

B28B

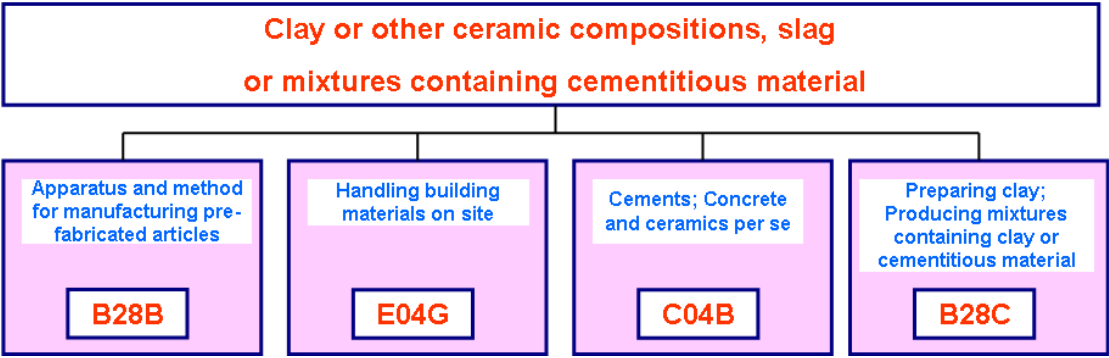
SHAPING CLAY OR OTHER CERAMIC COMPOSITIONS; SHAPING SLAG; SHAPING MIXTURES CONTAINING CEMENTITIOUS MATERIAL, e.g. PLASTER (foundry moulding [B22C](#); working stone or stone-like material [B28D](#); shaping of substances in a plastic state, in general [B29C](#); making layered products not composed wholly of these substances [B32B](#))

Definition statement

This place covers:

The methods and apparatuses covered manufacture of the shaped article at a location remote from its intended use, i.e. a pre-fabricated article.

Relationships with other classification places



The preceding image includes references to [B28B](#), [E04G](#), [C04B](#), [B28C](#).

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

The material	(a) clay or other ceramic compositions (b) slag (c) mixtures with water-setting properties given by clay, cementitious material, or slag.
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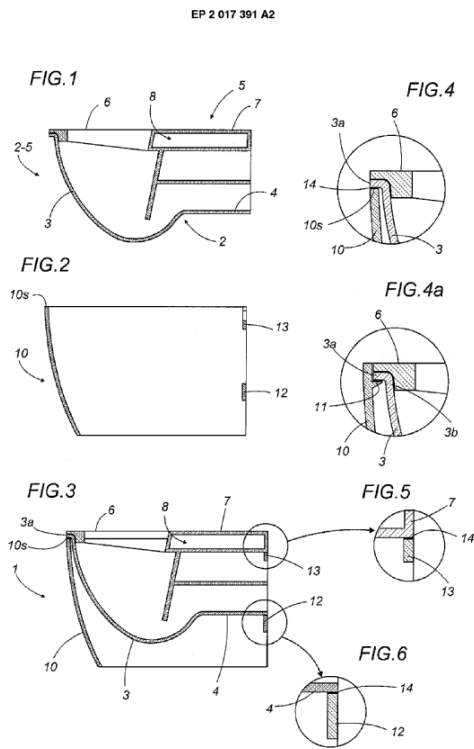
B28B 1/002

{assembled from preformed elements}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



References

Limiting references

This place does not cover:

To tiles, bricks or the like	B28B 19/0053
By building-up from preformed elements	B28B 21/70
Assembled from preformed parts	B28B 23/22

Special rules of classification

"The material" used to hold the assembled preformed elements together is as defined in the subclass.

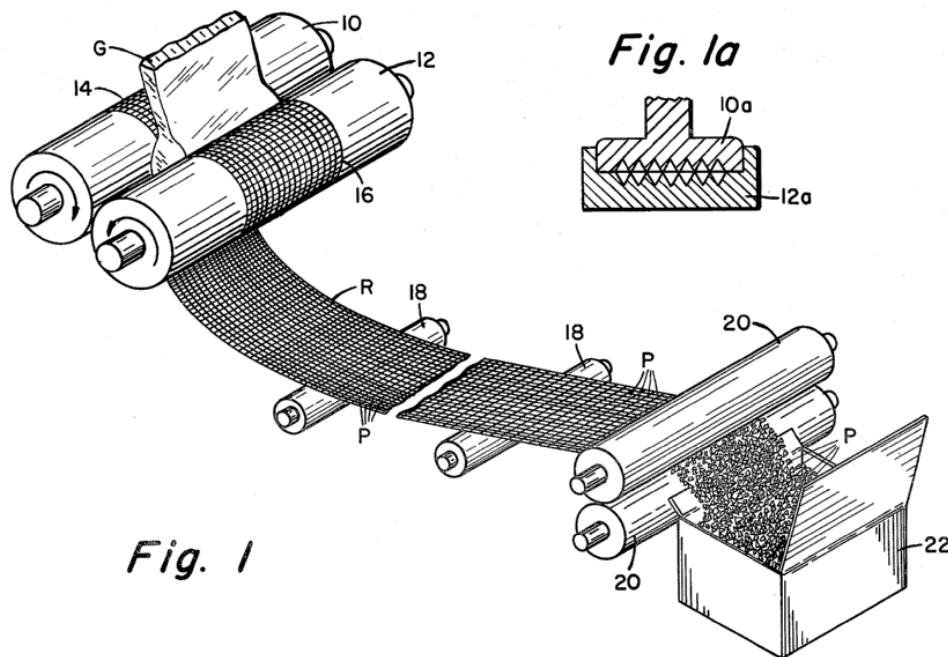
B28B 1/004

{Devices for shaping artificial aggregates from ceramic mixtures or from mixtures containing hydraulic binder (from slag [C04B 5/00](#); composition of artificial aggregates [C04B 18/02](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



U.S. Patent Apr. 14, 1981

Sheet 1 of 3

4,261,706

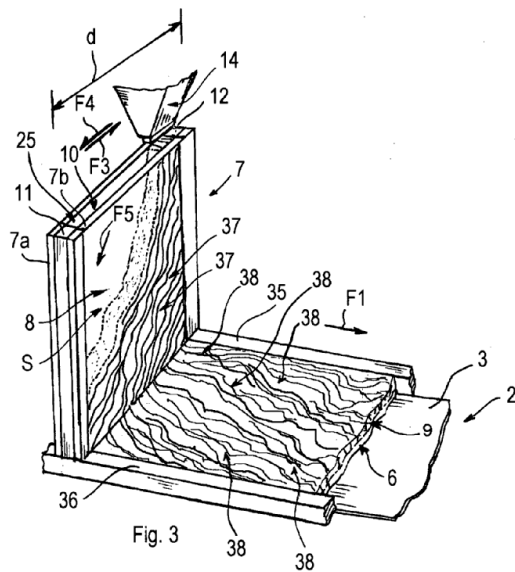
B28B 1/005

{Devices or processes for obtaining articles having a marble appearance (producing decorative effects [B44C](#); design of stone surfaces, e.g. marble, [B44F 9/04](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



3/4

W/O 2008/038115

PCT/IB2007/002813

Special rules of classification

Characteristic features concerning the feeding of the material should be classified in [B28B 13/02](#).

B28B 1/007

{by freezing the material}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

U.S. Patent June 30, 1992 Sheet 1 of 2 5,126,082

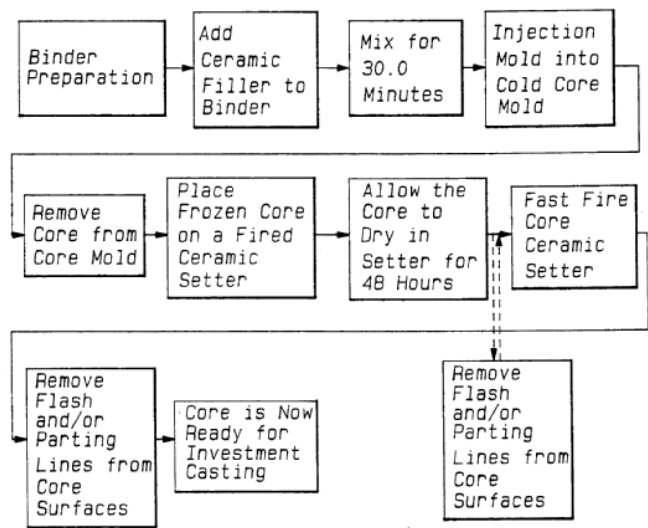


FIG-1

References

Limiting references

This place does not cover:

Manufacture of workpieces or articles from metallic powder characterised by the manner of compacting or sintering	B22F 3/00
B freeze-casting or in a supercritical fluid	B22F 3/222

References out of a residual place

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

Forming processes; Processing powders of inorganic compounds preparatory to the manufacturing of ceramic products	C04B 35/622
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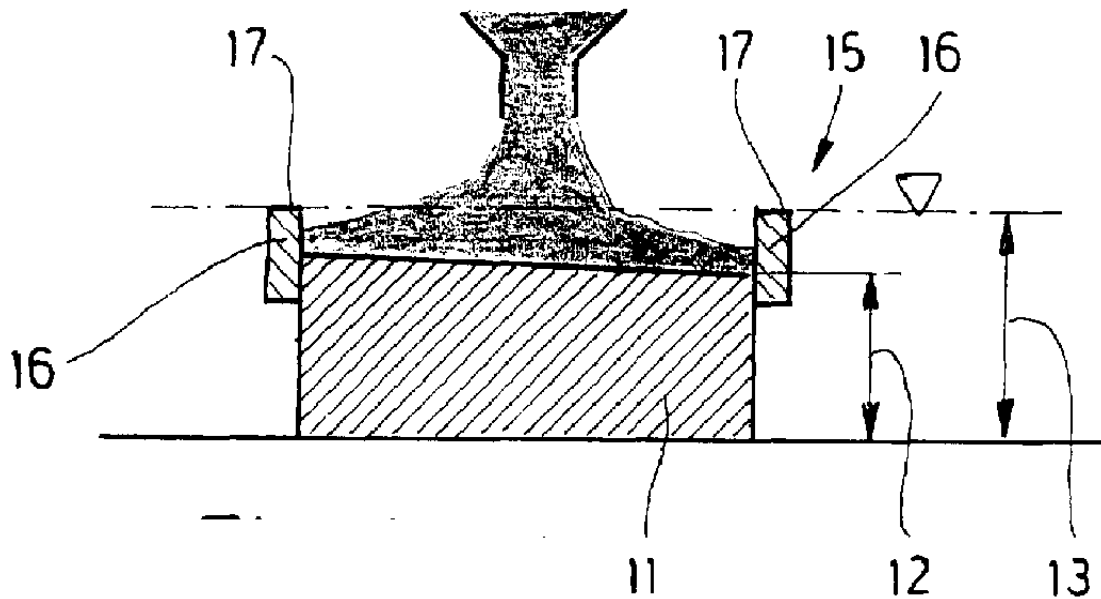
B28B 1/008

{made from two or more materials having different characteristics or properties (casting for producing layered articles [B28B 1/16](#); feeding several successive layers, optionally of different materials [B28B 13/022](#); coating [B28B 11/04](#); applying material to surfaces to form a permanent layer thereon [B28B 19/00](#))}

Definition statement

This place covers:

Making a base body (11) in a conventional manner with at least one external dimension (12), smaller than a corresponding desired dimension (13), applying a compensating coating (14) to the base body or its top.

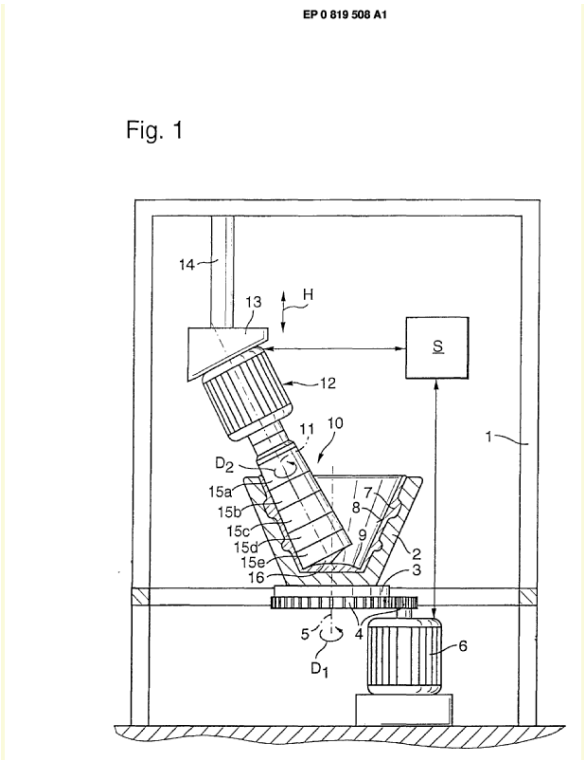


B28B 1/02

by turning or jiggering {in moulds or moulding surfaces on rotatable supports}

Definition statement

This place covers:
Potter's wheel and handtools associated with such a device.



References

Limiting references

This place does not cover:

Methods or machines specially adapted for the production of tubular articles	B28B 21/00
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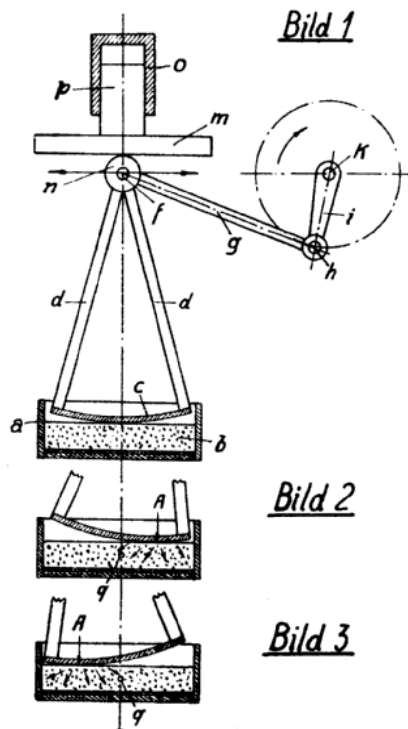
B28B 1/04

by tamping or ramming (followed by pressing [B28B 3/02](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

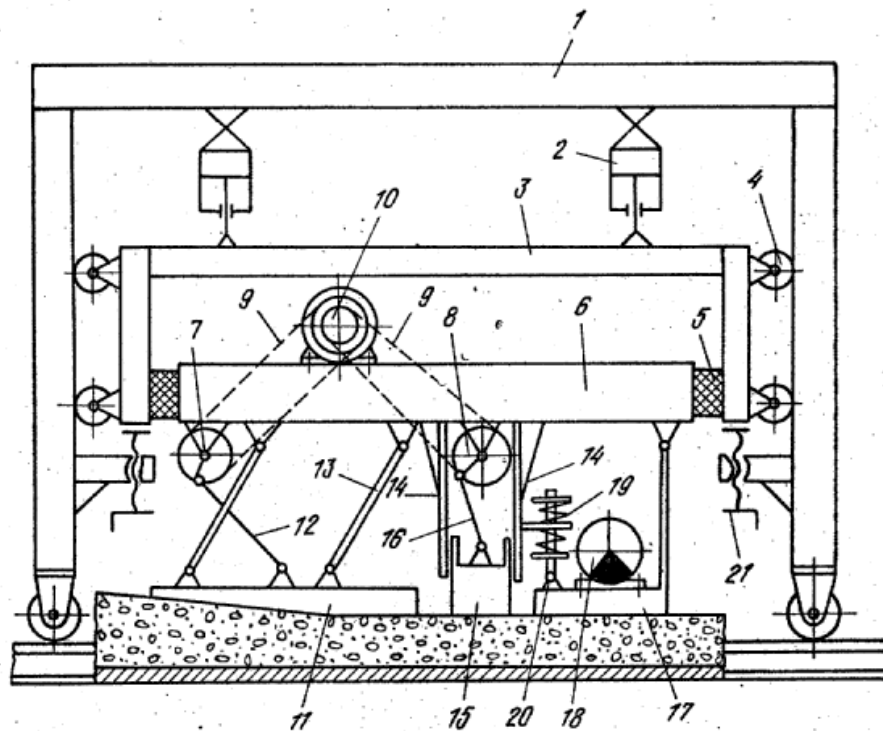
**References****Limiting references**

This place does not cover:

Tamping or ramming the material or the mould elements to produce tubular articles	B28B 21/12
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B28B 1/045**{combined with vibrating or jolting}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group:



B28B 1/08

by vibrating or jolting {(of moulding sand [B22C 15/10](#); of concrete in general [E04G 21/063](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

WO85/05590

PCT/DK85/00051

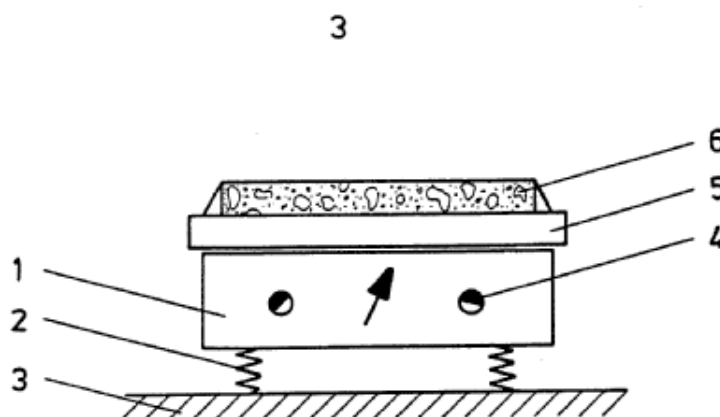


Fig. 3

References**Limiting references**

This place does not cover:

Operating with systems involving rotary unbalanced masses	B06B 1/16
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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:

Vibrating for the production of tubular articles	B28B 21/14
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Informative references

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

Of concrete in general	E04G 21/063
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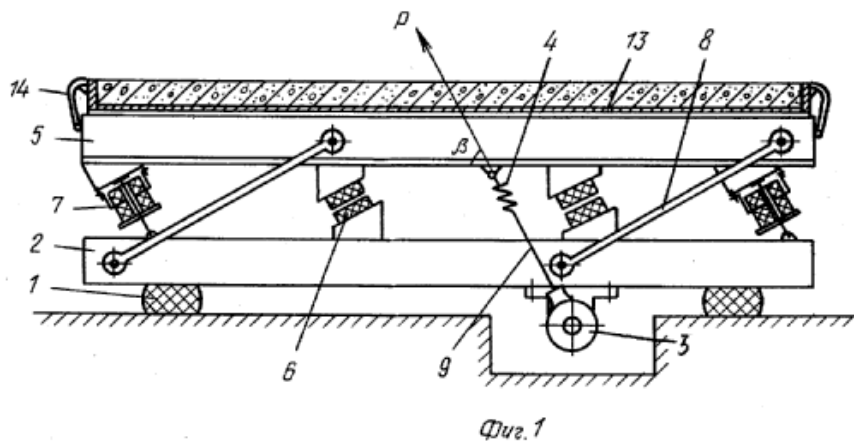
B28B 1/081

{Vibration-absorbing means}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



SU⁽¹⁹⁾ 1224141⁽¹¹⁾ A

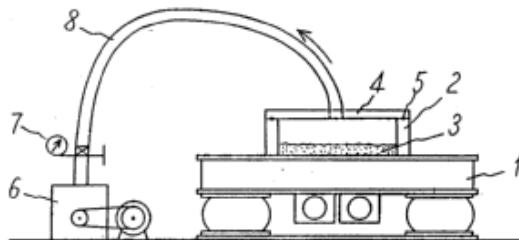
B28B 1/082

{combined with a vacuum, e.g. for moisture extraction (in general E04G 21/061)}

Definition statement

This place covers:

Illustrative example of subject matter matter classified in this group:



References

Informative references

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

For humidifying or dehumidifying	B28B 7/46
By vibrating the composition before or during moulding	B29C 67/244

For moisture extraction in general

[E04G 21/061](#)

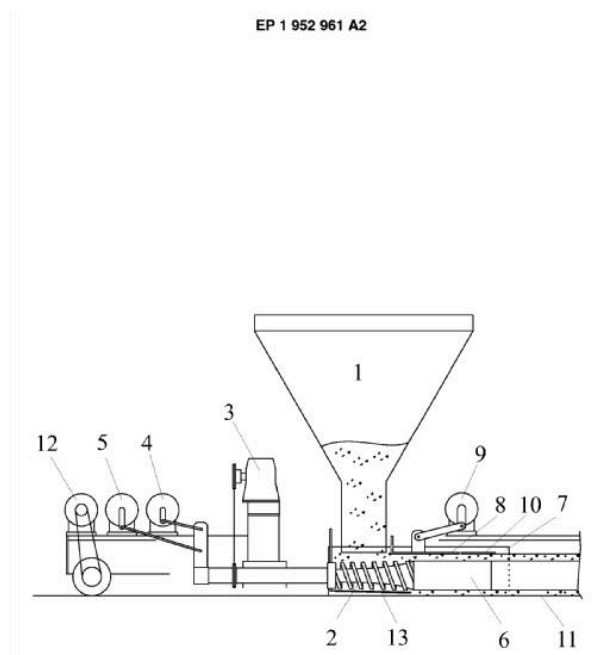
B28B 1/084

{the vibrating moulds or cores being moved horizontally for making strands of moulded articles}

Definition statement

This place covers:

Slipform casting process having an extruder screw.



Slipformer technique:

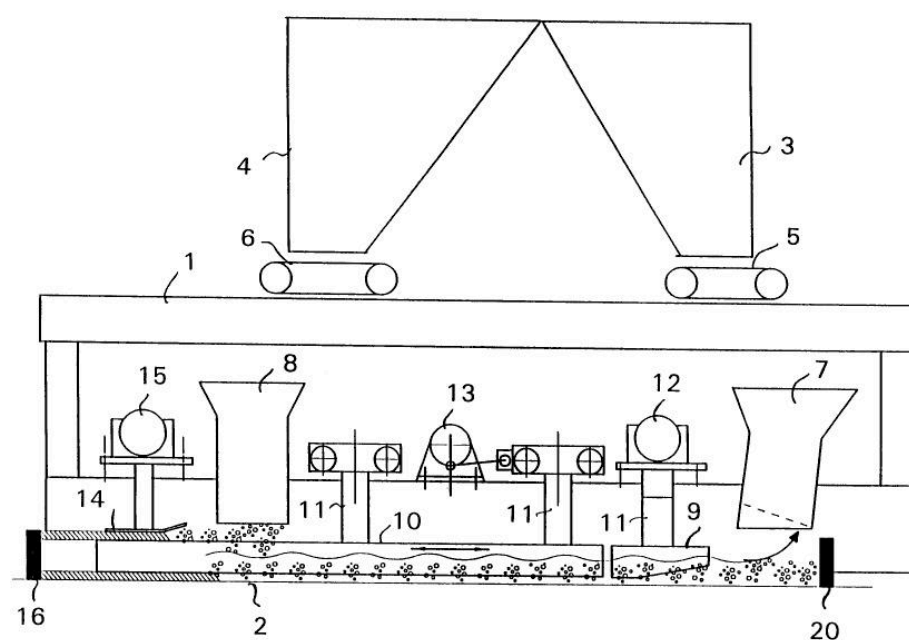


Fig. 3

WO 01/10615

3/6

PCT/ET00/00632

References

Limiting references

This place does not cover:

Apparatus designed for railless operation	E01C 19/4893
The pipes being made in situ	F16L 1/038

Special rules of classification

Slipform casting process having an extruder screw also to be classified in [B28B 3/224](#) "self-propelled screw extruders" TBC.

B28B 1/087

by means acting on the mould {; Fixation thereof to the mould}

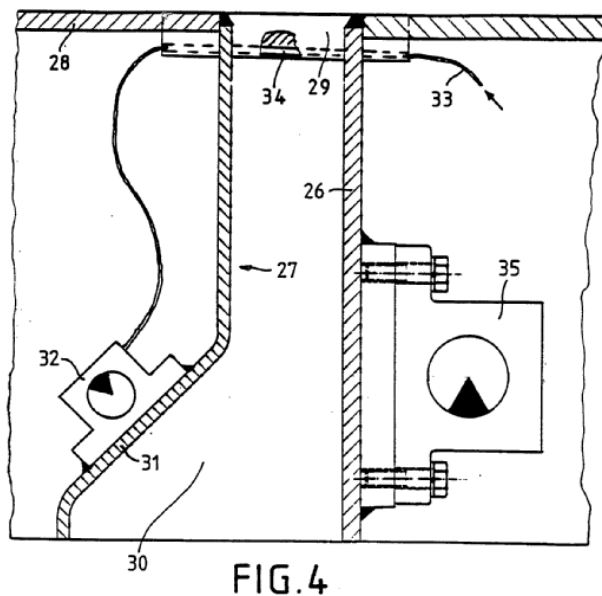
Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

ZEICHNUNGEN SEITE 2

Nummer: DE 43 15 195 A1
Int. Cl.⁵: B 28 B 13/04
Offenlegungstag: 10. November 1994



B28B 1/0873

{the mould being placed on vibrating or jolting supports, e.g. moulding tables}

Definition statement

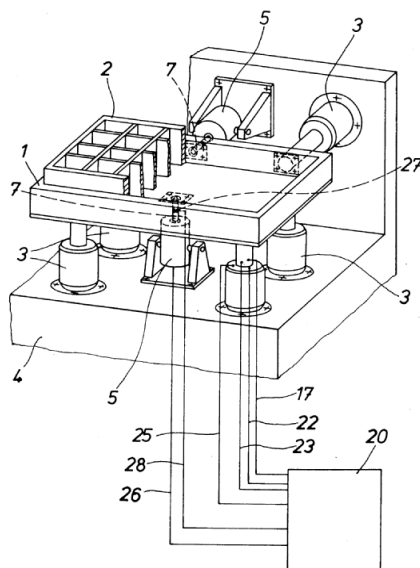
This place covers:

Illustrative example of subject matter classified in this group:

ZEICHNUNGEN SEITE 1

Nummer: DE 38 37 686 A1
Int. Cl. 5: B 08 B 1/00
Offenlegungstag: 10. Mai 1990

Fig. 1



008 019/264

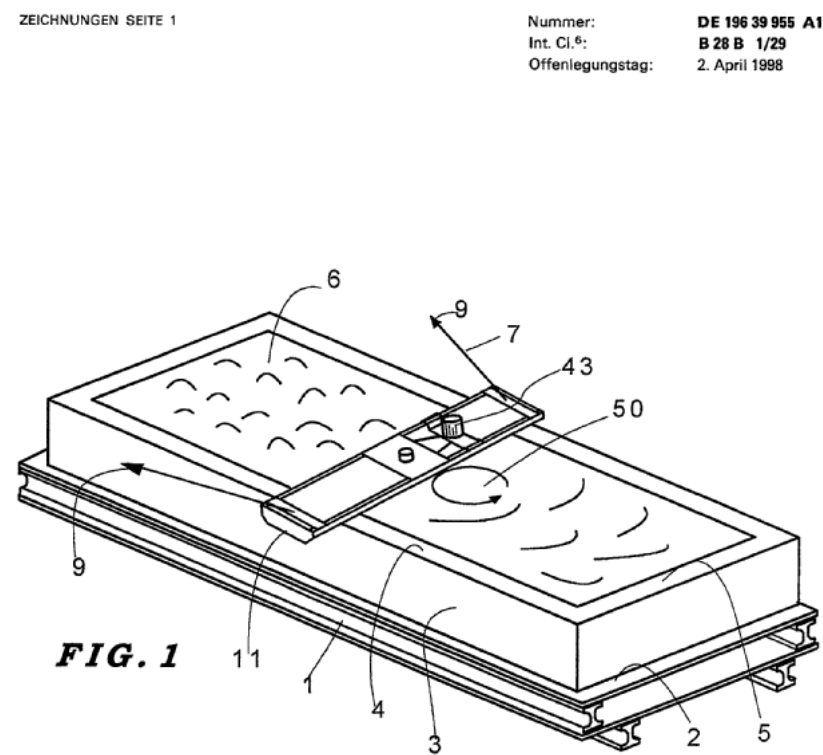
B28B 1/093

by means directly acting on the material, e.g. by cores wholly or partly immersed in the material {or elements acting on the upper surface of the material} ({B28B 1/084 takes precedence; } internal vibrators for compacting concrete in situ E04G 21/08)

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



References

Limiting references

This place does not cover:

The vibrating moulds or cores being moved horizontally for making strands of moulded articles	B28B 1/084
Adapted to impart a smooth finish to the paving, e.g. tamping or vibrating finishers	E01C 19/40
Making use of vibrating or jolting tools acting upon the surface of the concrete, whether or not provided with parts penetrating the concrete	E04G 21/066

Special rules of classification

By cores wholly or partly immersed in the material is to be classified in [B28B 1/0935](#).

B28B 1/0935

{using only elements wholly or partly immersed in the material, e.g. cores}

Definition statement

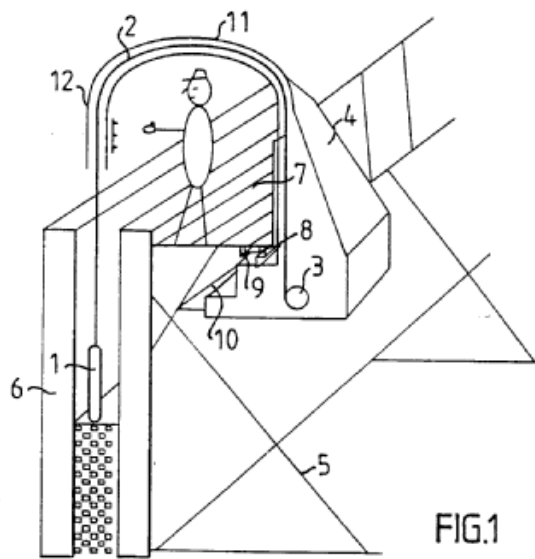
This place covers:

Illustrative example of subject matter classified in this group:

WO 94/00281

PCT/SE93/00560

1/1



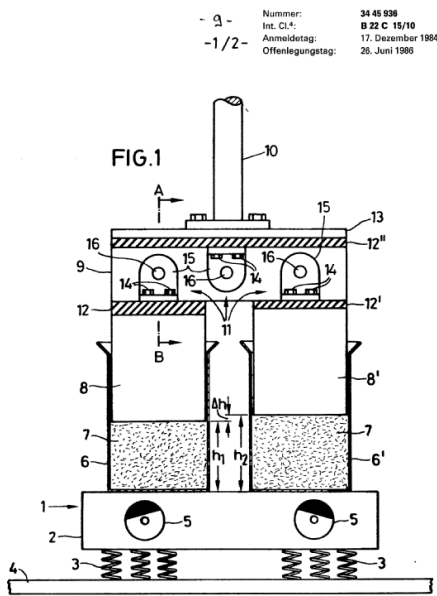
B28B 1/10

and applying pressure otherwise than by the use of presses

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



References

Limiting references

This place does not cover:

Wherein a ram exerts pressure on the material in a moulding space; combined with vibrating or jolting	B28B 3/022
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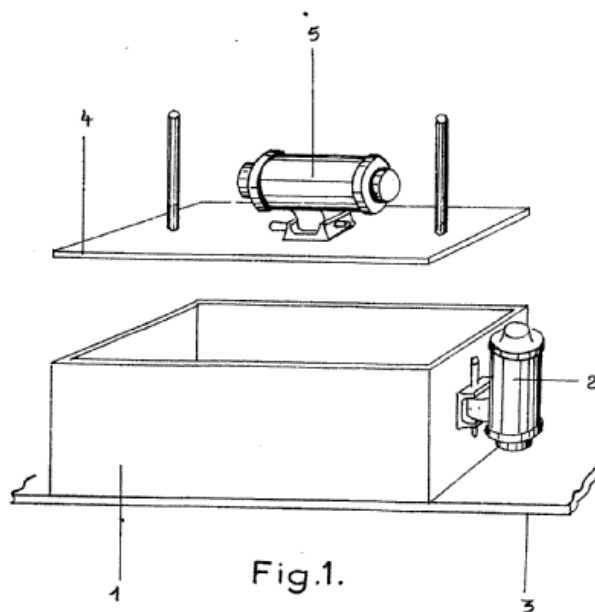
B28B 1/105

{this load also being actively vibrated or jolted}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

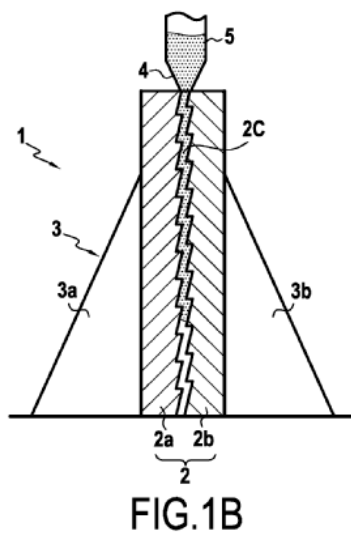
**B28B 1/14**

by simple casting, the material being neither forcibly fed nor positively compacted (for molten material [B28B 1/54](#))

Definition statement

This place covers:

Illustrative example for subject matter classified in this group:



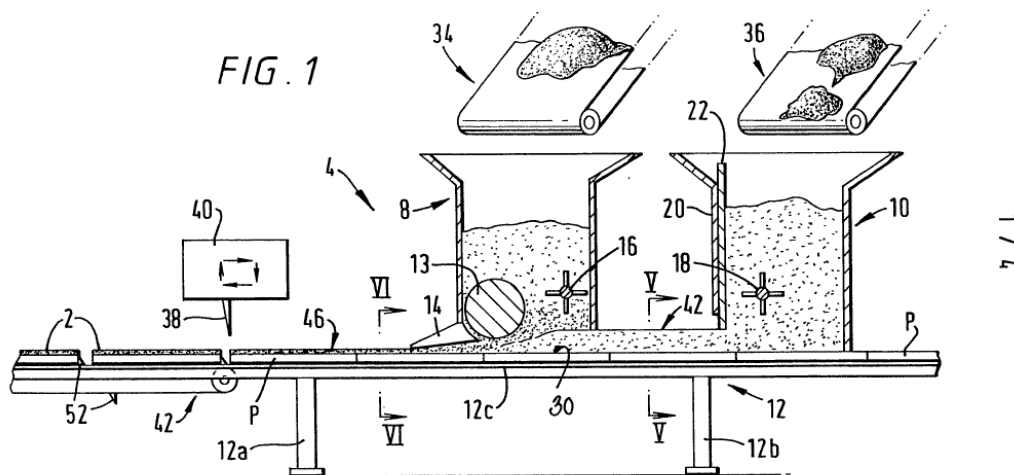
B28B 1/16

for producing layered articles (coating [B28B 11/04](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



Special rules of classification

Layered products essentially comprising a water-setting substance, e.g. concrete, plaster, asbestos cement, or like builders' material

B32B 13/00

B28B 1/20

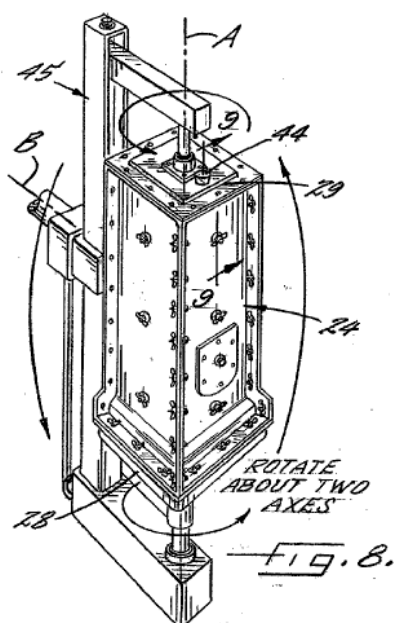
by centrifugal or rotational casting (slip-casting involving rotation of the mould [B28B 1/28](#); for molten material [B28B 1/54](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

Patent Application Publication Feb. 10, 2011 Sheet 3 of 14 US 2011/0030292 A1

**References****Limiting references**

This place does not cover:

Manufacture of workpieces or articles from metallic powder by centrifugal forces	B22F 3/06
Shaping glass by centrifuging	C03B 19/04

Special rules of classification

- [B28B 21/00](#) centrifugal or rotational casting with methods or machines specially adapted for the production of tubular articles
- [B28B 23/20](#) centrifugal or rotational casting wherein the elements are reinforcing members

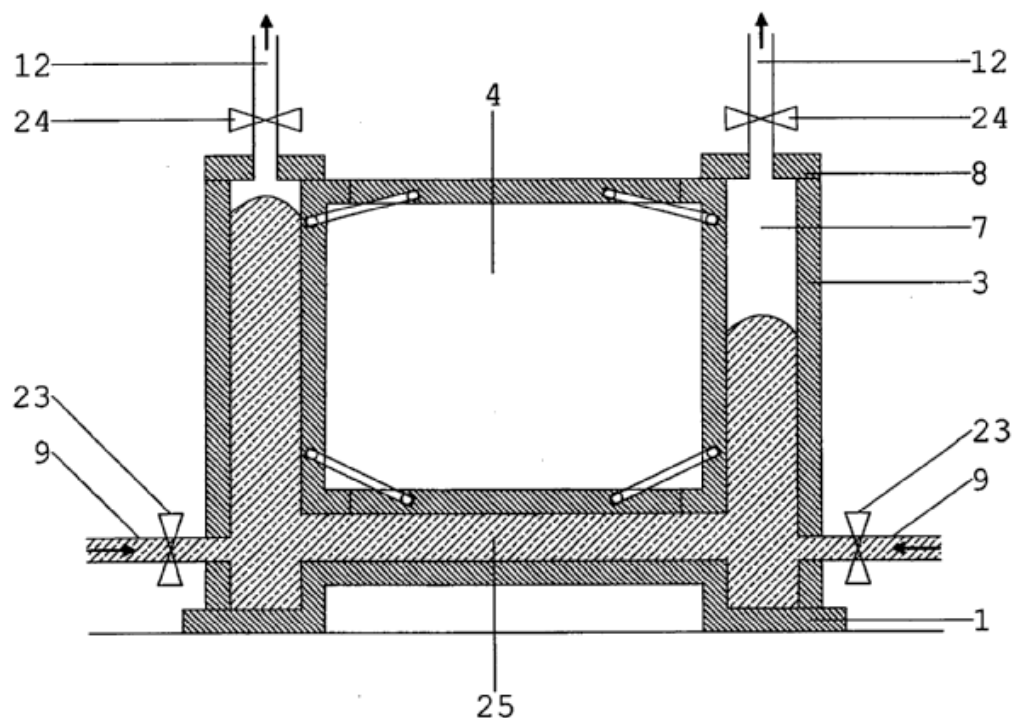
B28B 1/24

by injection moulding {(injection moulding of ceramic slips [B28B 1/265](#); of tubular articles [B28B 21/38](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

**References****Informative references**

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

Manufacture of workpieces or articles from metallic powder by injection moulding	B22F 3/22
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B28B 1/26

by slip-casting, i.e. by casting a suspension or dispersion of the material in a liquid-absorbent or porous mould, the liquid being allowed to soak into or pass through the walls of the mould; Moulds therefor ([B28B 1/52](#) takes precedence) {; specially for manufacturing articles starting from a ceramic slip; Moulds therefor (of tubular articles [B28B 21/08](#))}

References

Limiting references

This place does not cover:

Specially adapted for producing articles from mixtures containing fibres	B28B 1/52
Slip casting of tubular articles	B28B 21/08

Special rules of classification

For chemical aspects see: [C04B 33/28](#) slipcasting of clay-wares.

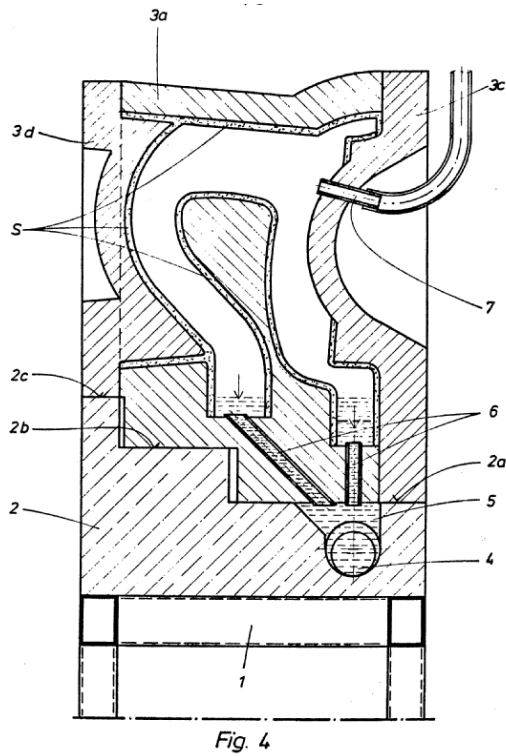
For manufacturing of workpieces or articles from metallic powder see: [B22F 3/22](#) for producing castings from a slip.

B28B 1/261

{Moulds therefor (absorbent moulds in general [B28B 7/344](#))}

Definition statement

This place covers:



References

Informative references

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

Absorbent moulds in general	B28B 7/344
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B28B 1/266

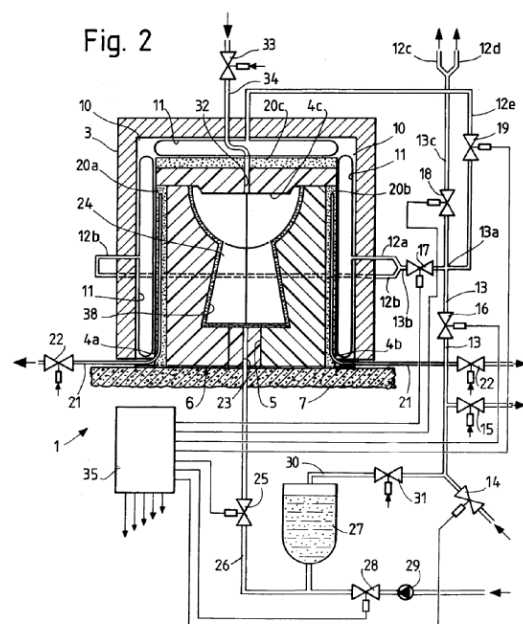
{Means for counteracting the pressure being applied on the slip or on the moulded article in the mould, e.g. means for clamping the moulds parts together in a frame-like structure}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

EP 0 689 912 A1



References

Informative references

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

Fastening means, clamping means for mould parts in general	B28B 2007/005
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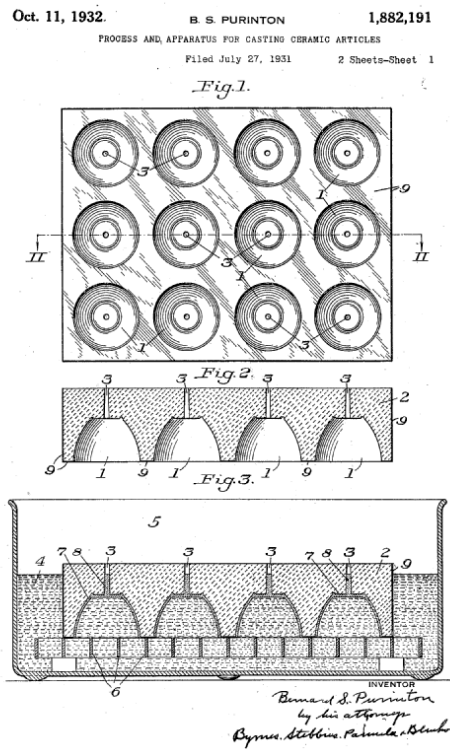
B28B 1/268

{by dipping moulding surfaces in the slip (in general [B28B 1/38](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



References

Informative references

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

Dipping moulding surfaces in the slip in general	B28B 1/38
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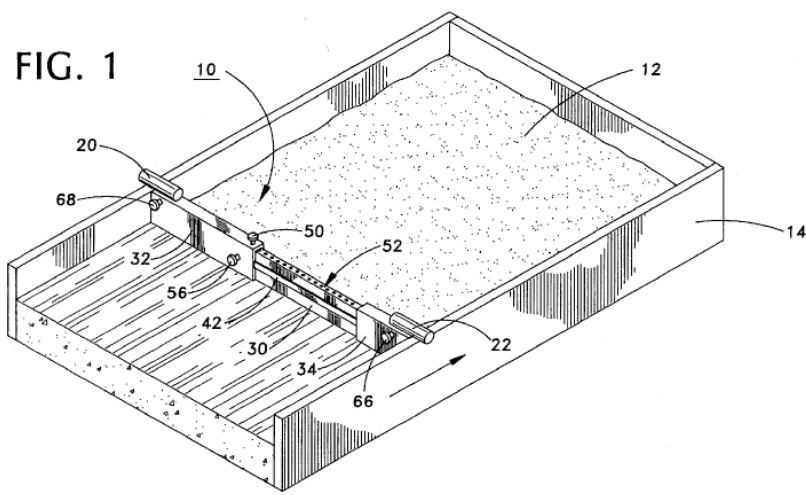
B28B 1/29

by profiling or strickling the material in open moulds or on moulding surfaces
{(in rotary moulds [B28B 1/02](#); by means of profiled rollers [B28B 3/12](#),
[B28B 3/123](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



U.S. Patent

Nov. 21, 1995

Sheet 1 of 3

5,468,095

Special rules of classification

Profiling or strickling in situ: [E01C 19/00](#) machines, tools or auxiliary devices for preparing or distributing paving materials.

B28B 1/32

by projecting, e.g. spraying (spraying in general [B05B](#), [B05D](#))

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:

Producing tubular articles by projecting, e.g. spraying	B28B 21/44
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Informative references

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

Spraying in general	B05B
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B28B 1/34

by centrifugal force {(centrifugally acting implements for applying plaster or the like to walls [E04F 21/10](#))}

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:

Producing tubular articles by centrifugal moulding	B28B 21/30
--	----------------------------

B28B 1/38

by dipping (in general [B05C](#), [B05D](#) {; shaping from synthetic resin [B29C 41/14](#)})

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:

Producing tubular articles by dipping	B28B 21/46
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Informative references

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

By dipping in general	B05C
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B28B 1/40

by wrapping, e.g. winding

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:

Producing tubular articles by wrapping, e.g. winding	B28B 21/48
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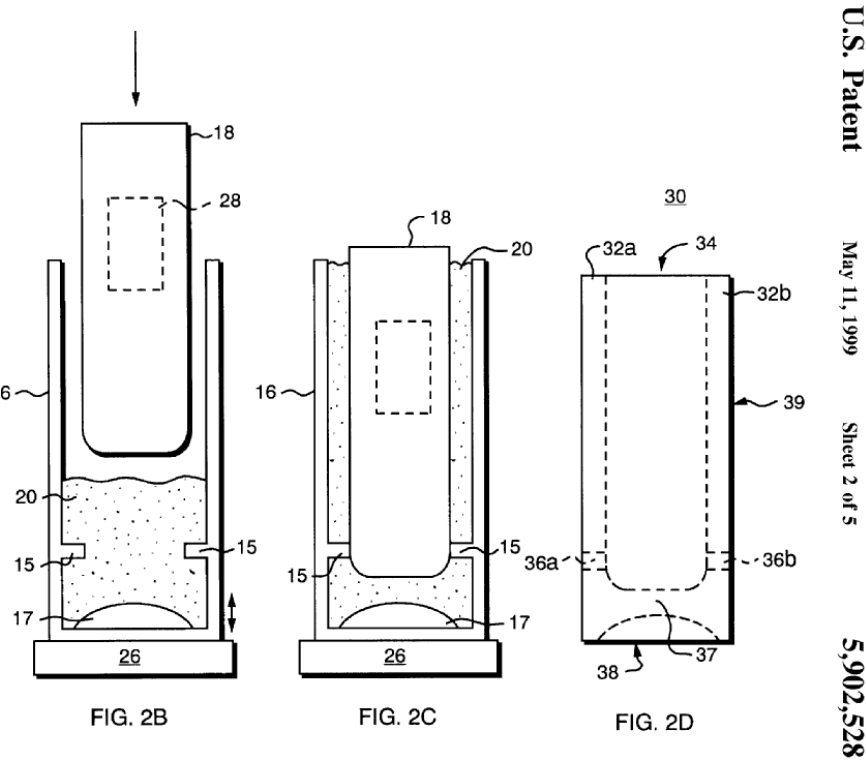
B28B 1/44

by forcing cores into filled moulds for forming hollow articles

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



References

Limiting references

This place does not cover:

Removing the material from the filled mould	B28B 1/48 , B28B 11/12
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Special rules of classification

The cores being forced into the filled moulds displace the material inside the filled moulds.

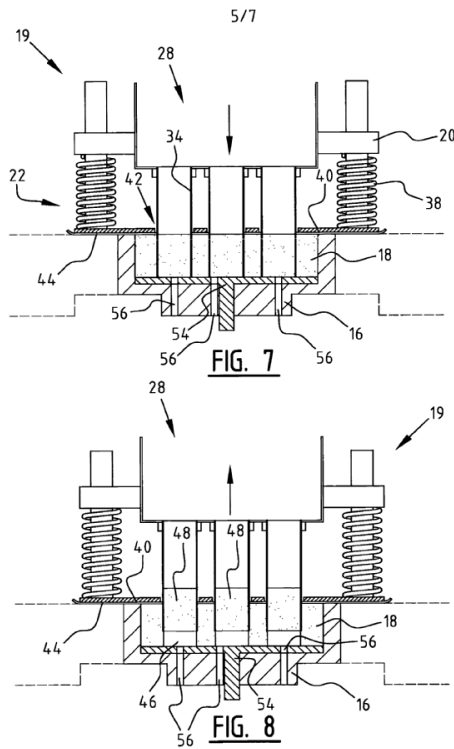
B28B 1/48

by removing material from solid section preforms for forming hollow articles,
e.g. by punching or boring

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



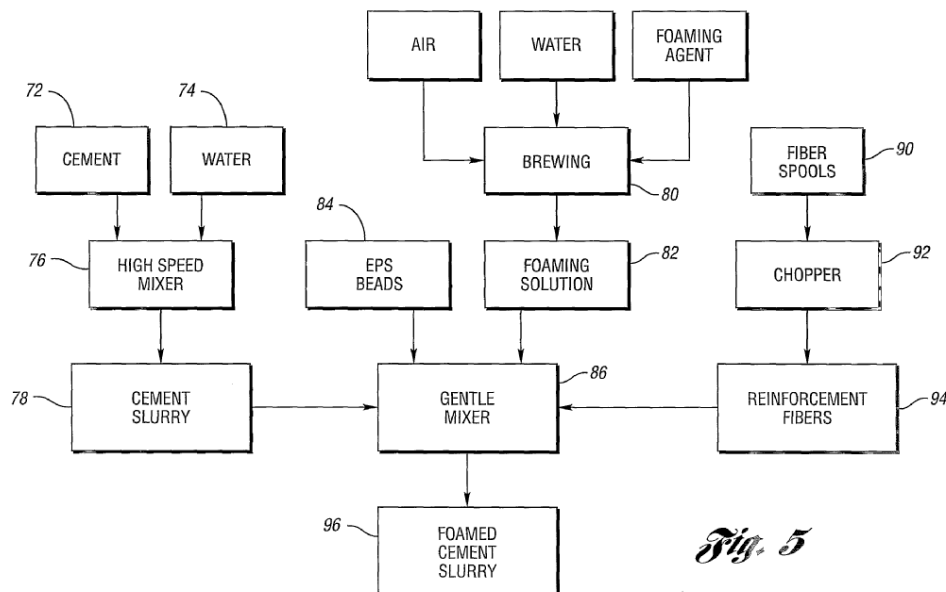
B28B 1/50

especially adapted for producing articles of expanded material, e.g. cellular concrete (chemical aspects {or making expanded aggregate} [C04B](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



W/O 2004/097151

4/6

PCT/US2004/013095

Special rules of classification

Mixers for producing cellular concrete:

- [B28C 5/1269](#)
- [B28C 5/381](#)
- [B01F](#)

Synonyms and Keywords

In patent documents, the following abbreviations are often used:

ALC	Autoclaved lightweight concrete
PC	Porous concrete

In patent documents, the following words/expressions are often used as synonyms:

- "porous concrete",
- "(autoclaved) lightweight concrete",
- "cellular concrete",
- "foam(ed) concrete" and
- "aerated concrete".

B28B 1/526

{by delivering the materials on a conveyor of the endless-belt type}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

WO 91/04142

PCT/DE90/00709

3/3

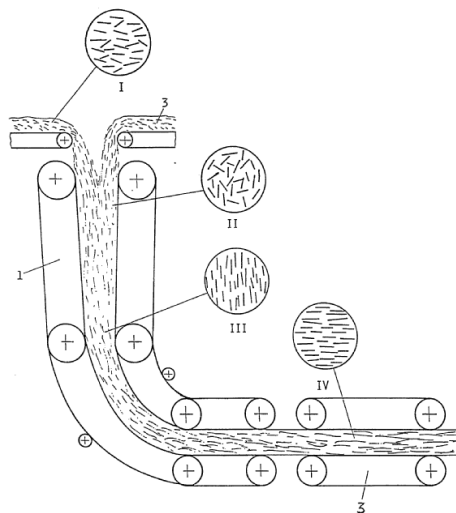


Fig. 3

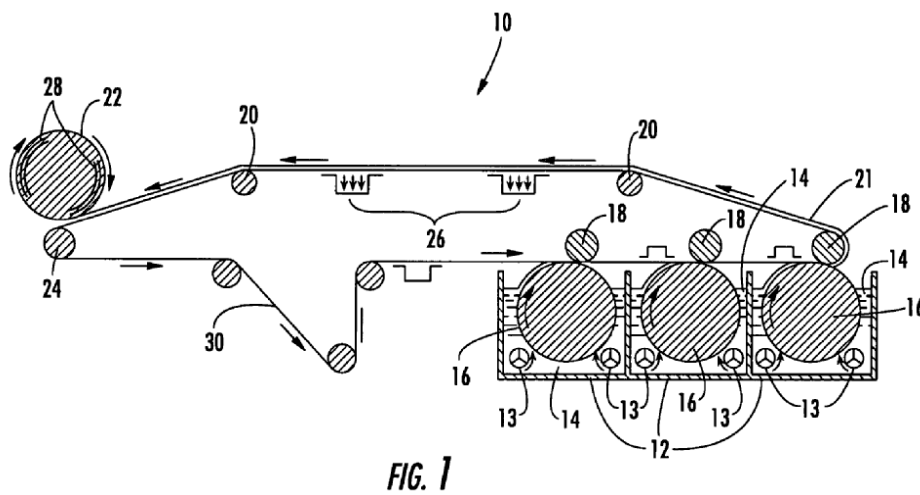
B28B 1/527

{by delivering the materials on a rotating drum, e.g. a sieve drum, from which the materials are picked up by a felt}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



Apr. 21, 2005 Sheet 1 of 9 US 2005/0085148 A1

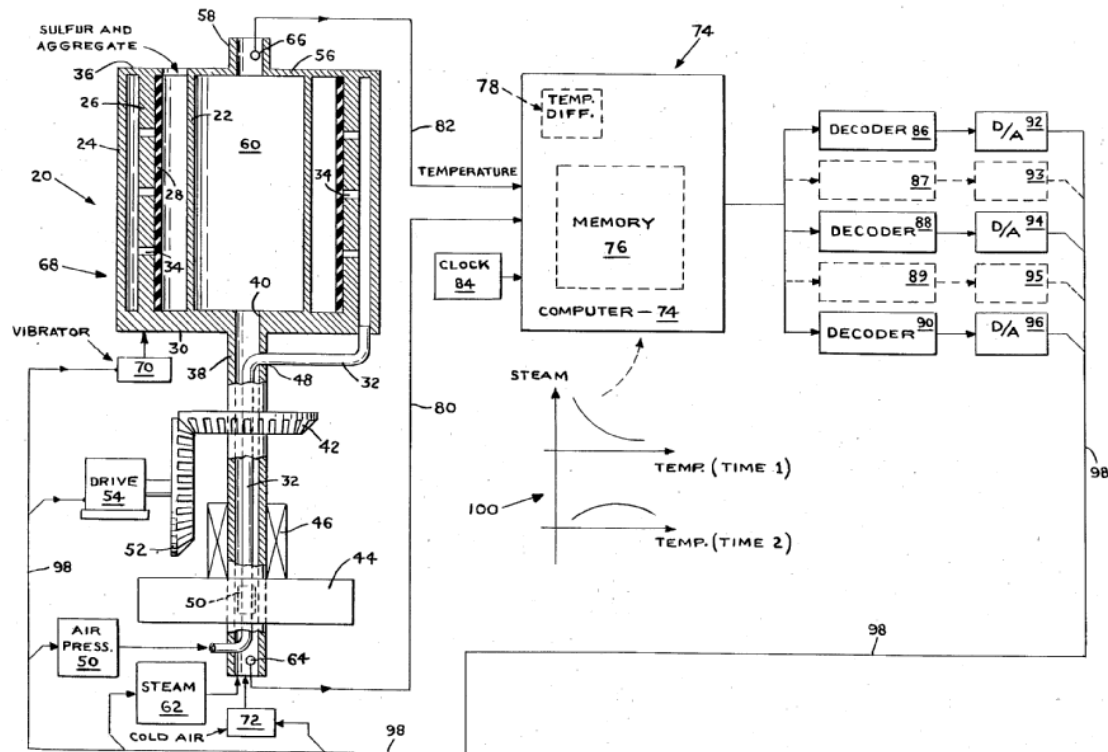
B28B 1/54

specially adapted for producing articles from molten material, e.g. slag {refractory ceramic materials} (chemical aspects [C04B](#) {; from molten bituminous material [B29C](#)})

Definition statement

This place covers:

E.g. sulfur/sulphur concrete



U.S. Patent

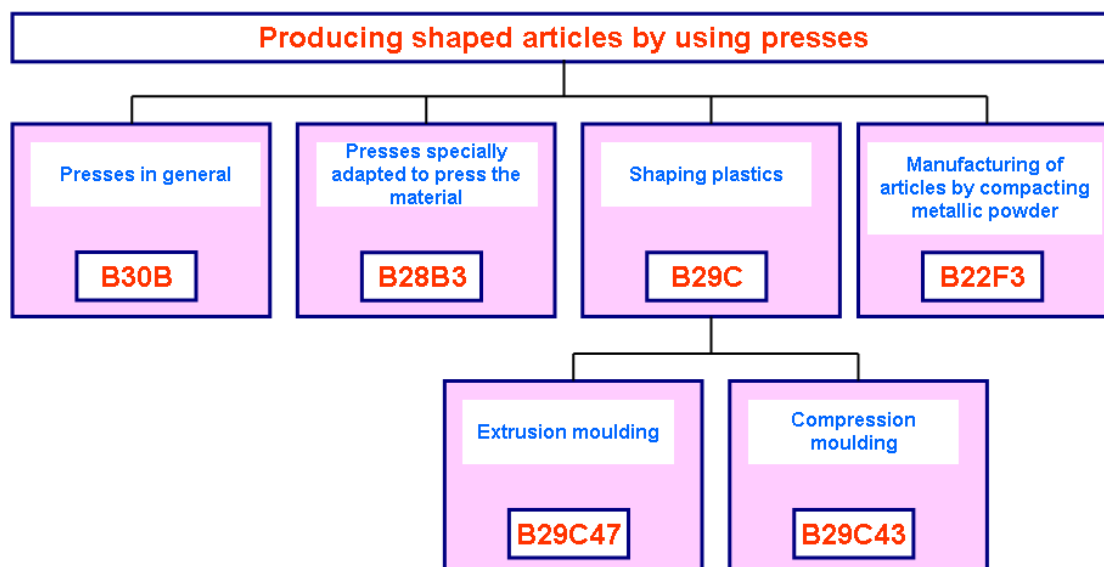
Jul. 15, 1986

4,600,373

B28B 3/00

Producing shaped articles from the material by using presses (shaping on moving conveyors [B28B 5/00](#)); Presses specially adapted therefor (presses in general [B30B](#))

Relationships with other classification places



The preceding image includes references to [B30B](#), [B28B 3/00](#), [B29C](#), [B22F 3/00](#), [B29C 48/00](#) and [B29C 43/00](#).

References

Limiting references

This place does not cover:

Drive systems for presses	B30B
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Informative references

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

Manufacture of workpieces or articles from metallic powder characterised by the manner of compacting or sintering	B22F 3/00
Extrusion moulding of plastics	B29C 48/00
Aspects related to presses in general	B30B

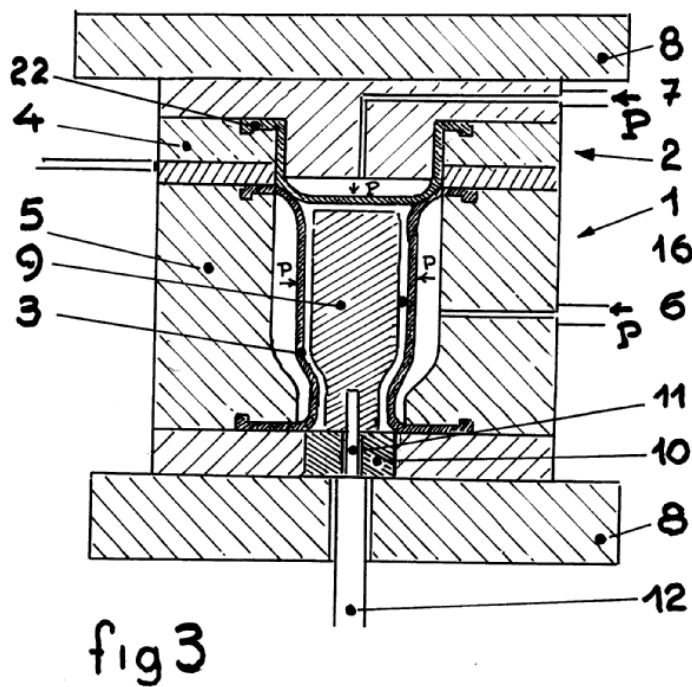
B28B 3/003

{Pressing by means acting upon the material via flexible mould wall parts, e.g. by means of inflatable cores, isostatic presses (isostatic presses in general [B30B 5/02](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



References

Limiting references

This place does not cover:

Flexible or resilient parts on a press ram, i.e. foamed or rubber parts.	B28B 3/024
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Informative references

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

Isostatic presses in general	B30B 5/02
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Special rules of classification

The flexible mould wall parts change shape due to an externally generated pressure (air, oil etc.) other than the reaction force caused by the pressing of a ram head.

B28B 3/02

wherein a ram exerts pressure on the material in a moulding space; Ram heads of special form

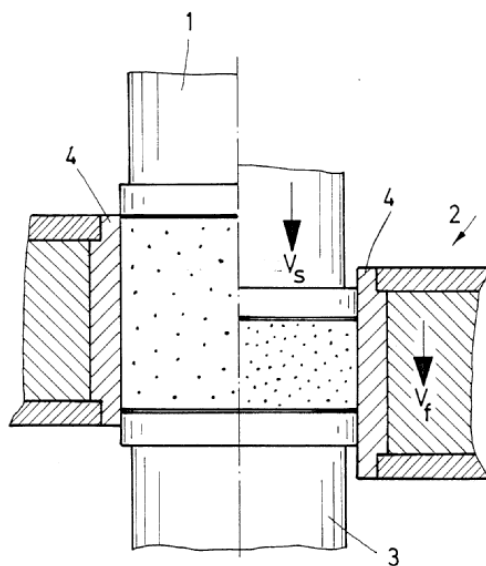
Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

ZEICHNUNGEN SEITE 1

Nummer: DE 40 09 606 A1
Int. Cl.⁵: B 30 B 11/02
Offenlegungstag: 11. Oktober 1990

**References****Informative references**

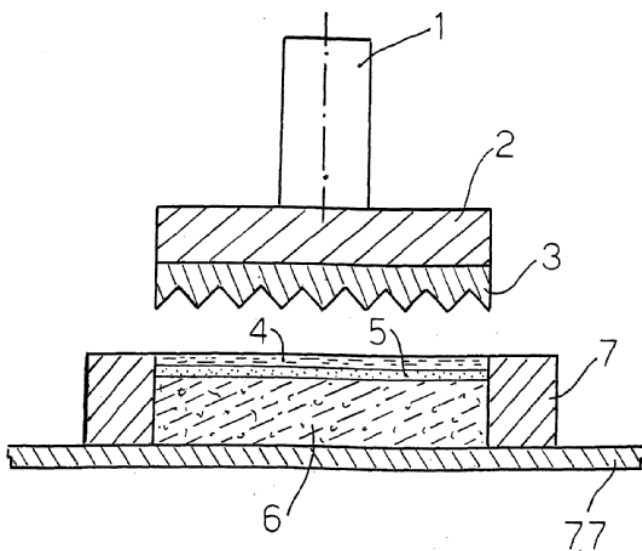
Attention is drawn to the following places, which may be of interest for search:

Using a ram exerting pressure on the material in a moulding space	B30B 11/02
---	----------------------------

B28B 3/021**{Ram heads of special form}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group:

EP 1 541 308 A2



B28B 3/022

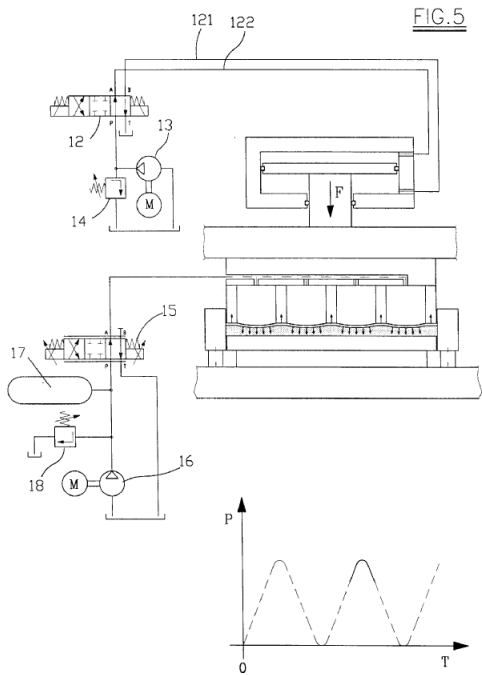
{combined with vibrating or jolting}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

U.S. Patent Oct. 30, 2001 Sheet 5 of 8 US 6,309,206 B1



References

Limiting references

This place does not cover:

Vibrating or jolting by means acting on the mould, i.e. vibrating tables	B28B 1/087
--	----------------------------

Informative references

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

Using a ram exerting pressure on the material in a moulding space, whereby the material is subjected to vibrations	B30B 11/022
--	-----------------------------

B28B 3/024

{the pressure on the material being transmitted through flexible or resilient wall parts, e.g. flexible cushions on the ramming surface, resilient wall parts pressing as a result of deformation caused by ram pressure}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

EP 1 500 480 A2

Fig. 2

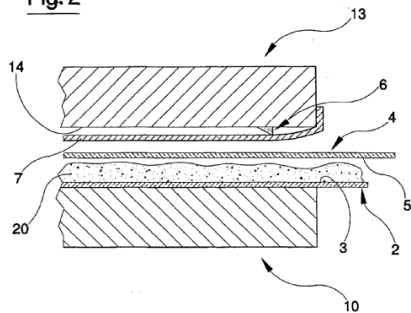
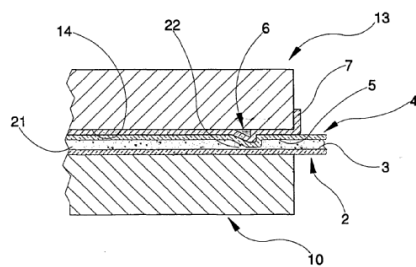


Fig. 3



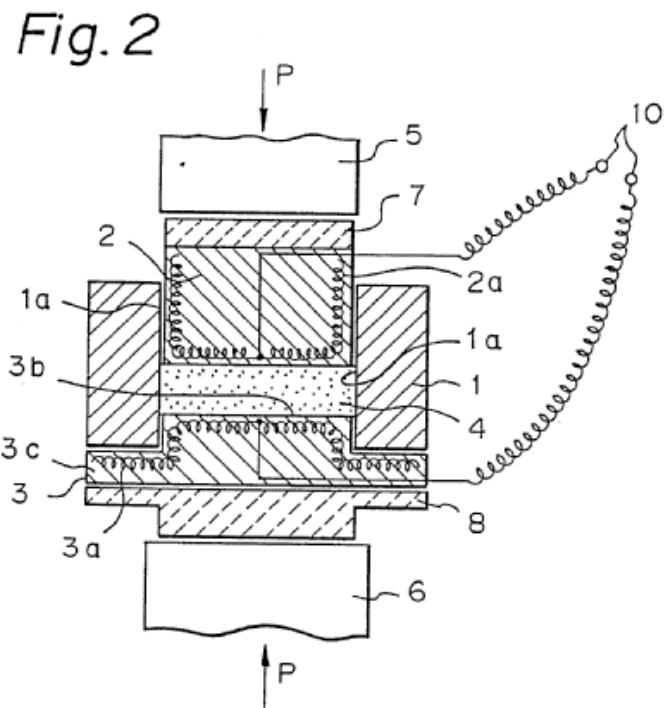
B28B 3/025

{Hot pressing, e.g. of ceramic materials}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



References

Limiting references

This place does not cover:

Simultaneously compacting and sintering of workpieces or articles from metallic powder	B22F 3/14
Pressure sintering	C04B 35/645

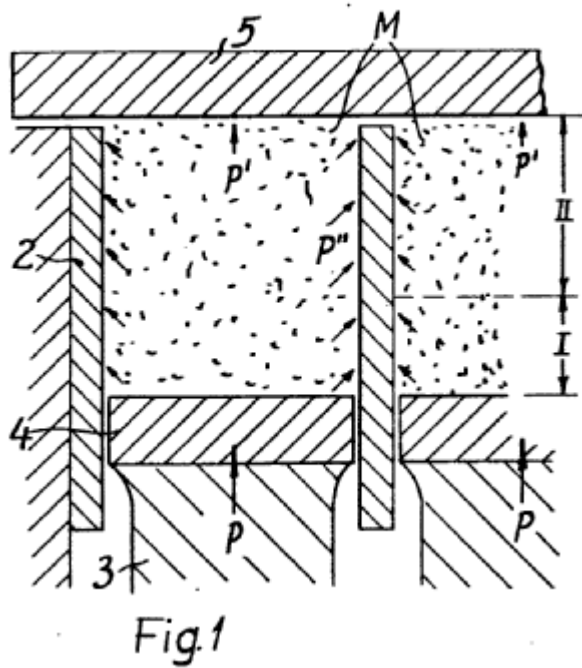
B28B 3/027

{using a bottom press ram actuated upwardly towards mould covers}

Definition statement

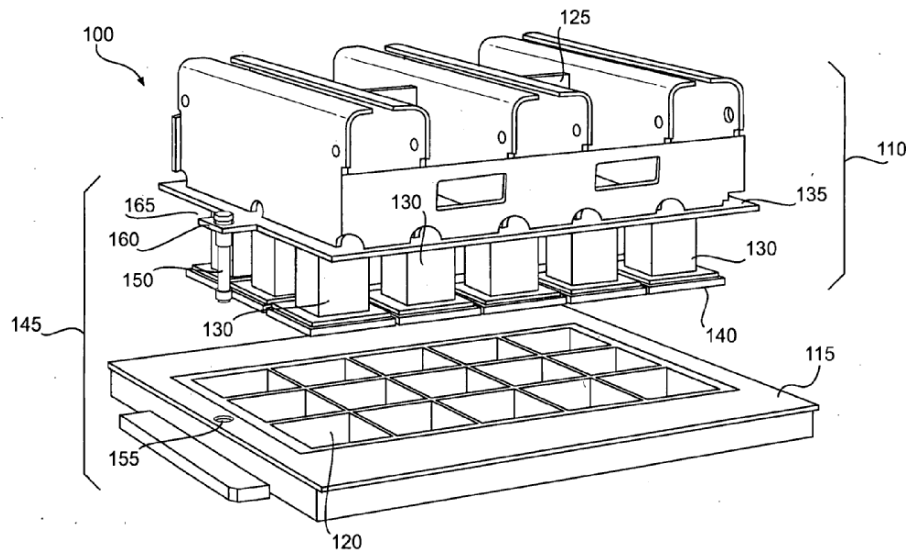
This place covers:

Illustrative example of subject matter classified in this group:



B28B 3/06**with two or more ram and mould sets****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group:

**FIG. 1**

Patent Application Publication Sep. 7, 2006 Sheet 1 of 4

US 2006/0197259 A1

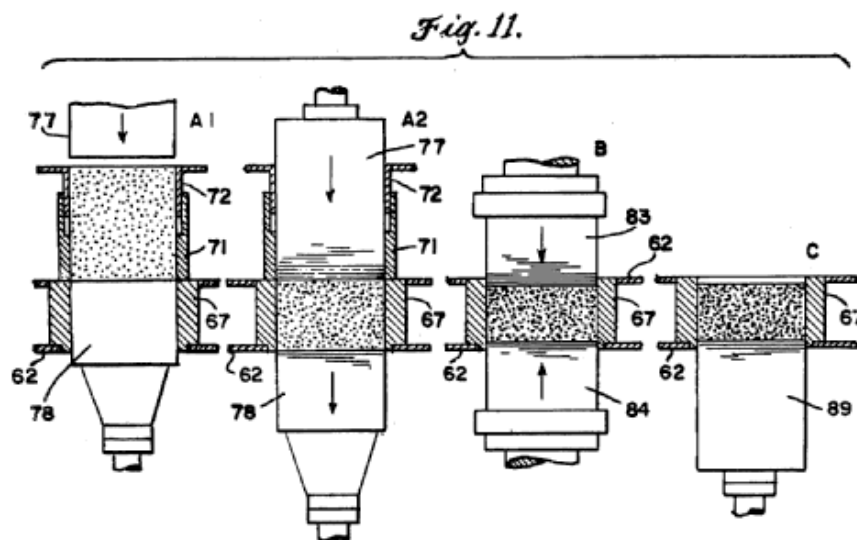
B28B 3/08**with two or more rams per mould****Definition statement***This place covers:*

Wherein the ram heads work in opposite directions:

U.S. Patent

Aug. 14, 1979

Sheet 5 of 13

4,164,537

B28B 3/083

{The juxtaposed rams working in the same direction}

Definition statement

This place covers:

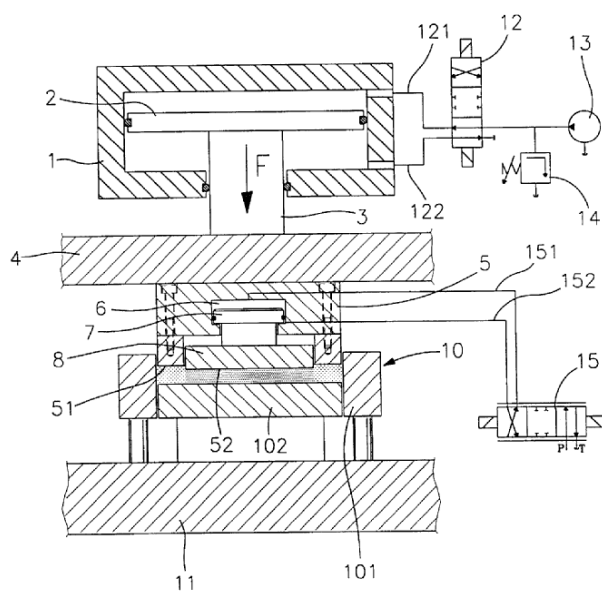
Illustrative example of subject matter classified in this group:

U.S. Patent

Jul. 29, 2003

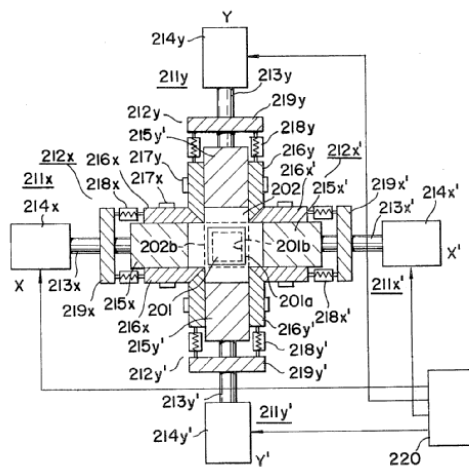
Sheet 2 of 9

US 6,599,114 B1



B28B 3/086**{The rams working in different directions}****Definition statement***This place covers:*

U.S. Patent Nov. 8, 1983 Sheet 3 of 4 4,414,028

FIG. 3

B28B 3/10

each charge of material being compressed against previously formed body

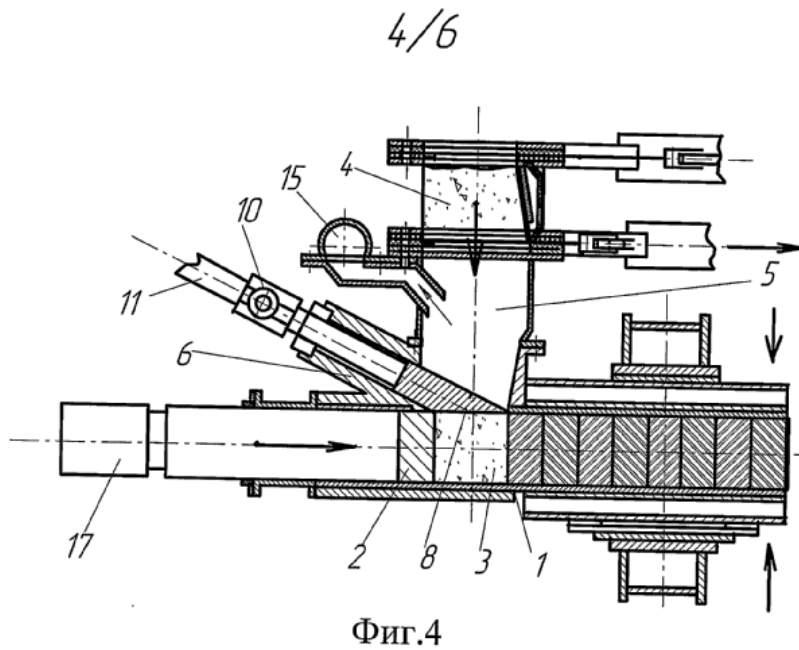
Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

WO 2007/049992

PCT/RU2006/000556



B28B 3/12

wherein one or more rollers exert pressure on the material

Definition statement

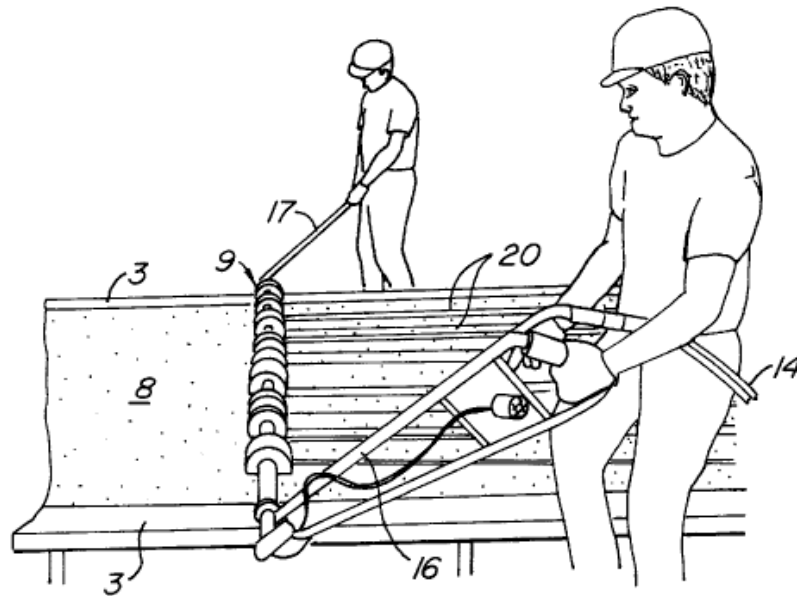
This place covers:

U.S. Patent

Jun. 6, 2000

Sheet 4 of 5

6,071,458



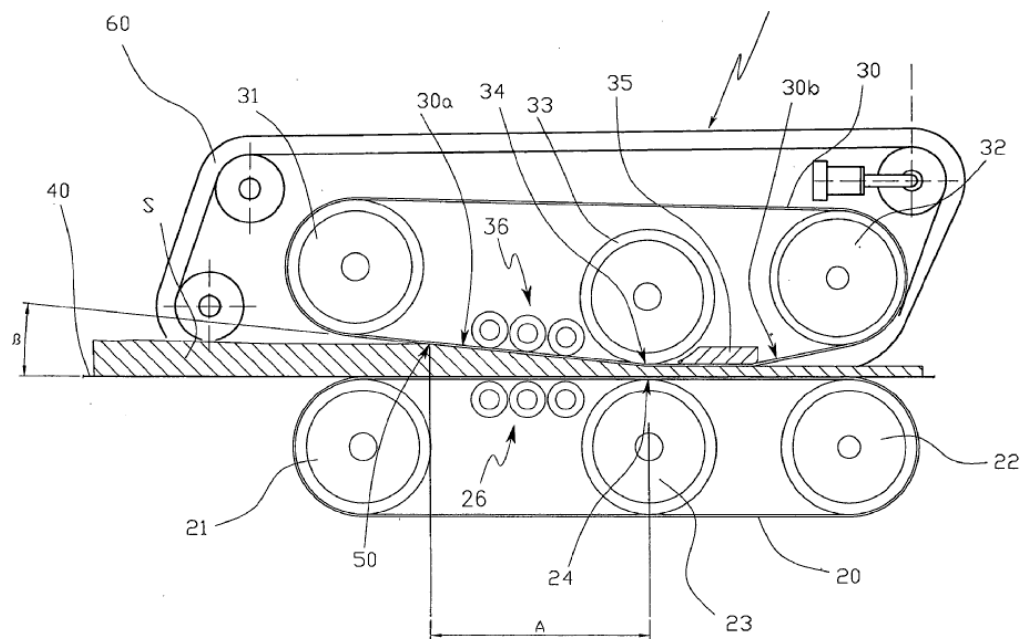
B28B 3/123

{on material in moulds or on moulding surfaces moving continuously underneath or between the rollers, e.g. on an endless belt}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



EP 1 674 228 A2

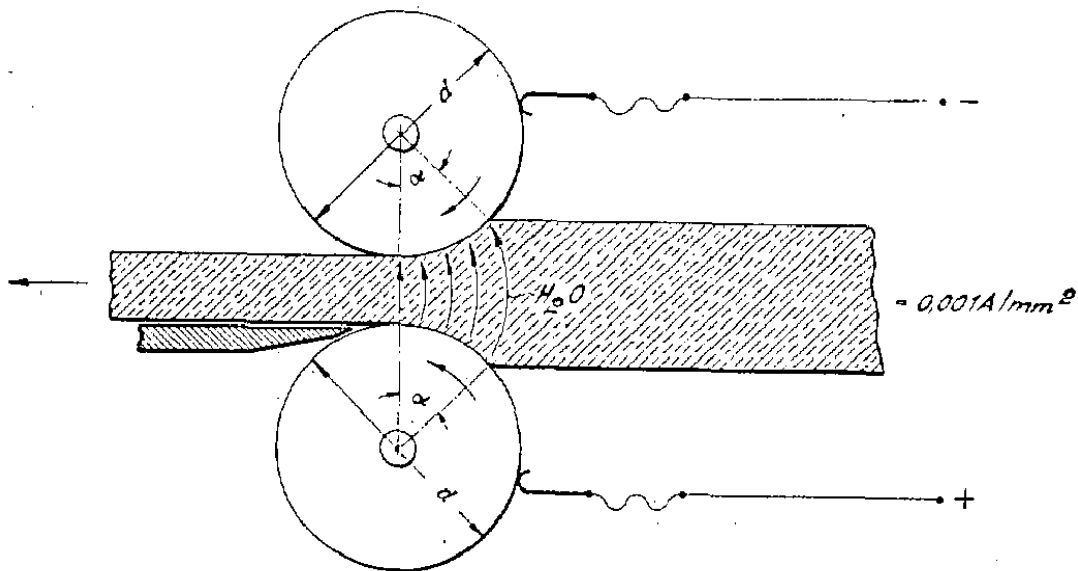
B28B 3/126

{on material passing directly between the co-operating rollers}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



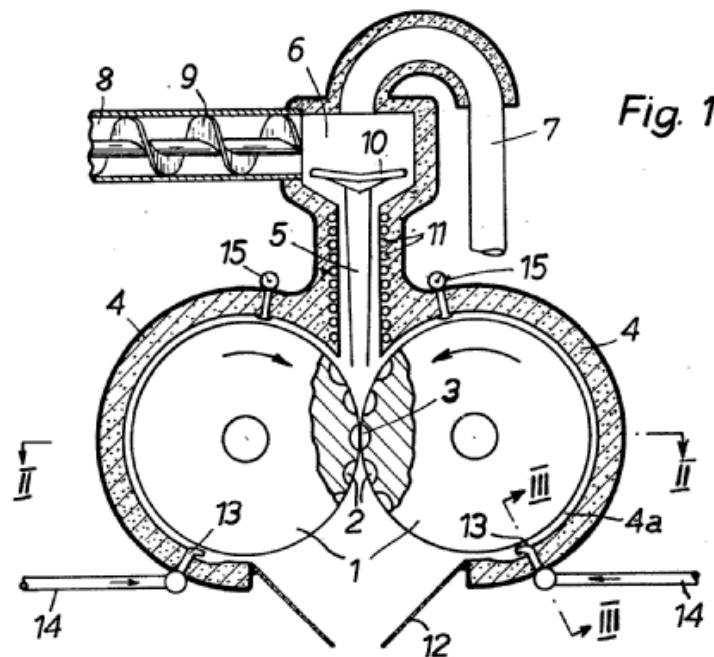
B28B 3/14

with co-operating pocketed rollers

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



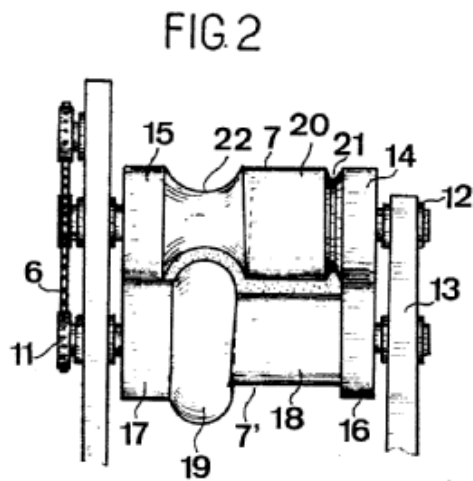
B28B 3/16

with co-operating profiled rollers

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



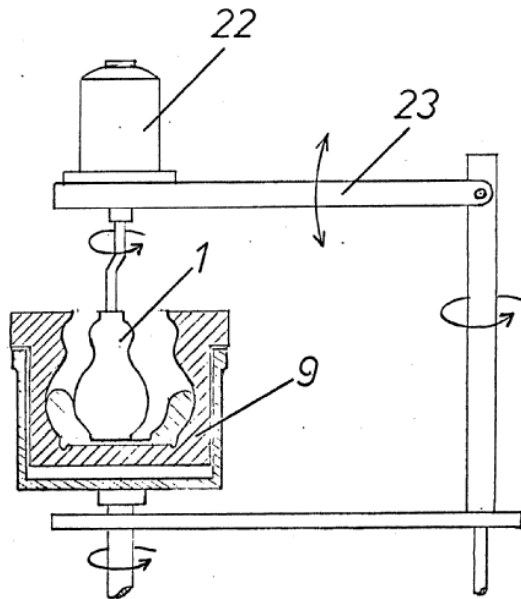
B28B 3/18

Roller-and-ring machines, i.e. with roller disposed within a ring and co-operating with the inner surface of the ring

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

**B28B 3/20**

wherein the material is extruded {(extrusion moulding of plastics [B29C 48/00](#))}

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:

Producing tubular articles by extruding	B28B 21/52
---	----------------------------

B28B 2003/203

{for multi-channelled structures, e.g. honeycomb structures}

Definition statement

This place covers:

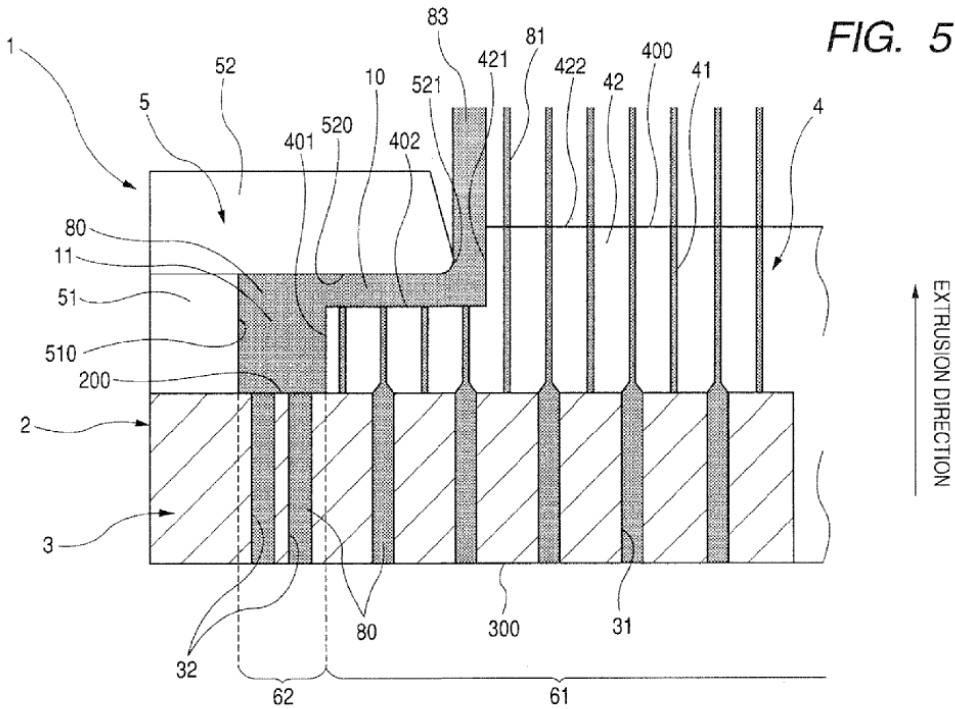


FIG. 5

Patent Application Publication Jan. 29, 2009 Sheet 5 of 10 US 2009/0028982 A1

References

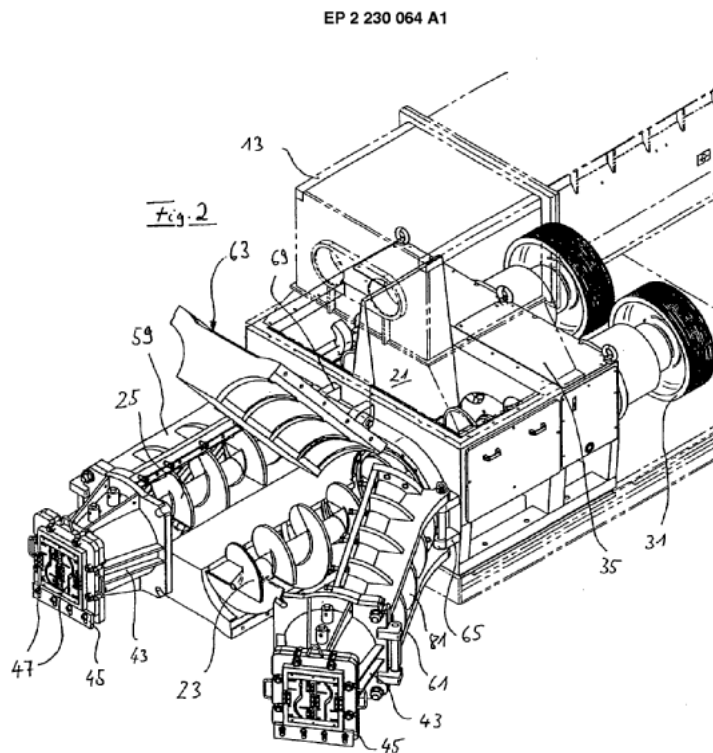
Limiting references

This place does not cover:

Extrusion dies for hollow (clay) bricks	B28B 3/26
---	---------------------------

B28B 3/22**by screw or worm****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group:



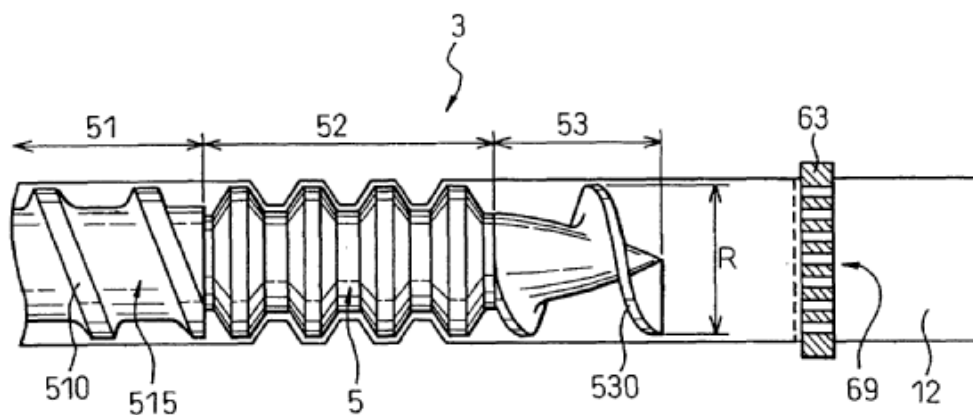
B28B 3/22**{Screw or worm constructions}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group:

ZEICHNUNGEN SEITE 5

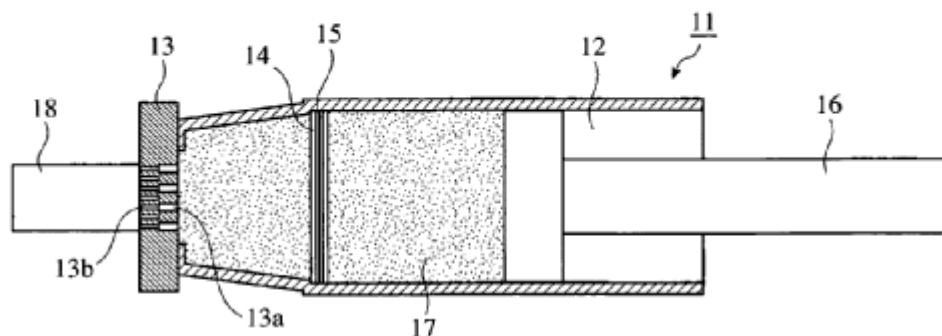
Nummer:
Int. Cl.⁷:
Offenlegungstag:

DE 101 22 937 A1
B 28 B 3/22
15. November 2001

Fig.6**B28B 3/24****by reciprocating plunger****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group:

EP 2 340 921 A1

Fig. 1

B28B 3/26**Extrusion dies****References****Limiting references**

This place does not cover:

Extrusion dies for multi-channelled structures
--

B28B 2003/203

B28B 3/2618

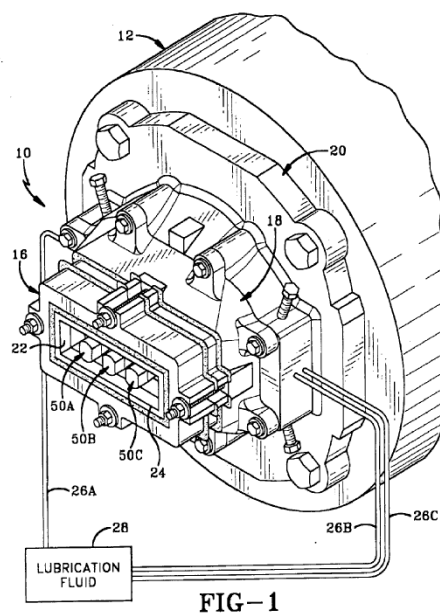
{using lubricating means}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

Patent Application Publication Feb. 26, 2009 Sheet 1 of 9 US 2009/0051074 A1



B28B 3/2627

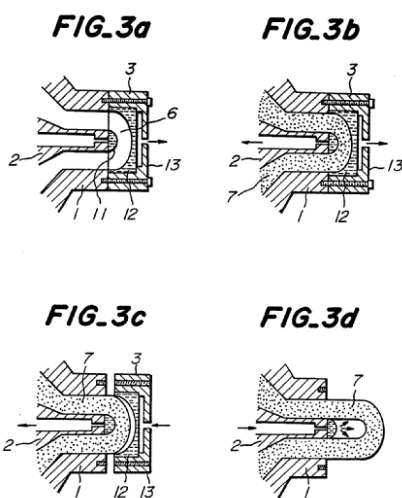
{using means for making hollow objects with transverse walls, e.g. hollow objects closed on all sides}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

EP 0 331 388 A1



B28B 3/2636

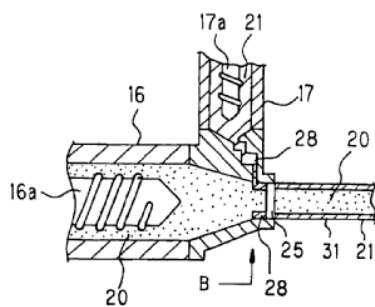
{using means for co-extruding different materials}

Definition statement

This place covers:

EP 1 415 779 A1

FIG. 19(a)



B28B 3/2645

{using means for inserting reinforcing members}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

EP 1 217 142 A2

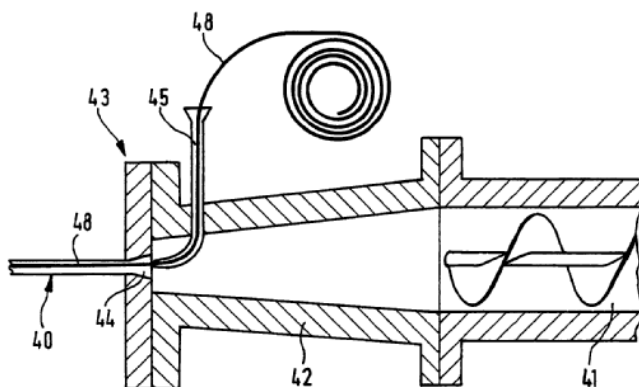


Fig. 4 b

B28B 5/00

Producing shaped articles from the material in moulds or on moulding surfaces, carried or formed by, in or on conveyors irrespective of the manner of shaping

Definition statement

This place covers:

The moulds or moulding surfaces are transported along several station of activity, for example, first a mould is transported to a cleaning station followed by a casting station and finally by a demoulding station.

References

Limiting references

This place does not cover:

Machines or methods for applying the material to surfaces to form a permanent layer thereon, to webs, sheets or the like	B28B 19/0092
--	------------------------------

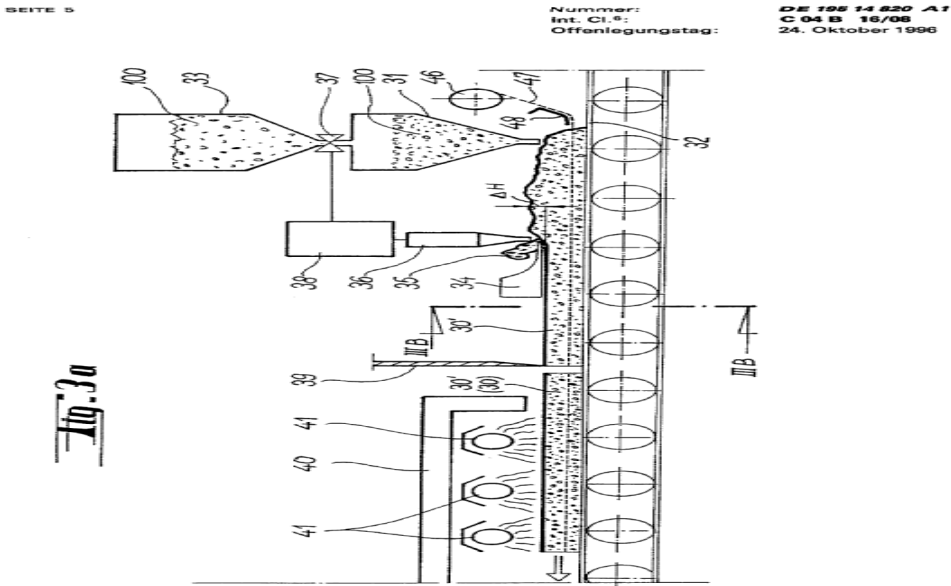
B28B 5/02

on conveyors of the endless-belt or chain type (in combination with pressing rollers [B28B 3/12](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



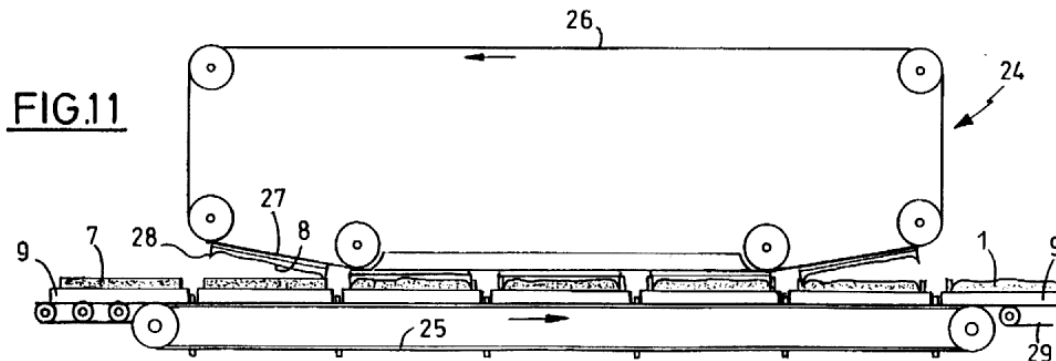
B28B 5/021

{the shaped articles being of definite length}

References**Limiting references**

This place does not cover:

Illustrative example of subject matter classified in this group:

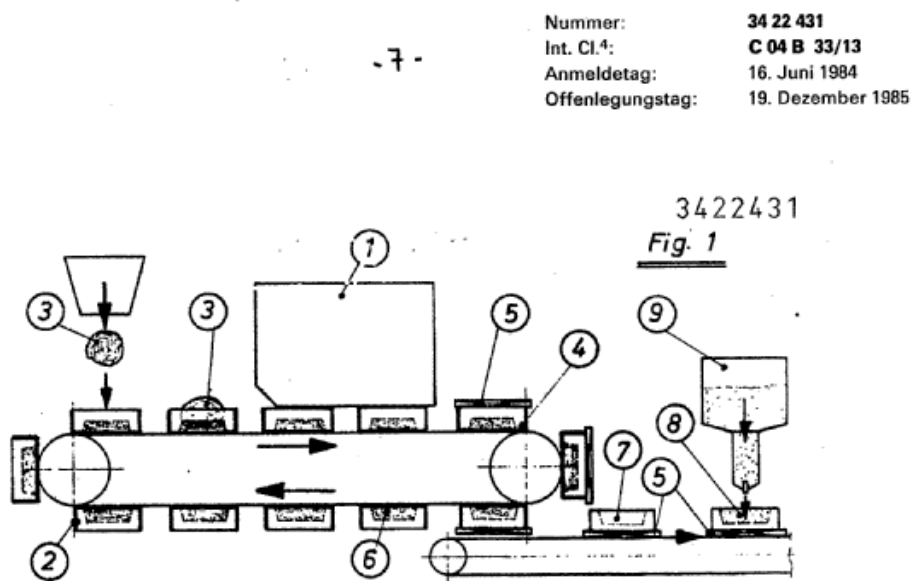
**B28B 5/022**

{the moulds or the moulding surfaces being individual independant units and being discontinuously fed (feeding [B28B 13/0215](#) and sub-groups)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



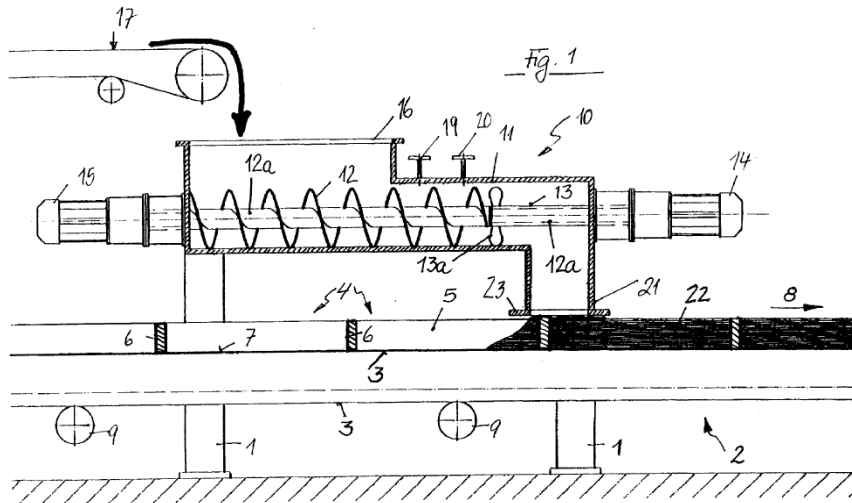
B28B 5/025

{the moulds or the moulding surfaces being divided by separating walls and being continuously fed (feeding [B28B 13/02](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

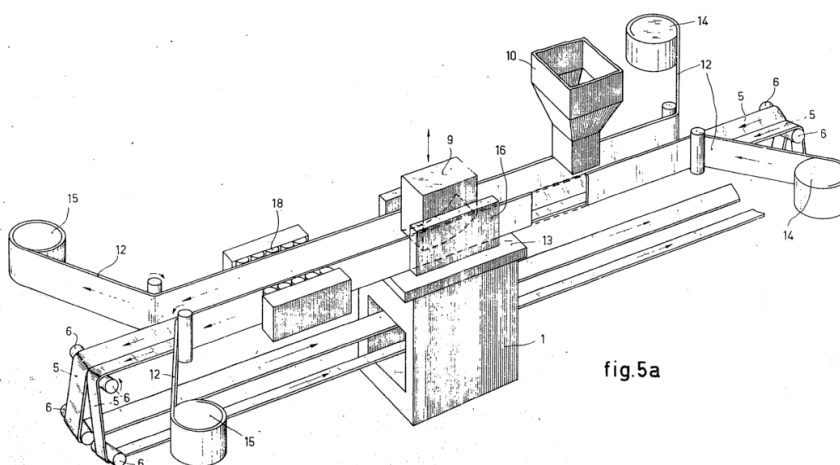
**B28B 5/026**

{the shaped articles being of indefinite length}

References**Limiting references**

This place does not cover:

Illustrative example of subject matter classified in this group:



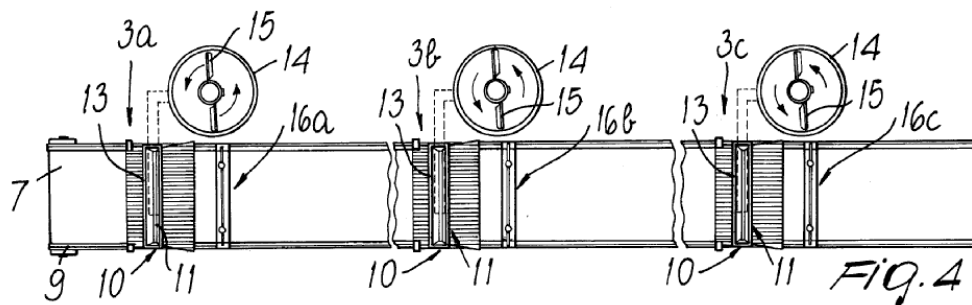
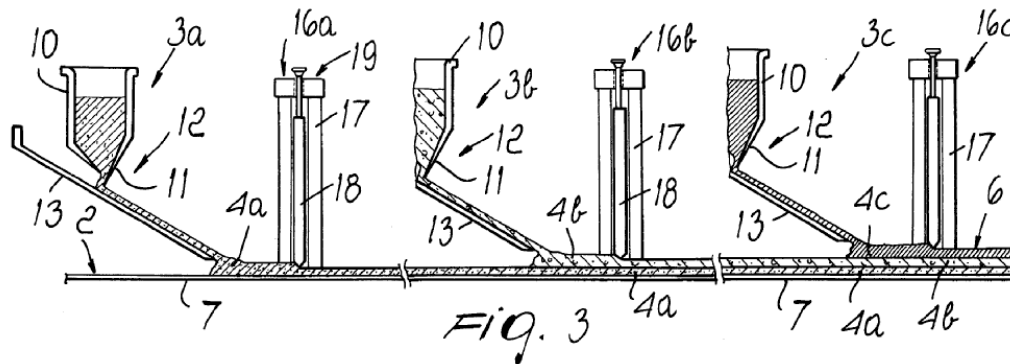
B28B 5/027

{the moulding surfaces being of the indefinite length type, e.g. belts, and being continuously fed (feeding [B28B 13/02](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



EP 1 101 583 A2

B28B 5/028

{the moulding surfaces being of definite length, e.g. succession of moving pallets, and being continuously fed (feeding [B28B 13/02](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

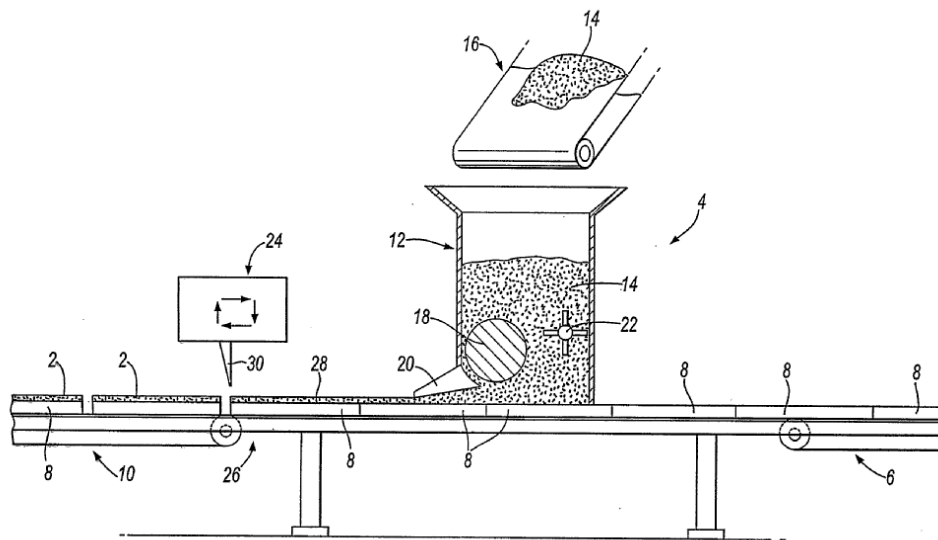


Fig. 1

WO 2008/025933

1/7

PCT/GI82006/003239

B28B 5/04

in moulds moved in succession past one or more shaping stations (on turn-tables [B28B 5/06](#))

References**Limiting references**

This place does not cover:

Illustrative example of subject matter classified in this group:

U.S. Patent Dec. 13, 2005 Sheet 7 of 10 US 6,974,317 B2

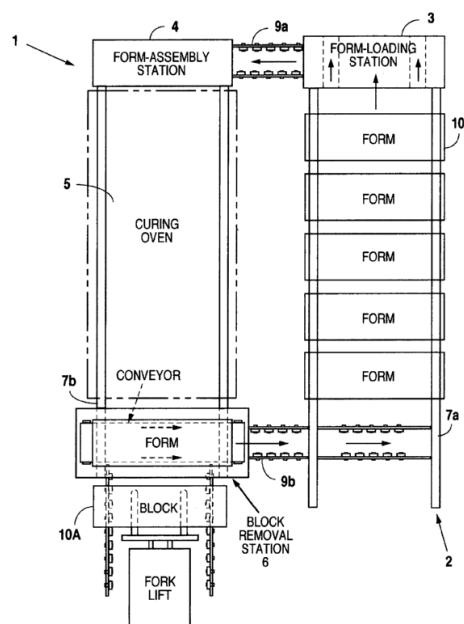


Fig. 10

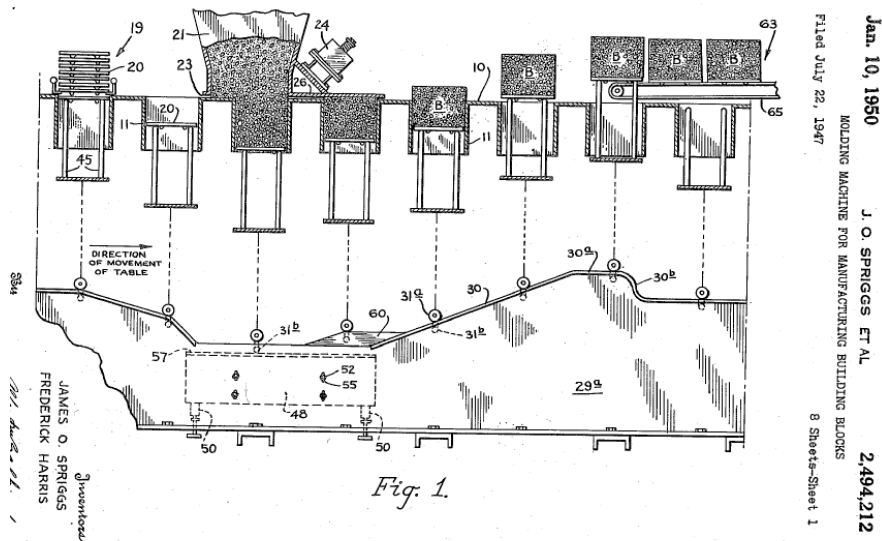
B28B 5/06

in moulds on a turntable

References**Limiting references**

This place does not cover:

Illustrative example of subject matter classified in this group:

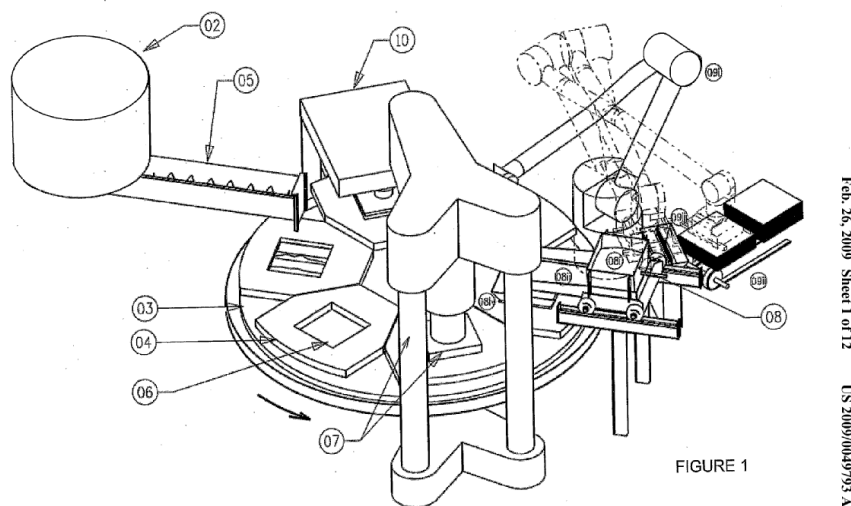
**B28B 5/08**

intermittently rotated

References**Limiting references**

This place does not cover:

Illustrative example of subject matter classified in this group:



B28B 5/10

in moulds carried on the circumference of a rotating drum

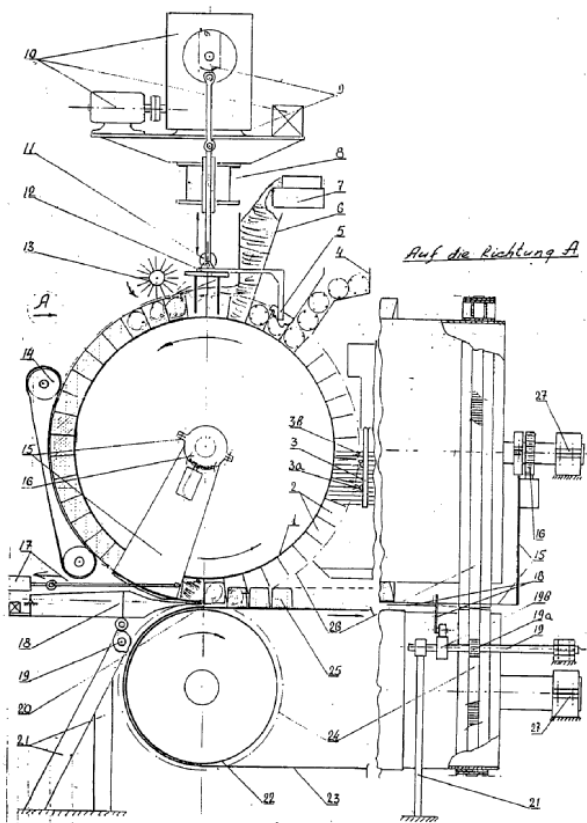
References**Limiting references**

This place does not cover:

Illustrative example of subject matter classified in this group:

DE 100 59 449 A1 2004.03.11

Anhängende Zeichnungen

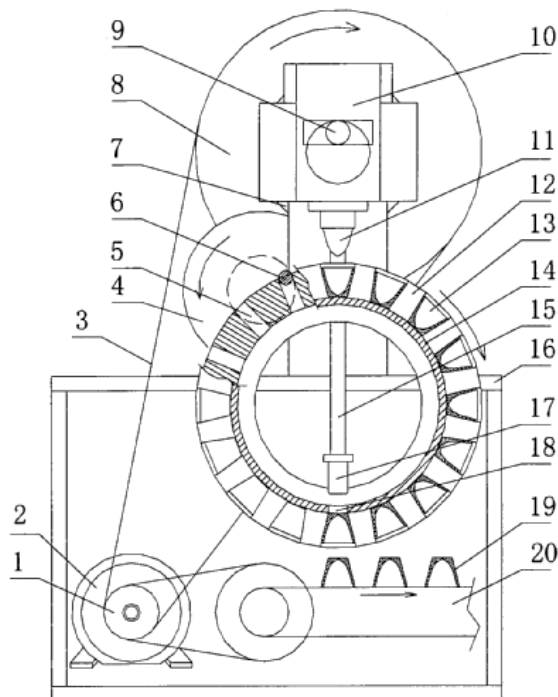


B28B 5/12**intermittently rotated****References****Limiting references***This place does not cover:*

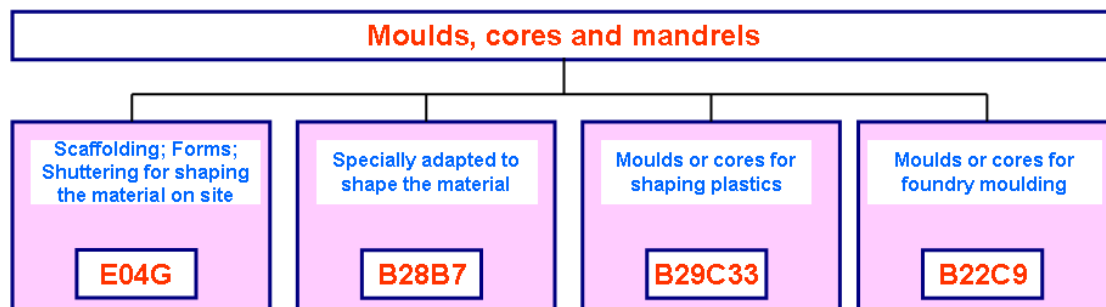
Illustrative example of subject matter classified in this group:

WO 2009/140852

PCT/CN2009/000436

**B28B 7/00**

Moulds; Cores; Mandrels (specially adapted for the production of the tubular articles [B28B 21/00](#); {for casting metals [B22C 9/00](#); moulds for plastic materials in general [B29C 33/00](#); falsework, forms or shutterings for forming buildings or parts thereof in situ [E04G 9/00](#) - [E04G 15/00](#)})

Relationships with other classification places

The preceding image includes references to [E04G](#), [B28B 7/00](#), [B29C 33/00](#), [B22C 9/00](#).

References

Limiting references

This place does not cover:

Moulds or cores for casting metal	B22C 9/00
-----------------------------------	---------------------------

Informative references

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

Moulds for plastic materials in general	B29C 33/00
Falsework, forms or shuttering for forming buildings or parts thereof in situ	E04G 9/00 - E04G 15/00

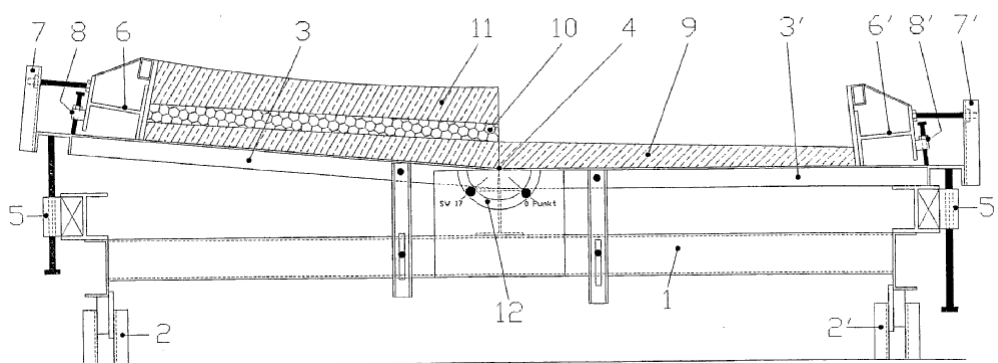
B28B 7/0032

{Moulding tables or similar mainly horizontal moulding surfaces}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



DE 10 2004 048 190 A1 2006.04.06
Anhängende Zeichnungen

B28B 7/0038

{the sidewalls of mould and moulded article moving only past each other, e.g. box-shaped moulds which are lifted off from the moulding}

Definition statement

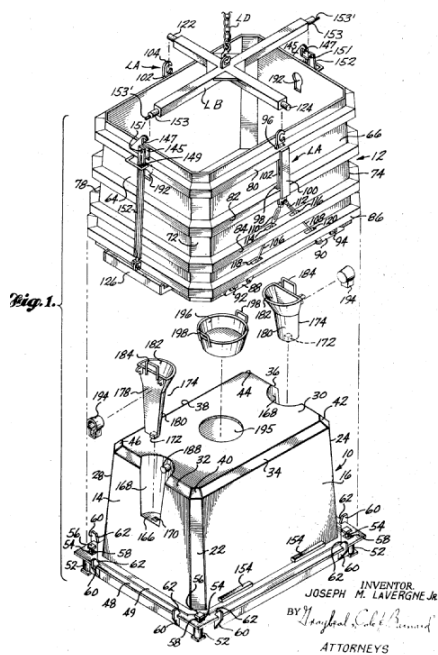
This place covers:

E.g. sliding movement of the mould walls past the cast article.

PATENTED AUG 29 1972

3,687,597

SHEET 1 OF 3



B28B 7/0041

{the sidewalls of the mould being moved only parallelly away from the sidewalls of the moulded article}

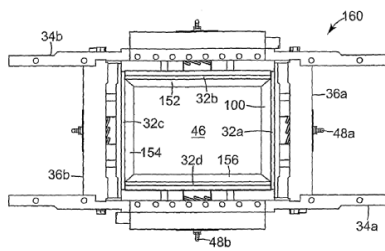
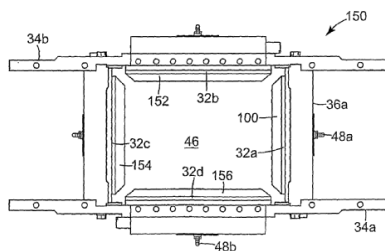
Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

WO 2006/076645

PCT/US2006/001344

**Fig. 4B****Fig. 4A**

B28B 7/0044

{the sidewalls of the mould being only tilted away from the sidewalls of the moulded article, e.g. moulds with hingedly mounted sidewalls}

Definition statement

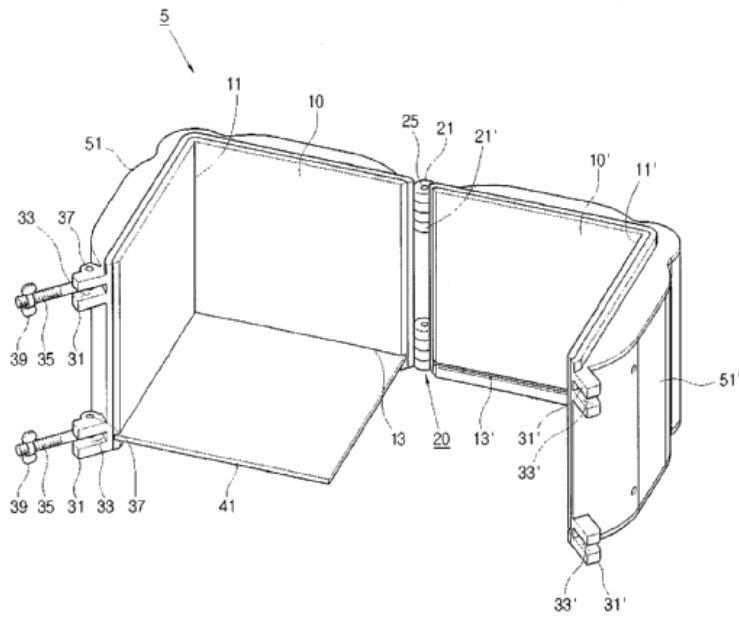
This place covers:

Illustrative example of subject matter classified in this group:

WO 2006/126784

PCT/KR2006/001413

Fig. 2



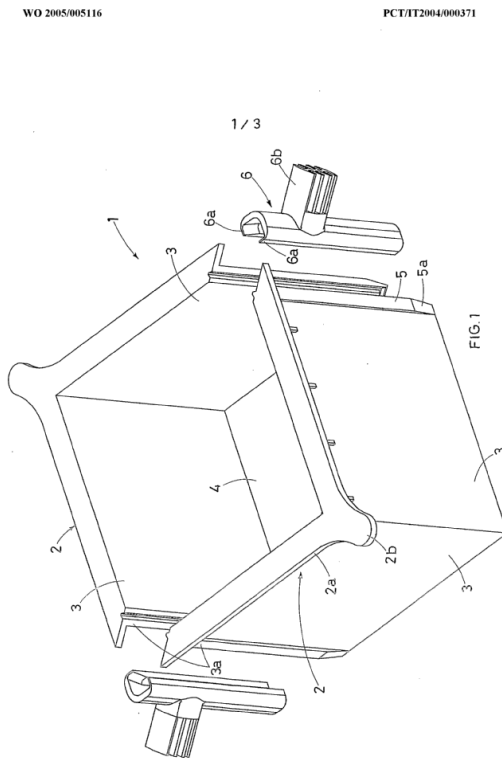
B28B 2007/005

{Fastening means for mould parts, e.g. for attaching mould walls on mould tables; Mould clamps}

Definition statement

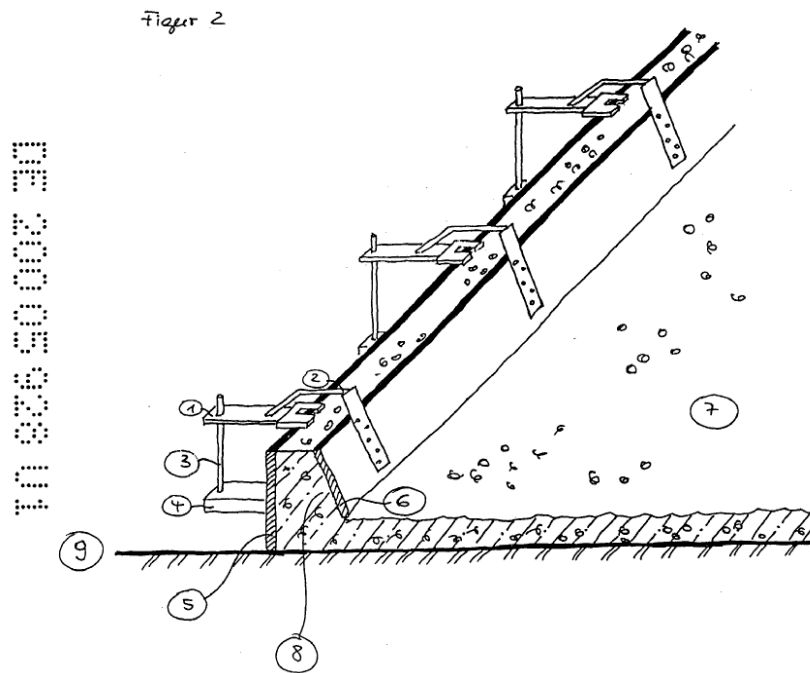
This place covers:

Illustrative example of subject matter classified in this group:



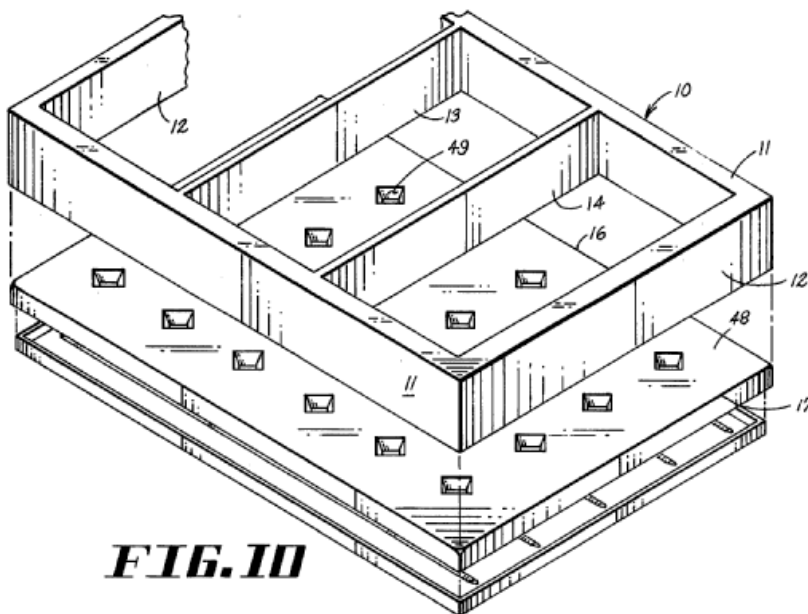
B28B 2007/0052**{for attaching mould walls on mould tables}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group:



B28B 7/0055**{Mould pallets; Mould panels}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group:

U.S. Patent **June 6, 1978** **Sheet 3 of 3** **4,093,174****FIG. 10**

B28B 7/0058

{Moulds, cores or mandrels with provisions concerning the elimination of superfluous material; Moulds with burr-removing means provided therein or carried thereby}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

EP 1 136 212 A1

Fig. 2

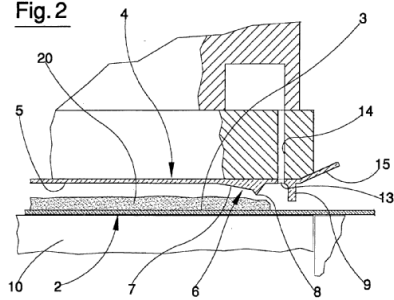
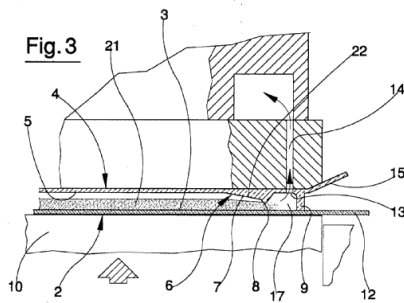


Fig. 3



B28B 7/0061

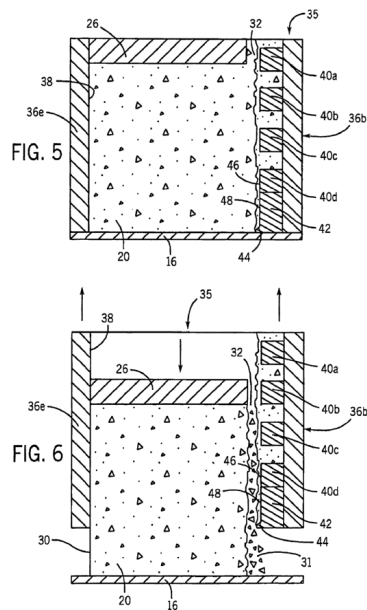
{Moulds, cores or mandrels specially adapted for mechanically working moulding surfaces during moulding or demoulding, e.g. smoothing by means of mould walls driven during moulding or of parts acting during demoulding}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

U.S. Patent Jan. 31, 2006 Sheet 3 of 3 US 6,991,206 B1



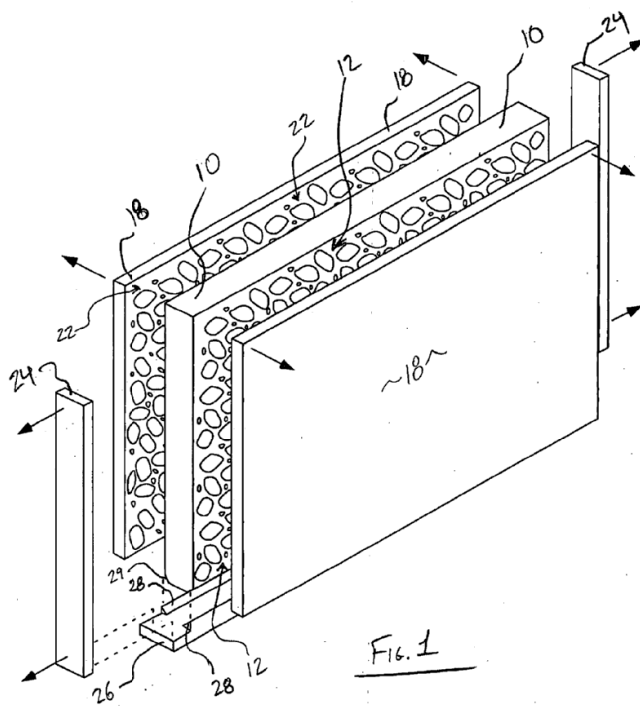
B28B 7/007

{with moulding surfaces simulating natural effects, e.g. wood or stone}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



Patent Application Publication Mar. 31, 2005 Sheet 1 of 6 US 2005/0067551 A1

B28B 7/0073

{with moulding surfaces simulating assembled bricks or blocks with mortar joints ([B28B 7/007](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

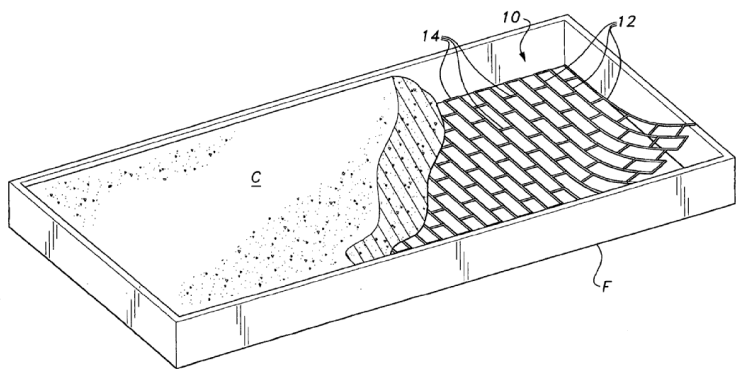


Fig. 1

Patent Application Publication Mar. 10, 2011 Sheet 1 of 9 US 2011/0056165 A1

References

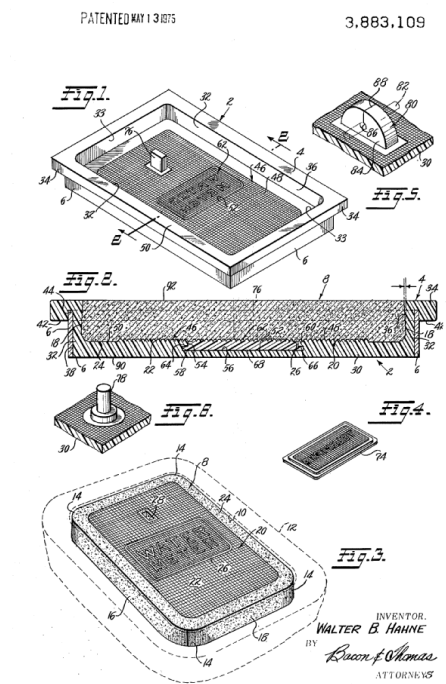
Limiting references

This place does not cover:

With moulding surfaces simulating natural effets	B28B 7/007
--	----------------------------

B28B 7/0076**{with surfaces for moulding letters or marks}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group:



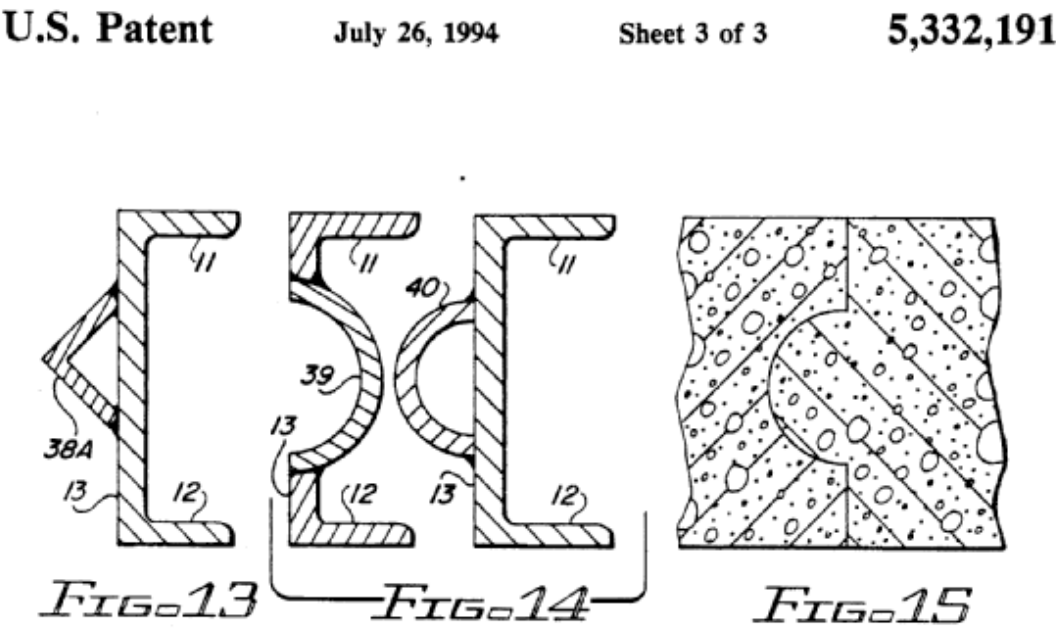
B28B 7/0079

{with surfaces for moulding interlocking means, e.g. grooves and ribs}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



B28B 7/0082

{with surfaces for moulding parallel grooves or ribs ([B28B 7/0073](#), [B28B 7/0079](#) takes precedence)}

References

Limiting references

This place does not cover:

With moulding surfaces simulating assembled bricks or blocks with mortar joints	B28B 7/0073
With surfaces for moulding interlocking means	B28B 7/0079

B28B 7/0085**{with surfaces for moulding chamfers}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group:

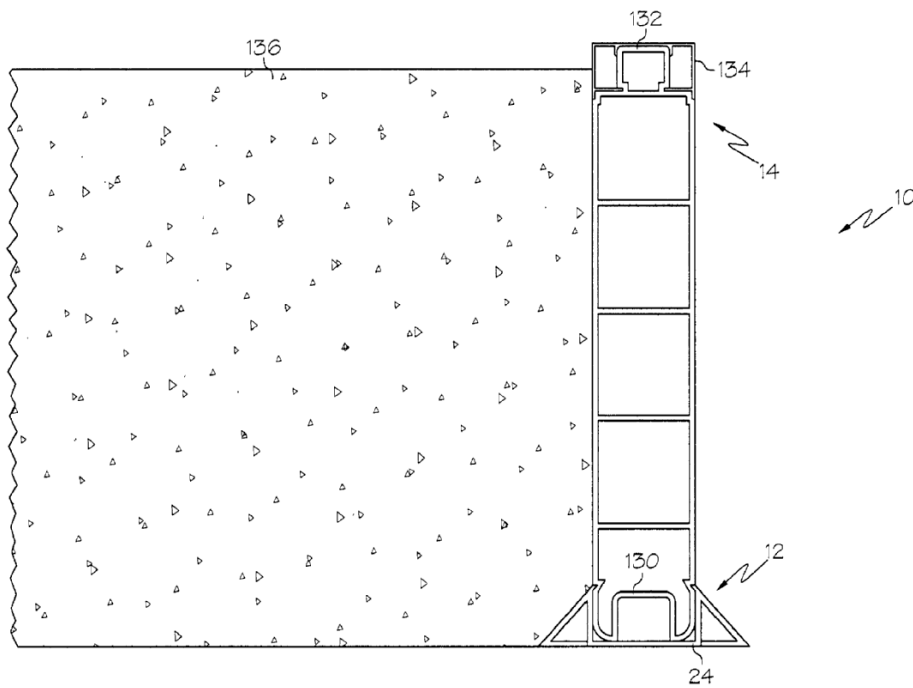


FIG. 29

B28B 7/0088

{Moulds in which at least one surface of the moulded article serves as mould surface, e.g. moulding articles on or against a previously shaped article, between previously shaped articles}

Definition statement

This place covers:

Wherein the surface of the moulded article which serves as a mould surface either becomes part of the final product or the two or more cast articles are separated from each other e.g. flat concrete panel which serves as a moulding surface for the next flat concrete panel to be cast.

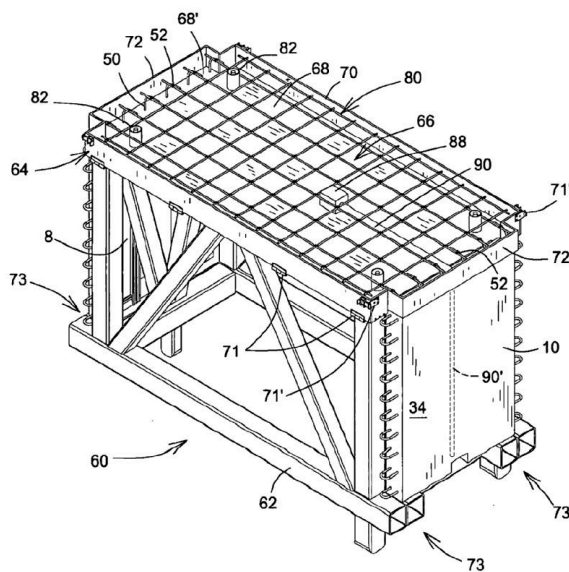


FIG. 7

Patent Application Publication Feb. 3, 2011 Sheet 4 of 5 US 2011/0023383 A1

B28B 7/0091

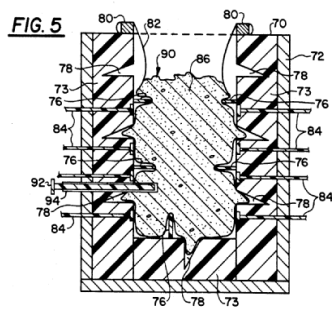
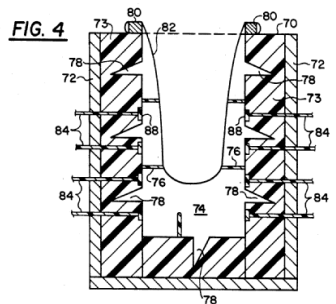
{Transformable moulds allowing the change of shape of an initial moulded preform by preform deformation or the change of its size by moulding on the preform}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

U.S. Patent May 25, 1993 Sheet 2 of 4 5,213,732



B28B 7/0097**{Press moulds; Press-mould and press-ram assemblies}****Definition statement***This place covers:*

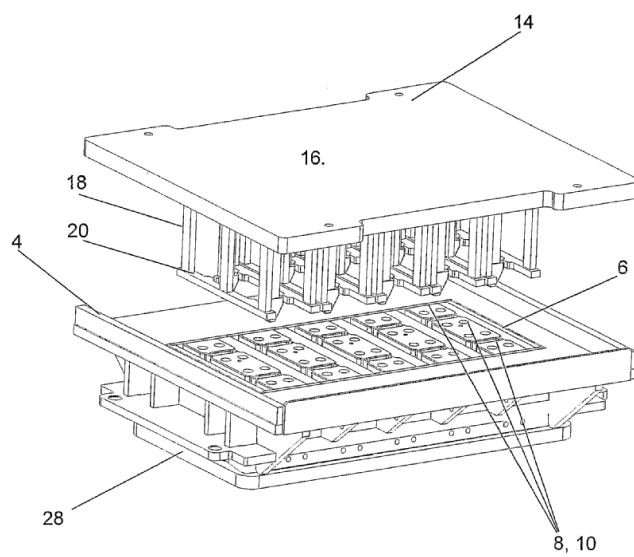
Illustrative example of subject matter classified in this group:

WO 2004/071732

PCT/DK2004/000099

1/7

Fig. 1



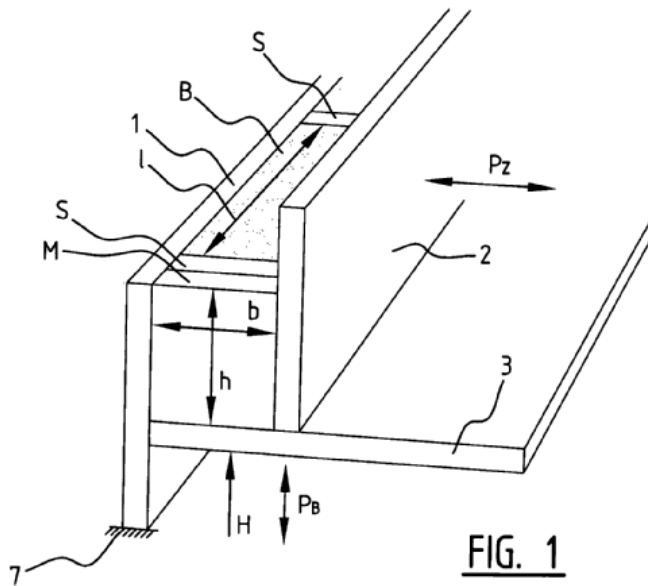
B28B 7/02

Moulds with adjustable parts {specially for modifying at will the dimensions or form of the moulded article}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



-18-

BE-2008/0602

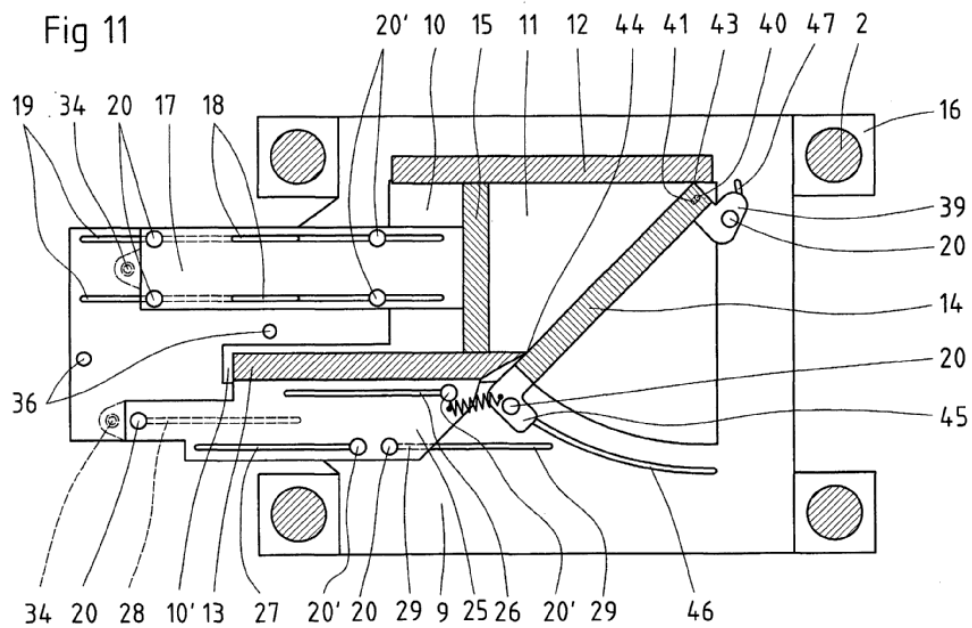
B28B 7/04

one or more of the parts being pivotally mounted

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



Numer:
Int. Cl. 7:
Offenlegungstag:
DE 198 41 065 A1
B 28 B 7/02
16. März 2000

B28B 7/06

Moulds with flexible parts

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

EP 1 935 597 A1

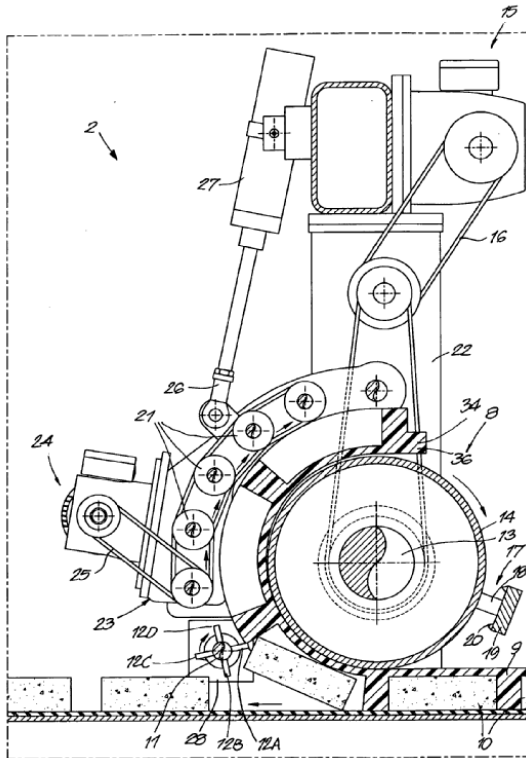


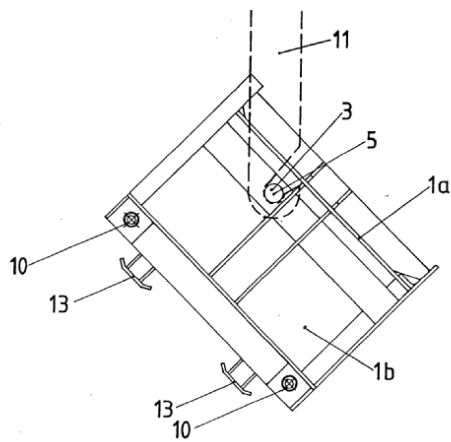
Fig.3

B28B 7/08**Moulds provided with means for tilting or inverting****Definition statement**

This place covers:

Illustrative example of subject matter classified in this group:

DE 20 2006 015 274 U1 2007.01.25



B28B 7/082

{Tilttable moulding tables or similar moulding surfaces (specially for casting and erecting walls or parts thereof during construction work [E04G 11/32](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

EP 1 555 098 A2

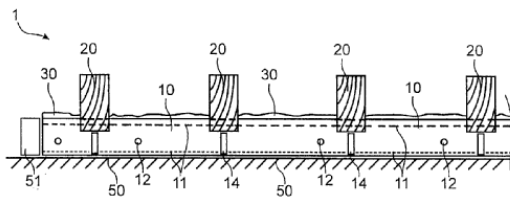


Fig. 1

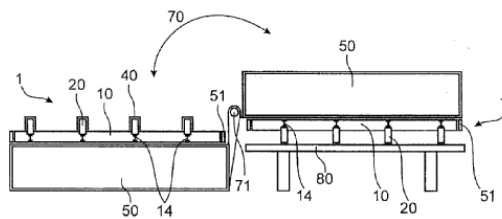
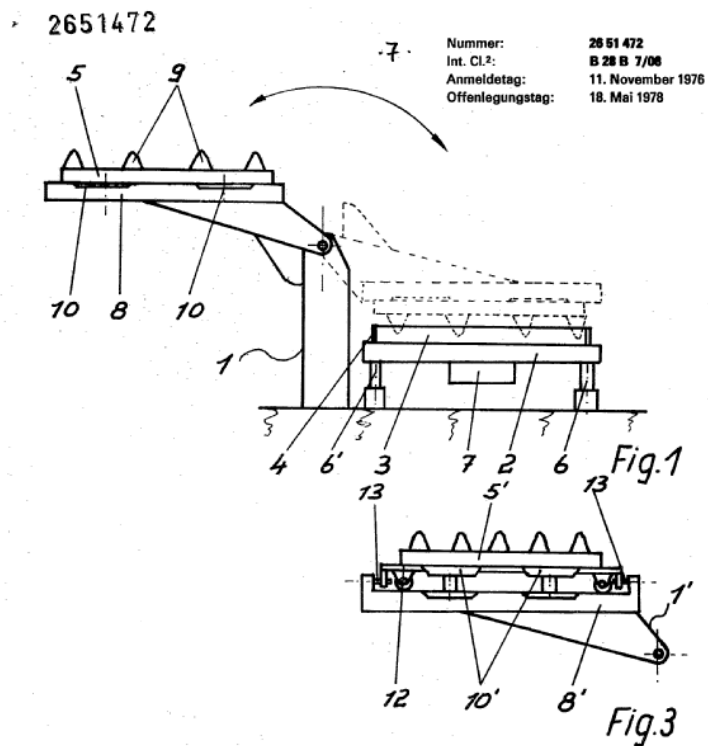


Fig. 2

B28B 7/085**{for making double wall panels}****Definition statement***This place covers:*

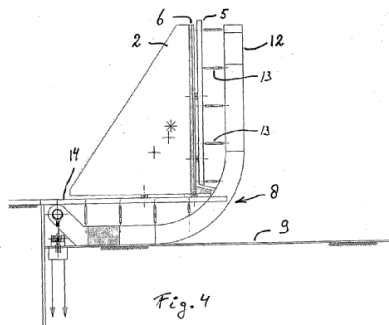
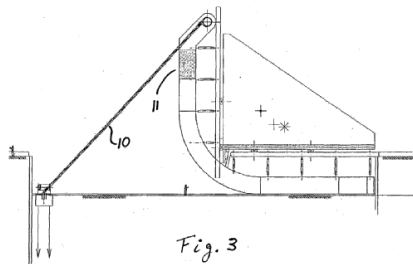
Illustrative example of subject matter classified in this group:



B28B 7/087**{using rocker or rolling means}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group:

EP 1 398 129 A2



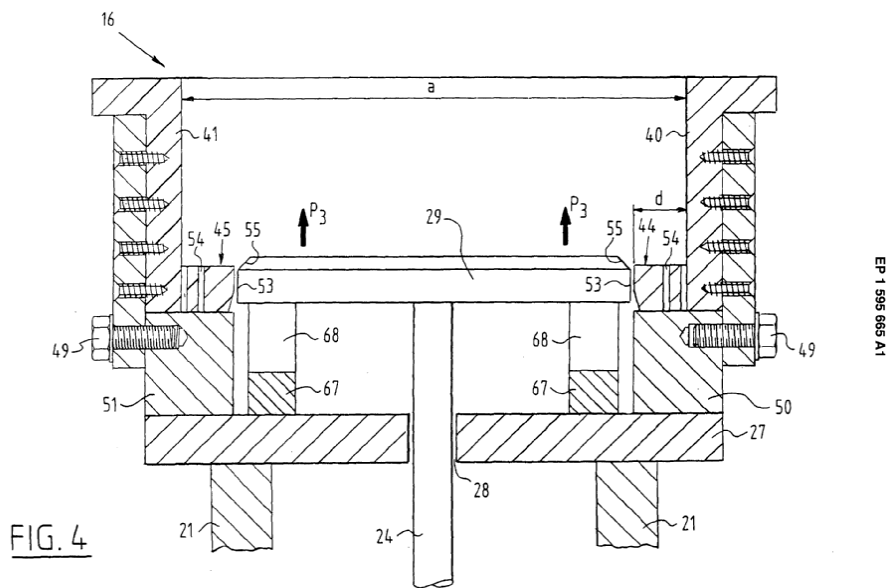
B28B 7/10

Moulds with means incorporated therein, or carried thereby, for ejecting {or detaching} the moulded article ({flexible moulds bent open for ejecting [B28B 7/06](#); ejecting by tilting or inverting the mould [B28B 7/08](#); } devices, not forming part of the mould, for ejecting the moulded article [B28B 13/06](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



B28B 7/12

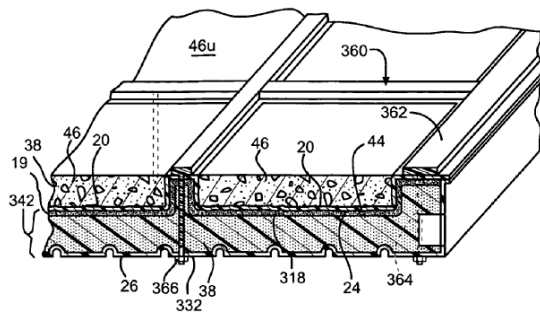
by fluid pressure {, e.g. acting through flexible wall parts or linings of the moulds}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

Patent Application Publication Jun. 7, 2007 Sheet 4 of 7 US 2007/0126155 A1



—FIG. 2

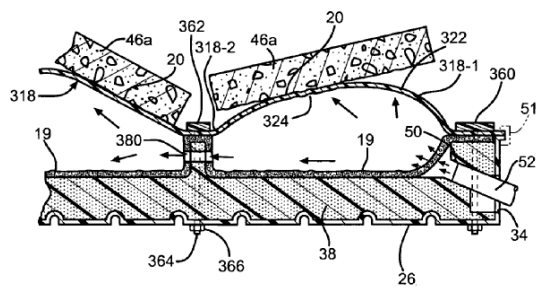


FIG. 3

B28B 7/14

Moulds with means incorporated therein, or carried thereby, for cutting the moulded article into parts ({for expanded material [B28B 1/506](#); } cutting means independent of the mould [B28B 11/14](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

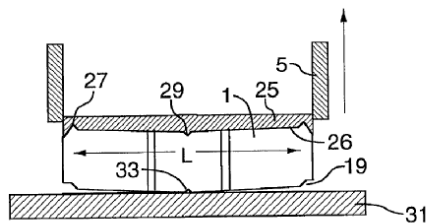


FIG. 5A

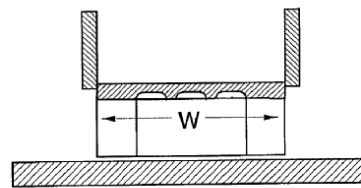


FIG. 5B

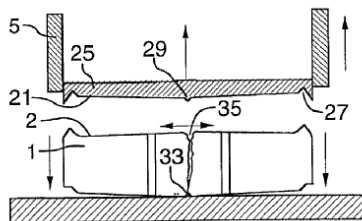


FIG. 6A

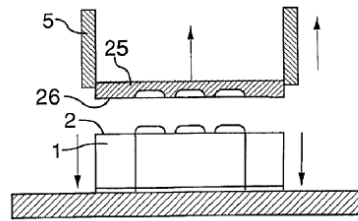


FIG. 6B

Nov. 1, 2001 Sheet 3 of 4 US 2001/0034980 A1

B28B 7/16

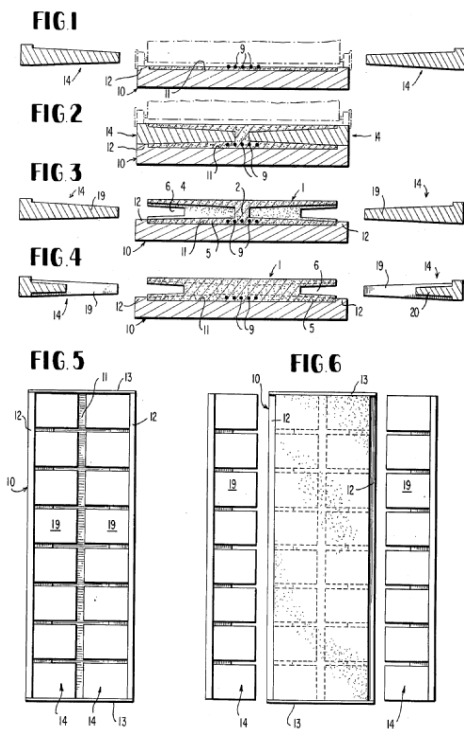
Moulds for making shaped articles with cavities or holes open to the surface {, e.g. with blind holes}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

U.S. Patent May 17, 1977 Sheet 1 of 5 4,023,769



B28B 7/162**{for building blocks or similar block-shaped articles}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group:

Fig.1

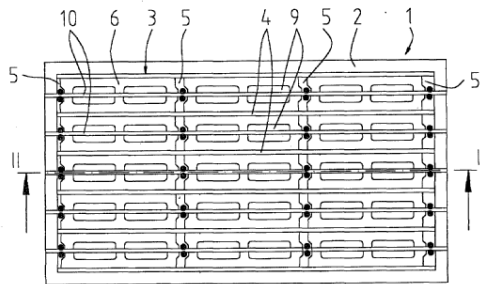
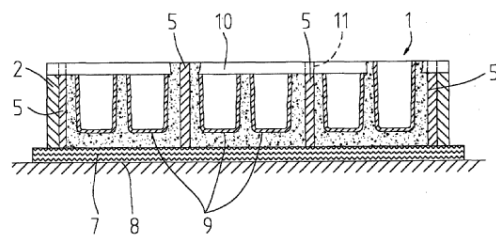


Fig.2

**B28B 7/164****{for plates, panels, or similar sheet- or disc-shaped articles}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group:

Patent Application Publication Jun. 24, 2004 Sheet 3 of 3 US 2004/0118070 A1

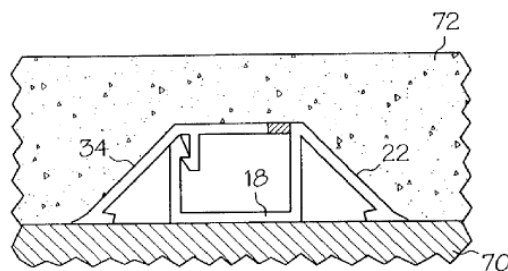


FIG. 4

B28B 7/166

{for oblong articles, e.g. hollow masts}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

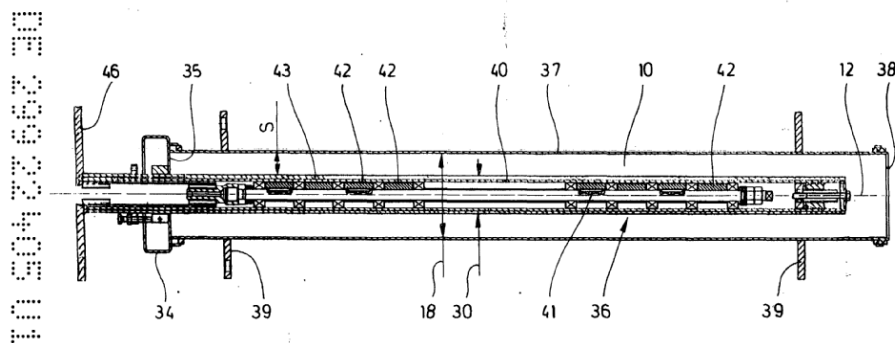


Fig. 5

B28B 7/168

{for holders or similar hollow articles, e.g. vaults, sewer pits}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

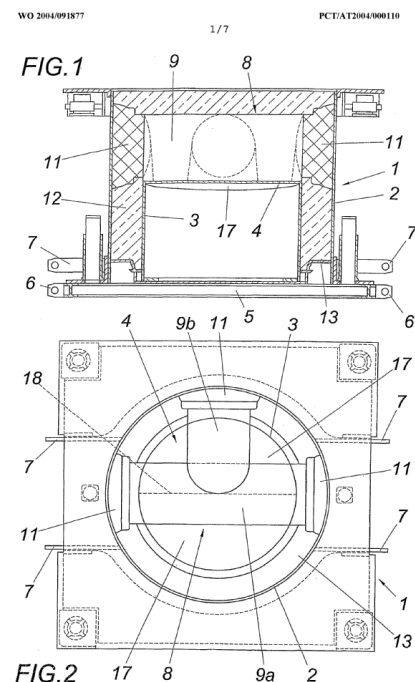


FIG. 2

B28B 7/18

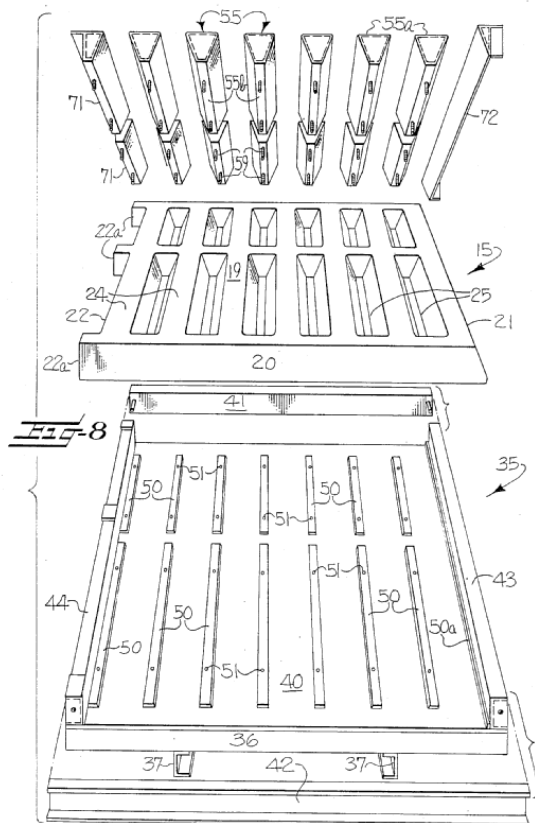
the holes passing completely through the article

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

U.S. Patent Jan. 1, 1991 Sheet 3 of 4 4,981,428



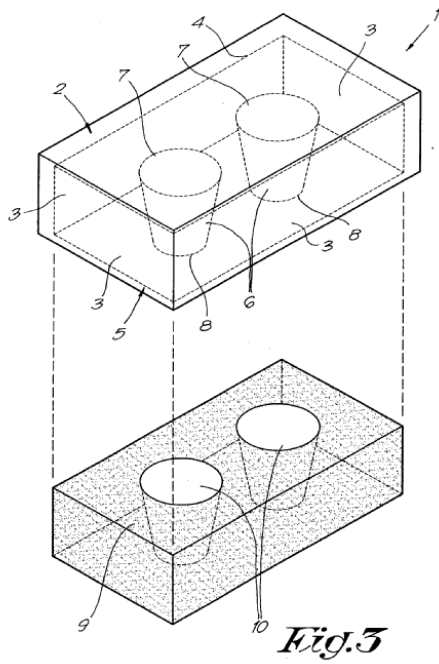
B28B 7/183

{for building blocks or similar block-shaped objects}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



B28B 7/186

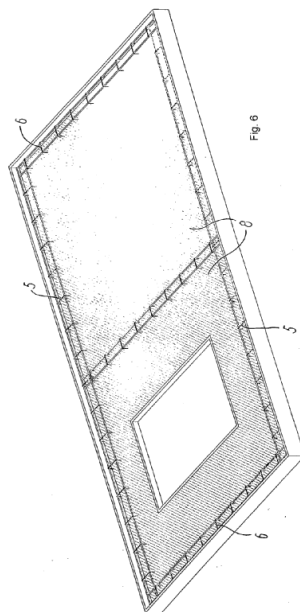
{for plates, panels or similar sheet- or disc-shaped objects, also flat oblong moulded articles with lateral openings, e.g. panels with openings for doors or windows, grated girders}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

EP 2 224 071 A2



B28B 7/20

Moulds for making shaped articles with undercut recesses, e.g. dovetails

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

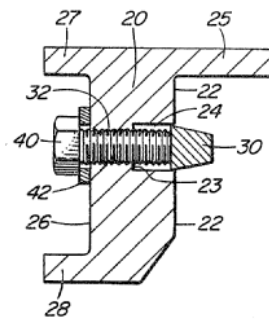


FIG. 4

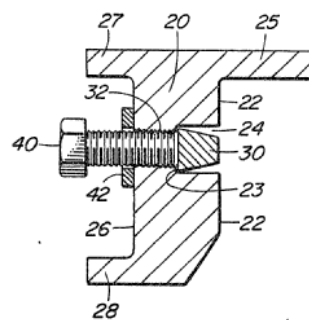


FIG. 5

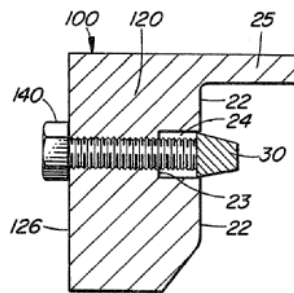


FIG. 6

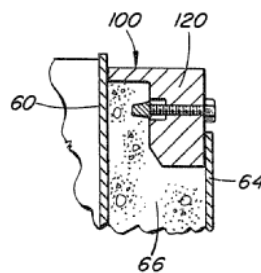


FIG. 7

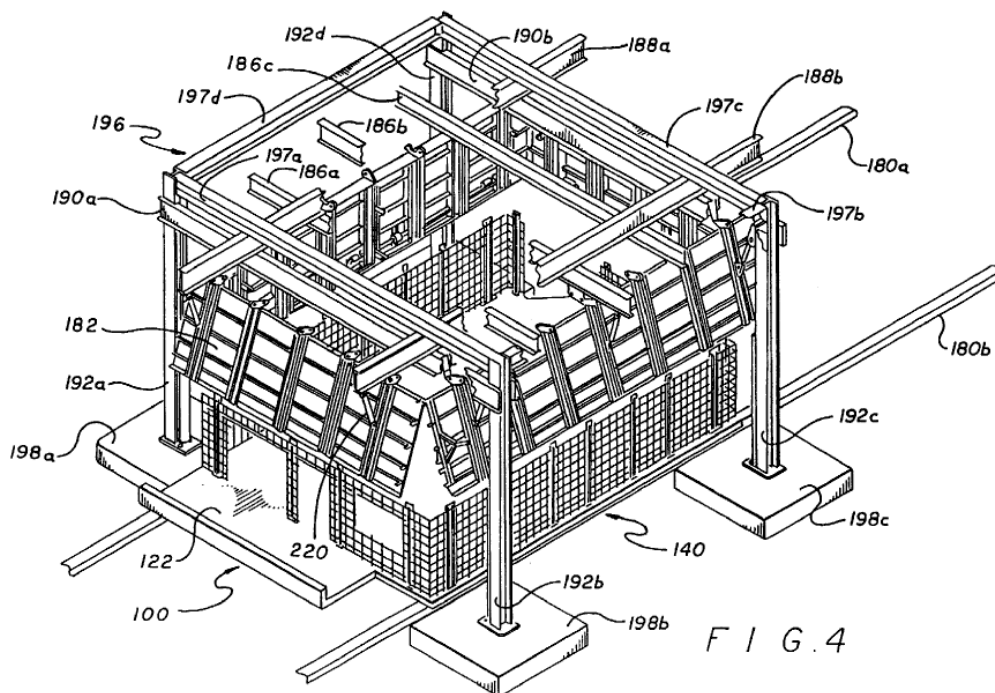
B28B 7/22

Moulds for making units for prefabricated buildings {, i.e. units each comprising an important section of at least two limiting planes of a room or space, e.g. cells (for making rooms or entire buildings in situ [E04G 11/02](#))};
Moulds for making prefabricated stair units

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



U.S. Patent

Mar. 17, 1998

Sheet 4 of 19

5,728,334

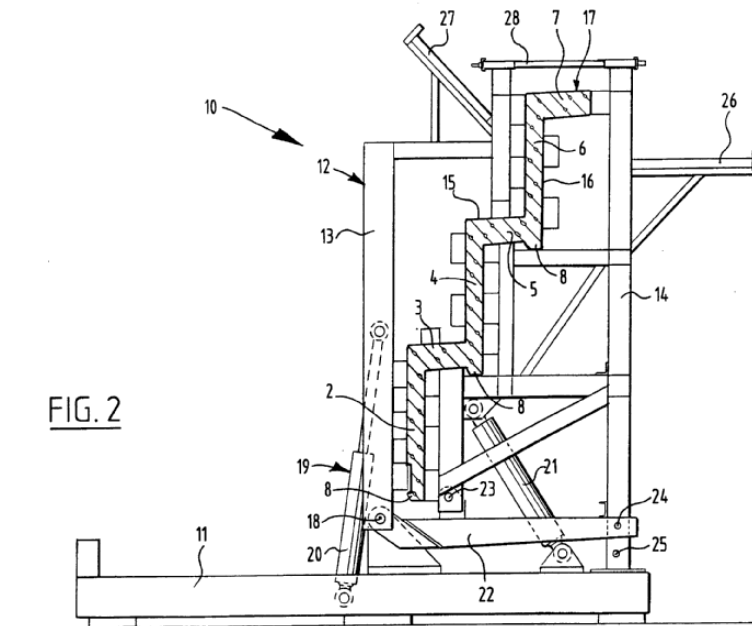
B28B 7/225

{for making stairs or stair units comprising more than one step (in situ E04G 13/06)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



EP 0 628 389 A1

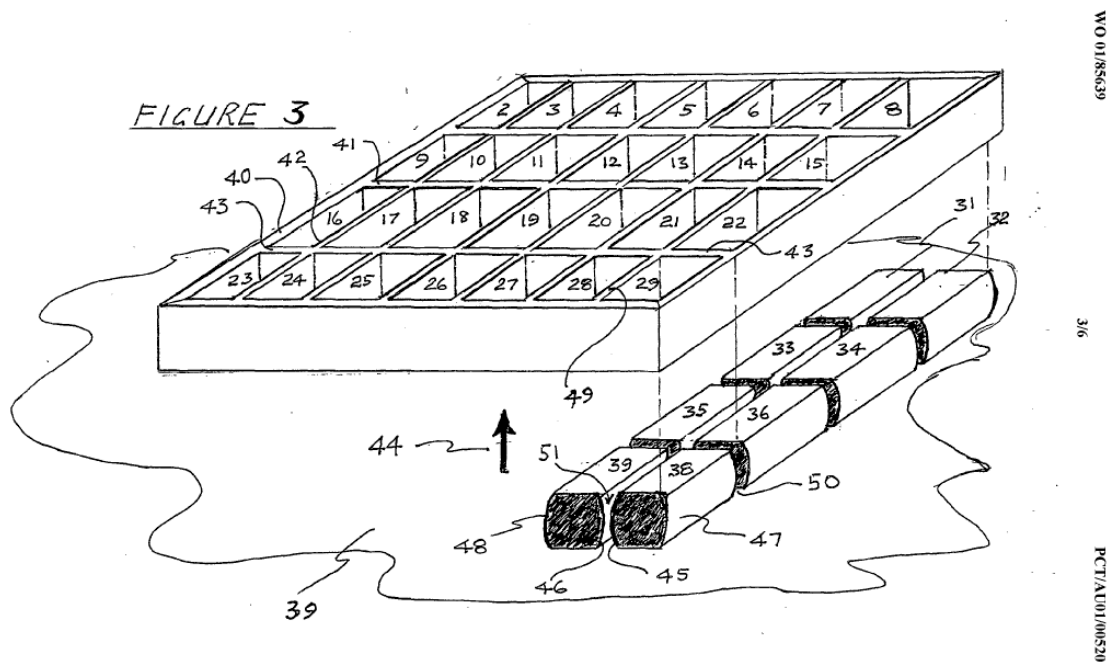
B28B 7/24

Unitary mould structures with a plurality of moulding spaces {, e.g. moulds divided into multiple moulding spaces by integratable partitions, mould part structures providing a number of moulding spaces in mutual co-operation (assemblies of individually complete moulds [B28B 7/26](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



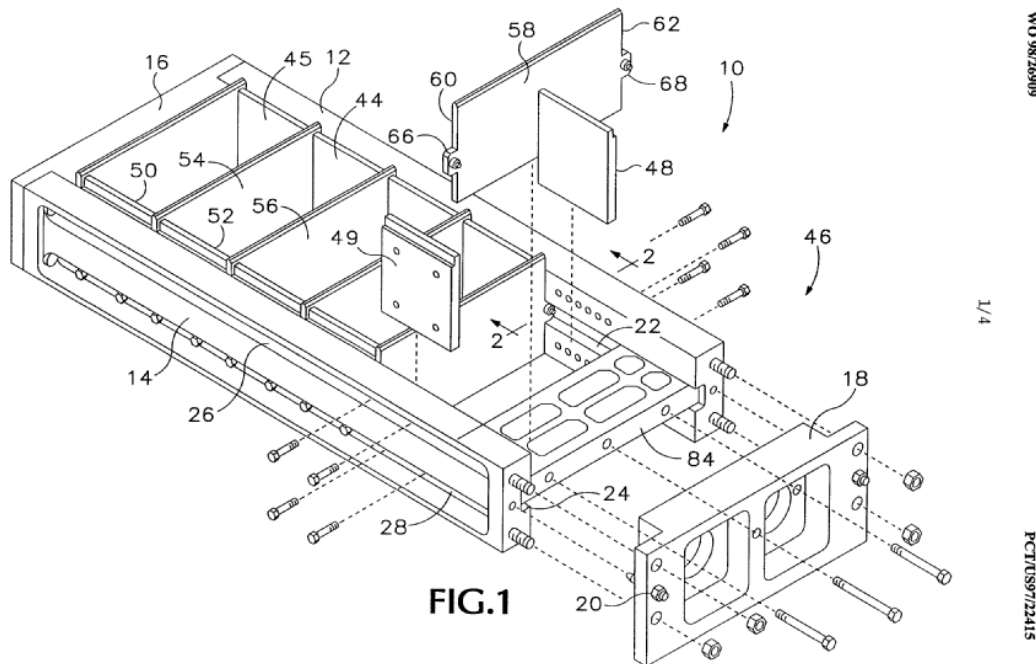
B28B 7/241

{Detachable assemblies of mould parts providing only in mutual co-operation a number of complete moulding spaces}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



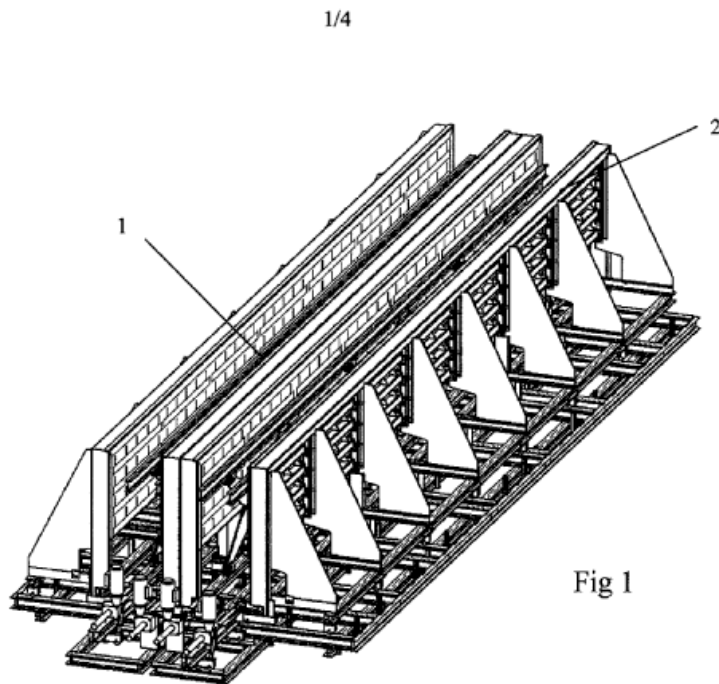
B28B 7/243

{for making plates, panels or similar sheet- or disc-shaped objects}

Definition statement

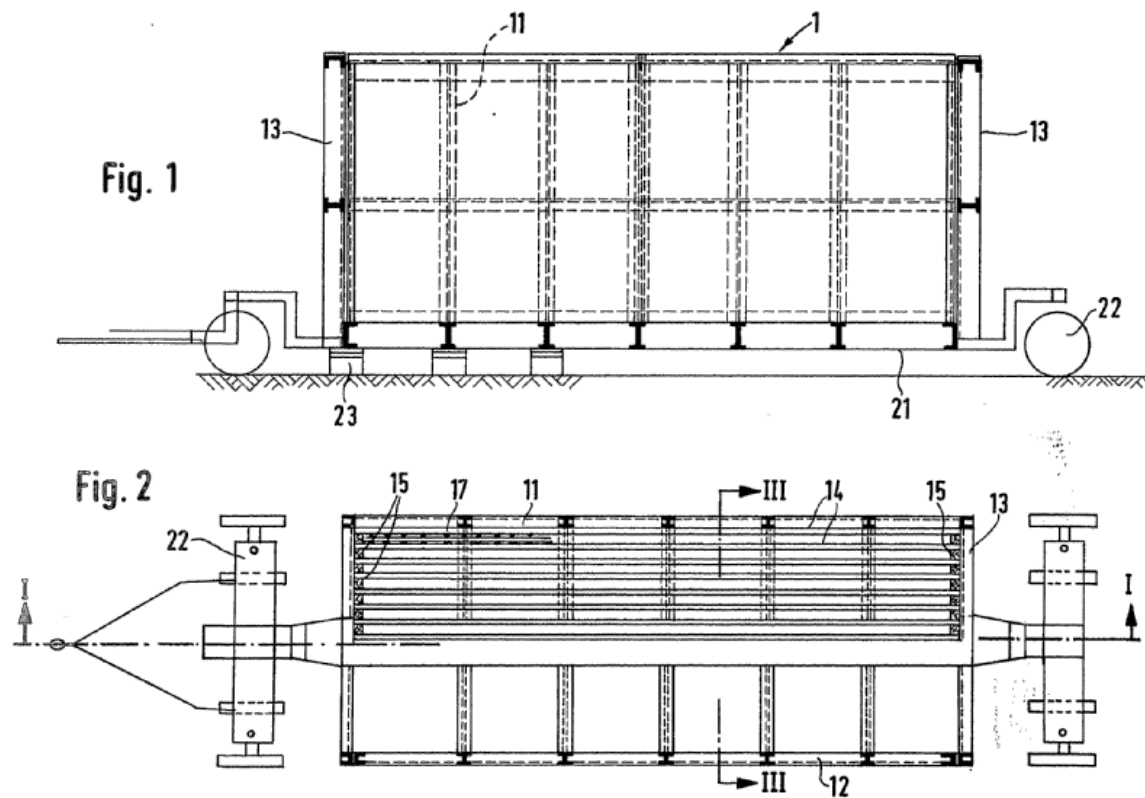
This place covers:

Illustrative example of subject matter classified in this group:



B28B 7/245**{using transportable mould batteries}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group:



B28B 7/246

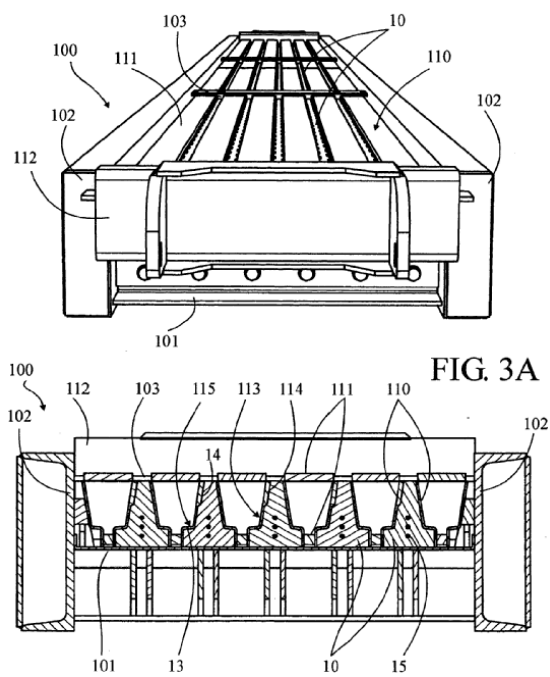
{for making oblong objects, e.g. girders}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

EP 1 918 081 A1



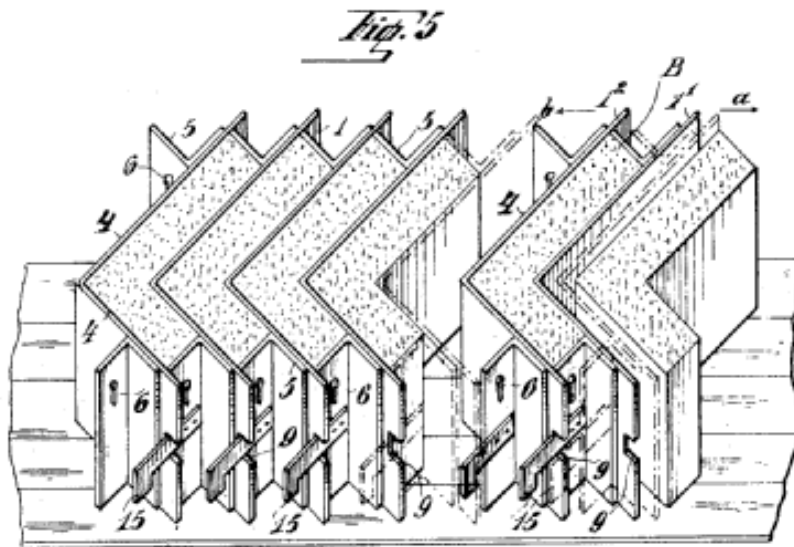
B28B 7/248

{using angle-shaped mould parts, e.g. L-parts}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



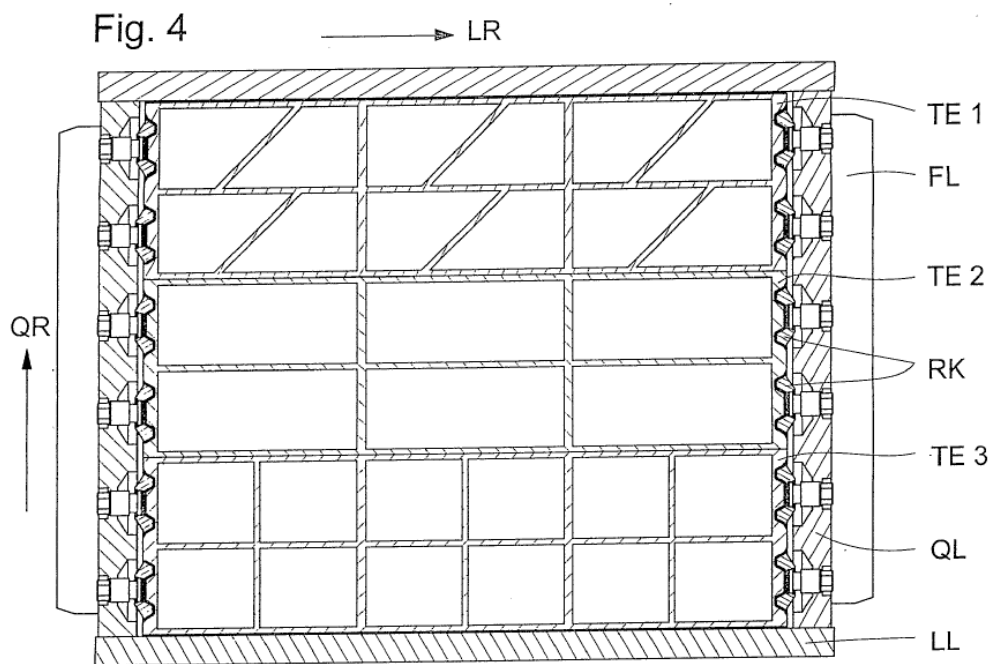
B28B 7/26

Assemblies of separate moulds {, i.e. of moulds or moulding space units, each forming a complete mould or moulding space unit independently from each other}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



WO 2004/01217

3/9

PCT/EP2003/008113

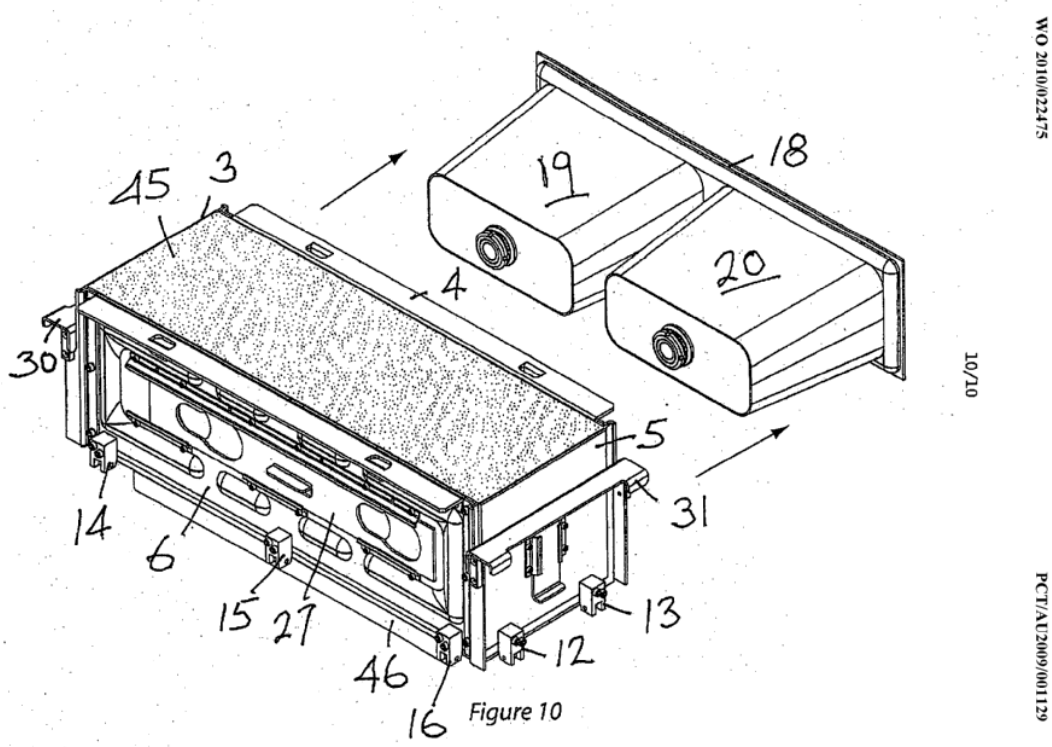
B28B 7/28

Cores; Mandrels {(B28B 1/44 takes precedence; of special materials in general B28B 7/34; cores for making blind holes in situ E04G 15/04; for making recesses E04G 15/06)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



References

Limiting references

This place does not cover:

By forcing cores into filled moulds for forming hollow articles	B28B 1/44
Embedding lost cores, see	B28B 23/0068

Informative references

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

Of special materials in general	B28B 7/34
---------------------------------	---------------------------

B28B 7/30

adjustable, collapsible, or expanding {(for making tubular objects [B28B 21/88](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

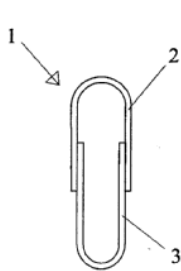


Fig. 1A

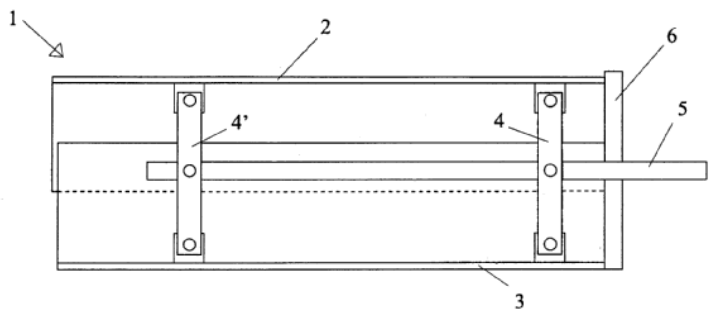


Fig. 1B

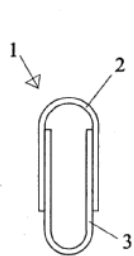


Fig. 2A

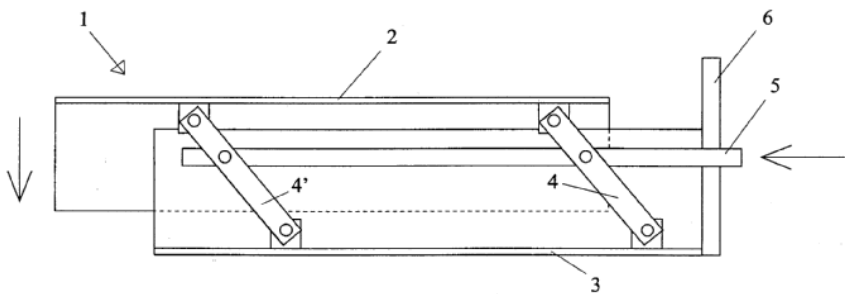


Fig. 2B

WO 2006/072664

1/3

PCT/EP2006/050004

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:

Adjustable, collapsible or expansible cores for the production of tubular articles	B28B 21/88
--	----------------------------

B28B 7/303

{specially for making undercut recesses or continuous cavities the inner section of which is superior to the section of either of the mouths}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

Fig 22

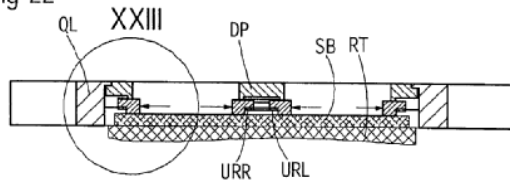


FIG 23

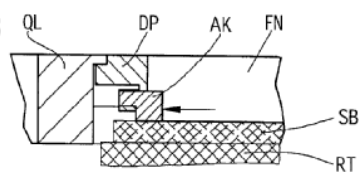


Fig 24

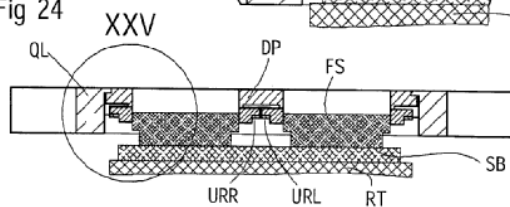
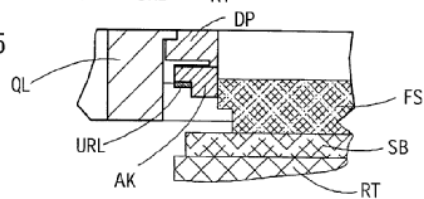


Fig 25



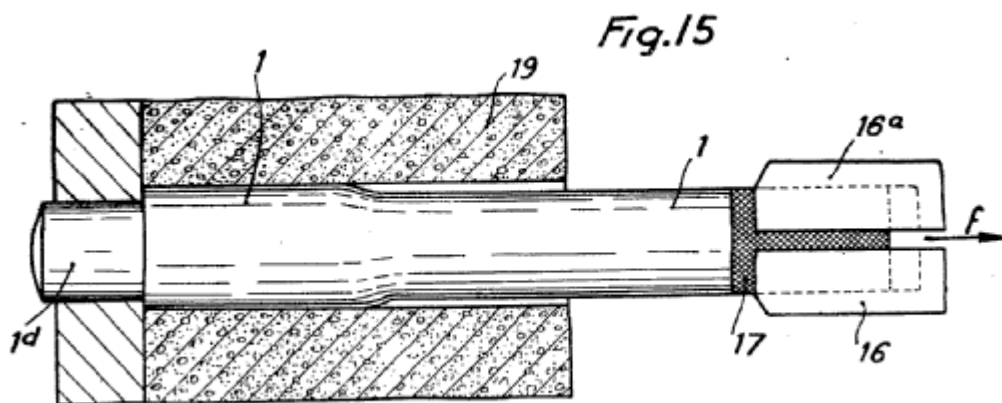
B28B 7/306

{pliable or extensible}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



B28B 7/366

{Replaceable lining plates for press mould}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

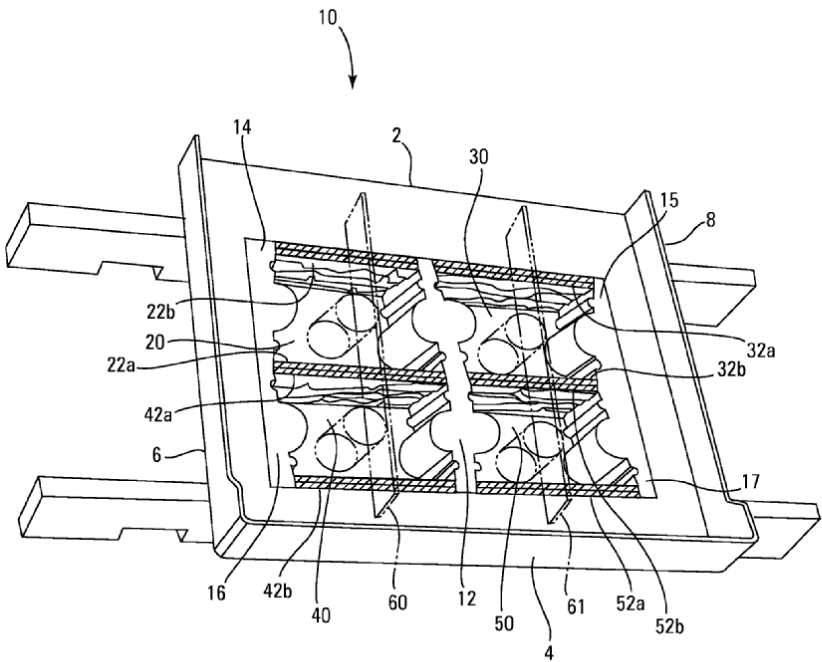


FIG. 1

Patent Application Publication Dec. 18, 2008 Sheet 1 of 11 US 2008/0307740 A1

B28B 7/388

{with liquid material, e.g. lubricating}

References

Limiting references

This place does not cover:

Specially for making moulded articles from concrete with exposed aggregate.	B28B 7/342
---	----------------------------

B28B 7/40

characterised by means for modifying the properties of the moulding material

Definition statement

This place covers:

The properties of the moulding material are modified while the article is still in contact with the mould, core, mandrel.

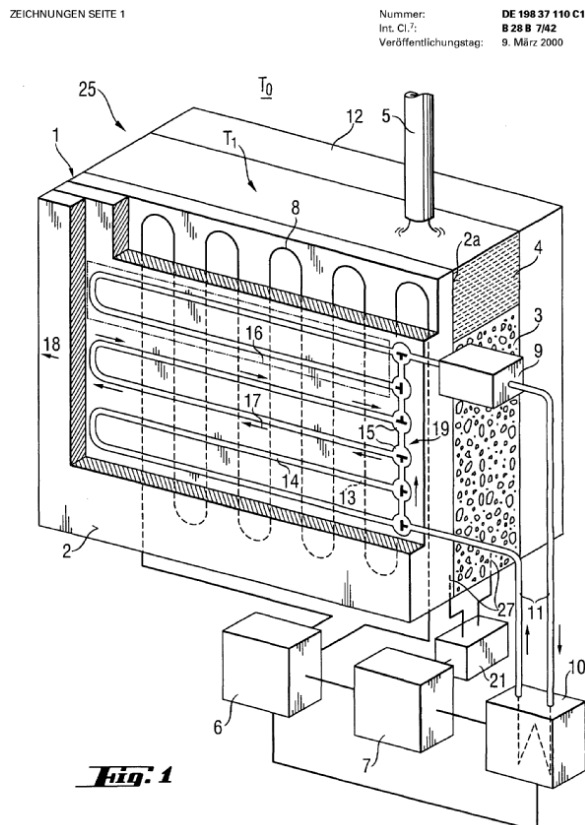
B28B 7/42

for heating or cooling, e.g. steam jackets {, by means of treating agents acting directly on the moulding material}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



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:

Moulds with heating or cooling means for the production of tubular articles	B28B 21/78
---	----------------------------

B28B 7/44

for treating with gases or degassing, e.g. for de-aerating {(treating with hot gases or vapour [B28B 7/42](#))}

References**Informative references**

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

For chemical aspects of treating with gasses, for example treatment of concrete with CO ₂ -gas.
--

C04B

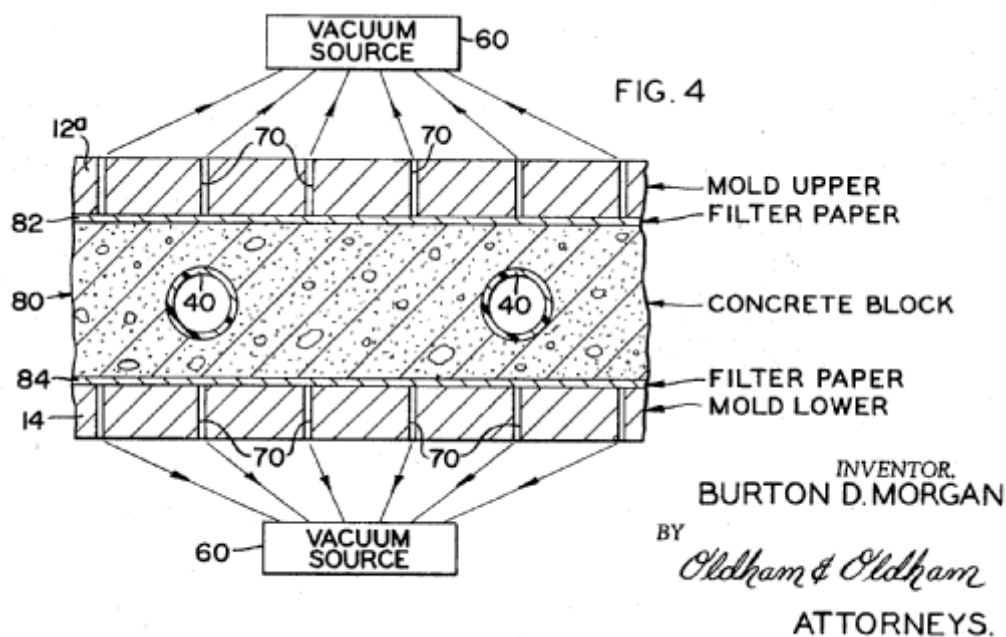
B28B 7/46

for humidifying or dehumidifying

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



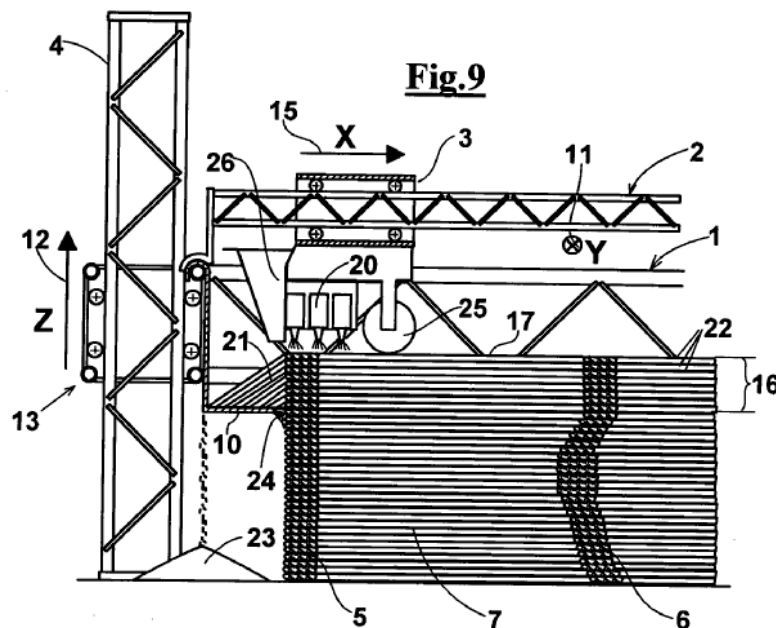
B28B 7/465**{Applying setting liquid to dry mixtures}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group:

WO 2009/037550

PCT/IB2008/002425

4/10

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

Rapid manufacturing and prototyping of 3D objects by using a combination of solid and liquid materials	B29C 64/165
--	-----------------------------

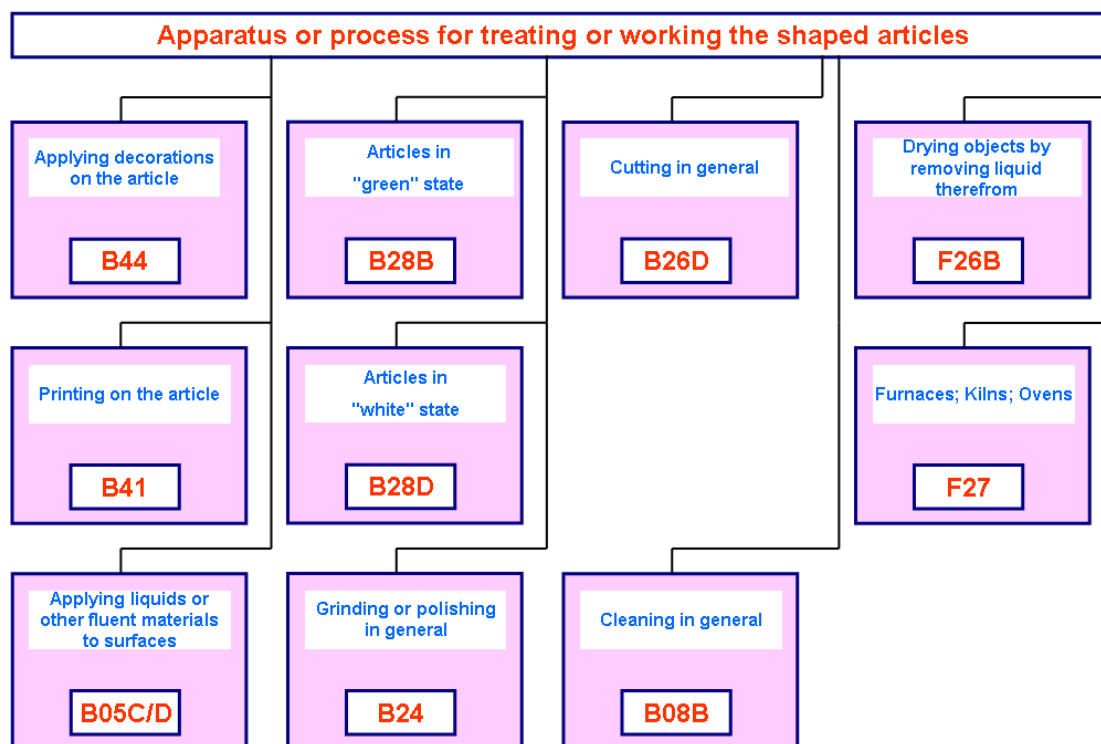
B28B 11/00

Apparatus or processes for treating or working the shaped {or preshaped} articles (specially adapted for tubular articles [B28B 21/92](#); decoration or surface treatment in general [B05](#), [B44](#); compacting concrete in situ in connection with building [E04G 21/06](#); drying [F26](#))

Definition statement*This place covers:*

The shaped articles being treated or worked are still in a green state.

Relationships with other classification places



The preceding image includes references to [B44](#), [B28B](#), [B26D](#), [F26B](#), [B41](#), [B28D](#), [F27](#), [B05C](#), [B05D](#), [B24](#), [B08B](#).

References

Limiting references

This place does not cover:

Places excluded by precedence rules:

[B28D](#) working stone or stone like materials

Informative references

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

Grinding; Polishing	B24
Decoration or surface treatment in general	B44 , B05
Drying	F26
Furnaces; Kilns; Ovens; Retorts	F27

B28B 11/003

{the shaping of preshaped articles, e.g. by bending ([B28B 11/08](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

WO 2006/094759

PCT/EP2006/002079

1/5

FIG.1

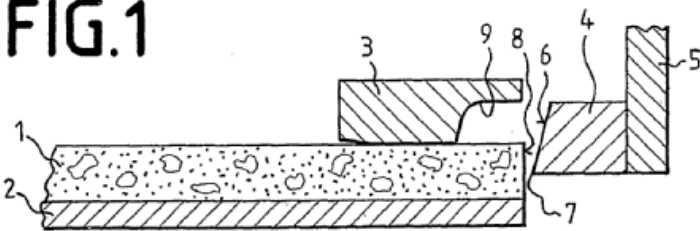
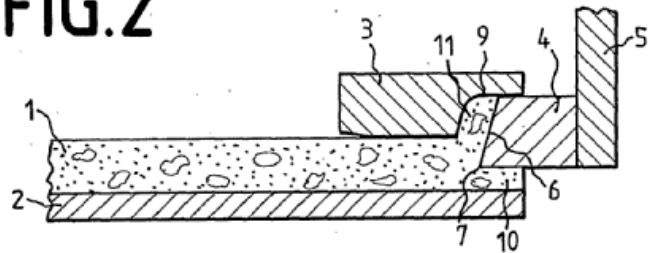


FIG.2



References

Limiting references

This place does not cover:

For reshaping the surface	B28B 11/08
---------------------------	----------------------------

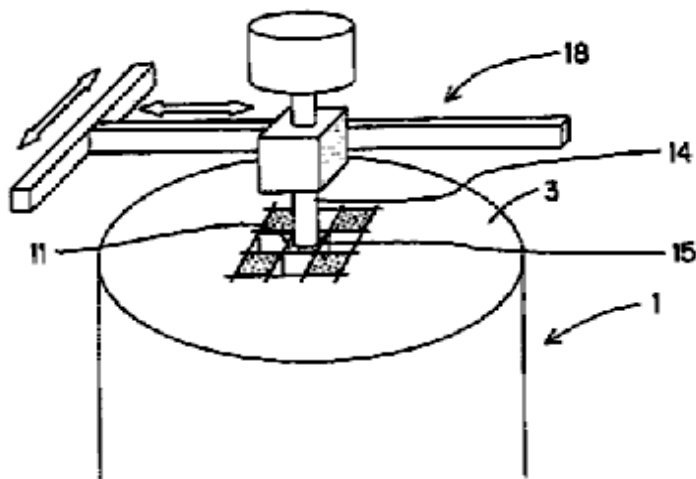
Application-oriented references

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:

Methods or apparatus for reshaping tubular articles	B28B 21/98
---	----------------------------

B28B 11/006**{Making hollow articles or partly closed articles}****Definition statement***This place covers:*

Plugging ceramic honeycomb filters.

(1 0)**特開2006-116483(P2006-116483A)****【図2】**

Definition statement

and other techniques

EP 0 338 651 A1

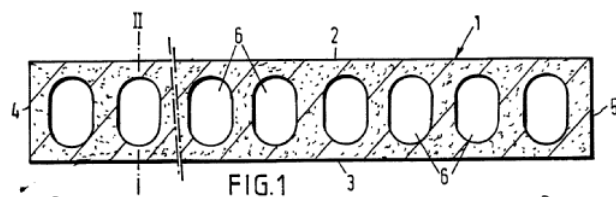


FIG. 1

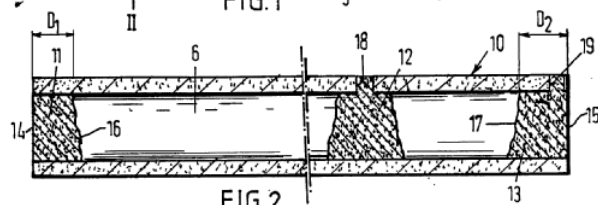


FIG. 2

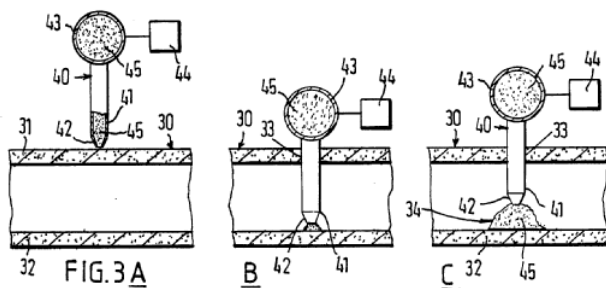


FIG. 3 A

B

C

References

Informative references

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

Honeycombs characterised by the plugs

B01D 46/2422

B28B 11/02

for attaching appendages, e.g. handles, spouts

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

EP 0 371 589 A1

FIG. 6 (a)

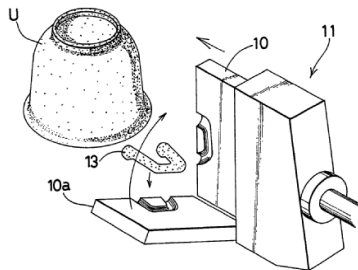
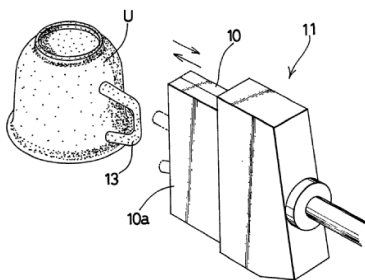


FIG. 6 (b)

**B28B 11/04**

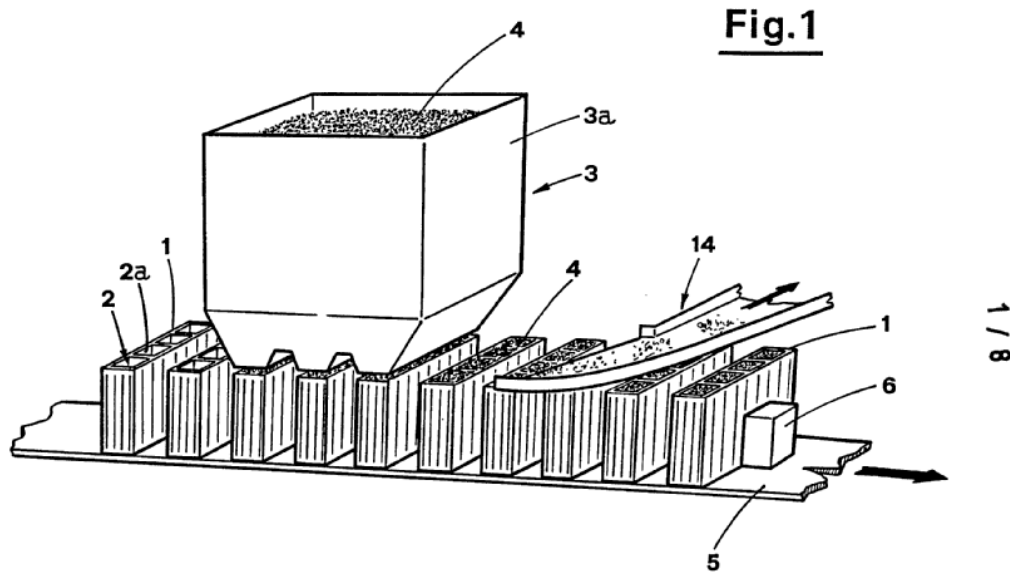
for coating {or applying engobing layers} (glazing, engobing [C04B](#))

Relationships with other classification places

In case the coating has a decorative purpose classify also in: [B28B 11/001](#)

B28B 11/042**{with insulating material}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group:



W/O 90/11419

PCT/IT90/00032

1 / 8

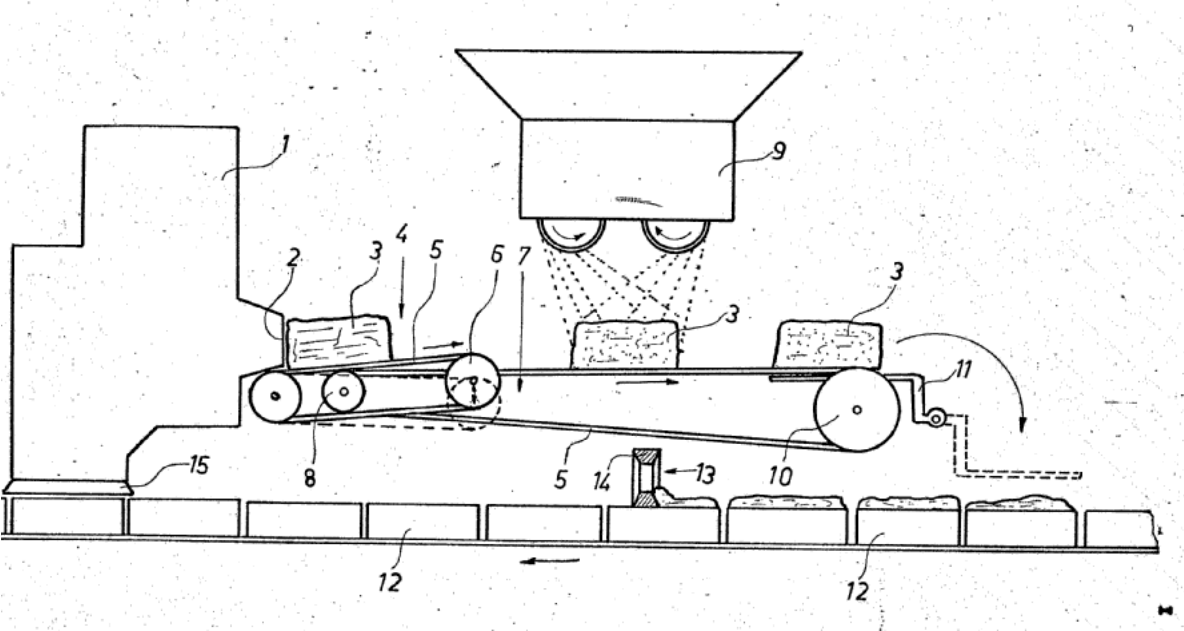
B28B 11/06

with powdered or granular material {, e.g. sanding of shaped articles}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



B28B 11/08

for reshaping the surface, e.g. smoothing, roughening, corrugating, making screw-threads

Definition statement

This place covers:

Working the surface of a formed green article or intermediate product which can still be (partly) in the mould or which has been demoulded,

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:

Methods or apparatus for smoothing, roughening, corrugating of tubular articles	B28B 21/96
---	----------------------------

Informative references

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

General field for grinding and polishing	B24
--	---------------------

B28B 11/0863

{for profiling, e.g. making grooves}

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:

Profiling of plates such as asbestos cement sheets	B28B 11/0827
--	------------------------------

B28B 11/12

for removing parts of the articles by cutting

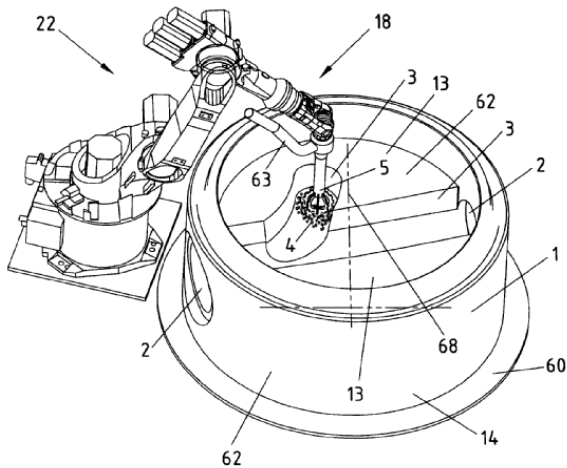
Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

EP 2 230 058 A2

Fig.1



References

Limiting references

This place does not cover:

By removing material from solid section preforms for forming hollow articles, e.g. by punching or boring	B28B 1/48
--	---------------------------

Informative references

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

Cutting; details common to machines for severing	B26D
--	----------------------

B28B 11/125

{Cutting-off protruding ridges, also profiled cutting}

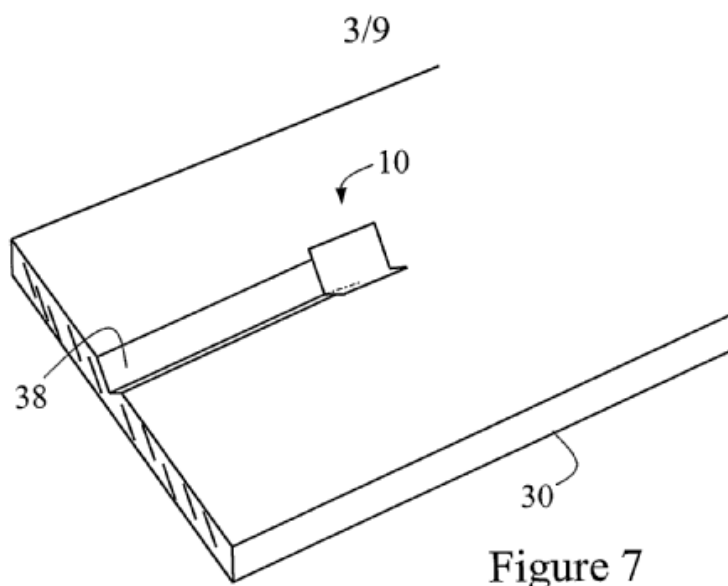
Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

WO 2005/011937

PCT/AU2004/000945

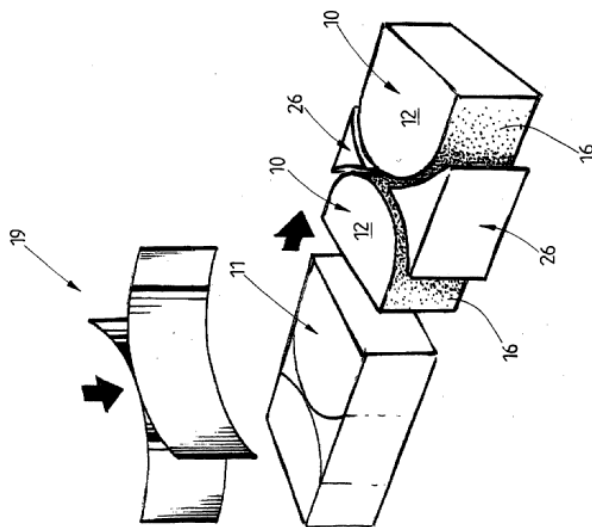


B28B 11/14**for dividing shaped articles by cutting****Definition statement**

This place covers:

Dividing a pre-form by a cutting action in two or more products.

DE 10 2006 022 267 A1 2007.11.15

**References****Informative references**

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

Separating article from each other per se	B28B 17/0018
---	------------------------------

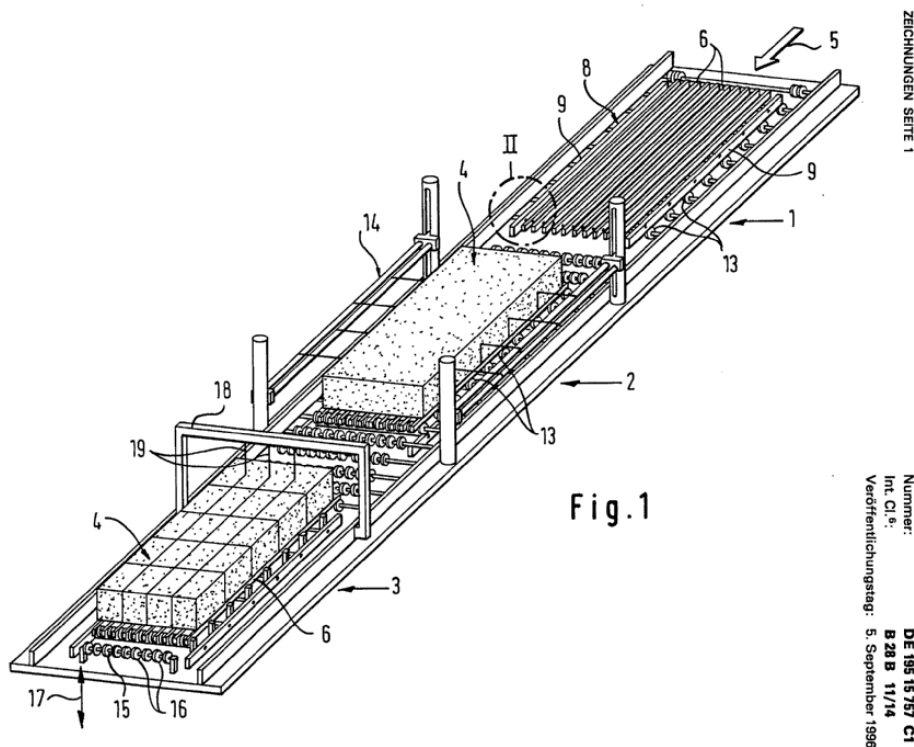
B28B 11/145

{for dividing block-shaped bodies of expanded materials, e.g. cellular concrete}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



B28B 11/16

for extrusion {or for materials supplied in long webs}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

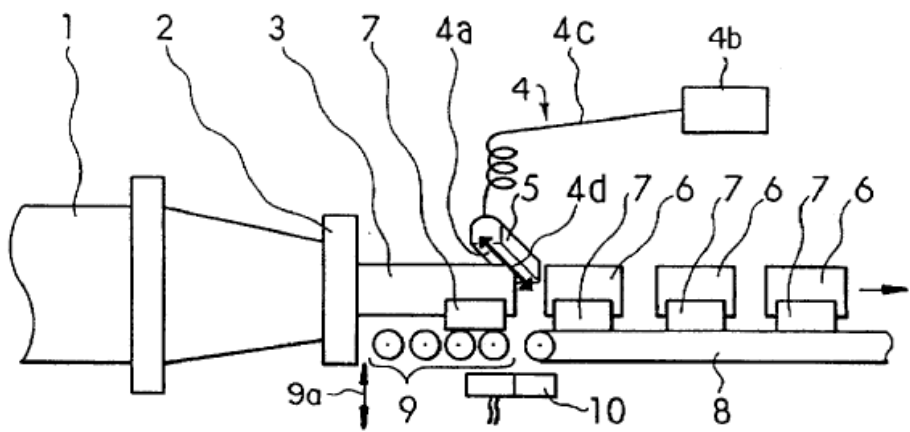
U.S. Patent

Sep. 23, 1997

Sheet 1 of 3

5,670,104

FIG. 1A



B28B 11/18

for removing burr {(combined with the mould [B28B 7/0058](#))}

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:

Methods or apparatus for removing burr from tubular articles	B28B 21/96
--	----------------------------

B28B 11/22

for cleaning

References

Limiting references

This place does not cover:

Cleaning of moulds, cores or mandrels	B28B 7/386
---------------------------------------	----------------------------

Informative references

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

Cleaning in general	B08B
---------------------	----------------------

B28B 11/24

for curing, setting or hardening (processes for influencing or modifying the setting or hardening ability of mortars, concrete or artificial stone compositions, in general [C04B 40/00](#))

References**Limiting references**

This place does not cover:

Mould, cores and mandrels characterised by means for modifying the properties of the moulding material	B28B 7/40
--	---------------------------

Informative references

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

Pressure vessels, e.g. autoclaves	B01J 3/04
Processes for influencing or modifying the setting or hardening ability of mortars, concrete or artificial stone compositions, in general	C04B 40/00
Drying objects by removing liquid therefrom	F26B
Furnaces; Kilns; Ovens, Retorts	F27

B28B 11/243

{Setting, e.g. drying, dehydrating or firing ceramic articles ([B28B 11/242](#) takes precedence)}

References**Limiting references**

This place does not cover:

By passing an electric current through wires, rods or reinforcing members incorporated in the article	B28B 11/242
---	-----------------------------

Informative references

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

Processing powders of inorganic compounds preparatory to the manufacturing of ceramic products	C04B 35/00
--	----------------------------

B28B 13/00

Feeding the unshaped material to moulds or apparatus for producing shaped articles; Discharging shaped articles from such moulds or apparatus

References

Informative references

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

Filling moulds with powder	B22F 3/004
Feeding material to presses	B30B 15/30

B28B 13/02

Feeding the unshaped material to moulds or apparatus for producing shaped articles

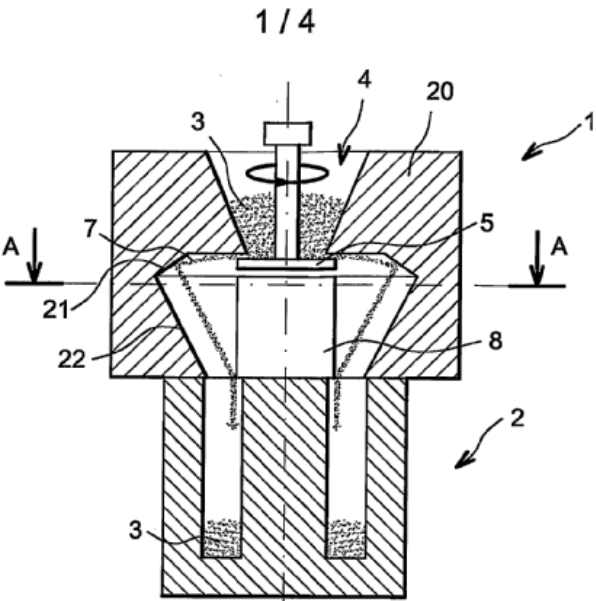
Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

WO 2005/051576

PCT/FR2004/050618



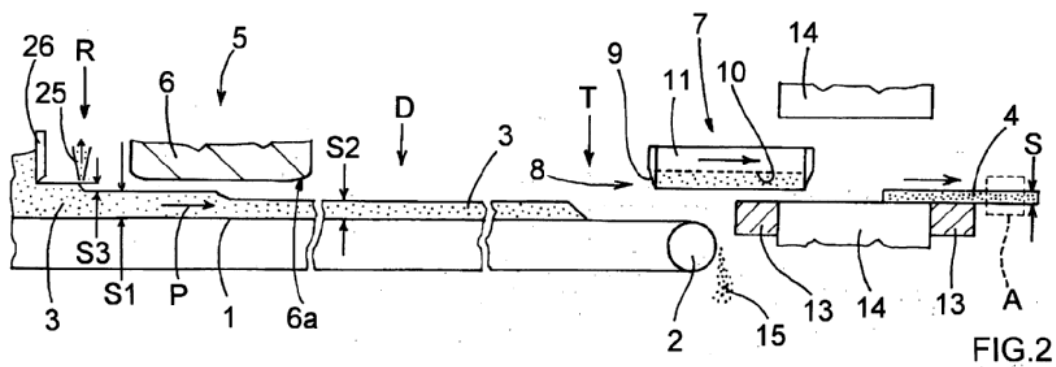
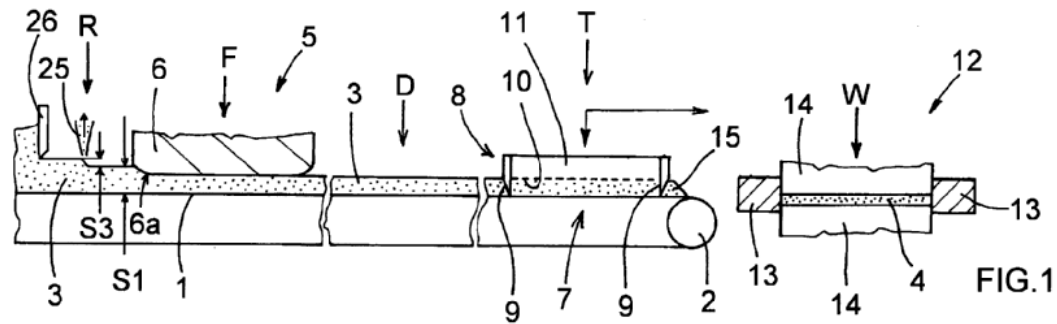
B28B 13/0205

{supplied to the moulding device in form of a coherent mass of material, e.g. a lump or an already partially preshaped tablet, pastil or the like}

Definition statement

This place covers:

The coherent mass of material has been pre-shaped, -formed, -compacted in a seperate apparatus



EP 1 447 190 A2

B28B 13/021

{by fluid pressure acting directly on the material, e.g. using vacuum, air pressure}

References

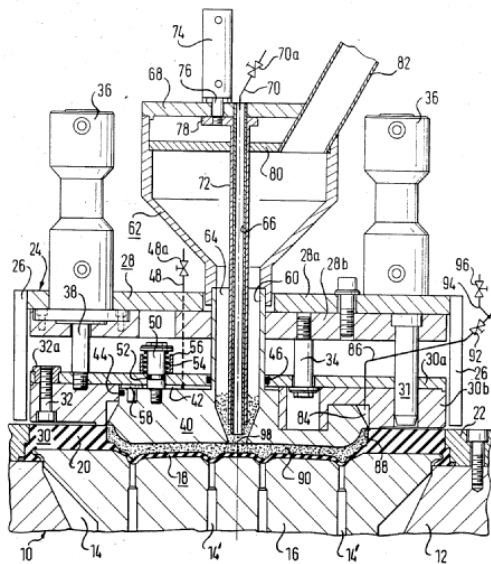
Limiting references

This place does not cover:

Illustrative example of subject matter not classified in this group:

U.S. Patent May 13, 1986 Sheet 2 of 3 4,588,368

FIG. 2



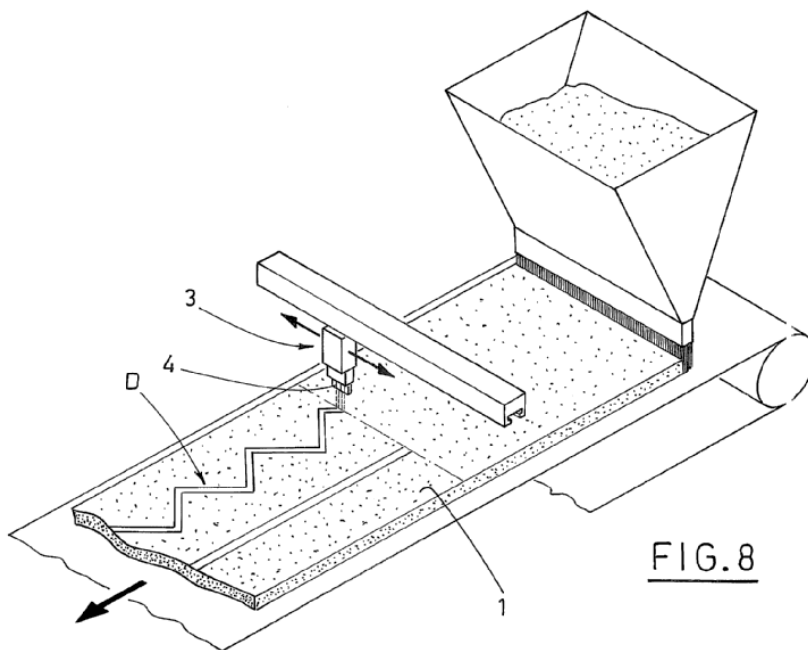
B28B 13/022

{Feeding several successive layers, optionally of different materials}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



EP 1 977 872 A2

References**Limiting references**

This place does not cover:

Producing layered article by simple casting	B28B 1/16
---	---------------------------

B28B 13/023

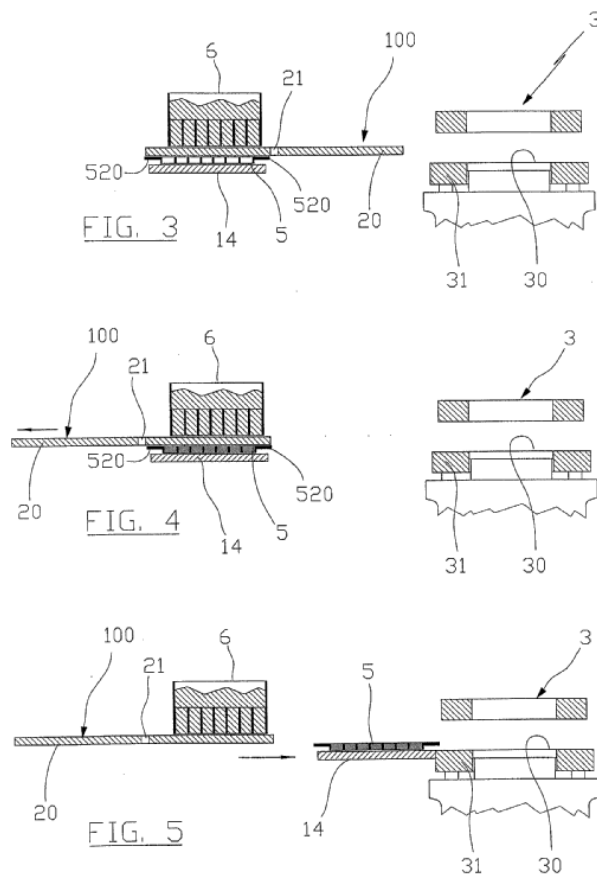
{by using a feed box transferring the moulding material from a hopper to the moulding cavities}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

EP 1 321 260 A2

**References****Informative references**

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

By using feed frames or shoes with relative movement	B30B 15/304
--	-----------------------------

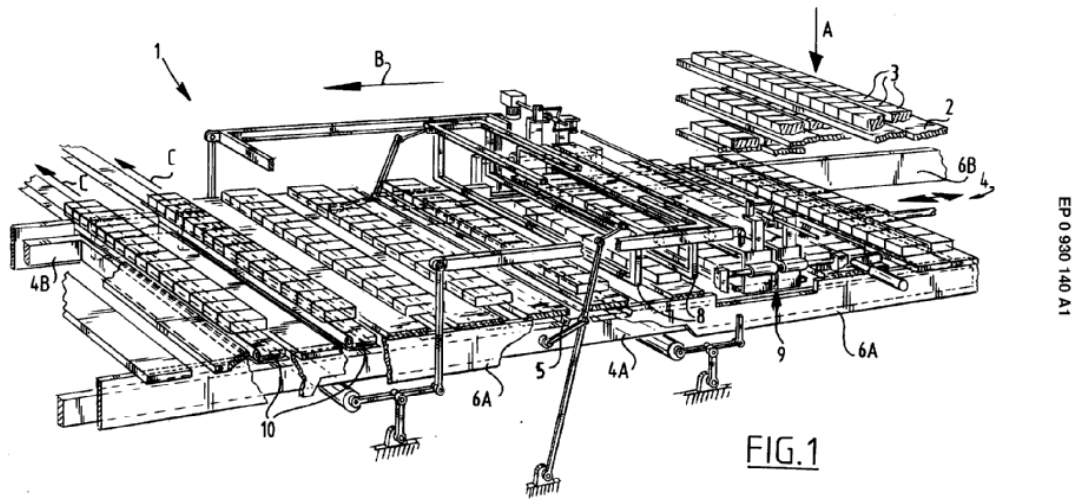
B28B 13/04

Discharging the shaped articles ({discharging tubular articles after shaping [B28B 21/90](#); } conveying systems for ceramic mouldings [B65G 49/08](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



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:

Methods or apparatus for discharging after shaping tubular articles	B28B 21/90
---	----------------------------

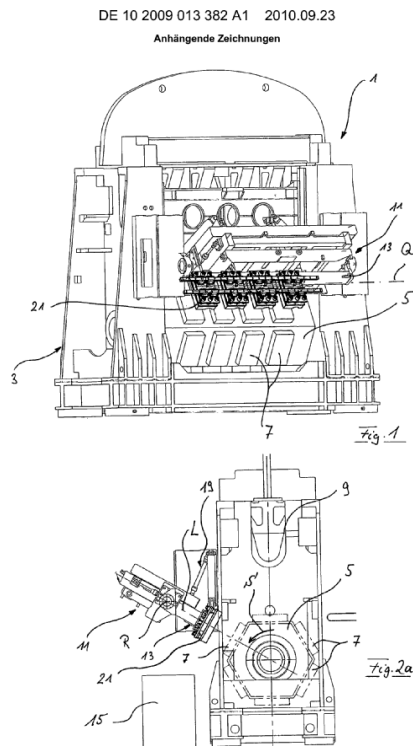
B28B 13/06

Removing the shaped articles from moulds (by means incorporated in, or carried by, the moulds [B28B 7/10](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



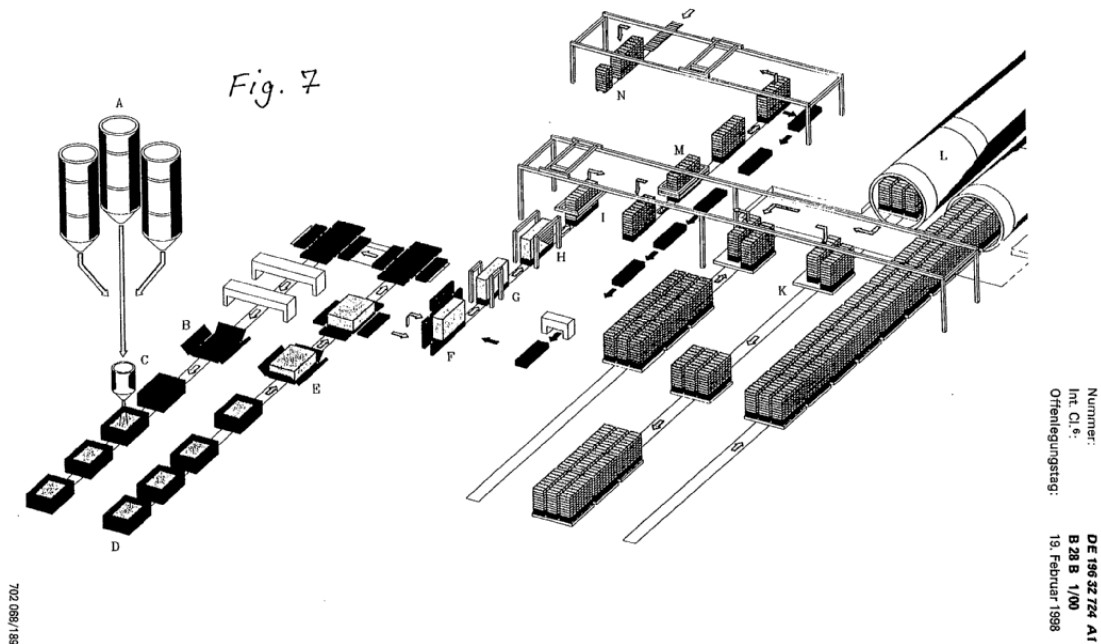
B28B 15/00

General arrangement or layout of plant {; Industrial outlines or plant installations}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

**B28B 15/002**

{Mobile plants, e.g. on vehicles or on boats}

Definition statement

This place covers:

e.g. mobile plants that can be broken-down for transport.

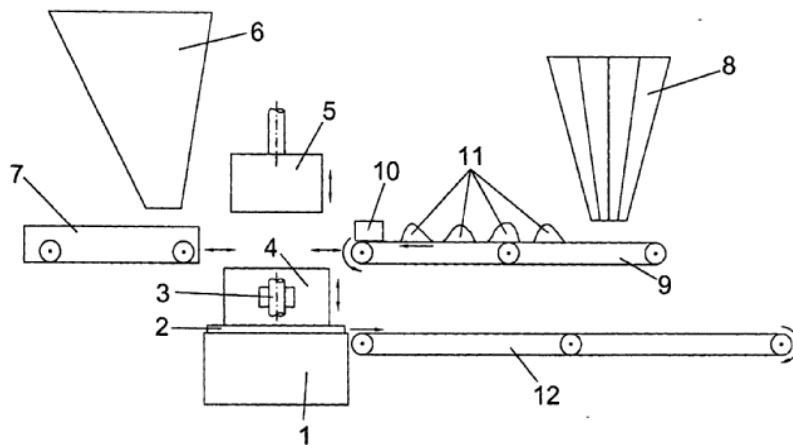
B28B 15/005

{Machines using pallets co-operating with a bottomless mould; Feeding or discharging means for pallets (feeding pallets for making a continuous moulding surface [B28B 5/025](#), [B28B 5/028](#))}

Definition statement

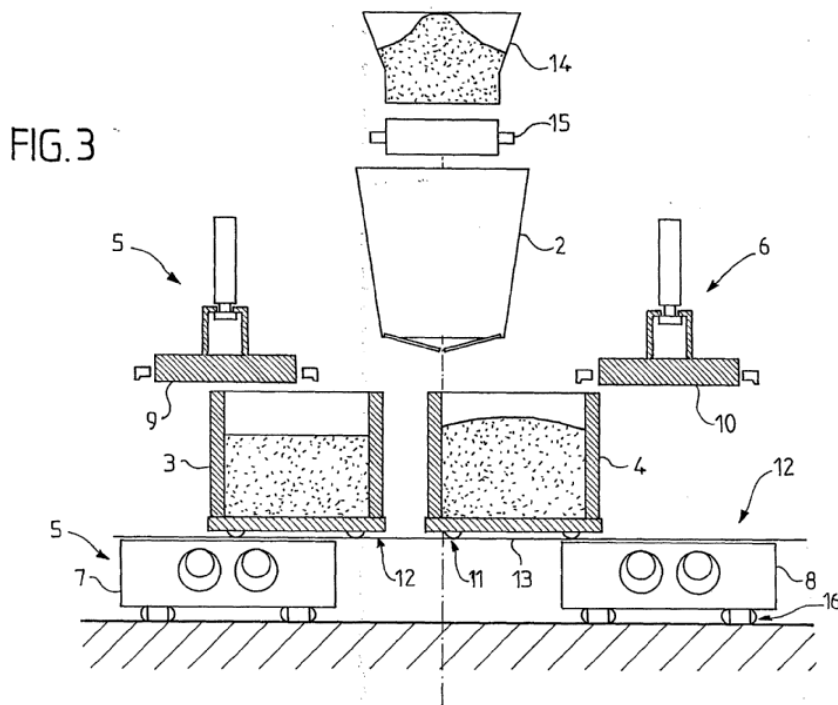
This place covers:

Illustrative example of subject matter classified in this group:



B28B 15/007**{Plant with two or more identical shaping or moulding devices}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group:



3/12

WO 03/016009

PCT/FR02/02858

B28B 17/0018**{Separating articles from each other}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group:

EP 1 964 655 A1

Fig. 4

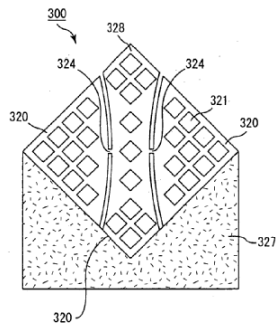
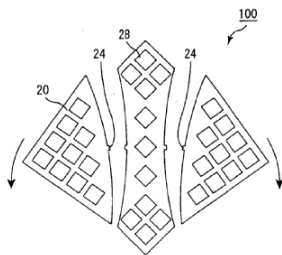


Fig. 5

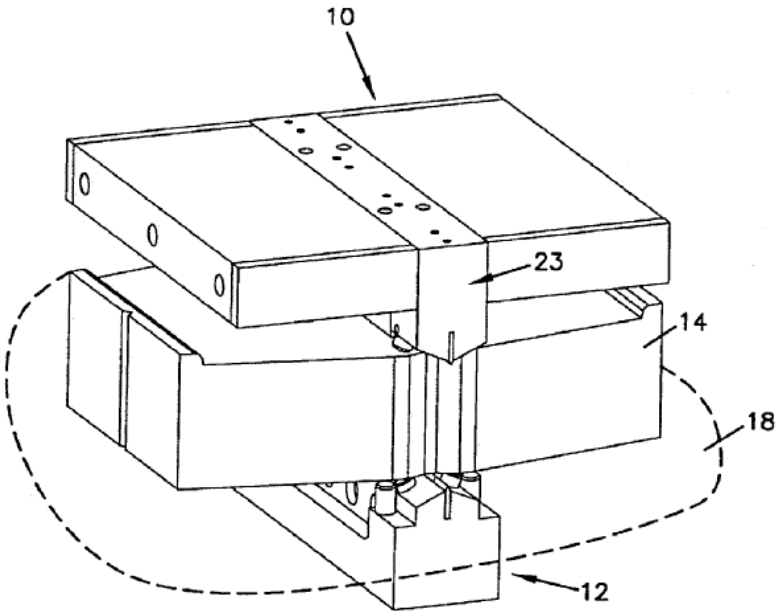


B28B 17/0027

{Accessories for obtaining rubblestones}

Definition statement

This place covers:



E.g. block splitting assembly

References

Informative references

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

Cutting by pressing stone or stone-like materials	B28D 1/222
---	----------------------------

B28B 17/0036

{Cutting means, e.g. water jets}

Definition statement

This place covers:

This subgroup is complementary to [B28B 11/12](#), [B28B 11/14](#) and subgroups.

References

Informative references

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

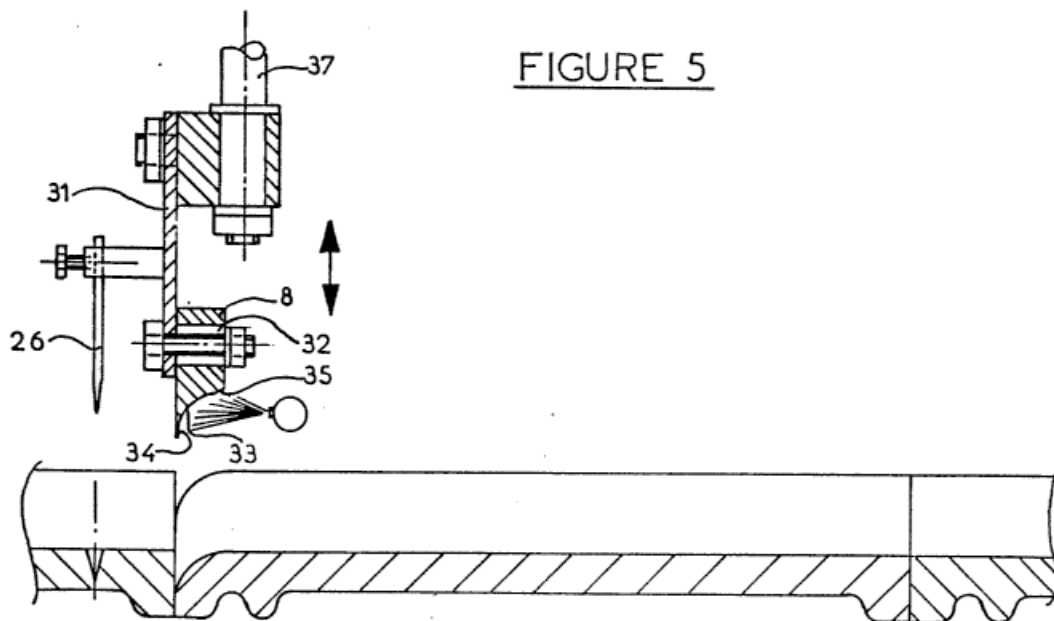
Cutting in general	B26D
--------------------	----------------------

B28B 17/0045**{Tensioning devices for cutting means}****References****Limiting references***This place does not cover:*

Tensioning means for cutters in general	B26D 1/48
---	---------------------------

B28B 17/0054**{Cleaning devices for cutting means}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group:

**B28B 17/0063****{Control arrangements}****Definition statement***This place covers:*

Control arrangements for both product inspection and operating conditions.

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

Measuring; Testing	G01
--------------------	---------------------

Controlling; Regulating

G05

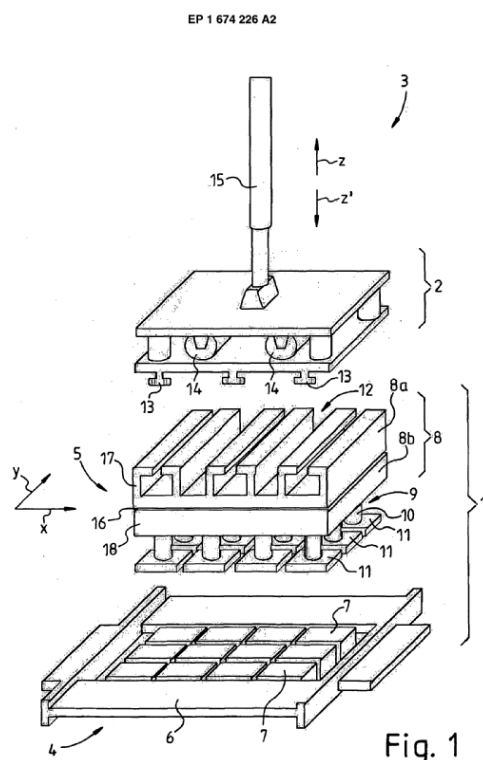
B28B 17/009

{Changing the forming elements, e.g. exchanging moulds, dies}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



References

Informative references

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

Mounting of dies, platens or press rams

B30B 15/026

B28B 17/02

Conditioning the material prior to shaping {(for mixtures containing clay or cement [B28C](#))}

References

Limiting references

This place does not cover:

Mixing per se

B01F , B28C

B28B 19/00

Machines or methods for applying the material to surfaces to form a permanent layer thereon (making shaped articles on mandrels [B28B 1/30](#); applying liquids or other fluent materials to surfaces in general [B05C](#); glazing or engobing [C04B](#))

References

Informative references

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

Layered products essentially comprising a water-setting substance	B32B 13/00
---	----------------------------

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

The material	(a) clay or other ceramic compositions; (b) slag;(c) mixtures with water-setting properties given by clay, cementitious material, or slag.
Surfaces	any kind of surface not restricted to any type of material

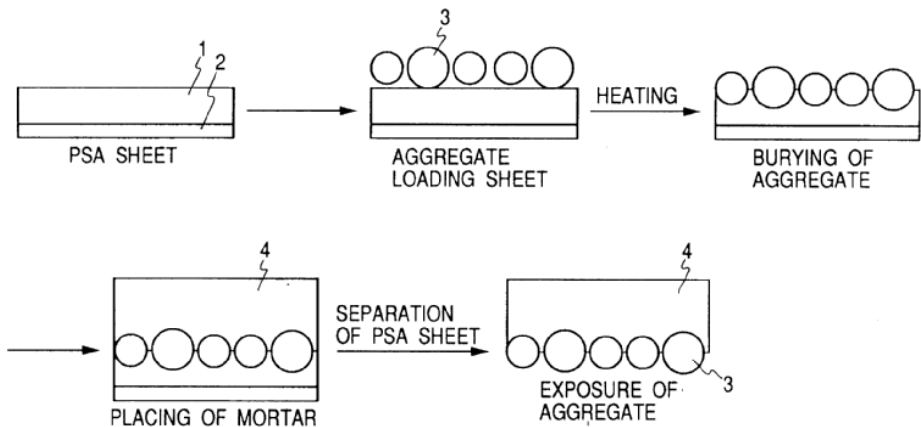
B28B 19/0007

{for producing articles with exposed aggregate}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



EP 0 594 303 A1

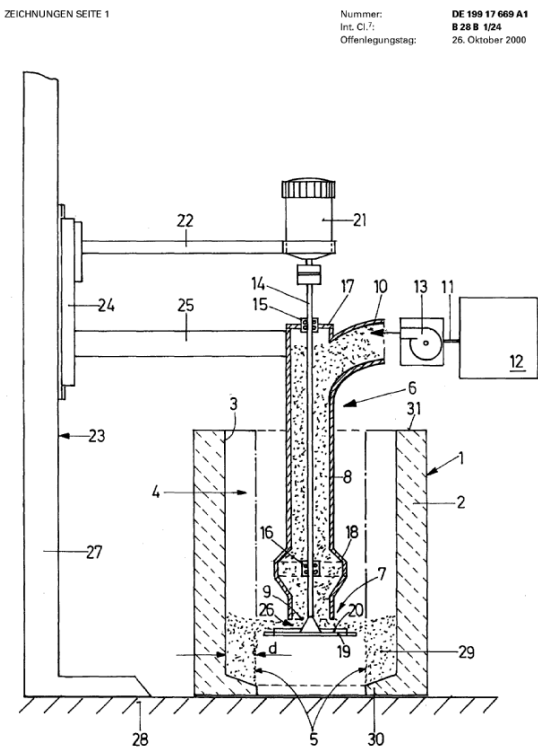
B28B 19/0023

{Lining the inner wall of hollow objects, e.g. pipes}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



References

Limiting references

This place does not cover:

Incorporating steel tubes in the production of tubular articles	B28B 21/58
---	----------------------------

Informative references

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

Devices or appurtenances for use in, or in connection with, pipes or pipe systems	F16L 55/00
Protection of pipes or pipe fittings against corrosion or incrustation	F16L 58/00

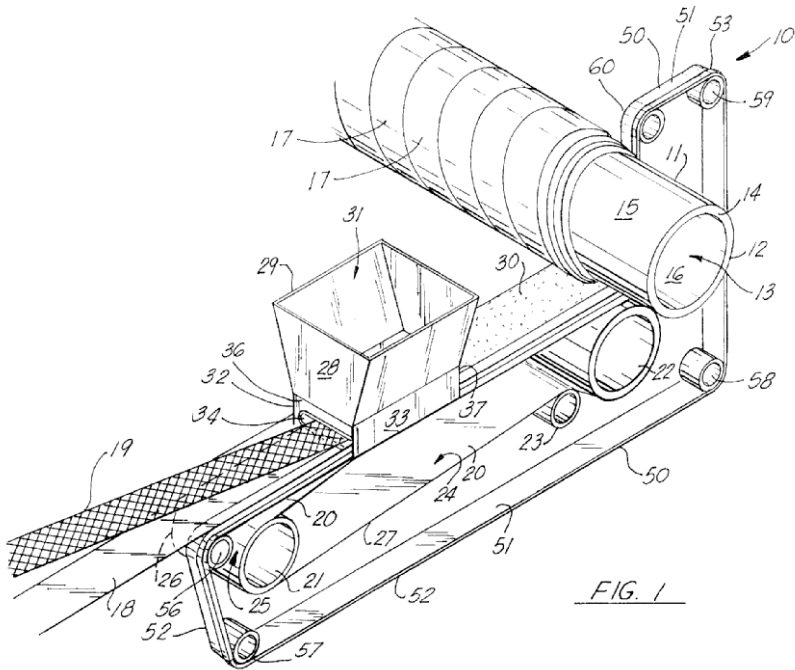
B28B 19/0038

{lining the outer wall of hollow objects, e.g. pipes}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



U.S. Patent Mar. 30, 1999 Sheet 1 of 6 5,888,339

References

Limiting references

This place does not cover:

Incorporating steel tubes in the production of tubular articles	B28B 21/58
---	----------------------------

Informative references

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

Devices or appurtenances for use in, or in connection with, pipes or pipe systems	F16L 55/00
Protection of pipes or pipe fittings against corrosion or incrustation	F16L 58/00

B28B 19/0053

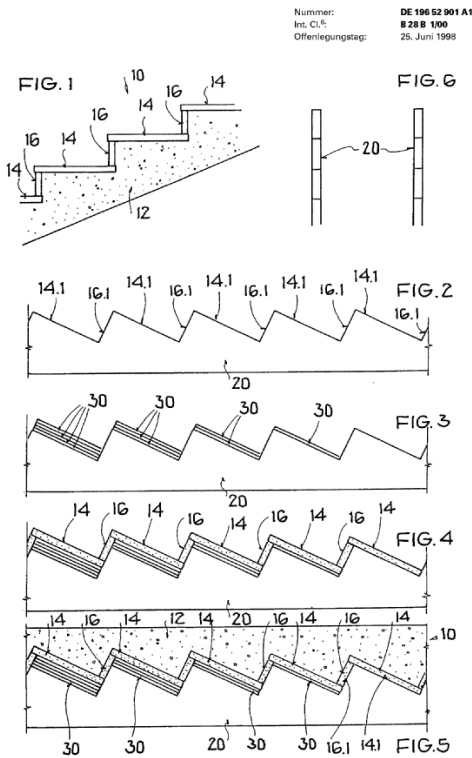
{to tiles, bricks or the like}

Definition statement

This place covers:

Application to cladding elements.

Illustrative example of subject matter classified in this group:



Relationships with other classification places

See also [E04C 2/041](#).

References

Limiting references

This place does not cover:

Apparatus for handling the smaller elements or the hardenable material; bricklaying machines for prefabricated panels	E04C 2/042
--	----------------------------

Informative references

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

Bricklaying machines in general	E04G 21/22
---------------------------------	----------------------------

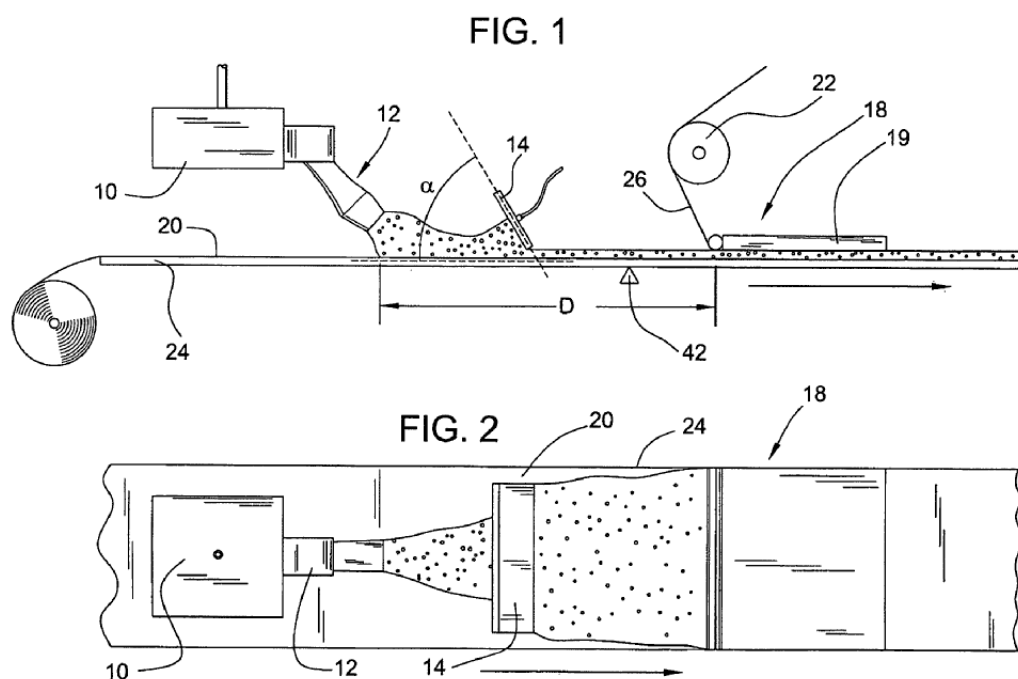
B28B 19/0092

{to webs, sheets or the like, e.g. of paper, cardboard}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



Patent Application Publication Mar. 1, 2007 Sheet 1 of 3 US 2007/0045892 A1

Relationships with other classification places

In case the webs, sheets or the like are also reinforcing members, also classify in:

- [B28B 23/0006](#) The reinforcement consisting of aligned, non-metal reinforcing elements.
- [B28B 23/02](#) In case of reinforcements made of metal.

Final products per se: [E04C 2/043](#) Building elements of plaster.

References**Informative references**

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

Methods or apparatus for laminating	B32B 37/00
-------------------------------------	----------------------------

B28B 21/00

Methods or machines specially adapted for the production of tubular articles

References

Informative references

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

Pipes Joints or fittings for pipes	F16L
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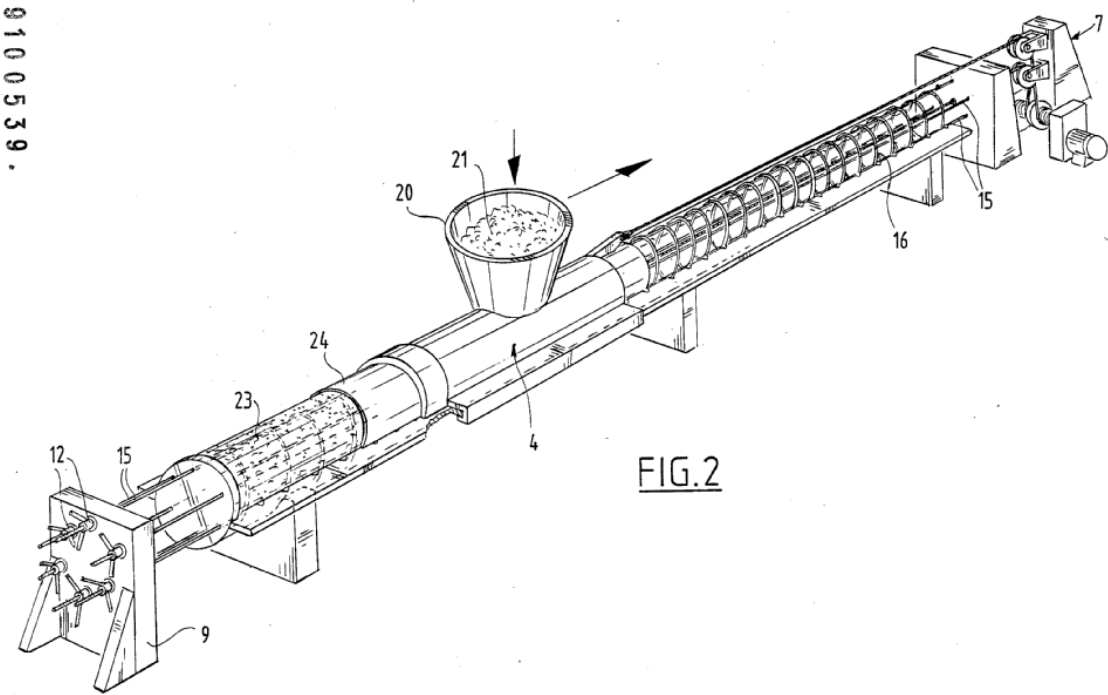
B28B 21/06

into moulds having sliding parts ([B28B 21/26](#) takes precedence; forms, shutterings, or falsework for making rooms as a whole, whole stories, or whole buildings in situ [E04G 11/02](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



References

Limiting references

This place does not cover:

With a packer head serving as a sliding mould or provided with guiding means for feeding the material	B28B 21/26
---	----------------------------

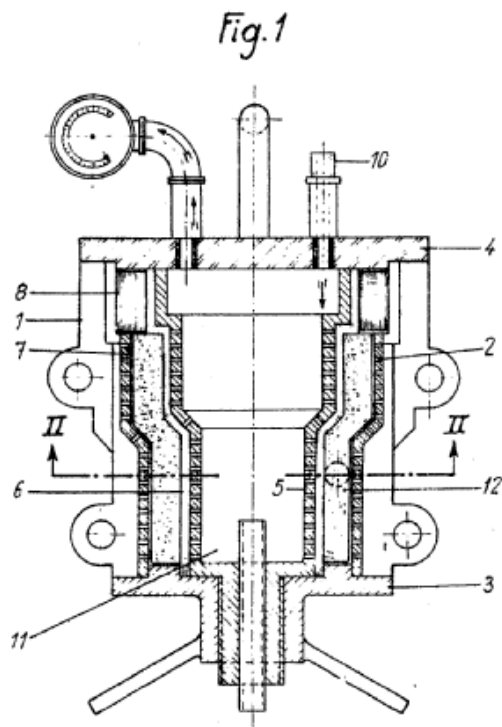
B28B 21/08

by slip-casting; Moulds therefor

Definition statement

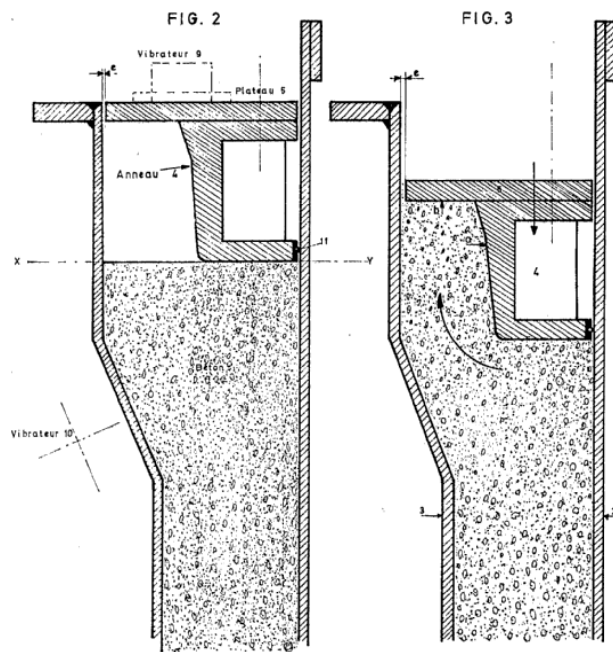
This place covers:

Illustrative example of subject matter classified in this group:



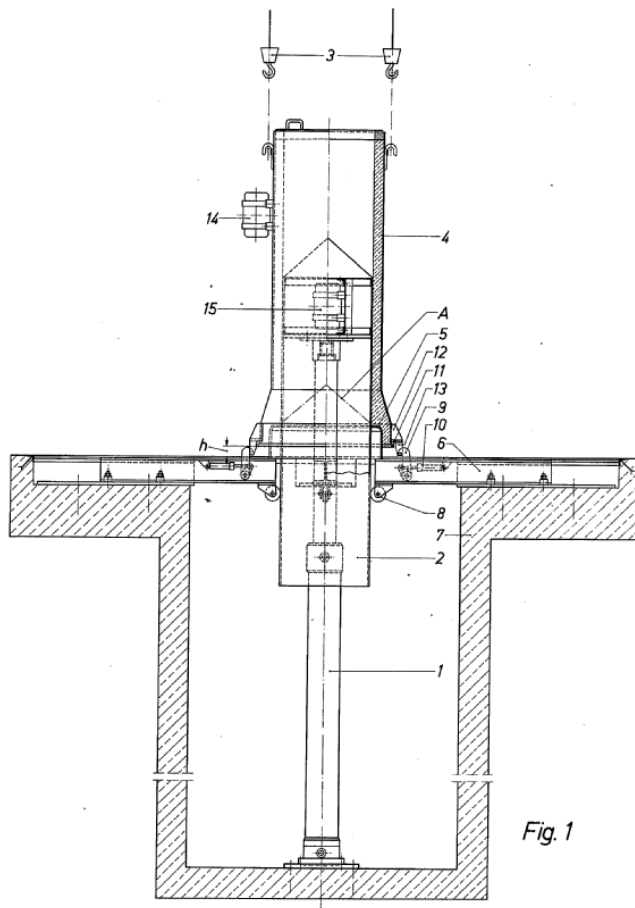
B28B 21/10**using compacting means****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group:



B28B 21/16**one or more mould elements****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group:



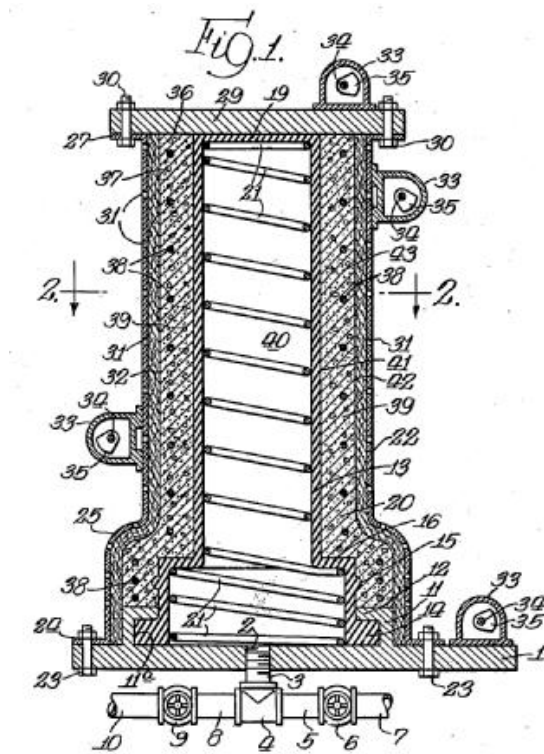
B28B 21/20

using inflatable cores, e.g. having a frame inside the inflatable part of the core (connection of valves to inflatable elastic bodies [B60C 29/00](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



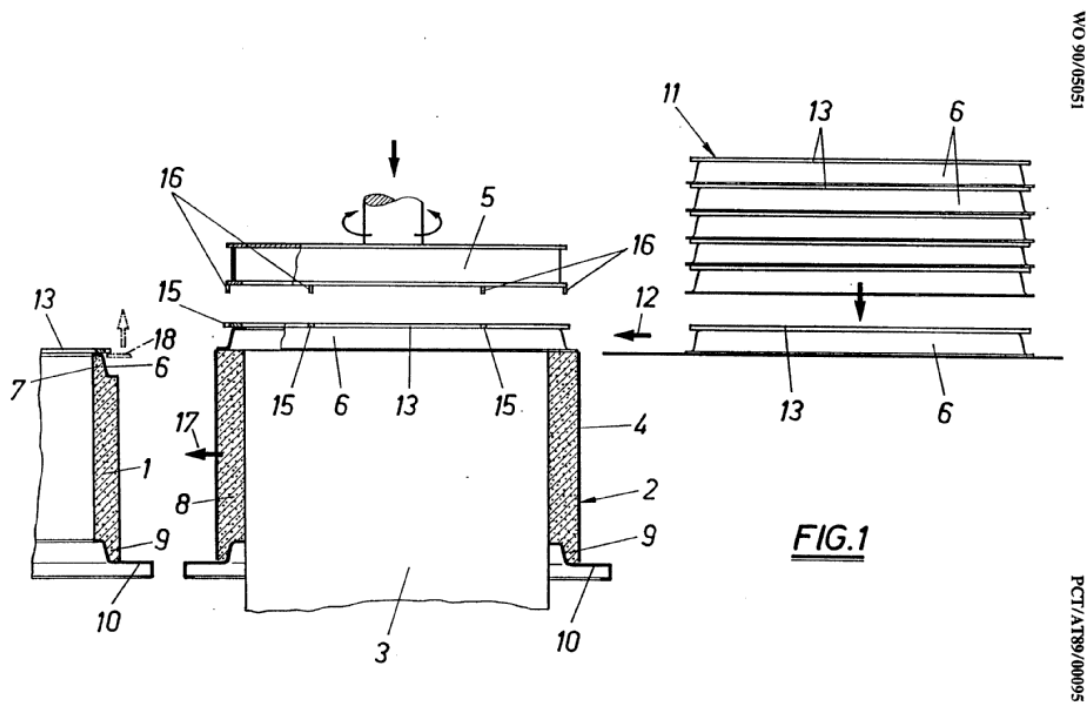
B28B 21/22

using rotatable mould or core parts

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



B28B 21/24

using compacting heads, rollers, or the like

Definition statement

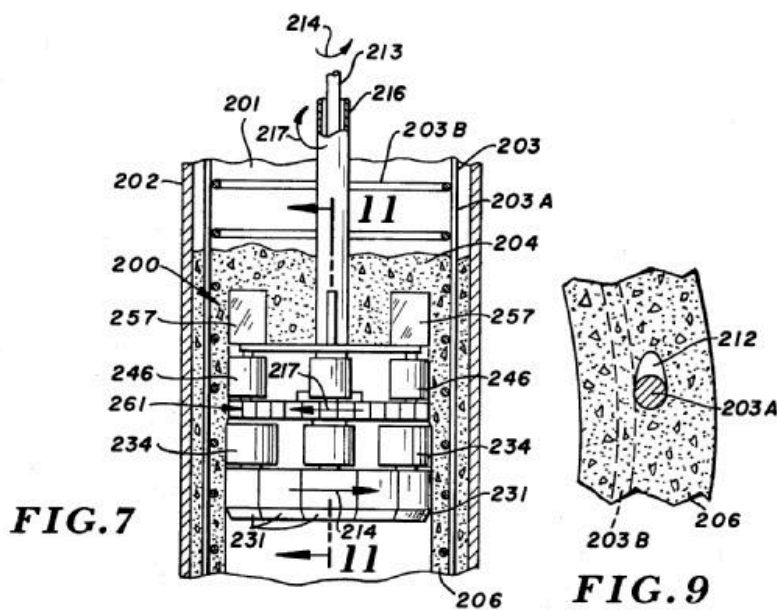
This place covers:

Compacting heads, rollers, or the like when driven and suspended from above

U.S. Patent Oct. 4, 1983

Sheet 5 of 7

4,407,648

**Special rules of classification**

Compacting heads, rollers, or the like driven from beneath or followed by a sliding mould with particular inventive emphasis classify in:

[B28B 21/26](#) With a packer head serving as a sliding mould or provided with guiding means for feeding the material.

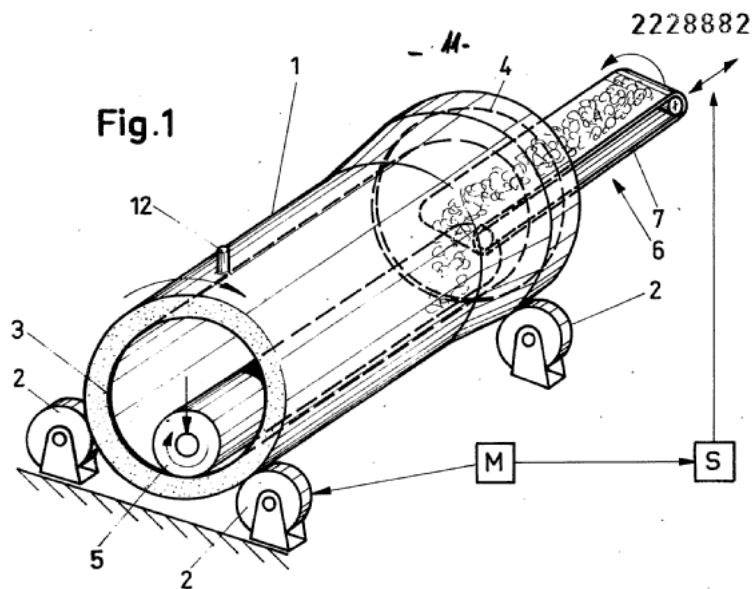
B28B 21/245

{using a horizontal compacting roller in a horizontally rotatable mould}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

**References****Limiting references**

This place does not cover:

Centrifugal moulding for the production of tubular articles	B28B 21/30
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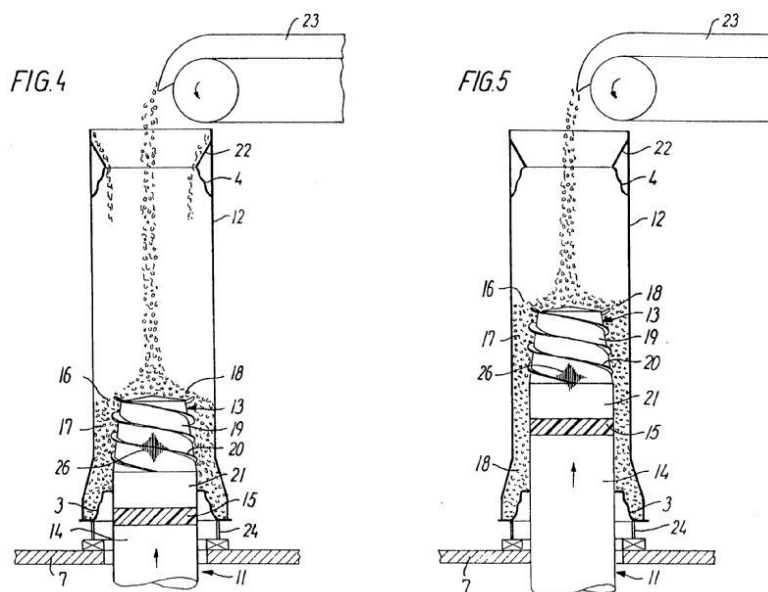
B28B 21/26

with a packer head serving as a sliding mould or provided with guiding means for feeding the material

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



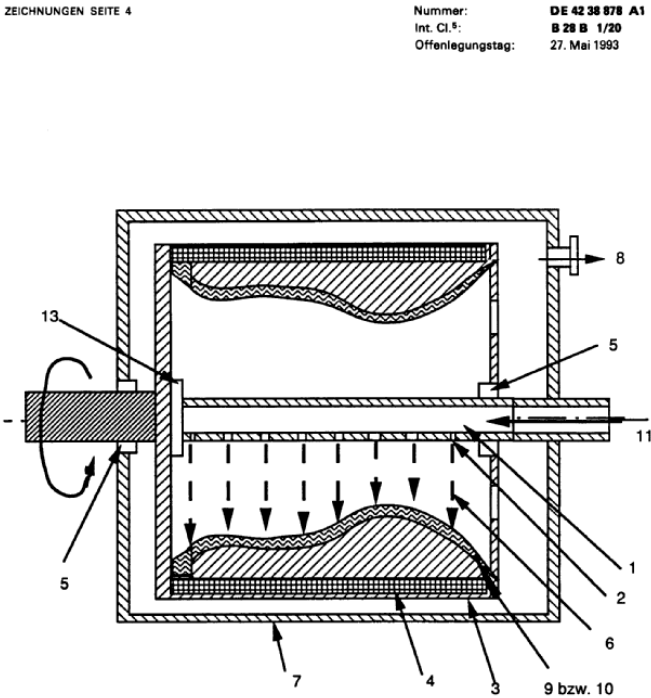
B28B 21/30

Centrifugal moulding

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



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:

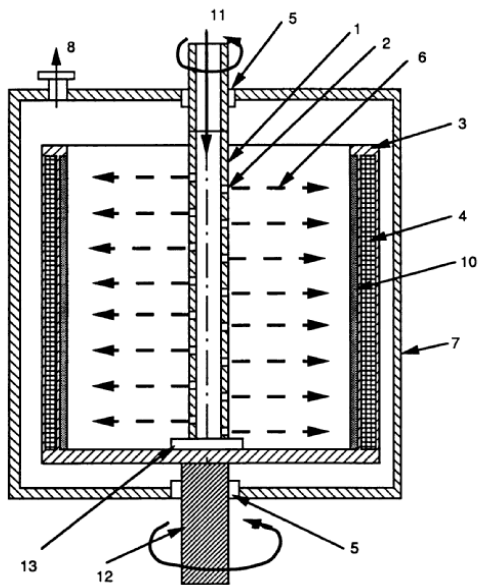
Incorporating reinforcements and applying centrifugal forces	B28B 21/68
--	----------------------------

B28B 21/305**{Moulding machines with vertical rotation axis}****Definition statement***This place covers:*

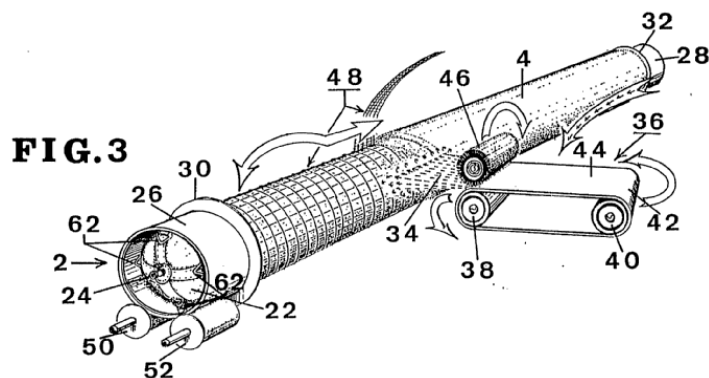
Illustrative example of subject matter classified in this group:

ZEICHNUNGEN SEITE 1

Nummer: **DE 42 38 878 A1**
 Int. Cl. 9: **B 28 B 1/20**
 Offenlegungstag: 27. Mai 1993

**B28B 21/44****by projecting, e.g. spraying****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group:



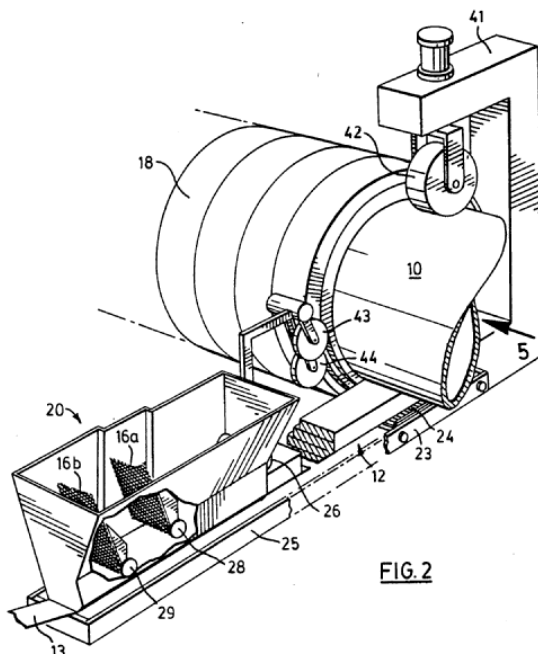
B28B 21/48

by wrapping, e.g. winding

Definition statement

This place covers:

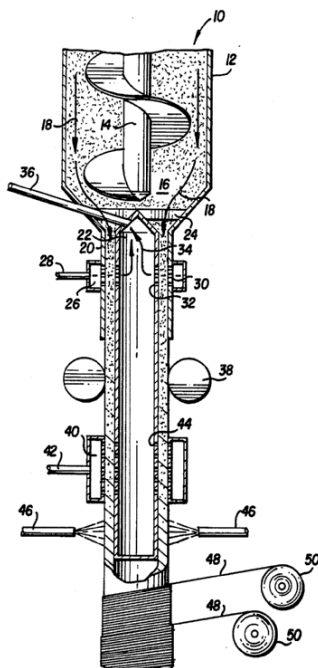
Illustrative example of subject matter classified in this group:



B28B 21/52**by extruding****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group:

U.S. Patent Aug. 11, 1987 4,685,873

**B28B 21/56****incorporating reinforcements {or inserts}****Definition statement***This place covers:*

Incorporating inserts and/or reinforcing members.

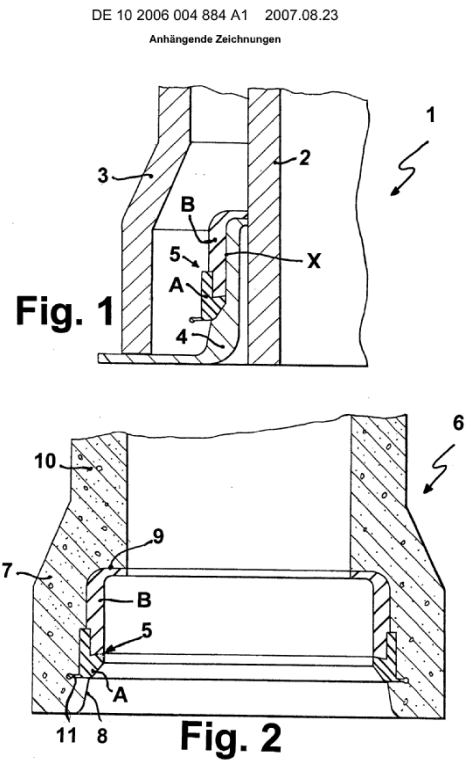
B28B 21/563

{Gaskets}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



References

Informative references

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

With elastic sealing rings between pipe and socket, placed on the socket before connection.	F16L 21/03
---	----------------------------

B28B 21/566

{Climbing elements}

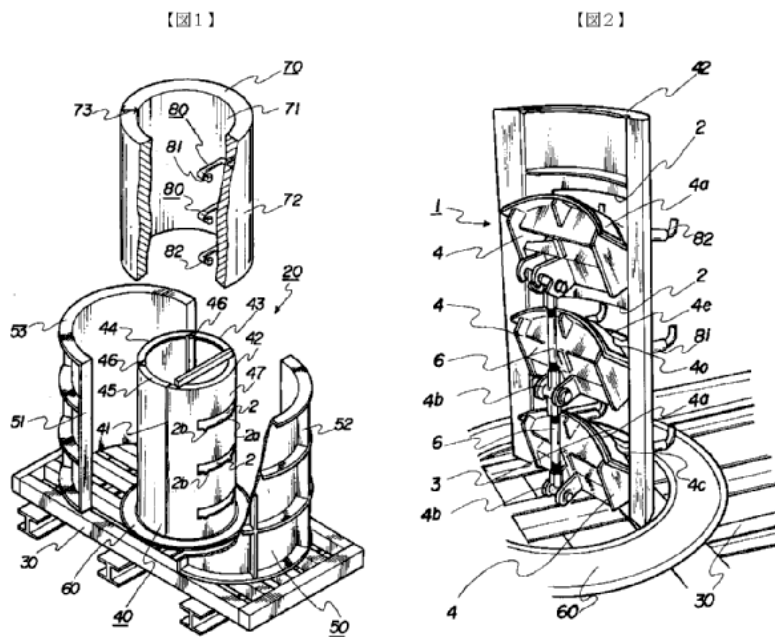
Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

(5)

特開平9-85728



References

Informative references

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

Climbing irons or the like	E06C 9/04
----------------------------	---------------------------

B28B 21/64

Winding arrangements

References

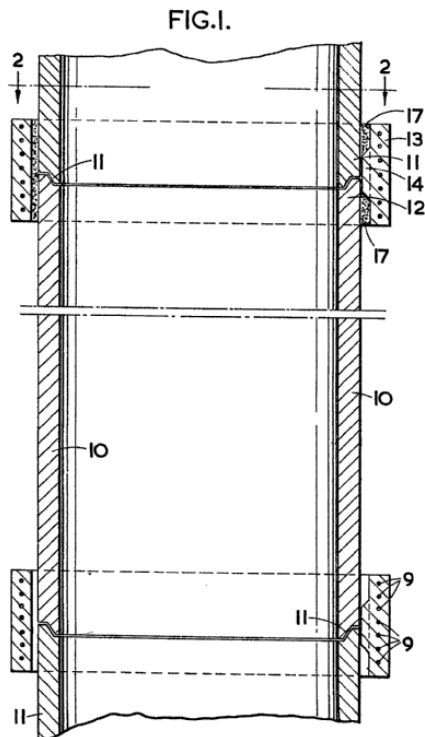
Informative references

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

Methods, apparatus, or devices for covering or wrapping cores by winding webs, tapes, or filamentary material	B65H 81/00
---	----------------------------

B28B 21/70**by building-up from preformed elements****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group:

**B28B 21/72****Producing multilayer tubes****Definition statement***This place covers:*

The preformed elements for producing multilayer tubes can be manufactured of any material.

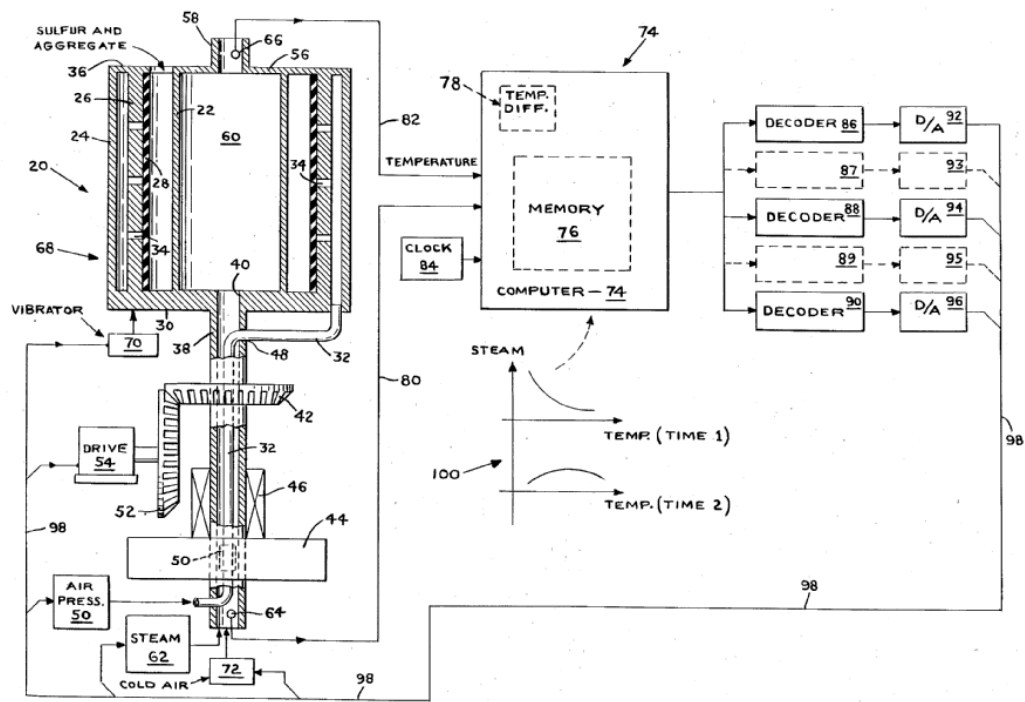
B28B 21/78

with heating or cooling means, e.g. steam jackets

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



U.S. Patent

Jul 15, 1986

4,600,373

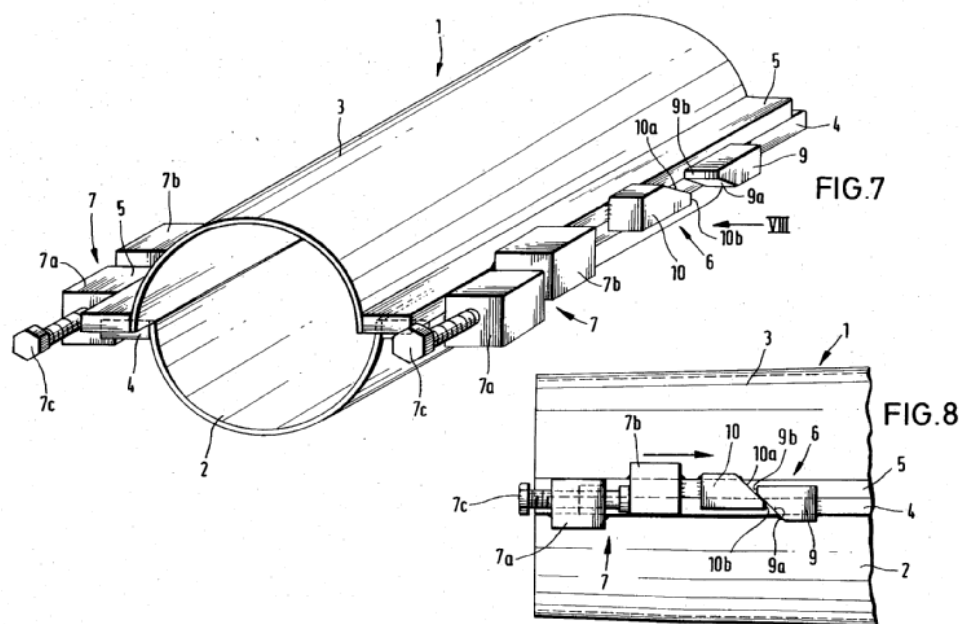
B28B 21/80

adapted to centrifugal or rotational moulding

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



U.S. Patent Jul. 22, 1986

Sheet 3 of 3

4,601,923

References**Limiting references**

This place does not cover:

Centrifugal moulding using compacting heads, rollers, or the like

B28B 21/30

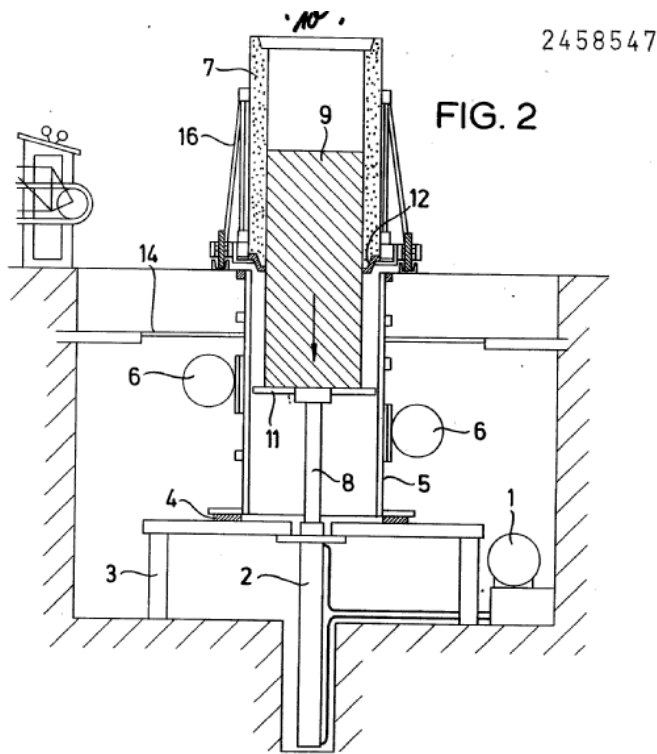
B28B 21/86

Cores (in general [B28B 7/00](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



References

Informative references

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

Cores in general	B28B 7/00
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B28B 21/925

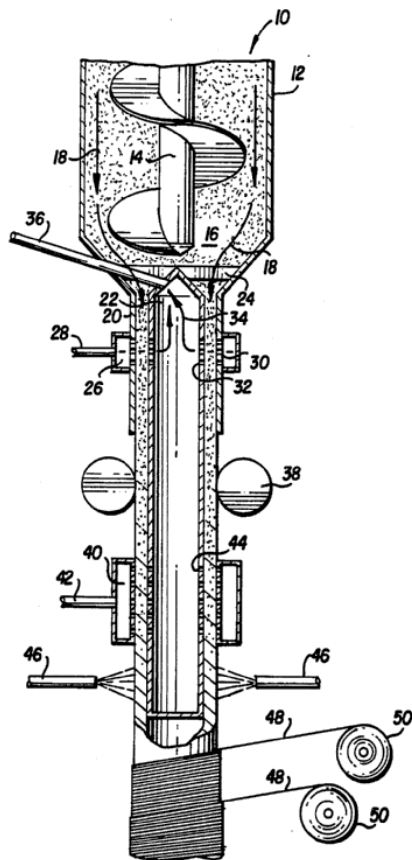
{for wrapping}

Definition statement*This place covers:*

Illustrative example of subject matter classified in this group:

U.S. Patent

Aug. 11, 1987

4,685,873

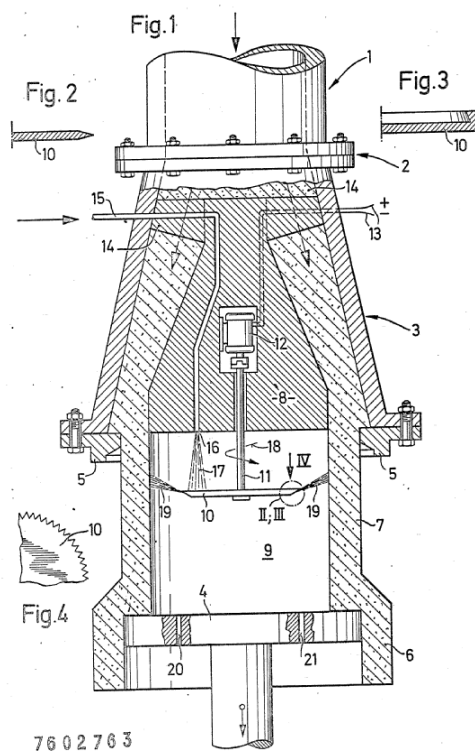
B28B 21/94

for impregnating or coating by applying liquids or semi-liquids

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



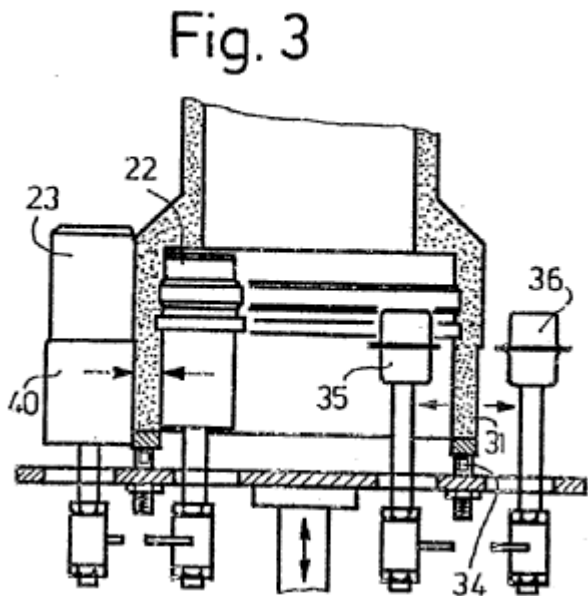
B28B 21/965

{for grooving or corrugating}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



B28B 23/00

Arrangements specially adapted for the production of shaped articles with elements wholly or partly embedded in the moulding material; {Production of reinforced objects} ([B28B 21/00](#) takes precedence; in units for prefabricated buildings [B28B 7/22](#))

Definition statement

This place covers:

Wherein the element which is wholly or partly embedded in the moulding material can be a reinforcing member, insert, moulding material component, gaskets, or the like; not being restricted by the choice of material.

References

Limiting references

This place does not cover:

Methods or machines specially adapted for the production of tubular articles	B28B 21/00
--	----------------------------

Informative references

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

Reinforcing elements in general	E04C 5/00
---------------------------------	---------------------------

Special rules of classification

Machines or methods for applying the material to surfaces to form a permanent layer thereon should be classified in [B28B 19/00](#).

B28B 23/0012**{Producing brick netting}****Definition statement**

This place covers:

Illustrative example of subject matter classified in this group:

FIG.1

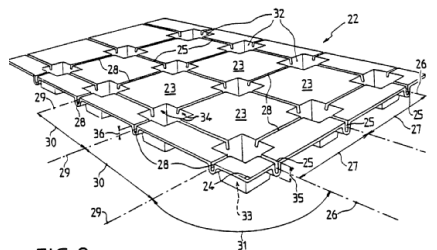
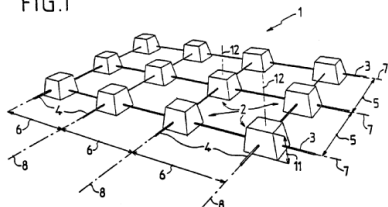


FIG.2

References**Informative references**

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

Pavings made of prefabricated single units	E01C 5/00
--	---------------------------

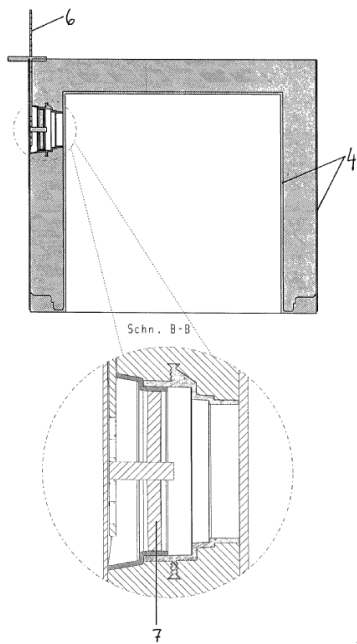
B28B 23/0043

{with gaskets or sealing elements, e.g. for tunnelings or man holes
([B28B 21/563](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



References

Limiting references

This place does not cover:

Gaskets	B28B 21/563
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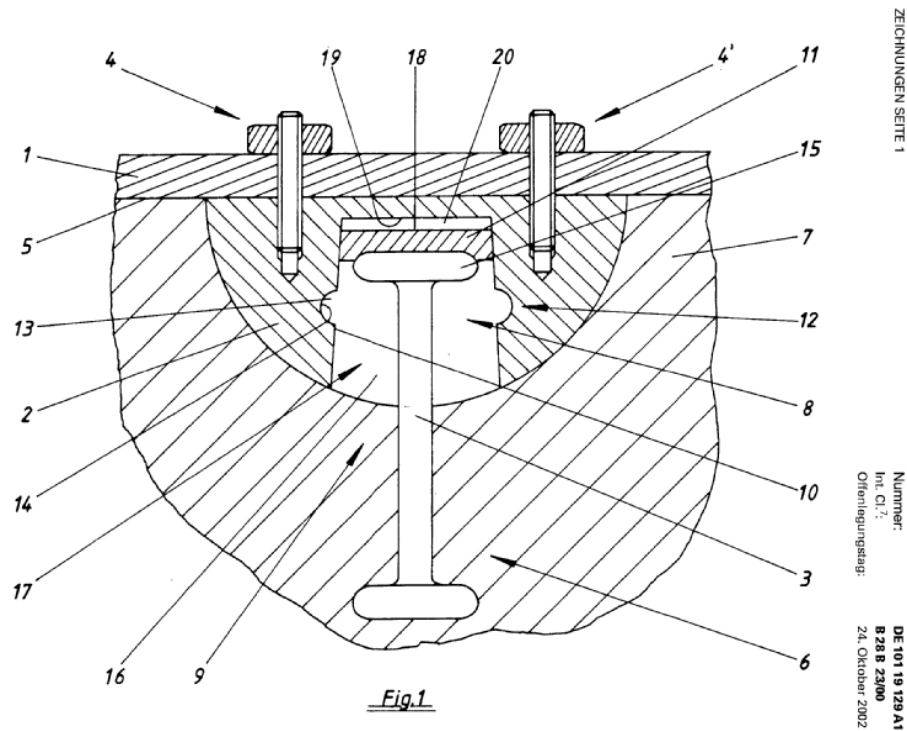
B28B 23/005

{with anchoring or fastening elements for the shaped articles}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



Relationships with other classification places

Anchoring or fastening elements in combination with means for supporting them in the mould, also classify in [B28B 23/0056](#).

References

Informative references

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

Connecting devices specially adapted for embedding in concrete	E04B 1/41
Means in or on the elements for connecting same to handling apparatus	E04G 21/142

B28B 23/0056

{Means for inserting the elements into the mould or supporting them in the mould ([B28B 23/022](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

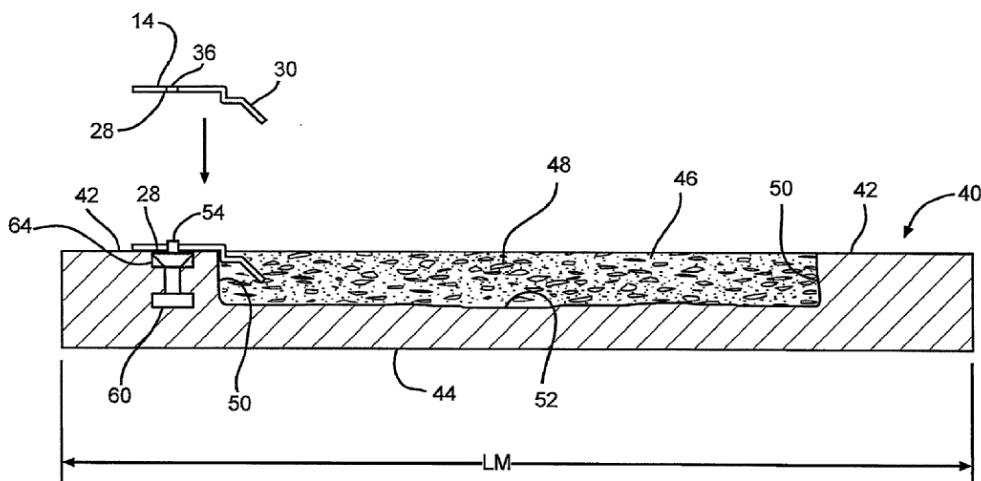


FIG. 3

Patent Application Publication Jul. 21, 2011 Sheet 2 of 4 US 2011/0175255 A1

References

Limiting references

This place does not cover:

Means for inserting reinforcing members into the mould or for supporting them in the mould	B28B 23/022
--	-----------------------------

Informative references

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

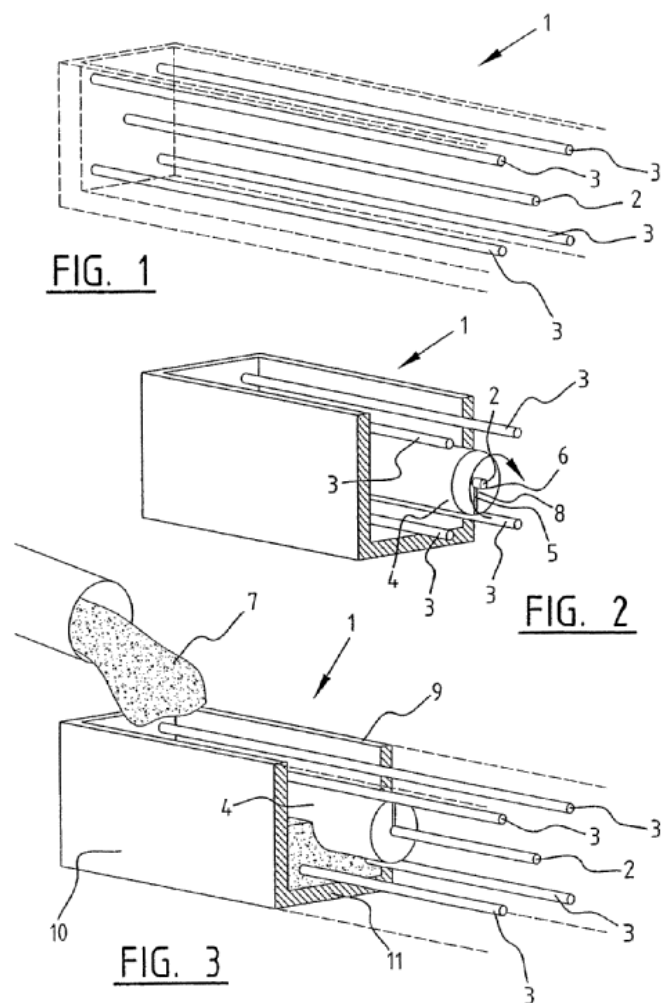
Cores for anchor holes or the like	E04G 15/04
------------------------------------	----------------------------

B28B 23/0068**{Embedding lost cores}****Definition statement**

This place covers:

Illustrative example of subject matter classified in this group:

EP 1 741 838 A2

**References****Informative references**

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

Non-reusable forms	E04G 15/061
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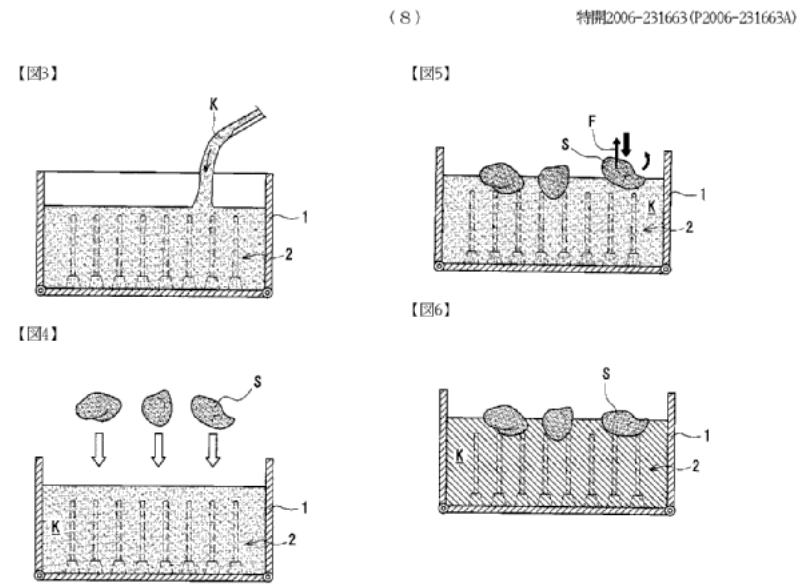
B28B 23/0075

{for decorative purposes}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



References

Limiting references

This place does not cover:

Coating with powdered or granular material	B28B 11/06
Applying the material to tiles, bricks, or the like to form a permanent layer thereon	B28B 19/0053

B28B 23/0081

{Embedding aggregates to obtain particular properties}

Definition statement

This place covers:

Wherein the aggregates themselves contain particular properties.

References

Limiting references

This place does not cover:

Embedding aggregates which cause a chemical reaction to obtain particular properties	C04B
--	----------------------

B28B 23/02

wherein the elements are reinforcing members {(B28B 23/0006 takes precedence)}

References

Limiting references

This place does not cover:

Specially adapted for producing articles from mixtures containing fibres	B28B 1/52
The reinforcement consisting of aligned, non-metal reinforcing elements	B28B 23/0006

B28B 23/022

{Means for inserting reinforcing members into the mould or for supporting them in the mould (inserting during extrusion [B28B 3/2645](#))}

References

Informative references

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

Mounting of reinforcing inserts	E04G 21/12
---------------------------------	----------------------------

B28B 23/026

{Mould partitionning elements acting as supporting means in moulds, e.g. for elongated articles}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:

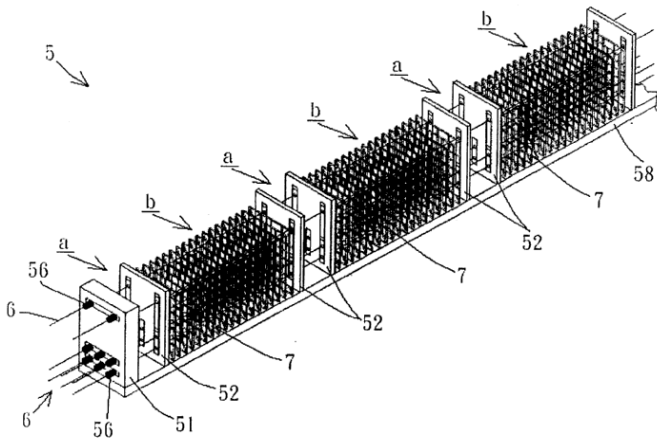
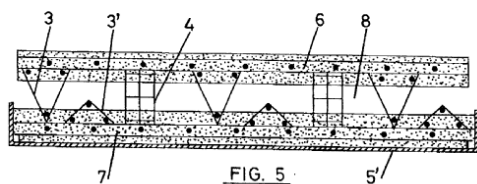
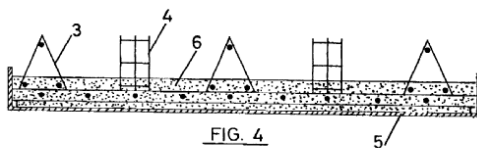
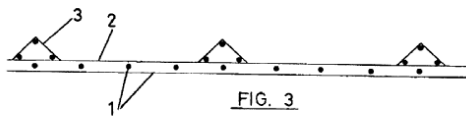
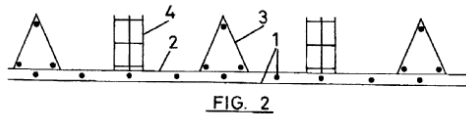


图 7

B28B 23/028**{for double - wall articles}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group:

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

Moulds provided with means for tilting or inverting for making double wall panels	B28B 7/085
---	----------------------------

B28B 23/04**the elements being stressed****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:*

Prestressed reinforcements in the production of tubular articles	B28B 21/60
--	----------------------------

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

Mounting of reinforcing inserts; Prestressing	E04G 21/12
---	----------------------------

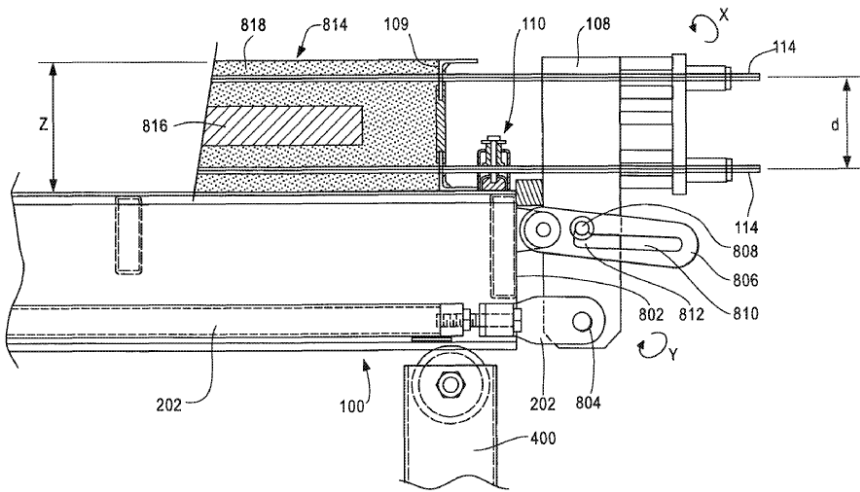
B28B 23/043

{Wire anchoring or tensioning means for the reinforcements}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



B28B 23/046

{Post treatment to obtain pre-stressed articles}

Definition statement

This place covers:

e.g. reinforcing members are stressed after the hardening of the element; Reinforcing members are introduced through (a) continuous opening(s) of the hardened element, are stressed and connected to the hardened element.

B28B 23/18

for the production of elongated articles ([B28B 23/06](#) takes precedence)

References

Limiting references

This place does not cover:

The elements being stressed	B28B 23/06
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