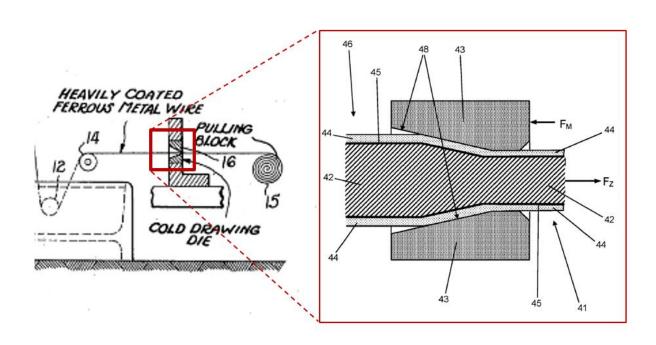
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1c.





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References

References out of a residual place

Examples of places in relation to which this place is residual:

| Covering indefinite lengths of metal or non-metal wires or rods with a metal coating by extrusion | B21C 23/24 |
|---|-------------|
| Metallic coating of wire | B21F 19/00 |
| Coating by spraying wires | C23C 4/16 |
| Electroplating of wires | C25D 7/0607 |

B21C 37/045

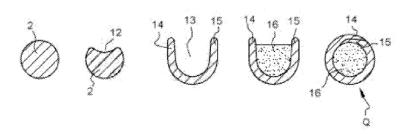
Definition statement

This place covers:

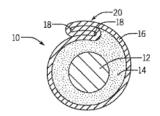
Manufacture of wire, rods or bars with particular section or properties not otherwise provided for.

Illustrative examples of subject matter classified in this place:

1.

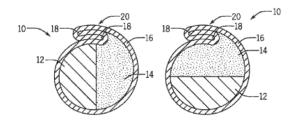


2.

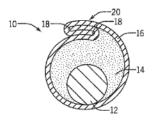


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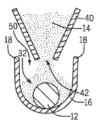
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4.



5.



Relationships with other classification places

Modifying the physical properties by deformation combined with, or followed by, heat treatment during the manufacture of wires is classified in C21D 8/06. Heat treatment for wire is classified in C21D 9/525. Manufacture of rods or wire with particular section or properties not otherwise provided for is classified in B21C 37/045.

References

References out of a residual place

Examples of places in relation to which this place is residual:

| Drawing materials of special alloys for manufacture of | B21C 1/003 |
|--|------------|
| metal wires or rods | |

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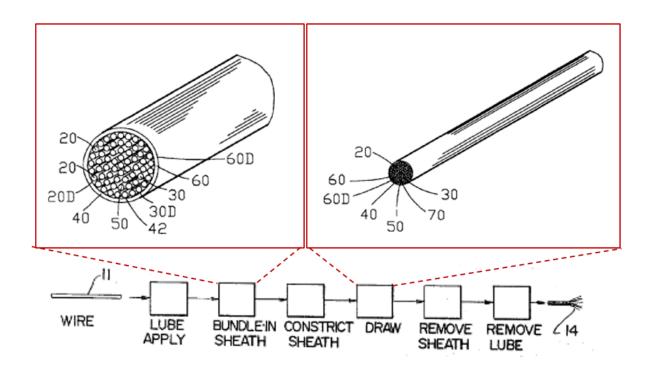
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B21C 37/047

Definition statement

This place covers:

Illustrative example of subject matter classified in this place:



References

References out of a residual place

Examples of places in relation to which this place is residual:

| Drawing materials of special alloys for manufacture of metal wires | B21C 1/003 |
|---|-------------|
| Cooling, heating or lubricating drawing material for manufacture of metal wires | B21C 9/00 |
| Continuous casting of metal wire | B22D 11/005 |
| Drawing fibres reinforced with a metal wire | C03B 37/026 |

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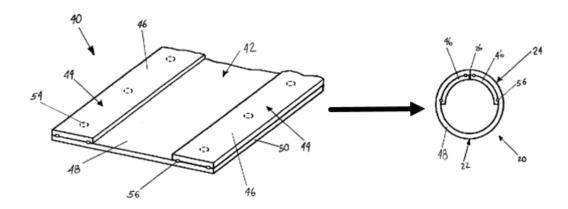
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B21C 37/065

Definition statement

This place covers:

Illustrative example of subject matter classified in this place:



References

References out of a residual place

Examples of places in relation to which this place is residual:

| Combined processes according to methods of | B21D 35/006 |
|---|-------------|
| straightening, restoring form, bending, corrugating or | |
| flanging used in manufacture of tubes and starting from | |
| blanks having varying thickness | |

B21C 37/0803

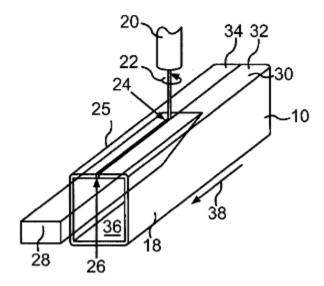
Definition statement

This place covers:

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Illustrative example of subject matter classified in this place:



References

References out of a residual place

Examples of places in relation to which this place is residual:

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Making metal tubes with non-circular section B2* | 1C 37/155 |
|--|-----------|
|--|-----------|

B21C 37/0807

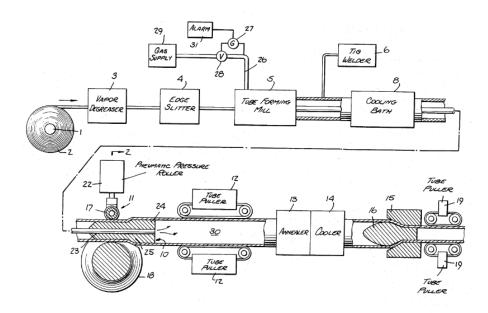
Definition statement

This place covers:

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Illustrative example of subject matter classified in this place:



References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Finishing metal tubes, e.g. sizing, burnishing | B21C 37/30 |
|--|------------|
| Machines for cutting tubes | B23D 21/00 |

B21C 37/0811

Definition statement

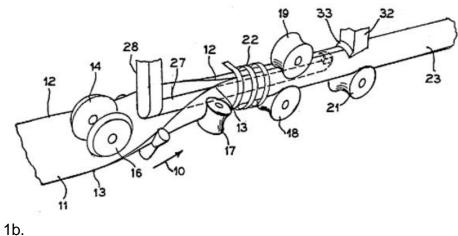
This place covers:

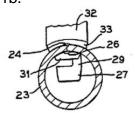
Illustrative example of subject matter classified in this place:

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1a.





Relationships with other classification places

Heat treatment for metal welded joints is classified in C21D 9/50.

References

References out of a residual place

Examples of places in relation to which this place is residual:

| Machines or devices for removing welding, brazing or | B23D 79/021 |
|--|-------------|
| soldering burrs on pipes | |

B21C 37/0818

Definition statement

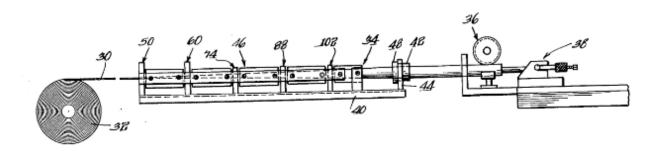
This place covers:

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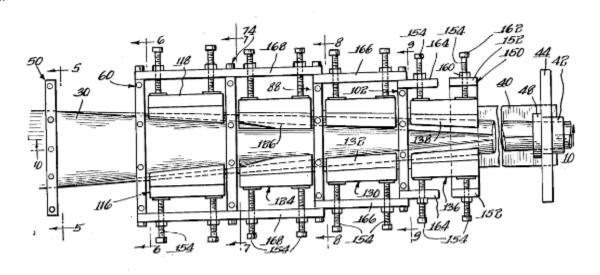
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Illustrative examples of subject matter classified in this place:

1.



2.



References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Arc welding longitudinal seam of metal tubes | B23K 9/0253 |
|--|-------------|
| Resistance welding using roller electrodes for welding | B23K 11/062 |
| longitudinal seams of metal tubes | |
| Seam welding metal tubes by induction heating | B23K 13/025 |
| Seam welding metal tubes by conduction heating | B23K 13/046 |
| Laser welding of longitudinal seams of metal tubes | B23K 26/262 |

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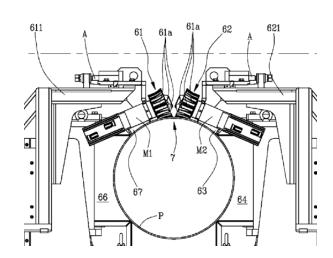
B21C 37/0822

Definition statement

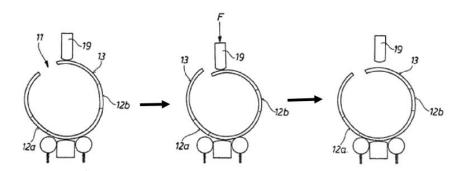
This place covers:

Illustrative examples of subject matter classified in this place:

1.

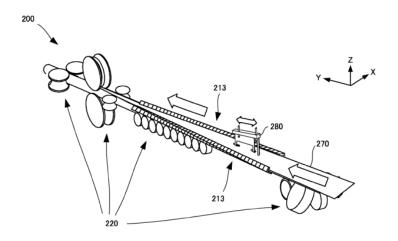


2.



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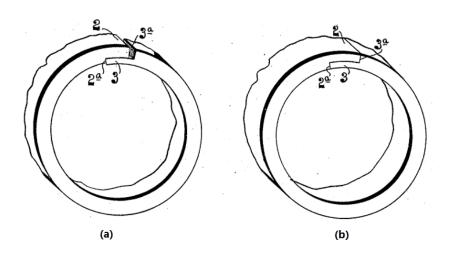
B21C 37/0826

Definition statement

This place covers:

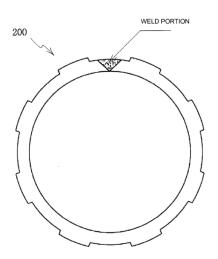
Illustrative examples of subject matter classified in this place:

1.



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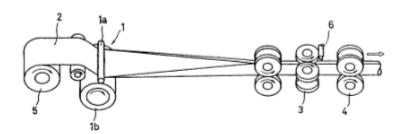
B21C 37/083

Definition statement

This place covers:

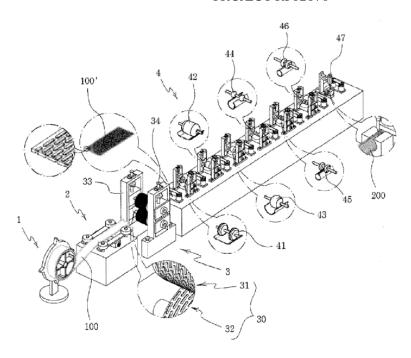
Illustrative examples of subject matter classified in this place:

1.



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B21C 37/087

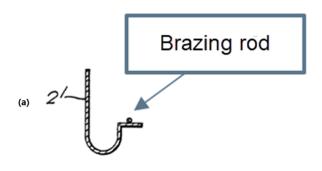
Definition statement

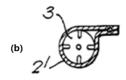
This place covers:

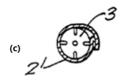
Illustrative examples of subject matter classified in this place:

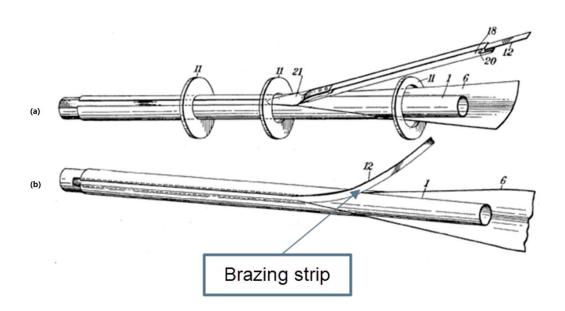
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References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Making metal tubes by soldering or welding, but not covered by any single one of main groups B23K 1/00 - B23K 28/00 | B23K 31/027 |
|---|--------------|
| Tubular or hollow metal articles made by soldering, welding or cutting | B23K 2101/04 |

B21C 37/09

Definition statement

This place covers:

Illustrative examples of subject matter classified in this place:

1.

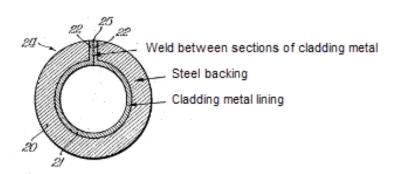
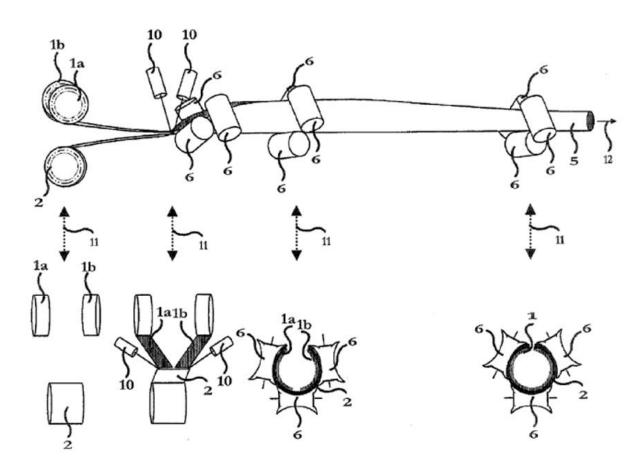


Figure 1 illustrates a weld (25) between sections of cladding metal comprising a steel backing (20) and a cladding metal lining (21).

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References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Making makin wall metal tabee | Making multi-wall metal tubes | B21C 37/154 |
|-------------------------------|-------------------------------|-------------|
|-------------------------------|-------------------------------|-------------|

B21C 37/10

Definition statement

This place covers:

Manufacture of tubes or pipes with seams being neither welded nor soldered, e.g. riveted or folded seams.

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Illustrative examples of subject matter classified in this place:

1a.

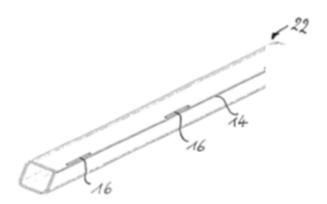


Figure 1a illustrates the manufacture of a pipe (22) with riveted seams (16).

1b.

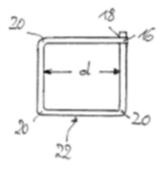
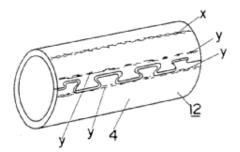


Figure 1b illustrates a cross-sectional view of Figure 1a.

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3.

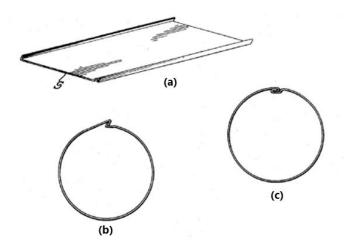


Figure 3 illustrates the manufacture of a pipe with a folded seam.

References

Limiting references

This place does not cover:

| Making metal tubes or metal hoses with helically arranged | B21C 37/121 |
|---|-------------|
| seams being neither welded nor soldered | |

References out of a residual place

Examples of places in relation to which this place is residual:

| Bending sheet metal along straight lines by drawing | B21D 5/10 |
|---|-----------|
| procedure for making tubes | |

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| Folding sheet metal to form a cylinder by connecting edges | B21D 39/02 |
|--|------------|
|--|------------|

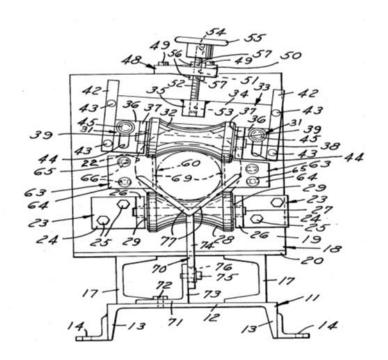
B21C 37/101

Definition statement

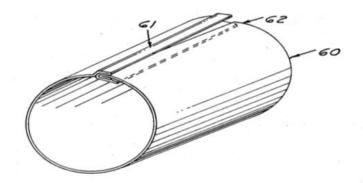
This place covers:

Illustrative example of subject matter classified in this place:

1a.



1b.



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References

References out of a residual place

Examples of places in relation to which this place is residual:

| Folding sheet metal to form a cylinder by connecting edges | B21D 39/02 |
|--|------------|
| Folding of longitudinal seam of cans or tins | B21D 51/28 |

B21C 37/102

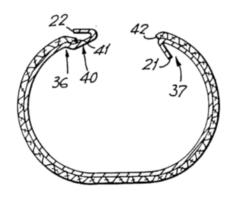
Definition statement

This place covers:

Manufacture of non-welded and non-soldered tubes or pipes with coated strip material or multi-wall material.

Illustrative example of subject matter classified in this place:

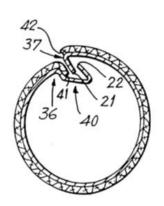
1a.



1b.

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References

References out of a residual place

Examples of places in relation to which this place is residual:

| Sheathing of hollow metal objects | B21D 49/005 |
|-----------------------------------|-------------|
|-----------------------------------|-------------|

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Making multi-walled metal tubes | B21C 37/154 |
|---------------------------------|-------------|

B21C 37/104

Definition statement

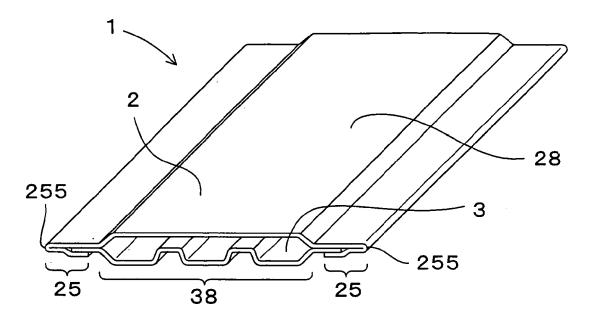
This place covers:

Making non-cylindrical or polygonal tubes having riveted or folded seams.

Illustrative example of subject matter classified in this place:

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References

References out of a residual place

Examples of places in relation to which this place is residual:

| Making non-cylindrical shape cans or tins, e.g. conical, | B21D 51/2646 |
|--|--------------|
| rectangular, polygonal, bulged | |

Informative references

Attention is drawn to the following places, which may be of interest for search:

| _ | | |
|---|--|-------------|
| | Making metal tubes with non-circular section | B21C 37/155 |

B21C 37/105

Definition statement

This place covers:

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Supply or operations combined with the supply of strip material for forming of tubes or pipes with riveted or folded seams.

Illustrative examples of subject matter classified in this place:

1.

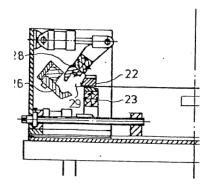
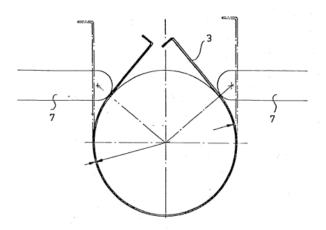


Figure 1 illustrates the supply of a blank and a preliminary bending operation.

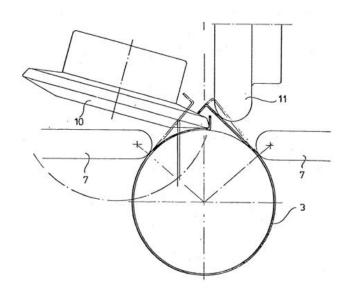
2a.



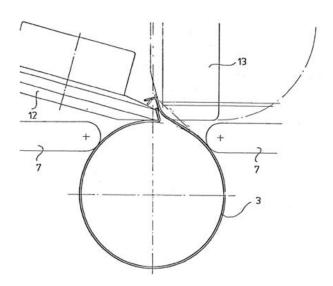
2b.

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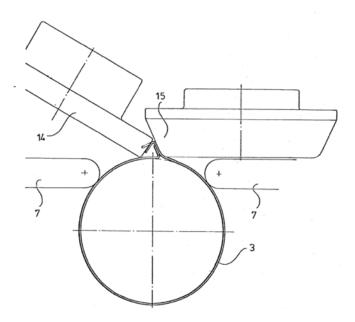
2c.



2d.

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Figures 2a-2d illustrate the forming of a folded seam.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Supply or operations combined with the supply of strip material for making metal tubes with welded or soldered seams | B21C 37/083 |
|--|--------------|
| Unwinding or uncoiling metal strip material from reels or drums | B21C 47/18 |
| Guiding of metal strip material from or to a coiler | B21C 47/3433 |

B21C 37/107

Definition statement

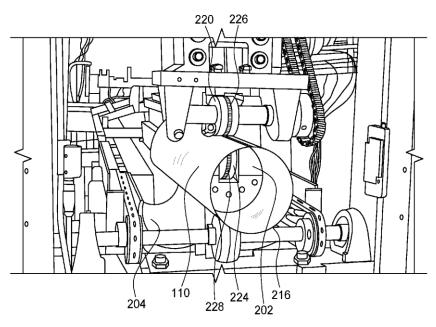
This place covers:

Treating, manipulating or cutting of tubes in combination with tube making machines for tubes with riveted or folded seams.

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Illustrative example of subject matter classified in this place:



The Figure illustrates knurling wheels (226, 228) for treating an overlapped pipe seam.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Finishing metal tubes, e.g. sizing, burnishing | B21C 37/30 |
|--|------------|
| Transversely cutting tubes | B26D 3/16 |

B21C 37/12

Definition statement

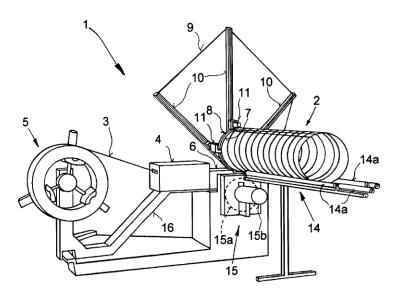
This place covers:

Manufacture of tubes or hoses with helical seams from a strip of material.

Illustrative example of subject matter classified in this place:

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References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Making metal tubes with helical guides without removing material | B21C 37/207 |
|--|-------------|
| , | B21C 37/26 |
| to tubes | |

B21C 37/121

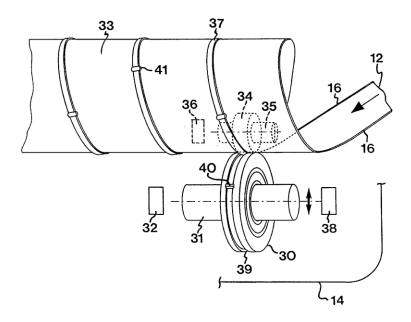
Definition statement

This place covers:

Illustrative example of subject matter classified in this place:

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The Figure illustrates roller (30) providing lock seam deformation (41) to seal helical seam (37).

References

References out of a residual place

Examples of places in relation to which this place is residual:

| Helical winding of elongated heat exchanger elements | B21D 53/027 |
|--|-------------|

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Hoses made of rigid metal material wound from profiled | F16L 11/16 |
|--|------------|
| strips or bands | |

B21C 37/123

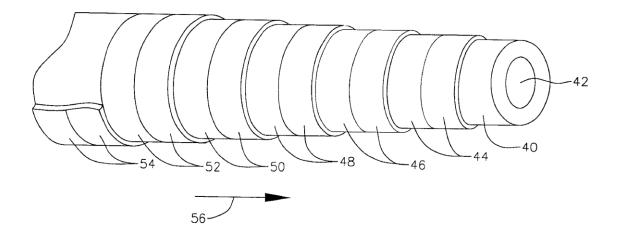
Definition statement

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This place covers:

Illustrative example of subject matter classified in this place:



The Figure illustrates steel strip material (44, 48, 52) being helically wound with intermediate lining layers (46, 50) and a cover layer (54) to form a helically seamed coated tube.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Making multi-wall metal tubes | B21C 37/154 |
|--|-------------|
| Rigid pipes wound from metal sheets with reinforcement | F16L 9/165 |
| Hoses made of rigid metal material wound from profiled | F16L 11/16 |
| strips or bands | |

B21C 37/124

Definition statement

This place covers:

Manufacture of helically seamed tubes or hoses having a special shape.

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Illustrative examples of subject matter classified in this place:

1.

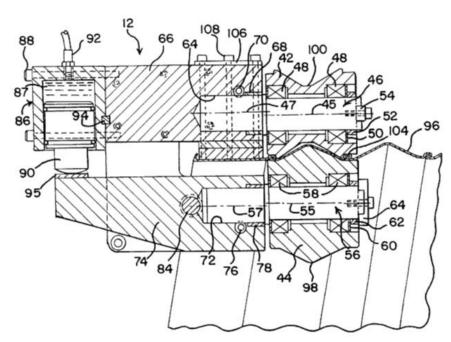
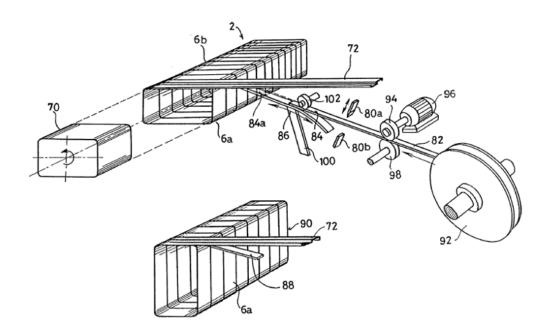


Figure 1 illustrates corrugating surfaces (98, 100) on rollers (42, 44) for creating a helically wound lock seam (104).



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References

References out of a residual place

Examples of places in relation to which this place is residual:

| Corrugating n | netal tubes transversely, | e.g. helically | B21D 15/04 |
|------------------|---------------------------|----------------|-------------------------|
| I Corrugating in | netal tubes transversely, | c.y. Helically | DZ 1D 13/0 1 |

Informative references

Attention is drawn to the following places, which may be of interest for search:

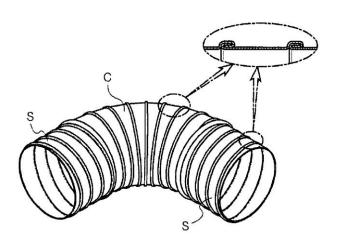
| Making metal tubes with non-circular section | B21C 37/155 |
|--|-------------|
| Making conical metal tubes | B21C 37/18 |

B21C 37/125

Definition statement

This place covers:

Illustrative example of subject matter classified in this place:



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References

References out of a residual place

Examples of places in relation to which this place is residual:

| Bending metal tubes | B21D 9/00 |
|---------------------|-----------|

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Making tube fittings for connecting pipes | B21C 37/28 |
|---|------------|

B21C 37/126

Definition statement

This place covers:

Supply of strip material in combination with a machine for helical winding of tubes or hoses and operations combined with supply.

Illustrative examples of subject matter classified in this place:

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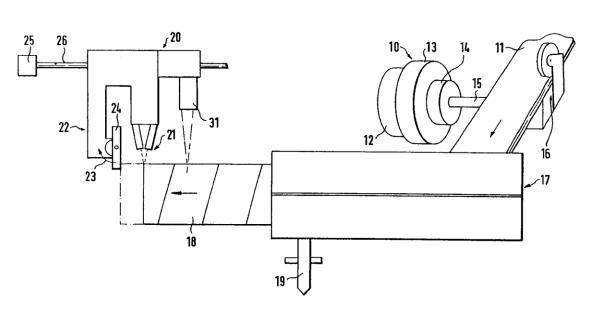
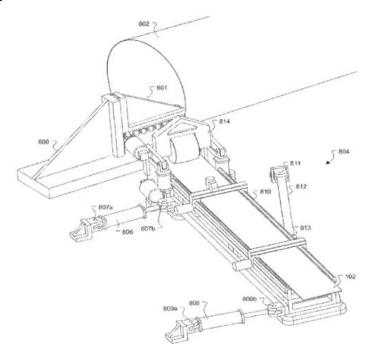


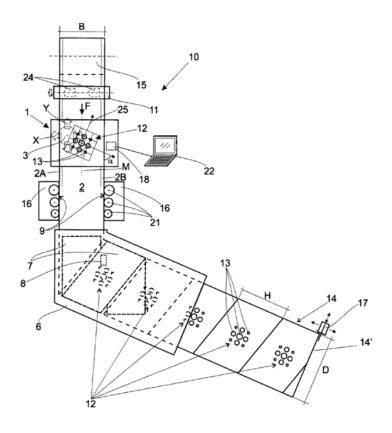
Figure 1 illustrates a flanging device (16) for flanging a strip (11) prior to tube winding in a tube forming tool (17).

2.

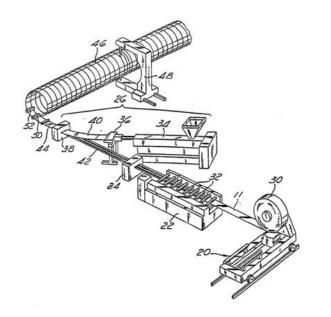


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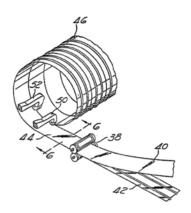
4a.



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4b.



References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Manufacturing metal tubes or metal hoses starting from | B21C 37/065 |
|---|-------------|
| specific blank | |
| Unwinding or uncoiling metal strip material from reels or | B21C 47/18 |
| drums | |

B21C 37/127

Definition statement

This place covers:

Helical tube or pipe treating, manipulating or cutting in combination with a helical tube making machine.

Illustrative examples of subject matter classified in this place:

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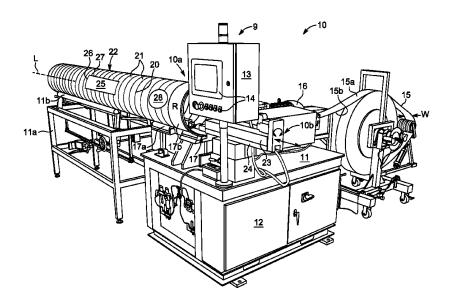
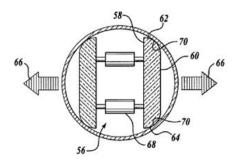


Figure 1 illustrates the cutting of holes (25, 28) in a helically formed tube.

2a.



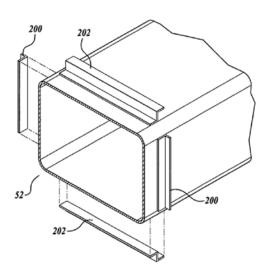
2b.



2c.

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3.

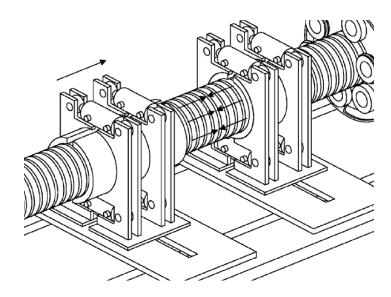


Figure 3 illustrates setting the pitch value of a winding.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Finishing metal tubes, e.g. sizing, burnishing | B21C 37/30 |
|--|------------|
| Transversely cutting tubes | B26D 3/16 |

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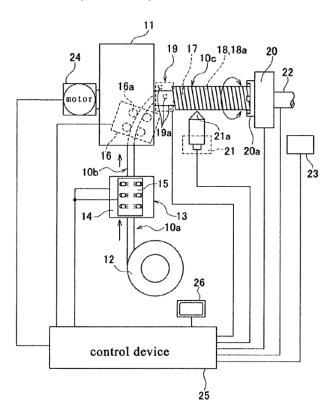
B21C 37/128

Definition statement

This place covers:

Control devices for controlling helical tube or hose winding machines.

Illustrative example of subject matter classified in this place:



References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Control devices or methods specially adapted for tube | B21B 37/78 |
|---|------------|
| rolling in metal-rolling mills | |

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B21C 37/14

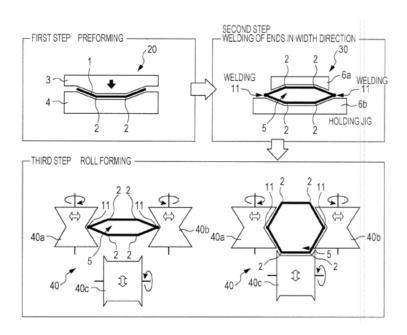
Definition statement

This place covers:

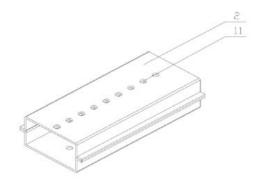
Manufacture of tubes or pipes from double flat material.

Illustrative examples of subject matter classified in this place:

1.



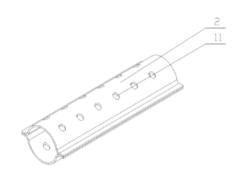
2a.



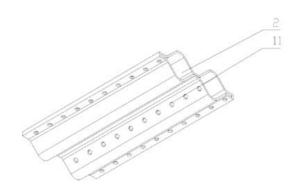
2b.

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2c.



3a.



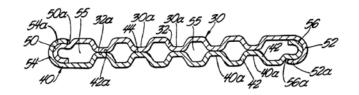
3b.



3с.



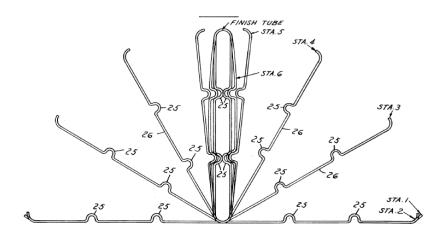
3d.



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4.



References

References out of a residual place

Examples of places in relation to which this place is residual:

| Making heat exchangers by inflating partially united sheet | B21D 53/045 |
|--|-------------|
| metal plates | |

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Making metal heat exchangers not otherwise provided for | B23P 15/26 |
|--|-------------|
| Heat-exchange apparatus with plate-like conduits wherein | F28D 1/0391 |
| a single plate is bent to form one or more conduits | |

B21C 37/15

Definition statement

This place covers:

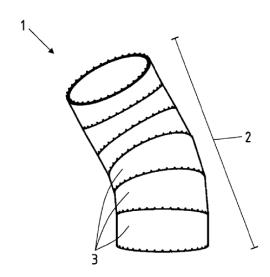
Making tubes or pipes of special shape and making tube fittings.

Illustrative examples of subject matter classified in this place:

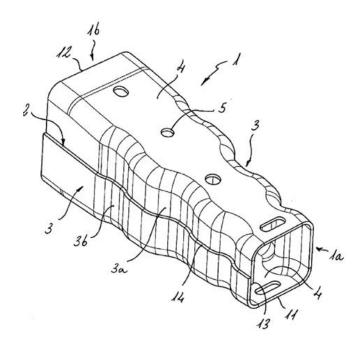
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1.



2.



References

Limiting references

This place does not cover:

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| Making metal tubes having a special shape, e.g. polygonal tubes, with welded or soldered seams | B21C 37/0803 |
|--|--------------|
| Making metal tubes having a special shape, e.g. polygonal tubes, with riveted seams | B21C 37/104 |
| Making metal tubes having a special shape, with helically arranged seams | B21C 37/124 |

B21C 37/151

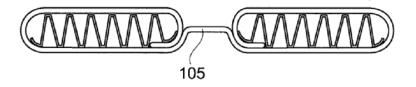
Definition statement

This place covers:

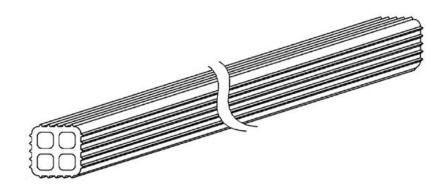
Making tubes or pipes with multiple passages.

Illustrative examples of subject matter classified in this place:

1.



2.



References

References out of a residual place

Examples of places in relation to which this place is residual:

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| Making uncoated tubes by direct extrusion | B21C 23/085 |
|---|-------------|
| Deforming metal tubular bodies by applying fluid pressure | B21D 26/033 |
| Making heat exchanger metal tubes | B21D 53/06 |

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Making metal heat exchangers not otherwise provided for | B23P 15/26 |
|--|-------------|
| Heat exchange apparatus with plate-like conduits wherein | F28D 1/0391 |
| a single plate is bent to form one or more conduits | |
| Heat-exchange tubular elements with non-circular cross- | F28F 1/022 |
| section and with multiple channels | |

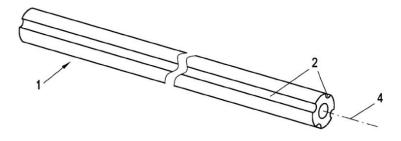
B21C 37/152

Definition statement

This place covers:

Illustrative example of subject matter classified in this place:

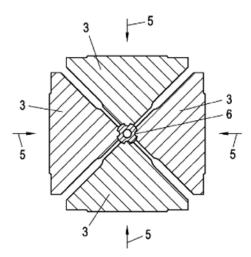
1a.



1b.

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References

References out of a residual place

Examples of places in relation to which this place is residual:

| Corrugating metal tubes longitudinally by applying fluid | B21D 15/03 |
|---|-------------|
| pressure | |
| Deforming metal tubular bodies by applying fluid pressure | B21D 26/033 |

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Treating surfaces mechanically with or without calibrating | B23P 9/00 |
|--|------------|
| Barrels or gun tubes with grooves or rifling | F41A 21/18 |

B21C 37/153

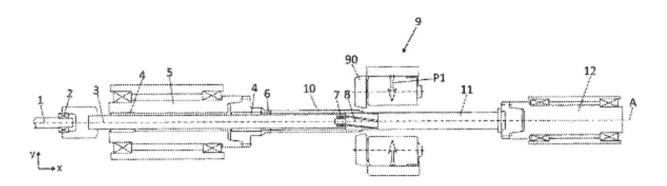
Definition statement

This place covers:

Illustrative example of subject matter classified in this place:

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The Figure illustrates a rotating mandrel (7) with grooves (8) for forming the interior of a barrel.

References

References out of a residual place

Examples of places in relation to which this place is residual:

| Corrugating metal tubes longitudinally by applying fluid | B21D 15/03 |
|---|-------------|
| pressure | |
| Deforming metal tubular bodies by applying fluid pressure | B21D 26/033 |

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Making helical or similar guides in or on metal tubes without removing material | B21C 37/20 |
|---|------------|
| Forming profiles on internal or external surfaces by forging, | B21J 5/12 |
| hammering or pressing | |
| Barrels or gun tubes with grooves or rifling | F41A 21/18 |

B21C 37/154

Definition statement

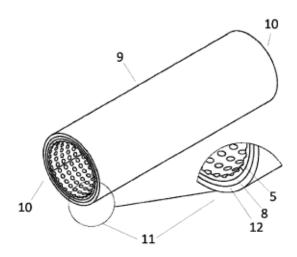
This place covers:

Illustrative examples of subject matter classified in this place:

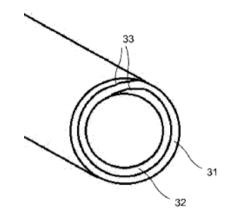
DATE: AUGUST 1, 2025

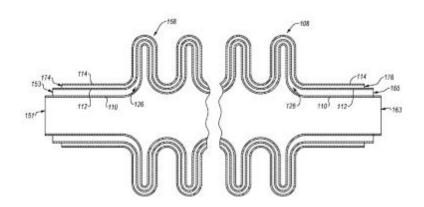
PROJECT RP12170

1.



2.





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References

References out of a residual place

Examples of places in relation to which this place is residual:

| Making metal-coated tubes by extrusion | B21C 23/22 |
|--|-------------|
| Deforming metal double-walled bodies by applying fluid | B21D 26/051 |
| pressure | |
| Assembling of tubes with tubes | B21D 39/04 |

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Layered tubular products | B32B 1/08 |
|---------------------------|-----------|
| Double-walled rigid pipes | F16L 9/18 |

B21C 37/155

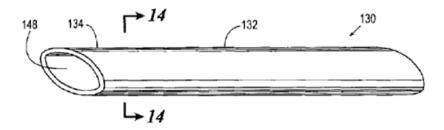
Definition statement

This place covers:

Making polygonal or other non-circular cross-section tubes.

Illustrative examples of subject matter classified in this place:

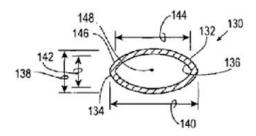
1a.



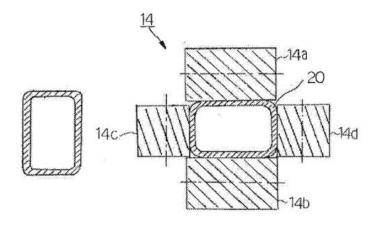
1b.

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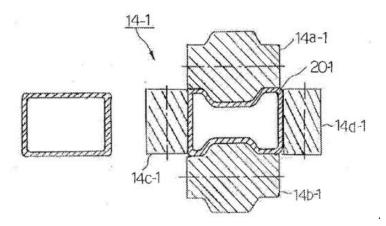
PROJECT RP12170



2a.



2b.



References

Limiting references

This place does not cover:

| Making metal tubes with multiple passages | B21C 37/151 |
|---|-------------|
| Making multi-wall metal tubes | B21C 37/154 |

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References out of a residual place

Examples of places in relation to which this place is residual:

| Deforming metal tubular bodies by applying fluid pressure | B21D 26/033 |
|---|--------------|
| Making non-circular cans or tins | B21D 51/2646 |

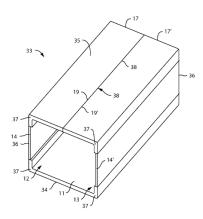
B21C 37/156

Definition statement

This place covers:

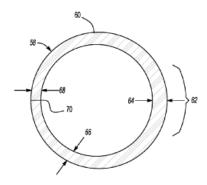
Illustrative examples of subject matter classified in this place:

1.



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References

Limiting references

This place does not cover:

| Making helical or similar guides in or on metal tubes | B21C 37/20 |
|---|------------|
| without removing material | |
| Making finned or ribbed metal tubes by fixing strip or like | B21C 37/22 |
| material to tubes | |

References out of a residual place

Examples of places in relation to which this place is residual:

| Locally embossing the walls of formed can bodies | B21D 51/2607 |
|--|--------------|
|--|--------------|

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Forming profiles on internal or external surfaces by forging, | B21J 5/12 |
|---|------------|
| hammering or pressing | |
| Making hollow metal racks | B21K 1/768 |

B21C 37/157

Definition statement

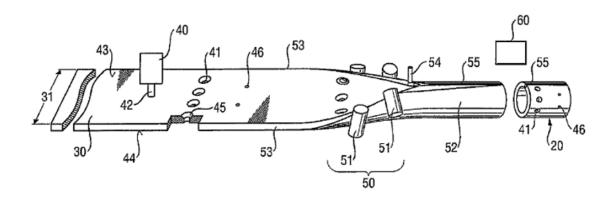
DATE: AUGUST 1, 2025

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This place covers:

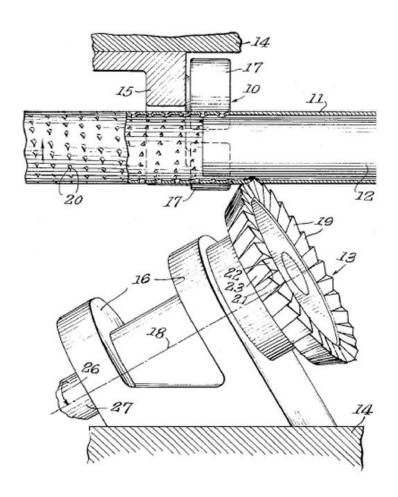
Illustrative examples of subject matter classified in this place:

1.



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References

References out of a residual place

Examples of places in relation to which this place is residual:

| Perforating metal sheet bodies by applying fluid pressure | B21D 26/023 |
|---|-------------|
| Perforating metal tubular bodies by applying fluid pressure | B21D 26/035 |
| Perforating, i.e. punching holes, in tubes | B21D 28/28 |

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Flow drilling during friction heat forging | B21J 5/066 |
|--|------------|

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B21C 37/158

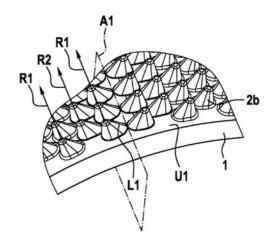
Definition statement

This place covers:

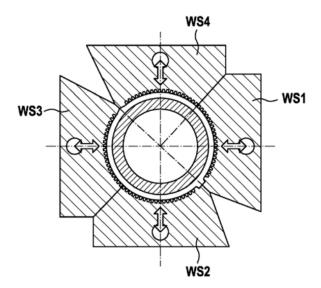
Forming dimples in or protrusions on a tube.

Illustrative examples of subject matter classified in this place:

1a.



1b.



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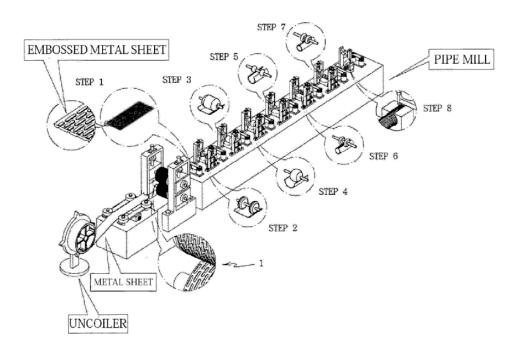


Figure 2 illustrates a pipe mill that uncoils a metal sheet and embosses (1) the metal sheet in step 1 and then advances the metal sheet in successive steps to seam and bend the embossed metal sheet into a tube/pipe.

References

References out of a residual place

Examples of places in relation to which this place is residual:

| Corrugating metal tubes | B21D 15/00 |
|---|------------|
| Making hollow metal objects with corrugated walls | B21D 51/12 |

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Embossing metal sheets or rolls by rolling | B21H 8/005 |
|---|------------|
| Tubular elements with means for increasing heat-transfer | F28F 1/10 |
| area, e.g. with fins, with projections or recesses | |
| Plate-like elements with means for increasing heat-transfer | F28F 3/044 |
| area, the means being integral punctual deformations of | |
| the element, e.g. dimples | |

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B21C 37/16

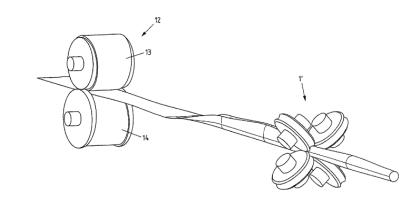
Definition statement

This place covers:

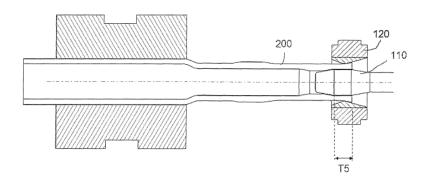
Making tubes with varying cross-sectional diameter.

Illustrative examples of subject matter classified in this place:

1.



2.



References

References out of a residual place

Examples of places in relation to which this place is residual:

| Drawing metal tubular articles by means of mandrels | B21C 1/24 |
|--|------------|
| Pointing of metal tubes | B21C 5/003 |
| Metal extrusion profiling tools for making tapered tubes | B21C 25/08 |
| Procedures to alter the diameter of metal tube ends | B21D 41/00 |

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Informative references

Attention is drawn to the following places, which may be of interest for search:

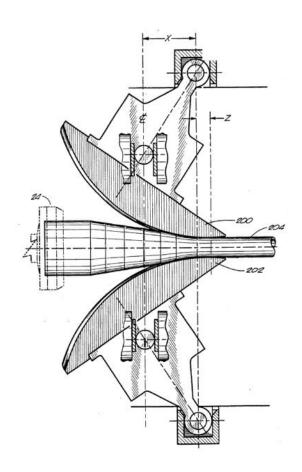
| Shaping hollow metal articles with different cross-section | B21K 21/08 |
|--|------------|
| by forging | |
| Forging or pressing end portions of hollow metal articles | B21K 21/12 |

B21C 37/18

Definition statement

This place covers:

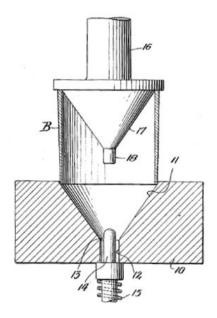
Illustrative examples of subject matter classified in this place:



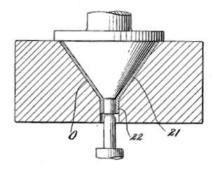
DATE: AUGUST 1, 2025

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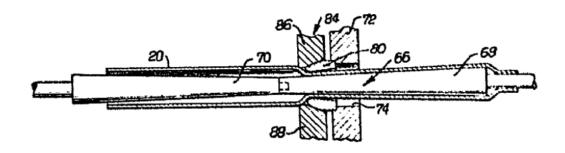
2a.



2b.



3.



References

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References out of a residual place

Examples of places in relation to which this place is residual:

| Procedures to alter the diameter of metal tube ends | B21D 41/00 |
|---|------------|
| Making conically shaped hollow metal objects | B21D 51/10 |

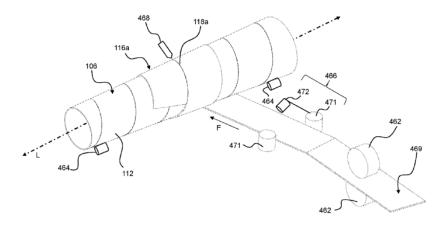
B21C 37/185

Definition statement

This place covers:

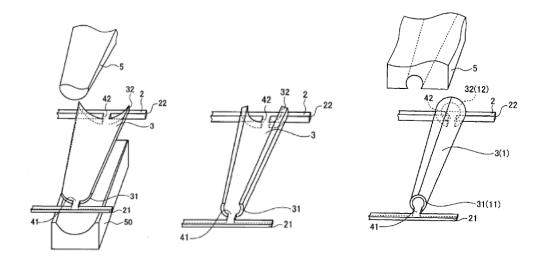
Illustrative examples of subject matter classified in this place:

1.



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References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Metal towers | E04H 12/08 |
|--------------|------------|
| | |

B21C 37/298

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| | Flow drilling during friction heat forging | B21J 5/066 |
|--|--|------------|
|--|--|------------|

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B21C 43/04

Relationships with other classification places

Devices for de-scaling metal sheet in combination with rolling are classified in B21B 45/04.

Devices for de-scaling wire or like flexible work are classified in B21C 43/04.

B21C 47/247

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Joining ends of material to continuous strip, bar or sheets | B21B 15/0085 |
|---|--------------|
| in metal-rolling mills | |

B21C 47/3458

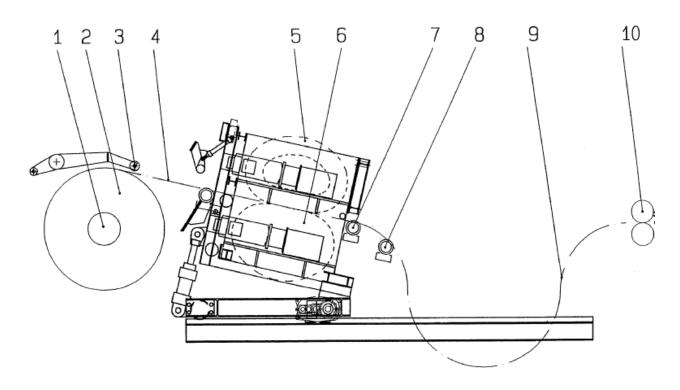
Definition statement

This place covers:

Illustrative example of subject matter classified in this place:

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References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Metal drawing chains | B21C 1/30 |
|----------------------|-----------|

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2. A. DEFINITIONS (modified)

B21C

Replace: The existing Definition statement with the following updated statement.

Definition statement

This place covers:

The methods and devices for working metal as follows:

- Metal drawing (covered by B21C 1/00 B21C 19/00);
- Metal extrusion (covered by B21C 23/00 B21C 35/00);
- Methods for manufacturing metal sheets, rods, wires, tubes or the like, not otherwise provided for (covered by B21C 37/00);
- Devices for cleaning metal products adapted for use with machines of this subclass (covered by B21C 43/00);
- Separating mandrels from work (covered by B21C 45/00);
- Winding-up, coiling, winding-off metal wire or metal band (covered by B21C 47/00);
- Devices for temporarily accumulating material (covered by B21C 49/00);
- Measuring, gauging, indicating, counting or marking devices adapted for use with subclasses B21B - B21F (covered by B21C 51/00);
- Other subject-matter concerning the manufacture of metal sheets, wire, rods, tubes or profiles otherwise than by rolling as well as other subject-matter concerning auxiliary operations used in connection with metal-working without essentially removing material (covered by B21C 99/00).

References

Delete: The entire Limiting references section.

Insert: The following new Application-oriented references section.

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PROJECT RP12170

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

| Processes for changing of physical properties of metals | C21D. C22F |
|---|------------|
| processes for changing or physical properties of metals | CZTD, CZZF |

Replace: The existing Informative references table with the following updated table.

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Devices for cleaning in general | B08B |
|---|------------|
| Rolling of metal | B21B |
| Working or processing of sheet metal or metal tubes, rods or profiles without essentially removing material; Punching metal | B21D |
| Making forged or pressed metal products | B21K |
| Continuous casting | B22D 11/00 |
| Soldering, welding, flame-cutting | B23K |
| Pressure welding by means of a rolling mill | B23K 20/04 |
| Metal-working not otherwise provided for; Combined operations | B23P |
| Transport or storage devices, e.g. conveyors for loading | B65G |
| Handling thin or filamentary material, e.g. sheets, webs, cables | B65H |

B21C 1/00

Replace: The existing Definition statement with the following updated statement.

Definition statement

This place covers:

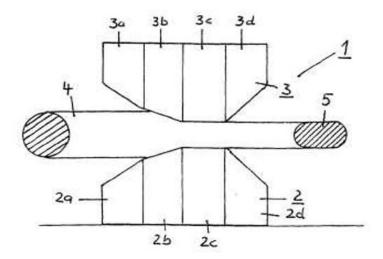
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Methods, devices and drives for metal drawing of metal sheets, metal wire, metal rods, metal bars, metal tubes or like semi-manufactured products.

Metal drawing consists in reducing the cross-section of a work piece (e.g. reducing the diameter of a metal rod or wire) by forcing it through a die. Metal drawing differs from extrusion by the lower rate of reduction.

Illustrative example of subject matter classified in this place:



B21C 1/003

Replace: The existing Definition statement with the following updated statement.

Definition statement

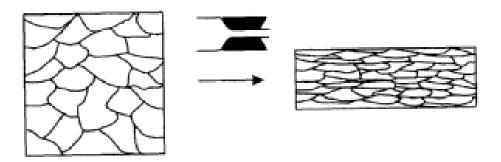
This place covers:

Drawing special alloys with the purpose, for example, of modifying the physical properties of such alloys, and all special drawing methods therefor.

Illustrative example of subject matter classified in this place:

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References

<u>Insert</u>: The following new Application-oriented references section.

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

| Modifying the physical properties by deformation during | C21D 8/065 |
|--|------------|
| manufacturing of ferrous alloy rods or wires | |
| Changing the physical structure of non-ferrous metals or | C22F 1/00 |
| alloys by heat treatment or by hot or cold working | |

Replace: The existing Informative references table with the following updated table.

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Ropes or cables built-up from metal wires, e.g. of section wires | D07B 1/0666 |
|--|-------------|
| around a hemp core, the wires being characterised by an anti- | |
| corrosive or adhesion promoting coating | |

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B21C 1/006

Replace: The existing Definition statement with the following updated statement.

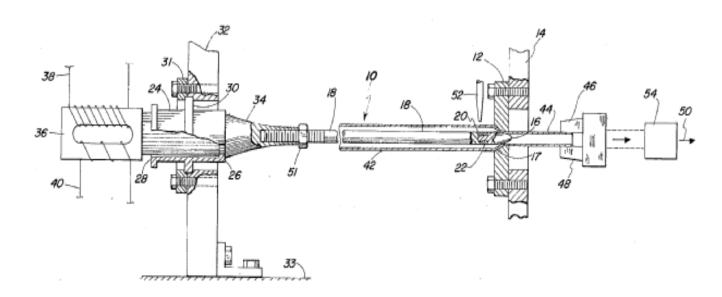
Definition statement

This place covers:

Drawing metal sheets, metal wire, metal rods, metal tubes applying vibratory energy, for example, to the mandrel or the dies.

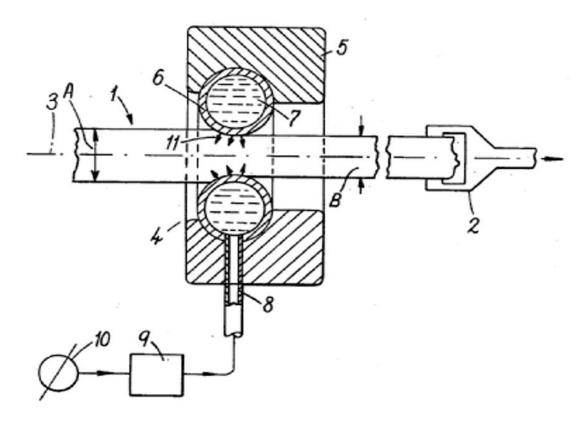
Illustrative examples of subject matter classified in this place:

1.



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B21C 1/02

Replace: The existing Definition statement with the following updated statement.

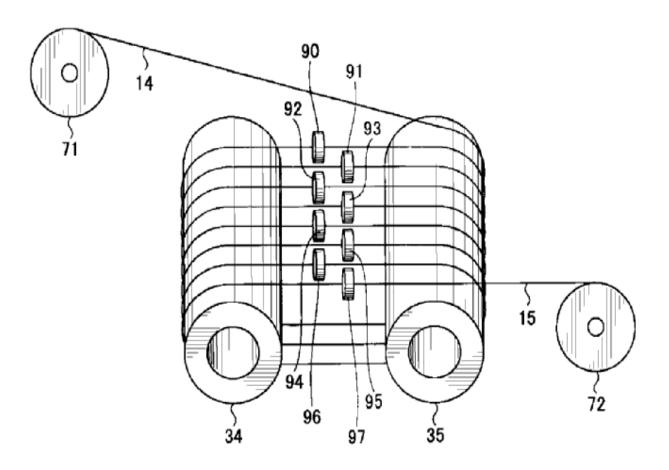
Definition statement

This place covers:

Illustrative examples of subject matter classified in this place:

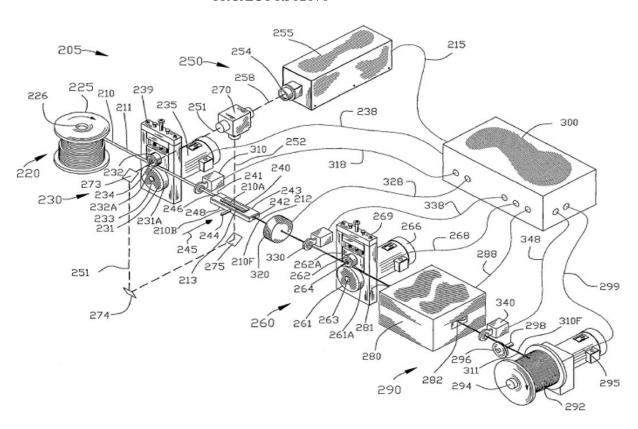
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B21C 1/04

Replace: The existing Definition statement with the following updated statement.

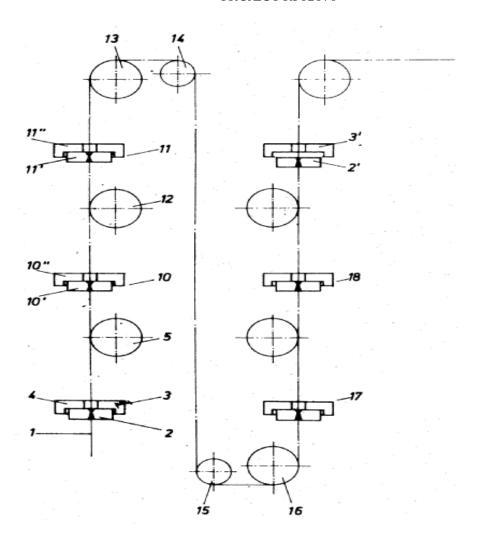
Definition statement

This place covers:

Illustrative examples of subject matter classified in this place:

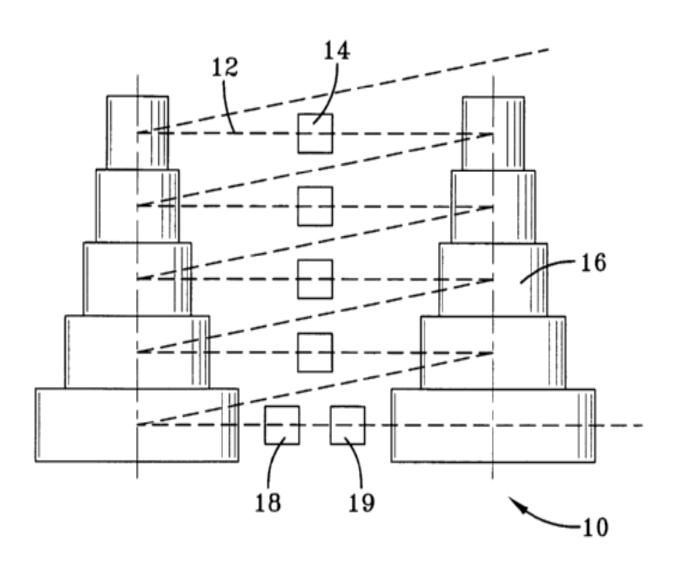
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B21C 1/06

Replace: The existing Definition statement with the following updated statement.

Definition statement

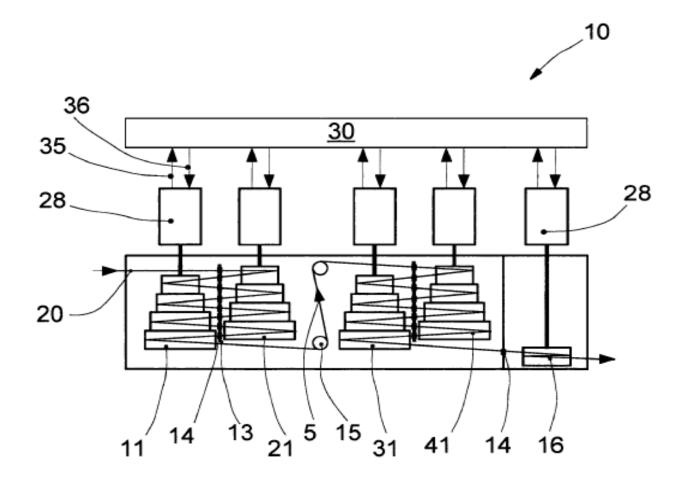
This place covers:

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Wire drawing devices and methods whereby positive slip ensures that all portions of the wire are taut and that there is adequate frictional force exerted on the wire by the drums to pull the wire through the dies.

Illustrative example of subject matter classified in this place:



B21C 1/08

Replace: The existing Definition statement with the following updated statement.

Definition statement

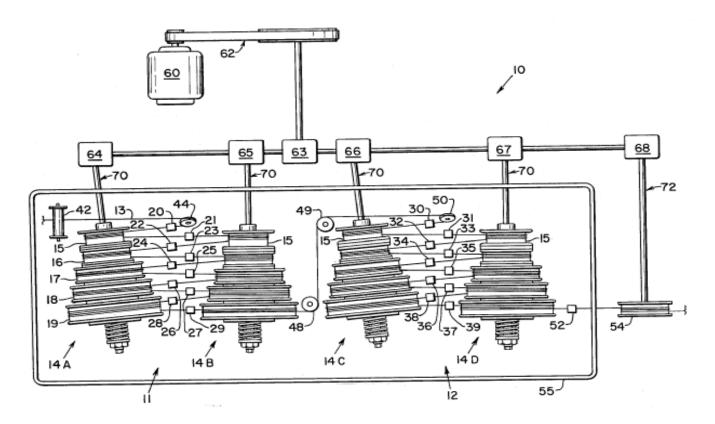
This place covers:

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PROJECT RP12170

Wire drawing devices and methods whereby wire slips on the drawing drums are eliminated.

Illustrative example of subject matter classified in this place:



B21C 1/10

Replace: The existing Definition statement with the following updated statement.

Definition statement

This place covers:

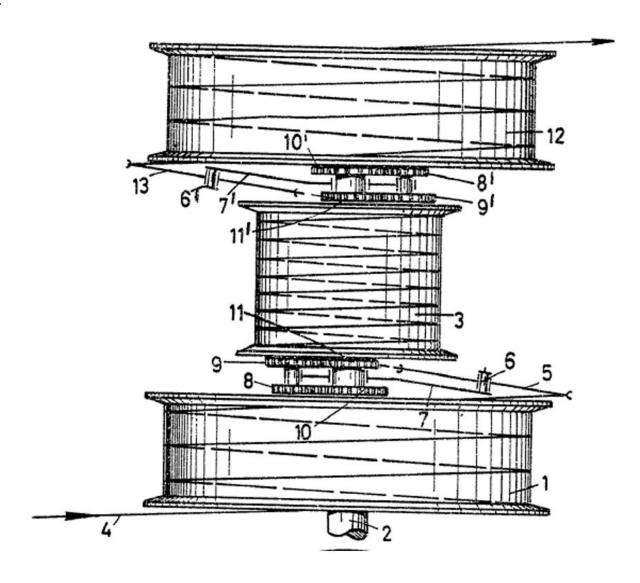
Wire drawing devices and methods whereby a certain amount of wire is accumulated in order, for example, to allow steady operation of the machine, even though the speeds of the various drums are not in exact proportion to the elongation of the wire.

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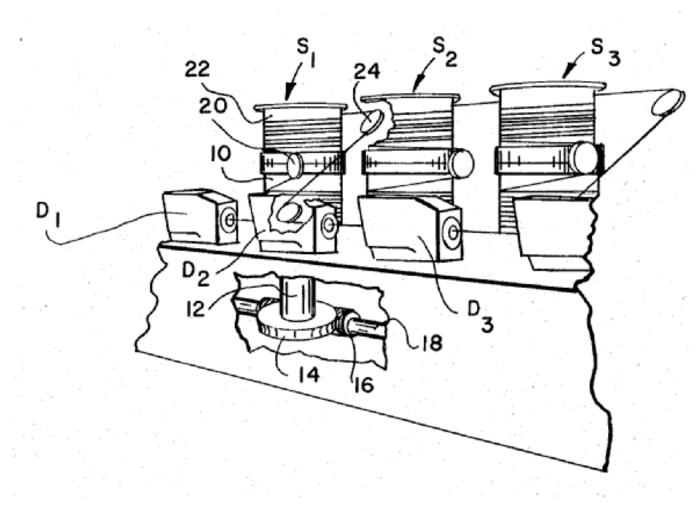
Illustrative examples of subject matter classified in this place:

1.



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B21C 1/12

Replace: The existing Definition statement with the following updated statement.

Definition statement

This place covers:

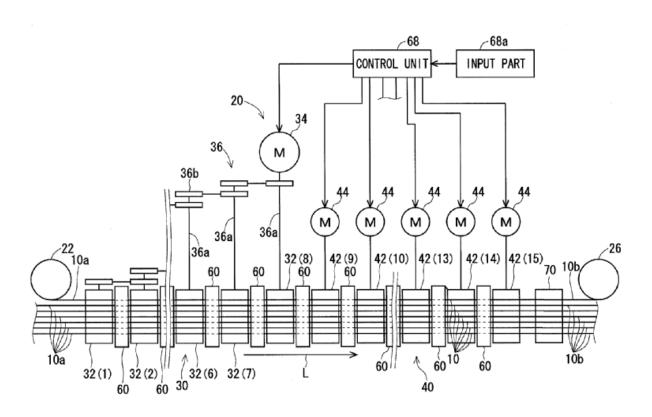
- Wire drawing devices and methods, whereby drums are controlled to apply the correct tension on the wire;
- Details of drives for drums; and
- Stop or relief mechanisms.

Illustrative examples of subject matter classified in this place:

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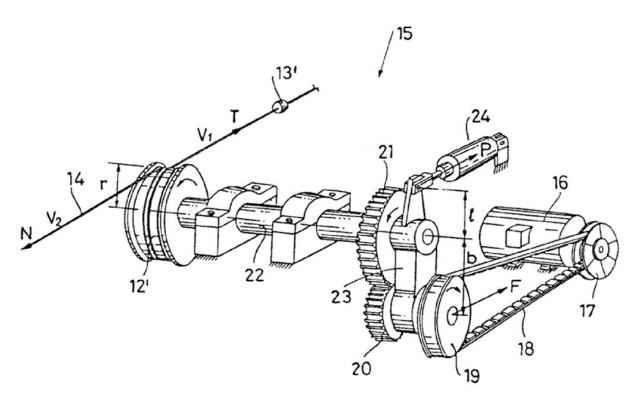
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1.



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B21C 1/14

Replace: The existing Definition statement with the following updated statement.

Definition statement

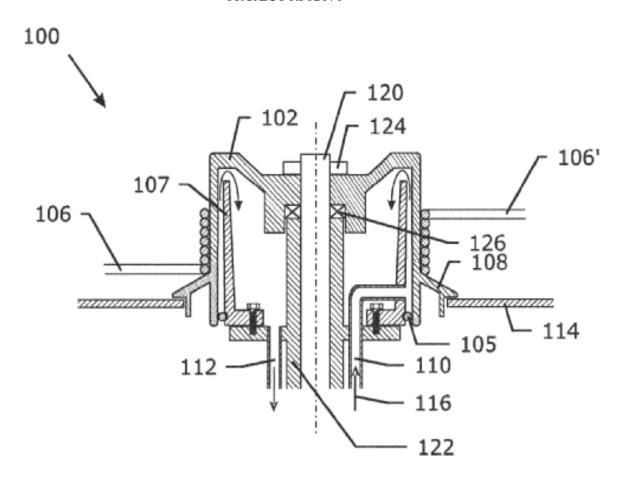
This place covers:

Wire drawing capstans and gripping means cooperating with said capstans.

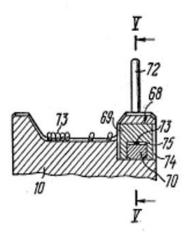
Illustrative examples of subject matter classified in this place:

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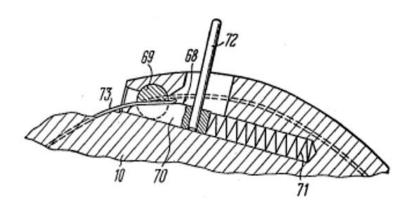


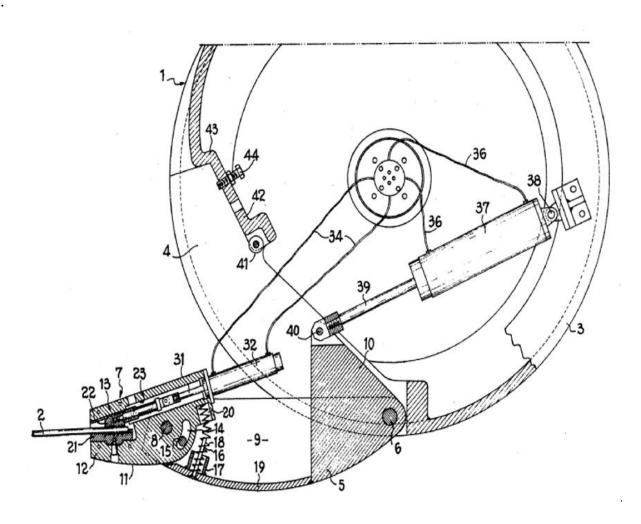
2a.



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B21C 1/16

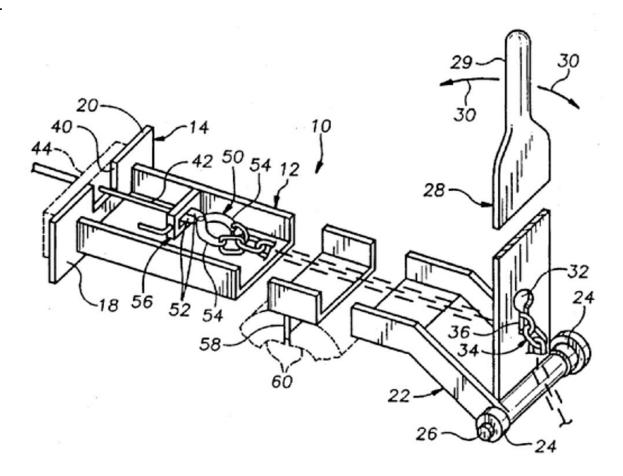
Replace: The existing Definition statement with the following updated statement.

Definition statement

This place covers:

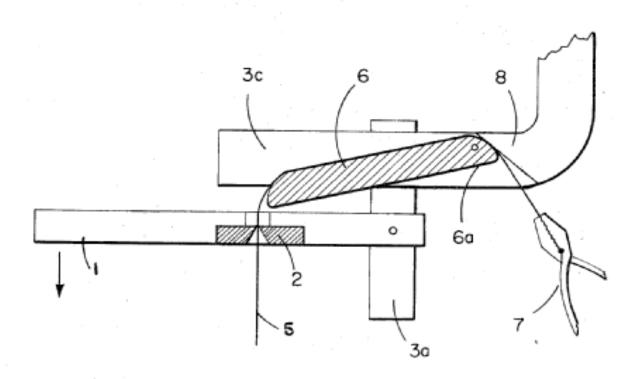
Illustrative examples of subject matter classified in this place:

1.



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B21C 1/18

Replace: The existing Definition statement with the following updated statement.

Definition statement

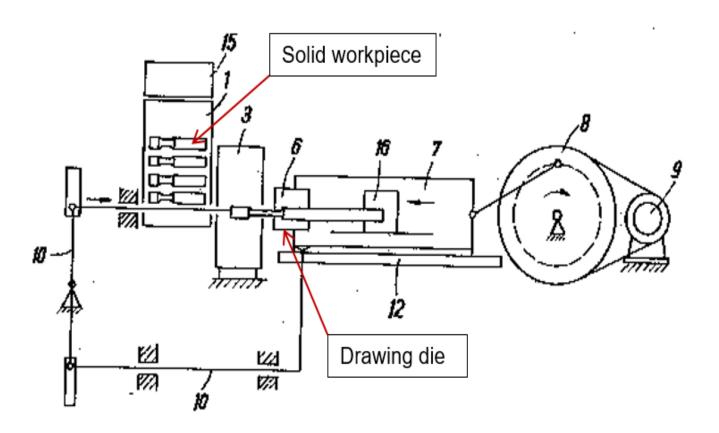
This place covers:

Drawing devices and methods from solid stocks of limited length.

Illustrative example of subject matter classified in this place:

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B21C 1/20

Replace: The existing Definition statement with the following updated statement.

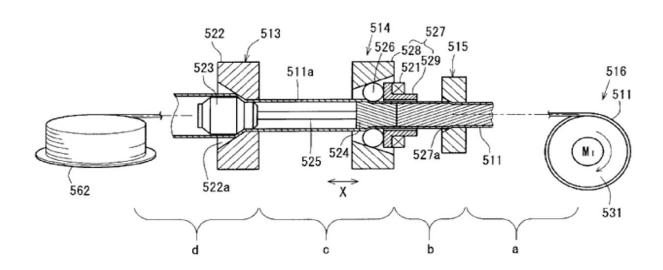
Definition statement

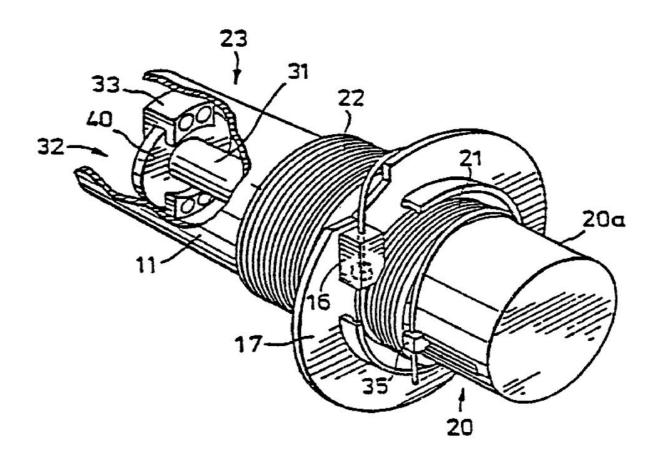
This place covers:

Illustrative examples of subject matter classified in this place:

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DATE: AUGUST 1, 2025

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B21C 1/22

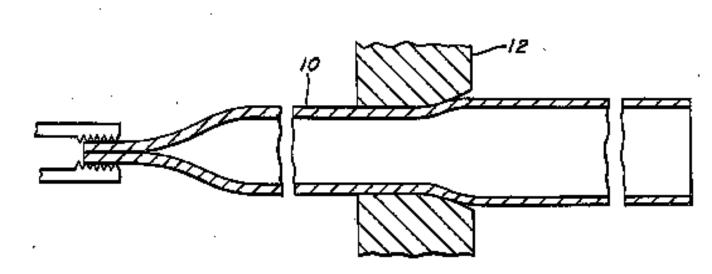
Replace: The existing Definition statement with the following updated statement.

Definition statement

This place covers:

Drawing devices and methods specially adapted for making tubular articles, also starting from stock of limited length.

Illustrative example of subject matter classified in this place:



References

<u>Insert</u>: The following new Limiting references section.

Limiting references

This place does not cover:

| Bending sheet metal into tubular form by drawing | B21D 5/10 |
|--|-----------|
|--|-----------|

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Replace: The existing Informative references table with the following updated table.

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Metal tube-rolling not restricted to methods provided for in only one of groups B21B 17/00, B21B 19/00, B21B 21/00, e.g. combined processes | B21B 23/00 |
|---|------------|
| Rigid pipes wound from sheets or strips, with or without reinforcement, made of metal | F16L 9/165 |

B21C 1/24

Replace: The existing Definition statement with the following updated statement.

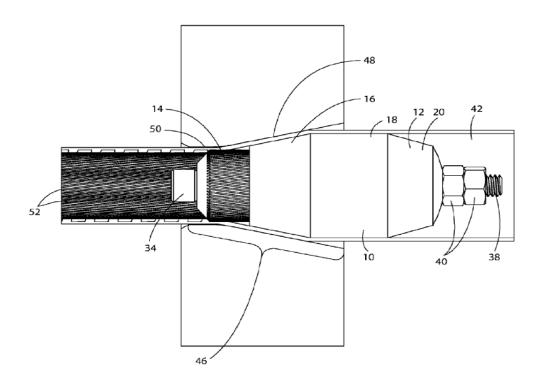
Definition statement

This place covers:

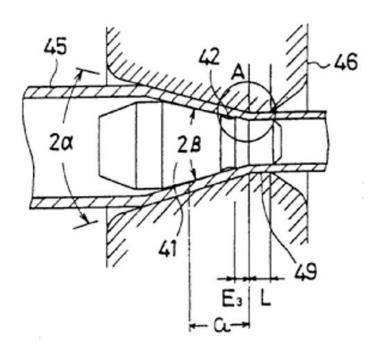
Illustrative examples of subject matter classified in this place:

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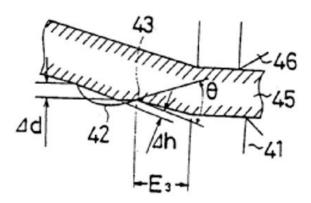
2a.



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2b.



References

Replace: The existing Informative references table with the following updated table.

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Mandrels | B21C 3/16 |
|---|------------|
| Making helical or similar guides in or on tubes without removing material, e.g. by drawing same over mandrels, by pushing same through dies; Making tubes with angled walls, ribbed tubes or tubes with decorated walls | B21C 37/20 |

B21C 1/26

Replace: The existing Definition statement with the following updated statement.

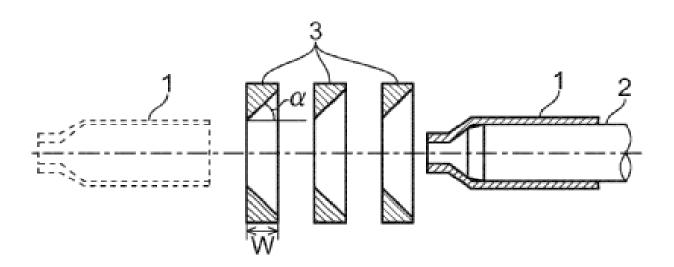
Definition statement

This place covers:

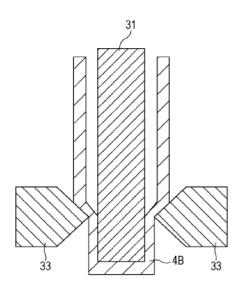
Illustrative examples of subject matter classified in this place:

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2.



References

Replace: The existing Informative references table with the following updated table.

Informative references

Attention is drawn to the following places, which may be of interest for search:

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| Mandrels; Mounting or adjusting same | B21C 3/16 |
|---|------------|
| Metal tube-rolling not restricted to methods provided for in only one of groups B21B 17/00, B21B 19/00, B21B 21/00, e.g. combined processes | B21B 23/00 |
| Shaping metal without cutting, by deep-drawing | B21D 22/20 |

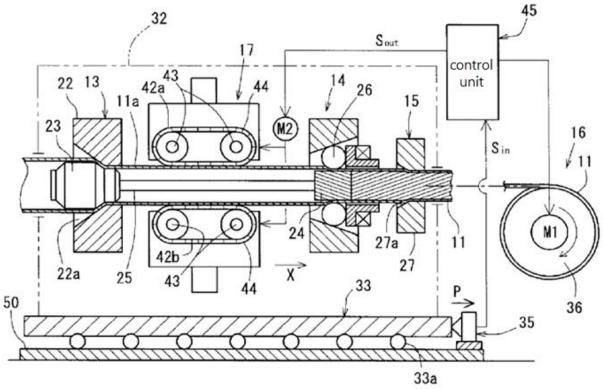
B21C 1/27

Replace: The existing Definition statement with the following updated statement.

Definition statement

This place covers:

Illustrative example of subject matter classified in this place:



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B21C 1/28

Replace: The existing Definition statement with the following updated statement.

Definition statement

This place covers:

Illustrative examples of subject matter classified in this place:

1.

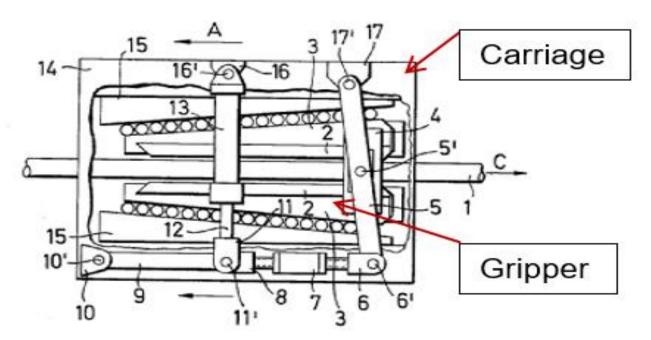
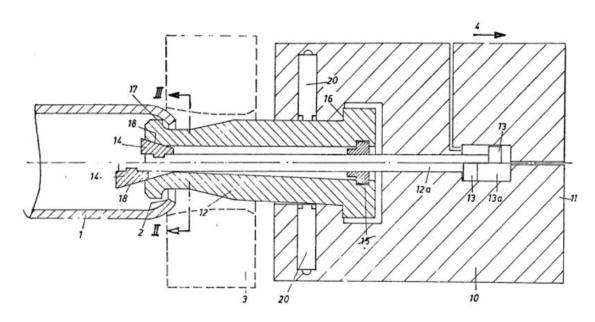


Figure 1 illustrates a carriage (14) and grippers (3).

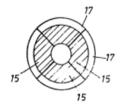
2a.

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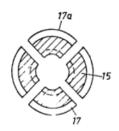
PROJECT RP12170



2b.



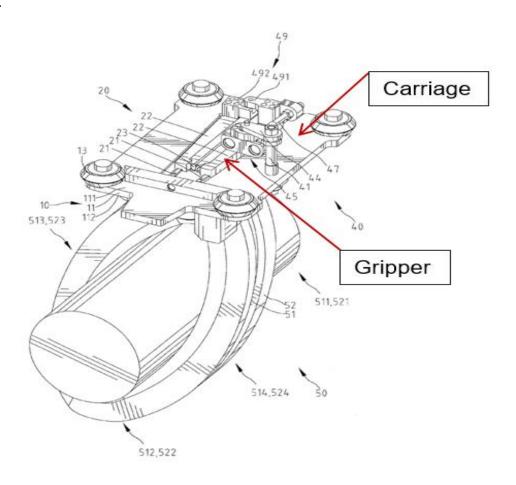
2c.



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3.



B21C 1/30

Replace: The existing Definition statement with the following updated statement.

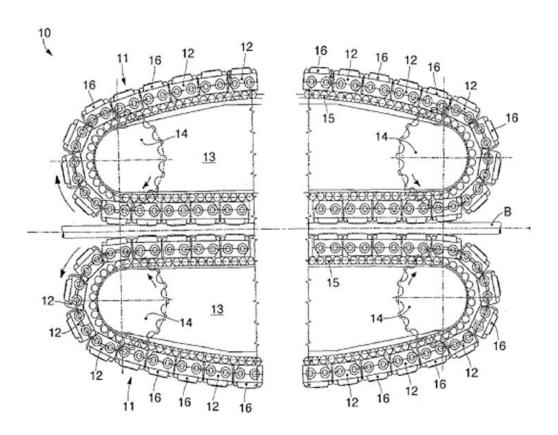
Definition statement

This place covers:

Illustrative examples of subject matter classified in this place:

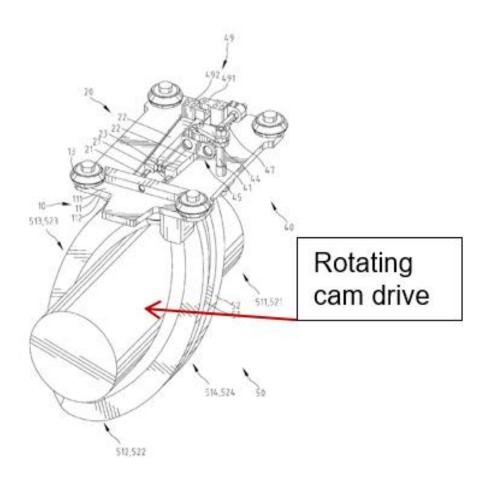
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References

<u>Delete</u>: The entire Limiting references section.

Replace: The existing Informative references table with the following updated table.

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Removing work from metal extruding presses; Drawing-off metal extruded work | B21C 35/02 |
|---|--------------|
| Endlessly revolving chain systems for metal coiling | B21C 47/3458 |
| Aprons, endless belts, lattices or like driven elements for forwarding filamentary material | B65H 51/14 |

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B21C 1/305

Replace: The existing Definition statement with the following updated statement.

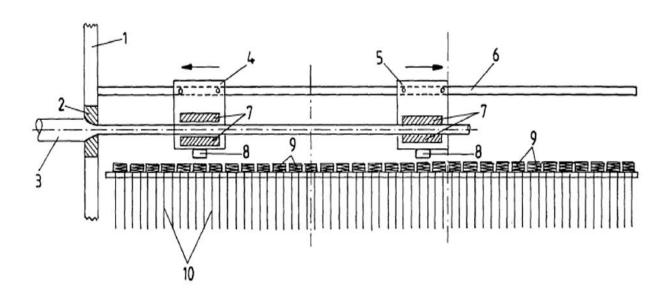
Definition statement

This place covers:

Electric linear motors for drawing.

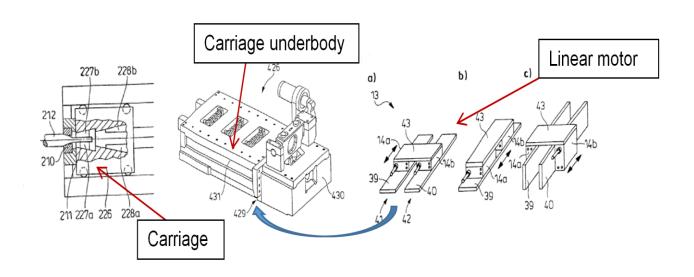
Illustrative examples of subject matter classified in this place:

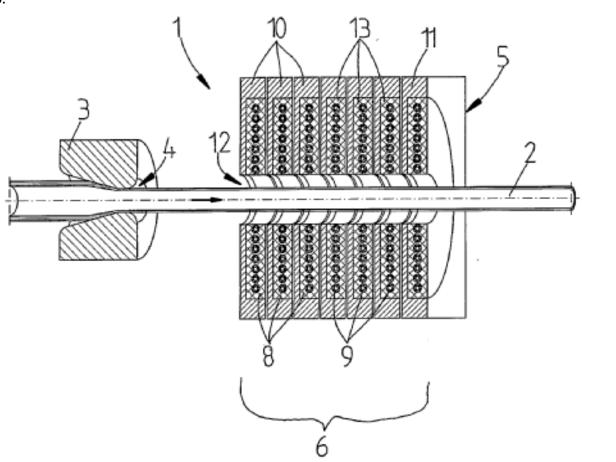
1.



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References

Replace: The existing Informative references table with the following updated table.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Linear or sectional motors for propulsion systems in which a rigid body is moved along a path due to dynamo-electric interaction between the body and a magnetic field travelling along the path H02K 41/02

B21C 1/32

Replace: The existing Definition statement with the following updated statement.

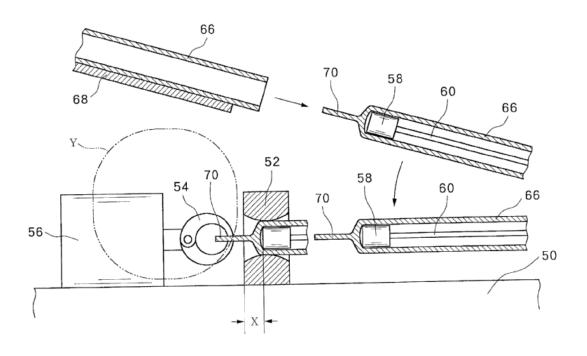
Definition statement

This place covers:

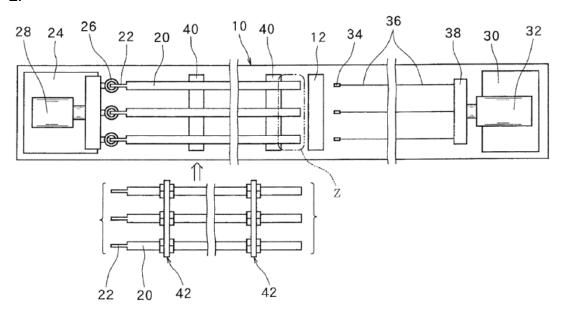
Illustrative examples of subject matter classified in this place:

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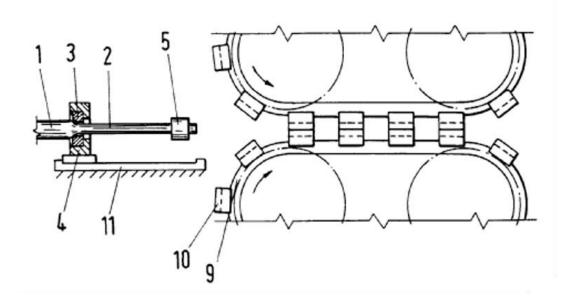
2.



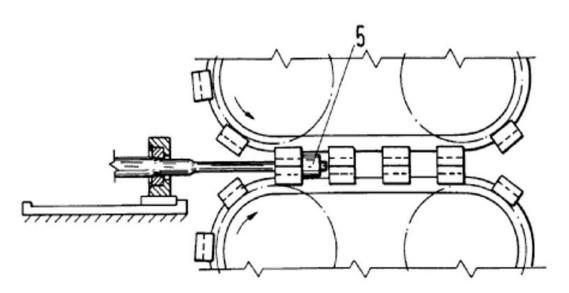
3a.

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3b.



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B21C 1/34

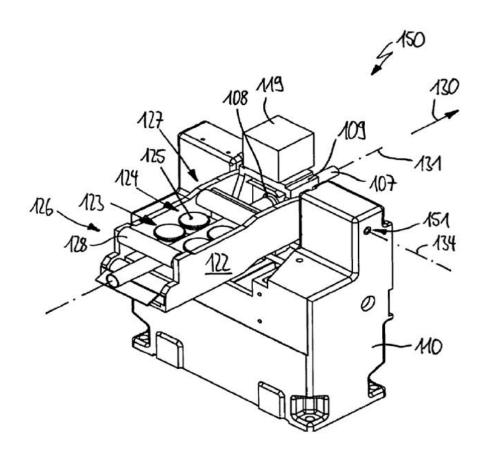
Replace: The existing Definition statement with the following updated statement.

Definition statement

This place covers:

Illustrative examples of subject matter classified in this place:

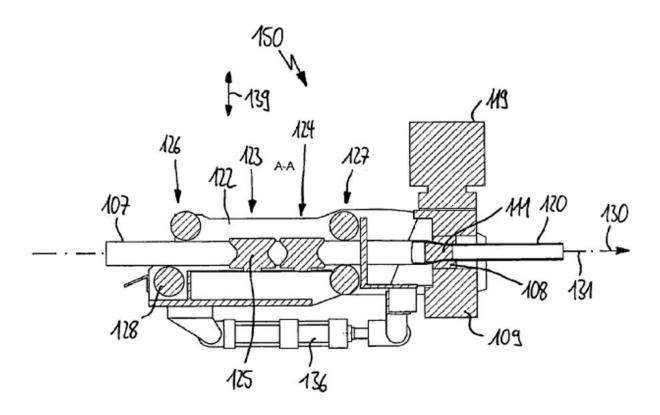
1a.



1b.

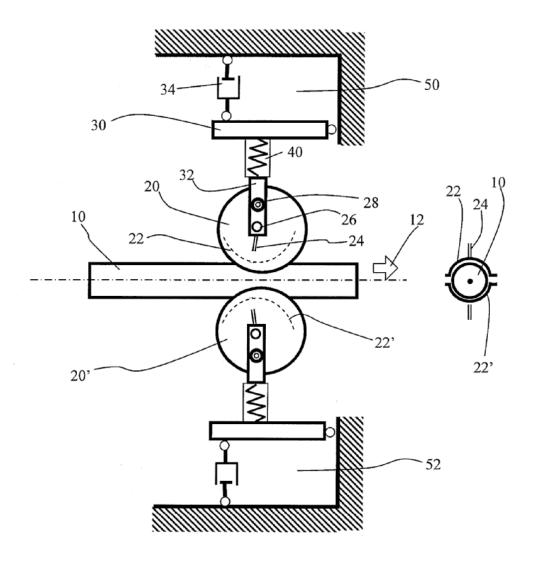
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B21C 3/00

Replace: The existing Definition statement with the following updated statement.

Definition statement

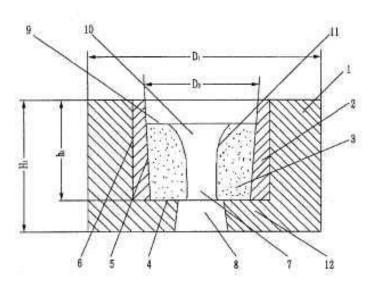
This place covers:

Metal drawing tools, e.g. dies, die holders, mandrels.

Illustrative example of subject matter classified in this place:

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B21C 5/00

Replace: The existing Definition statement with the following updated statement.

Definition statement

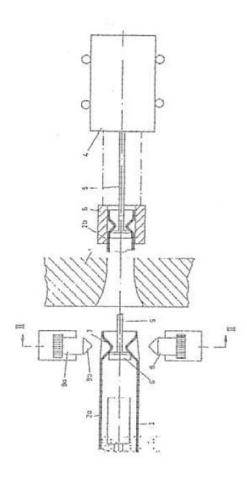
This place covers:

Reducing the cross-section of the material's leading end for easing its insertion into the drawing die prior to drawing.

Illustrative example of subject matter classified in this place:

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B21C 9/00

Replace: The existing Definition statement with the following updated statement.

Definition statement

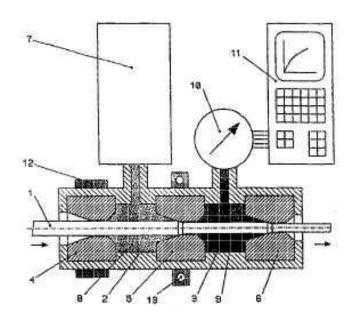
This place covers:

Cooling, heating or lubricating the drawing material or the drawing devices or dies.

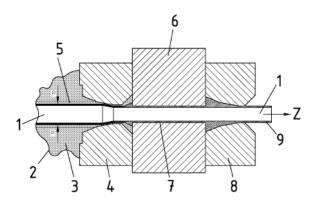
Illustrative examples of subject matter classified in this place:

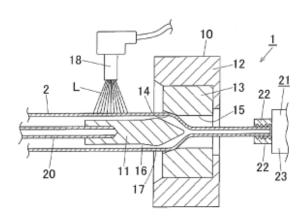
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2.





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References

<u>Insert</u>: The following new Limiting references section.

Limiting references

This place does not cover:

| Die holders combined with devices for guiding the drawing material | B21C 3/14 |
|--|-----------|
| or combined with devices for cooling, heating or lubricating | |

Replace: The existing Informative references table with the following updated table.

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Metal drawing machines, methods or drives | B21C 1/00 |
|--|--------------|
| Lubricating workpieces for deep-drawing | B21D 22/201 |
| Lubrication of tool and workpiece | B21D 37/18 |
| Lubricating during forging or pressing | B21J 3/00 |
| Lubricants in general | C10M |
| Lubricating compositions for metal working | C10N 2040/20 |

B21C 19/00

References

Replace: The existing Informative references table with the following updated table.

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Winding, coiling | B21C 47/00 |
|--|------------|
| Straightening or restoring form of metal rods, metal tubes, metal profiles or specific articles made therefrom, whether or not in combination with sheet metal parts | B21D 3/00 |

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| Working of metal wire by straightening | B21F 1/02 |
|--|-----------|
|--|-----------|

B21C 23/00

Replace: The existing Definition statement with the following updated statement.

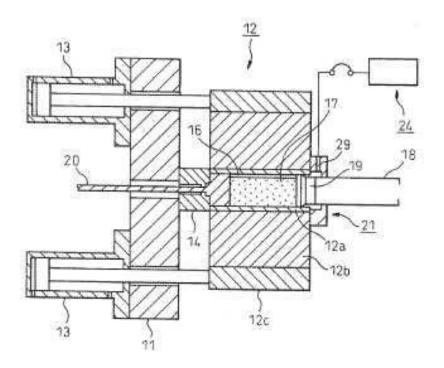
Definition statement

This place covers:

Methods and devices for metal extrusion including impact extrusion, products obtained by metal extrusion as well as lubrication aspects.

Metal extrusion consists in forcing solid metal through a suitably shaped orifice using compressive forces. Metal extrusion differs from metal drawing by the higher rate of reduction.

Illustrative example of subject matter classified in this place:



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References

Replace: The existing Informative references table with the following updated table.

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Profiling tools for metal extrusion, e.g. mandrels or dies | B21C 25/00 |
|---|------------|
| Rams or plungers for metal extrusion; Disks therefor | B21C 26/00 |
| Containers for metal to be extruded | B21C 27/00 |
| Cooling or heating extruded work or parts of the extrusion press | B21C 29/00 |
| Control or measuring devices in relation with metal extrusion | B21C 31/00 |
| Feeding extrusion presses with metal to be extruded | B21C 33/00 |
| Removing work or waste from extrusion presses; Cleaning dies, ducts, containers or mandrels for metal extruding | B21C 35/00 |
| Continuous casting | B22D |
| Extrusion of plastic material | B29C 48/00 |

B21C 23/001

Definition statement

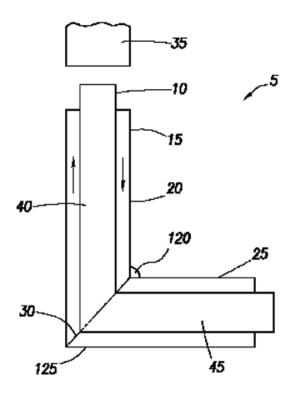
This place covers:

All aspects relating to the extrusion of metals with the purpose of improving the physical properties of such metals, for example, through severe plastic deformation such as equal channel angular pressing [ECAP] or equal channel angular extrusion [ECAE].

Illustrative examples of subject matter classified in this place:

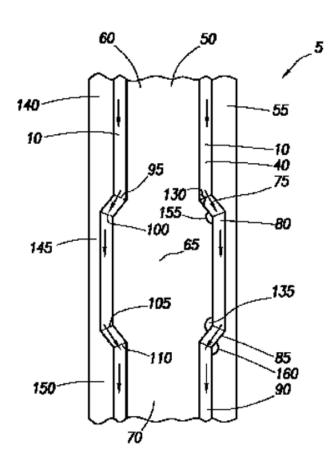
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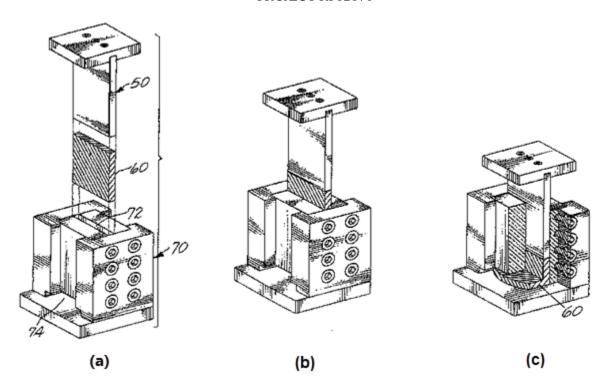
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References

<u>Insert</u>: The following new Application-oriented references table.

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

| Modifying the physical properties of iron or steel by | C21D 7/02 |
|--|-----------|
| deformation by cold working | |
| Changing the physical structure of non-ferrous metals or | C22F 1/00 |
| alloys by heat treatment or by hot or cold working | |

Replace: The existing Informative references table with the following updated table.

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Informative references

Attention is drawn to the following places, which may be of interest for search:

| Extruding metal starting from material of particular form or shape, e.g. mechanically pre-treated | B21C 23/01 |
|--|------------|
| Preliminary treatment of metal stock without particular shaping affecting grain orientation, e.g. salvaging segregated zones, forging or pressing in the rough | B21J 1/025 |

<u>Insert</u>: The following new Synonyms and Keywords section.

Synonyms and Keywords

In patent documents the following abbreviations are often used:

| ECAP | equal channel angular pressing |
|------|---------------------------------|
| ECAE | equal channel angular extrusion |

B21C 25/00

Replace: The existing Definition statement with the following updated statement.

Definition statement

This place covers:

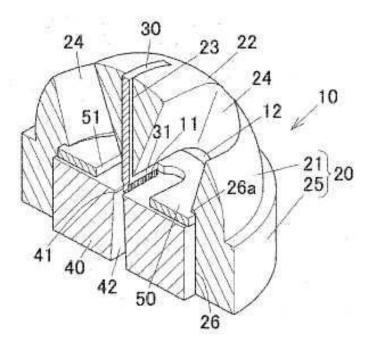
Dies and mandrels for metal extrusion, including dies and mandrels for coating work by extrusion or having a section variable during extruding.

The extrusion die and/or mandrel define/s the section through which the billet is forced, thereby defining the cross-sectional shape of the extruded product.

Illustrative example of subject matter classified in this place:

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References

Replace: The existing Informative references table with the following updated table.

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Metal extrusion devices and methods | B21C 23/00 |
|---|------------|
| Rams or plungers for metal extrusion; Disks therefor | B21C 26/00 |
| Containers for metal to be extruded | B21C 27/00 |
| Cooling or heating extruded work or parts of the extrusion press | B21C 29/00 |
| Control or measuring devices in relation with metal extrusion | B21C 31/00 |
| Feeding extrusion presses with metal to be extruded | B21C 33/00 |
| Removing work or waste from extrusion presses; Cleaning dies, ducts, containers or mandrels for metal extruding | B21C 35/00 |

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B21C 26/00

Replace: The existing Definition statement with the following updated statement.

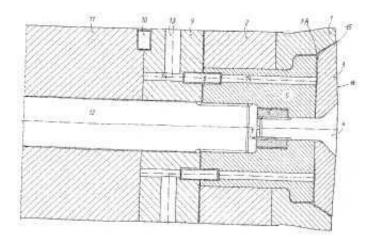
Definition statement

This place covers:

Rams or plungers for metal extrusion; the disks therefor as well as the dummy blocks.

The extrusion ram or plunger is normally the element applying the extrusion pressure to the billet to be extruded.

Illustrative example of subject matter classified in this place:



References

Replace: The existing Informative references table with the following updated table.

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Metal extrusion devices and methods | B21C 23/00 |
|--|------------|
| Profiling tools for metal extrusion, e.g. mandrels or dies | B21C 25/00 |
| Containers for metal to be extruded | B21C 27/00 |

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| Cooling or heating extruded work or parts of the extrusion press | B21C 29/00 |
|---|------------|
| Control or measuring devices in relation with metal extrusion | B21C 31/00 |
| Feeding extrusion presses with metal to be extruded | B21C 33/00 |
| Removing work or waste from extruding presses; Cleaning dies, ducts, containers or mandrels for metal extruding | B21C 35/00 |

B21C 27/00

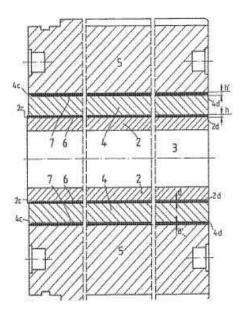
Replace: The existing Definition statement with the following updated statement.

Definition statement

This place covers:

Containers into which the billet is placed and pressurised for extrusion.

Illustrative example of subject matter classified in this place:



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References

Replace: The existing Limiting references table with the following updated table.

Limiting references

This place does not cover:

| Cooling or heating of containers for metal to be extruded | B21C 29/02 |
|---|------------|
|---|------------|

Replace: The existing Informative references table with the following updated table.

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Metal extrusion devices and methods | B21C 23/00 |
|---|------------|
| Profiling tools for metal extrusion, e.g. mandrels or dies | B21C 25/00 |
| Rams or plungers for metal extrusion; Disks therefor | B21C 26/00 |
| Cooling or heating extruded work or parts of the extrusion press | B21C 29/00 |
| Control or measuring devices in relation with metal extrusion | B21C 31/00 |
| Feeding extrusion presses with metal to be extruded | B21C 33/00 |
| Removing work or waste from extrusion presses; Cleaning dies, ducts, containers or mandrels for metal extruding | B21C 35/00 |

B21C 29/00

Replace: The existing Definition statement with the following updated statement.

Definition statement

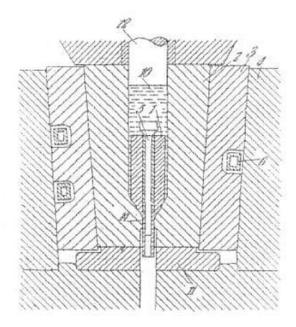
This place covers:

Heating or cooling in combination with metal extrusion.

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Illustrative example of subject matter classified in this place:



References

Replace: The existing Informative references table with the following updated table.

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Metal extrusion devices and methods | B21C 23/00 |
|---|------------|
| Profiling tools for metal extrusion, e.g. mandrels or dies | B21C 25/00 |
| Rams or plungers for metal extrusion; Disks therefor | B21C 26/00 |
| Containers for metal to be extruded | B21C 27/00 |
| Control or measuring devices in relation with metal extrusion | B21C 31/00 |
| Feeding extrusion presses with metal to be extruded | B21C 33/00 |
| Removing work or waste from extruding presses; Cleaning dies, ducts, containers or mandrels for metal extruding | B21C 35/00 |

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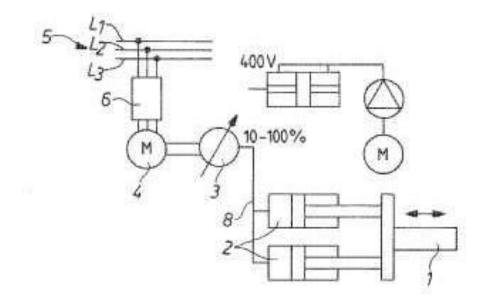
B21C 31/00

Replace: The existing Definition statement with the following updated statement.

Definition statement

This place covers:

Illustrative example of subject matter classified in this place:



References

Replace: The existing Limiting references table with the following updated table.

Limiting references

This place does not cover:

| Controlling variation of section with dies or mandrels during | g B21C 25/08 |
|---|--------------|
| extruding | |

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Replace: The existing Informative references table with the following updated table.

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Metal extrusion devices and methods | B21C 23/00 |
|---|------------|
| Rams or plungers for metal extrusion; Disks therefor | B21C 26/00 |
| Containers for metal to be extruded | B21C 27/00 |
| Cooling or heating extruded work or parts of the extrusion press | B21C 29/00 |
| Feeding extrusion presses with metal to be extruded | B21C 33/00 |
| Removing work or waste from extruding presses; Cleaning dies, ducts, containers or mandrels for metal extruding | B21C 35/00 |
| Measuring devices specially adapted for use in the production or manipulation of material in accordance with subclasses B21B - B21F | B21C 51/00 |

B21C 33/00

Replace: The existing Definition statement with the following updated statement.

Definition statement

This place covers:

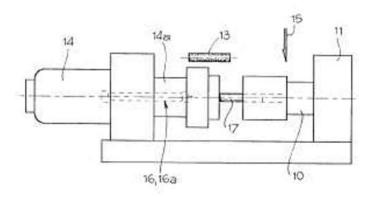
Operations or devices upstream of the extrusion press or extrusion process, and specifically linked to it, including, e.g. feeding conveyors and grippers used to provide a workpiece to an extrusion press.

Illustrative example of subject matter classified in this place:

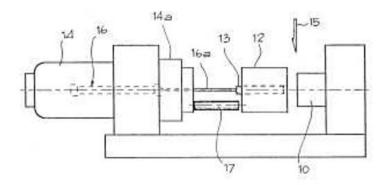
1a.

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1b.



References

Replace: The existing Informative references table with the following updated table.

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Metal extrusion devices and methods | B21C 23/00 |
|--|------------|
| Profiling tools for metal extrusion, e.g. mandrels or dies | B21C 25/00 |
| Rams or plungers for metal extrusion; Disks therefor | B21C 26/00 |
| Containers for metal to be extruded | B21C 27/00 |
| Cooling or heating extruded work or parts of the extrusion press | B21C 29/00 |
| Control or measuring devices in relation with metal extrusion | B21C 31/00 |

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| Removing work or waste from extrusion presses; Cleaning | B21C 35/00 |
|---|------------|
| dies, ducts, containers or mandrels for metal extruding | |

B21C 35/00

Replace: The existing Definition statement with the following updated statement.

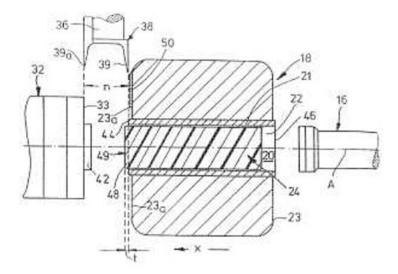
Definition statement

This place covers:

Operations or devices downstream of the extrusion press or extrusion process, and specifically linked to it, including, e.g.:

- · Removing work or waste from extruding presses;
- Drawing off extruded work;
- · Cleaning dies, ducts, containers or mandrels;
- Scrapers and scraping knives for cutting-off or removing the waste or for removing sections from the extruded work, e.g. removing a strip to create an open profile.

Illustrative example of subject matter classified in this place:



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References

Insert: The following new Limiting references section.

Limiting references

This place does not cover:

| Removing work or waste from extruding presses in connection with the extruding of bent tubes or rods; Drawing-off extruded work in | B21C 23/12 |
|--|------------|
| connection with the extruding of bent tubes or rods | |

Replace: The existing Informative references table with the following updated table.

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Profiling tools for metal extrusion, e.g. mandrels or dies) | B21C 25/00 |
|--|------------|
| Rams or plungers for metal extrusion; Disks therefor | B21C 26/00 |
| Containers for metal to be extruded | B21C 27/00 |
| Cooling or heating extruded work or parts of the extrusion press | B21C 29/00 |
| Control or measuring devices in relation with metal extrusion | B21C 31/00 |
| Feeding extrusion presses with metal to be extruded | B21C 33/00 |

B21C 35/03

Replace: The existing Informative references table with the following updated table.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Straightening of sheet metal | B21D 1/00 |
|--|-----------|
| Straightening of metal rods or metal tubes | B21D 3/00 |

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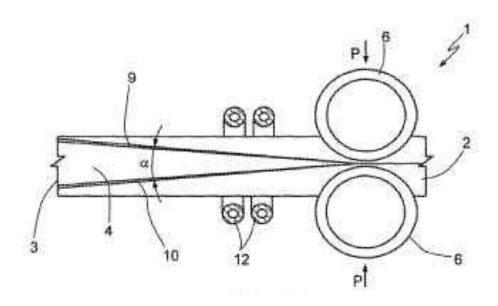
B21C 37/00

Replace: The existing Definition statement with the following updated statement.

Definition statement

This place covers:

Illustrative example of subject matter classified in this place:



References

Replace: The existing References out of a residual place table with the following updated table.

References out of a residual place

Examples of places in relation to which this place is residual:

| Manufacture of metal sheets, rods, wire, tubes, profiles or like semi- manufactured products by metal extrusion | B21C 23/00 |
|--|------------|
| Manufacture by working or processing of semi-finished sheet metal or metal tubes, rods or profiles without essentially removing material | B21D |

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| Manufacture of metal rods, profiles or tubes by bending | B21D 7/00 |
|---|-----------|
| Manufacture by working or processing metal wire | B21F |
| Manufacture by casting of metals | B22D |
| Manufacture by electroforming | C25D 1/00 |
| Manufacture of tubes by electroforming | C25D 1/02 |
| Manufacture of wires by electroforming | C25D 1/04 |

References

<u>Insert</u>: The following new Informative references table.

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Rolling of metal | B21B |
|--|------------|
| Manufacture by material-removing machine tools | B23 |
| Welding; Cladding or plating by welding | B23K |
| Making steel wool or the like | B23P 17/06 |
| Grinding; Polishing | B24 |

B21C 37/06

References

<u>Replace</u>: The existing References out of a residual place table with the following updated table.

References out of a residual place

Examples of places in relation to which this place is residual:

| Bending sheets for making tubes | B21D 5/00 |
|--|------------|
| Bending sheet metal along straight lines between rams and anvils or abutments for making tubes | B21D 5/015 |

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| Bending sheet metal along straight lines by drawing procedure making use of dies or forming-rollers for making tubes | B21D 5/10 |
|--|------------|
| Seaming by folding, e.g. connecting edges of a metal sheet to form a cylinder | B21D 39/02 |

B21C 37/08

References

Replace: The existing Limiting references table with the following updated table.

Limiting references

This place does not cover:

| Making metal tubes or metal hoses with welded or | B21C 37/122 |
|--|-------------|
| soldered helically arranged seams | |

Delete: The entire References out of a residual place section.

<u>Insert</u>: The following new Informative references section.

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Involving only a soldering or welding operation B23 | 3K |
|---|----|
|---|----|

B21C 37/108

<u>Insert</u>: The following new Definition statement.

Definition statement

This place covers:

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Illustrative example of subject matter classified in this place:

| NO. | NAME OF STEP | SCHEMATIC VIEW |
|-----|----------------------------------|---------------------------------|
| 1 | FEED OF RAW MATERIAL | 102 |
| 2 | BENDING | 105 102 105 |
| 3 | FOLDING | 105 106 106 102 101 |
| 4 | INWARD BENDING | 105 105 107 107 102 101 |
| 5 | SEAMING OF FOLDING PORTION | 108 109 102 |

References

<u>Insert</u>: The following new References out of a residual place section.

References out of a residual place

Examples of places in relation to which this place is residual:

| Bending sheet metal along straight lines between rams and anvils | B21D 5/015 |
|--|-------------|
| or abutments for making tubes | |
| Bending sheet metal along straight lines by drawing procedure | B21D 5/10 |
| making use of dies or forming-rollers for making tubes | |
| Bending metal tubes using a mandrel in a press | B21D 9/08 |
| Round bending of sheet metal | B21D 11/203 |

<u>Delete</u>: The entire Informative references section.

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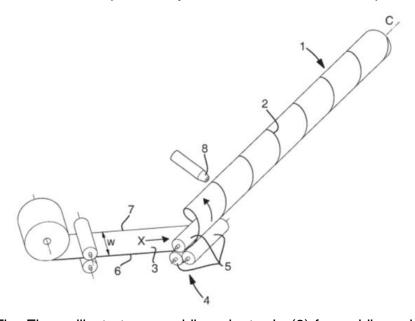
B21C 37/122

<u>Insert</u>: The following new Definition statement.

Definition statement

This place covers:

Illustrative example of subject matter classified in this place:



The Figure illustrates a welding electrode (8) for welding a helical seam (2).

References

Insert: The following new References out of a residual place section.

References out of a residual place

Examples of places in relation to which this place is residual:

| Helical winding of elongated heat exchanger elements | B21D 53/027 |
|--|-------------|

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Replace: The existing Informative references table with the following updated table.

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Gas flame welding of helicoidal seams | B23K 5/086 |
|--|--------------|
| Arc welding of helicoidal seams | B23K 9/0325 |
| Resistance welding of helicoidal seams using roller electrodes | B23K 11/068 |
| Resistance welding of helicoidal seams | B23K 11/084 |
| Laser beam welding of helicoidal seams | B23K 26/302 |
| Tubes made by welding | B23K 2101/06 |

B21C 43/00

Replace: The existing Definition statement with the following updated statement.

Definition statement

This place covers:

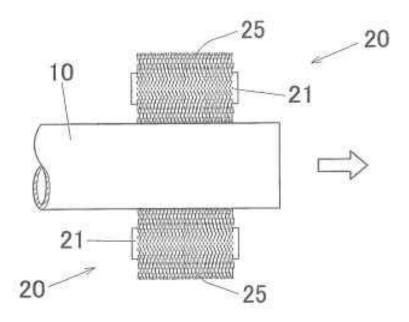
Cleaning metal products, wherein the cleaning action is realised by using machines of B21C or wherein the cleaning action is used in combination with machines of B21C.

This group includes in particular, cleaning metal products, especially descaling, by metal drawing, or with methods associated to metal drawing or winding processes.

Illustrative example of subject matter classified in this place:

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B21C 45/00

Replace: The existing Definition statement with the following updated statement.

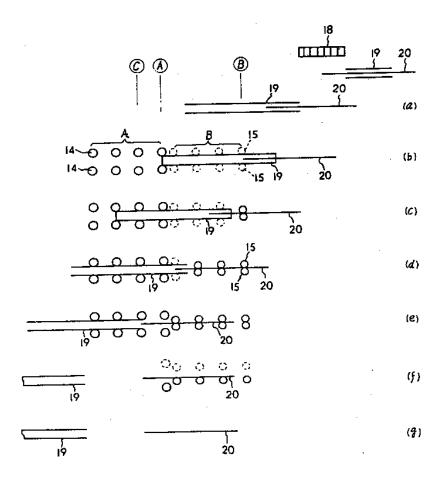
Definition statement

This place covers:

Illustrative example of subject matter classified in this place:

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B21C 47/00

Replace: The existing Definition statement with the following updated statement.

Definition statement

This place covers:

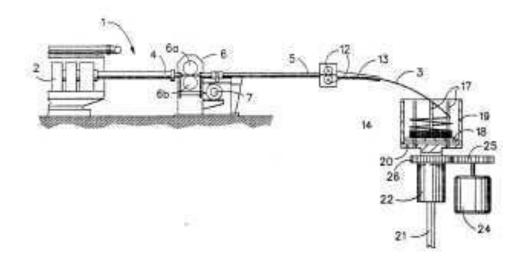
Methods and devices for coiling (winding) and uncoiling (unwinding) of metal wire, band or similar metal product.

Associated operations, like feeding or guiding the material, transferring coils, joining wire or band ends, treating the material, holding on drums or coil holders.

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Illustrative example of subject matter classified in this place:



References

Replace: The existing Limiting references table with the following updated table.

Limiting references

This place does not cover:

| Coiling metal wire into particular form | B21F 3/00 |
|---|-----------|
|---|-----------|

<u>Replace</u>: The existing Application-oriented references table with the following updated table.

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

| Hot coilers i | n connection with heat-treatment apparatus for | C21D 9/68 |
|---------------|--|-----------|
| metal strips | or wire | l |

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Replace: The existing Informative references table with the following updated table.

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Joining ends of material to continuous strip, bar or | B21B 15/0085 |
|--|--------------|
| sheet in metal-rolling mills | |

B21C 49/00

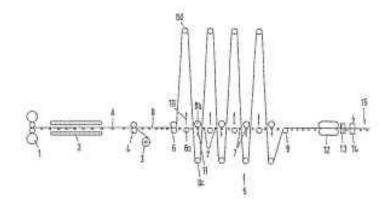
Replace: The existing Definition statement with the following updated statement.

Definition statement

This place covers:

Devices for temporarily accumulating metallic material, e.g. metal bands or wires.

Illustrative example of subject matter classified in this place:



References

Replace: The existing Informative references table with the following updated table.

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Informative references

Attention is drawn to the following places, which may be of interest for search:

| Accumulating easily-flexible work, e.g. wire, sheet metal bands, in loops or curves | B21B 41/00 |
|---|------------|
| Advancing webs in general | B65H 20/00 |

B21C 51/00

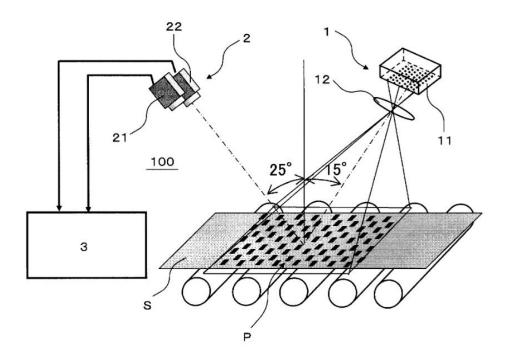
Replace: The existing Definition statement with the following updated statement.

Definition statement

This place covers:

Mainly detecting flaws of metal sheets and positioning or marking said flaws.

Illustrative example of subject matter classified in this place:



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References

Replace: The existing Informative references table with the following updated table.

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Machines or apparatus for embossing decorations or marks | B44B 5/00 |
|--|-----------|
|--|-----------|

B23K 35/40

References

Replace: The existing Informative references table with the following updated table.

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Applying liquids or other materials to surfaces | B05D |
|---|------|
| Manufacture of metal sheets, wire, rods, tubes, profiles or like semi-manufactured products otherwise than by rolling | B21C |
| Powder metallurgy | B22F |

Replace: The existing Special rules text with the following updated text.

Special rules of classification

If a composition is given, it should also be classified in the relevant groups under subclass C22C. For example, a tungsten electrode (alloy composition disclosed) and its method of manufacture will be classified in groups B23K 35/402, C22C 1/04, C22C 27/04 and B23K 9/24. Similarly, a seamless-tube compound welding electrode made by filling of a pre-formed tube closed at the bottom with a mixture consisting of several granulated materials such as flux, de-oxidisers or carbides, which are

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periodically compacted by means of a punch introduced from the top, following which the tube is size-reduced by rolling and/or drawing, which also further compacts the filling will be classified in groups B23K 35/406, B23K 35/327, B23K 35/0272 and B23K 35/302.

References B05D and B21C are non-limiting in the subgroup B23K 35/40. CPC will be updated/corrected once this inconsistency is resolved in IPC.

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2. B. DEFINITIONS QUICK FIX

| Symbol | Location of change (e.g., section title) | Existing reference symbol or text | Action; New symbol; New text |
|--------------|--|-----------------------------------|-------------------------------|
| B21C 37/0815 | Definition | | Delete the entire Definition. |

Notes:

Use this Definitions Quick Fix (DQF) table to:

- Delete an entire definition
- Delete an entire section
- Change a reference symbol
- Delete a reference symbol
- Delete text in a References section
- Correct one error in spelling, article use, or verb tense Otherwise, use the standard template.

Reminder: Never delete F symbol definitions.

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3. REVISION CONCORDANCE LIST (RCL)

| Type* | From CPC Symbol (existing) | To CPC Symbol(s) |
|-------|----------------------------|--|
| D | B21C 9/005 | <administrative 00="" 9="" b21c="" to="" transfer=""></administrative> |
| D | B21C 29/006 | <administrative 009="" 23="" b21c="" to="" transfer=""></administrative> |

^{*} C = entries with modified file scope where reclassification of documents from the entries is involved; Q = new entries which are firstly populated with documents via administrative transfers from deleted (D) entries. Afterwards, the transferred documents into the Q entry will either stay or be moved to more appropriate entries, as determined by intellectual reclassification; D = deleted entries; F = frozen entries will be deleted once reclassification of documents from the entries is completed.

NOTES:

- Only C, D, F, and Q type entries are included in the table above.
- When multiple symbols are included in the "To" column, do not use ranges of symbols.
- For administrative transfer of documents, the following text should be used: "< administrative transfer to XX>", "<administrative transfer to XX and YY simultaneously>", or "<administrative transfer to XX, YY, ...and ZZ simultaneously>" when administrative transfer of the same documents is to more than one place.
- Administrative transfer to main trunk groups is assumed to be the source allocation type, unless otherwise indicated.
- Administrative transfer to 2000/Y series groups is assumed to be "additional information".
- If needed, instructions for allocation type should be indicated within the angle brackets using the abbreviations "ADD" or "INV": <administrative transfer to XX ADD>, <administrative transfer to XX INV>, or < administrative transfer to XX ADD, YY INV, ... and ZZ ADD simultaneously>.
- In certain situations, the "D" entries of 2000-series or Y-series groups may not require a destination ("To") symbol, however it is required to specify "<no transfer>" in the "To" column for such cases.
- RCL is not needed for finalisation projects.

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4. CHANGES TO THE CPC-TO-IPC CONCORDANCE LIST (CICL)

| CPC | <u>IPC</u> | Action* |
|-------------|------------|---------|
| B21C 9/005 | | DELETE |
| B21C 23/009 | B21C 23/00 | NEW |
| B21C 29/006 | | DELETE |

*Action column:

- For an (N) or (Q) entry, provide an IPC symbol and complete the Action column with "NEW."
- For an existing CPC main trunk entry or indexing entry where the existing IPC symbol needs to be changed, provide an updated IPC symbol and complete the Action column with "UPDATED."
- For a (D) CPC entry or indexing entry complete the Action column with "DELETE." IPC symbol does not need to be included in the IPC column.
- For an (N) 2000 series CPC entry which is positioned within the main trunk scheme (breakdown code) provide an IPC symbol and complete the action column with "NEW".
- For an (N) 2000 series CPC entry positioned at the end of the CPC scheme (orthogonal code), with no IPC equivalent, complete the IPC column with "CPCONLY" and complete the action column with "NEW".

NOTES:

- F symbols are <u>not</u> included in the CICL table above.
- T and M symbols are not included in the CICL table above unless a change to the existing IPC is desired.

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5. CROSS-REFERENCE LIST (CRL)

Definitions references impacted by this revision project

| Location of reference to be changed | Referenced subclass or group to be changed | Section of definition | Action; New reference symbol; New text |
|-------------------------------------|--|---------------------------|---|
| B21F | B21C 1/00 | Limiting references | Replace existing text with the following: Manufacture of metal sheets, wire, rods, tubes or like semi-manufactured products by drawing |
| B21F | B21C 37/04 | Limiting references | Replace existing text with the following: Manufacture of rods or wire by metal working |
| C21D 1/00 | B21C | Informative references | Replace existing text with the following: Manufacture of metal sheets, wire, rods, tubes, profiles or like semimanufactured products otherwise than by rolling |
| C21D 3/00 | B21C | Informative references | Replace existing text with the following: Manufacture of metal sheets, wire, rods, tubes, profiles or like semimanufactured products otherwise than by rolling |
| C21D 7/00 | B21C | Informative references | Replace existing text with the following: Manufacture of metal sheets, wire, rods, tubes, profiles or like semimanufactured products otherwise than by rolling |

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| Location of reference to be changed | Referenced subclass or group to be changed | Section of definition | Action; New reference symbol; New text |
|-------------------------------------|--|---------------------------|---|
| C21D 8/00 | B21C | Informative references | Replace existing text with the following: Manufacture of metal sheets, wire, rods, tubes, profiles or like semimanufactured products otherwise than by rolling |
| C21D 8/005 | B21C | Informative references | Replace existing text with the following: Manufacture of metal sheets, wire, rods, tubes, profiles or like semimanufactured products otherwise than by rolling |
| C21D 8/04 | B21C | Informative references | Replace existing text with the following: Manufacture of metal sheets, wire, rods, tubes, profiles or like semimanufactured products otherwise than by rolling |
| C21D 8/06 | B21C | Informative references | Replace existing text with the following: Manufacture of metal sheets, wire, rods, tubes, profiles or like semimanufactured products otherwise than by rolling |
| C21D 8/10 | B21C | Informative references | Replace existing text with the following: Manufacture of metal sheets, wire, rods, tubes, profiles or like semimanufactured products otherwise than by rolling |
| C21D 8/12 | B21C | Informative references | Replace existing text with the following: Manufacture of metal sheets, wire, rods, tubes, profiles or like semimanufactured products otherwise than by rolling |

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| Location of reference to be changed | Referenced subclass or group to be changed | Section of definition | Action; New reference symbol; New text |
|-------------------------------------|--|---------------------------|--|
| C21D 9/00 | B21C | Informative references | Replace existing text with the following: Manufacture of metal sheets, wire, rods, tubes, profiles or like semimanufactured products otherwise than by rolling |
| C22F | B21C | Informative references | Replace reference text with the following: Manufacture of metal sheets, wire, rods, tubes, profiles or like semimanufactured products otherwise than by rolling |
| C23C 2/00 | B21C 37/042 | Informative references | Replace reference text with the following: Manufacture of coated wire or rods |
| D07B 1/0666 | B21C 37/042 | Informative references | Replace reference text with the following: Manufacture of coated wire or rods |
| F41A 21/20 | B21C 37/152 | Informative references | Replace reference text with the following: Making rifle or gun barrels |

NOTES:

- The CRL tables above are used for changes to locations <u>outside</u> of the project scope. Changes to references in scheme titles or definitions <u>inside</u> the project scope will be reflected in the "scheme change" template or one of the "definition" templates.
- In addition to other changes proposed in the tables above, in the column titled "Referenced subclass or group to be changed," <u>referenced</u> D symbols should indicate an action of "delete" or should indicate a replacement symbol and <u>referenced</u> F symbols should indicate a replacement symbol.
- When a reference is deleted, text related to that reference will also be deleted unless other references or a range of references associated with the same text remain.