

**CPC****COOPERATIVE PATENT CLASSIFICATION****F16N****LUBRICATING****NOTE**

Attention is drawn to the following places:

|                             |   |
|-----------------------------|---|
| <a href="#">A01D 69/12</a>  | Lubrication of harvesters;  |
| <a href="#">B21J 3/00</a>   | Lubricating during forging or pressing;                                     |
| <a href="#">B25D 17/26</a>  | Lubricating of portable power-driven percussive tools;                      |
| <a href="#">B60R 17/00</a>  | Arrangements or adaptations of lubricating; systems or devices in vehicles; |
| <a href="#">B61C 17/08</a>  | Lubrication systems for railway locomotives;                                |
| <a href="#">B62D 55/092</a> | Vehicle endless-track units with lubrication means;                         |
| <a href="#">D04B 35/28</a>  | Devices for lubricating knitting machine parts;                             |
| <a href="#">E05B 17/08</a>  | Lubricating devices for locks;  |
| <a href="#">E05D 11/02</a>  | Lubricating arrangements for hinges;  |
| <a href="#">E21B 10/22</a>  | Lubricating details of roller drill bits for earth; drilling.               |

**Guidance heading:** Lubrication devices or arrangements for oil or grease

**F16N 1/00**      **Constructional modifications of parts of machines or apparatus for the purpose of lubrication**

**F16N 3/00**      **Devices for supplying lubricant by manual action** ([draining equipment for liquid containers B65D](#))

- F16N 3/02      .    delivering oil
- F16N 3/04      ..    Oil cans; Oil syringes
- F16N 3/06      ...    delivering on squeezing
- F16N 3/08      ...    incorporating a piston-pump
- F16N 3/10      .    delivering grease
- F16N 3/12      ..    Grease guns

**F16N 5/00**      **Apparatus with hand-positioned nozzle supplied with lubricant under pressure** ([F16N 3/00](#) takes precedence)

- F16N 5/02      .    Nozzles or nozzle-valve arrangements therefor, e.g. high-pressure grease guns

**F16N 7/00**      **Arrangements for supplying oil or unspecified lubricant from a stationary reservoir or the equivalent in or on the machine or member to be lubricated** ([axle-box lubrication for railway rolling-stock B61F 17/00](#))

- F16N 7/02      .    with gravity feed or drip lubrication
- F16N 7/04      ..    with oil flow promoted by vibration

- F16N 7/06 . . Arrangements in which the droplets are visible
- F16N 7/08 . . controlled by means of the temperature of the member to be lubricated (thermostats [G05D](#))
- F16N 7/10 . . incorporating manually-operated regulating means, e.g. spindles
- F16N 7/12 . with feed by capillary action, e.g. by wicks
- F16N 7/14 . the lubricant being conveyed from the reservoir by mechanical means (by pumping devices [F16N 7/36](#), [F16N 7/38](#); adaptations for lubrication of machines or engines in general, of internal-combustion engines [F01M](#))
- F16N 7/16 . . the oil being carried up by a lifting device (scoop devices in general [F04D](#))
- F16N 7/18 . . . with one or more feed members fixed on a shaft
- F16N 7/20 . . . with one or more members moving around the shaft to be lubricated
- F16N 7/22 . . . . shaped as rings
- F16N 7/24 . . . with discs, rollers, belts or the like contacting the shaft to be lubricated
- F16N 7/26 . . Splash lubrication (mist lubrication [F16N 7/32](#))
- F16N 7/28 . . Dip lubrication
- F16N 7/30 . the oil being fed or carried along by another fluid (in internal- combustion engines [F02F](#))
- F16N 7/32 . . Mist lubrication (splash lubrication [F16N 7/26](#))
- F16N 7/34 . . . Atomising devices for oil (atomising devices in general [B05B](#))
- F16N 7/36 . with feed by pumping action of the member to be lubricated or of a shaft of the machine; Centrifugal lubrication
- F16N 7/363 . . { Centrifugal lubrication}
- F16N 7/366 . . {with feed by pumping action of a vertical shaft of the machine}
- F16N 7/38 . with a separate pump; Central lubrication systems
- F16N 7/385 . . {Central lubrication systems}
- F16N 7/40 . . in a closed circulation system
  
- F16N 9/00** **Arrangements for supplying oil or unspecified lubricant from a moving reservoir or the equivalent (also usable with a stationary reservoir [F16N 7/00](#))**
- F16N 9/02 . with reservoir on or in a rotary member
- F16N 9/04 . with reservoir on or in a reciprocating, rocking, or swinging member
  
- F16N 11/00** **Arrangements for supplying grease from a stationary reservoir or the equivalent in or on the machine or member to be lubricated; Grease cups**
- F16N 11/02 . Hand-actuated grease cups, e.g. Stauffer cups
- F16N 11/04 . Spring-loaded devices
- F16N 11/06 . Weight-loaded devices
- F16N 11/08 . with mechanical drive, other than directly by springs or weights (lubricating-pumps [F16N 13/00](#))
- F16N 11/10 . by pressure of another fluid
- F16N 11/12 . by centrifugal action
  
- F16N 13/00** **Lubricating-pumps (oil cans with pump [F16N 3/08](#); pumps for liquids in general [F04](#))**

- F16N 2013/003 . {Flexible-wall pumps}
- F16N 2013/006 . {Jet pumps}
- F16N 13/02 . with reciprocating piston (pumps with distributing equipment [F16N 13/22](#))
- F16N 13/04 . . Adjustable reciprocating pumps
- F16N 13/06 . . Actuation of lubricating-pumps
- F16N 2013/063 . . . {with electrical drive}
- F16N 2013/066 . . . {with electromagnetical drive}
- F16N 13/08 . . . by hand {or foot}
- F16N 13/10 . . . with mechanical drive ([F16N 13/18](#) takes precedence)
- F16N 13/12 . . . . with ratchet
- F16N 13/14 . . . . with cam or wobble-plate on shaft parallel to the pump cylinder or cylinders
- F16N 13/16 . . . with fluid drive
- F16N 13/18 . . . relative movement of pump parts being produced by inertia of one of the parts or of a driving member
- F16N 13/20 . Rotary pumps (with distributing equipment [F16N 13/22](#))
- F16N 2013/205 . . {Screw pumps}
- F16N 13/22 . with distributing equipment (separate distributing equipment [F16N 25/00](#))

**F16N 15/00** **Lubrication with substances other than oil or grease; Lubrication characterised by the use of particular lubricants in particular apparatus or conditions** ([F16N 17/00](#) takes precedence; lubricating compositions, selection of particular substances as lubricants in general [C10M](#); bearings with surfaces incorporating lubricant [F16C 33/04](#); lubrication specially adapted to machines or apparatus provided for in a single other class, see the relevant class for the machine or apparatus)

- F16N 15/02 . with graphite or graphite-containing compositions
- F16N 15/04 . with water (bearings working in water [F16C](#))

**F16N 17/00** **Lubrication of machines or apparatus working under extreme conditions** (additives to lubricating oil or lubricating grease [C10M](#))

- F16N 17/02 . at high temperature (of turbines [F01D](#), [F02C](#); lubrication of machines or engines in general, of internal-combustion engines [F01M](#))
- F16N 17/04 . at low temperature (lubrication of refrigerating machines [F25B](#))
- F16N 17/06 . in vacuum or under reduced pressure (lubrication of evacuating pumps [F04](#); of rotary anodes of X-ray tubes [H01J 35/10](#))

**Guidance heading: Details of lubricators or lubrication systems**

**F16N 19/00** **Lubricant containers for use in lubricators or lubrication systems**

- F16N 19/003 . { Indicating oil level (measuring liquid level in general [G01F](#))}
- F16N 19/006 . {Maintaining oil level (level control in general [G05D 9/00](#))}

**F16N 21/00** **Conduits; Junctions (in general [F16L](#)); Fittings for lubrication apertures**

- F16N 2021/005 . {Modulair units }
- F16N 21/02 . Lubricating nipples

|                          |   |
|--------------------------|---|
| F16N 21/04               | <ul style="list-style-type: none"> <li>• Nozzles for connection of lubricating equipment to nipples</li> </ul>  |
| F16N 21/06               | <ul style="list-style-type: none"> <li>• Covering members for nipples, conduits or apertures</li> </ul>   |
| <b>F16N 23/00</b>        | <b>Special adaptations of check valves</b> ( <a href="#">check valves in general F16K</a> )   |
| <b>F16N 25/00</b>        | <b>Distributing equipment {with or without proportioning devices}</b>   |
| F16N 25/02               | <ul style="list-style-type: none"> <li>• with reciprocating distributing slide valve</li> </ul>   |
| F16N 25/04               | <ul style="list-style-type: none"> <li>• with rotary distributing member (<a href="#">combined with oil pump F16N 13/22</a>)</li> </ul>   |
| <b>F16N 27/00</b>        | <b>Proportioning devices</b> ( <a href="#">liquid meters G01F</a> )   |
| F16N 27/005              | <ul style="list-style-type: none"> <li>• {<a href="#">using restrictions</a>}</li> </ul>  |
| F16N 27/02               | <ul style="list-style-type: none"> <li>• Gating equipment (<a href="#">multiple-way valves F16K</a>; <a href="#">metering cocks G01F</a>)</li> </ul>  |
| <b>F16N 29/00</b>        | <b>Special means in lubricating arrangements or systems providing for the indication or detection of undesired conditions; Use of devices responsive to conditions in lubricating arrangements or systems</b> ( <a href="#">in bearings F16C</a> ; <a href="#">constructions of apparatus outside the lubricating arrangements or systems, see the relevant classes</a> ) |
| F16N 29/02               | <ul style="list-style-type: none"> <li>• for influencing the supply of lubricant</li> </ul>   |
| F16N 29/04               | <ul style="list-style-type: none"> <li>• enabling a warning to be given; enabling moving parts to be stopped</li> </ul>   |
| <b>F16N 31/00</b>        | <b>Means for collecting, retaining, or draining-off lubricant in or on machines or apparatus</b> ( <a href="#">oil separators for separating oil from exhaust steam F22G</a> )  |
| F16N 31/002              | <ul style="list-style-type: none"> <li>• {<a href="#">Drain pans</a>}</li> </ul>  |
| F16N 31/004              | <ul style="list-style-type: none"> <li>• {<a href="#">combined with container</a>}</li> </ul>   |
| F16N 31/006              | <ul style="list-style-type: none"> <li>• {<a href="#">Drip trays</a>}</li> </ul>  |
| F16N 2031/008            | <ul style="list-style-type: none"> <li>• {<a href="#">Drain plugs</a>}</li> </ul>   |
| F16N 31/02               | <ul style="list-style-type: none"> <li>• Oil catchers; Oil wipers (<a href="#">oil-scraping rings for pistons F16J 9/20</a>; { <a href="#">cleaning means for indicating or measuring dip members, e.g. dipstick wipers G01F 23/045</a>})</li> </ul>  |
| F16N 2031/025            | <ul style="list-style-type: none"> <li>• {<a href="#">Oil-slinger</a>}</li> </ul>   |
| <b>F16N 33/00</b>        | <b>Mechanical arrangements for cleaning lubricating equipment; Special racks or the like for use in draining lubricant from machine parts</b>   |
| F16N 2033/005            | <ul style="list-style-type: none"> <li>• {<a href="#">Flushing</a>}</li> </ul>  |
| <b>Guidance heading:</b> | <b><u>Care of lubricants</u></b>  |
| <b>F16N 35/00</b>        | <b>Storage of lubricants in engine-rooms or the like</b> ( <a href="#">storage containers B65</a> )   |
| <b>F16N 37/00</b>        | <b>Equipment for transferring lubricant from one container to another</b>   |
| F16N 37/003              | <ul style="list-style-type: none"> <li>• {<a href="#">for filling bearings</a>}</li> </ul>  |
| F16N 2037/006            | <ul style="list-style-type: none"> <li>• {<a href="#">Filling</a>}</li> </ul>   |
| F16N 37/02               | <ul style="list-style-type: none"> <li>• for filling grease guns</li> </ul>   |
| <b>F16N 39/00</b>        | <b>Arrangements for conditioning of lubricants in the lubricating system</b> ( <a href="#">cleaning of lubricating oil, lubricating compositions C10M</a> )   |

- F16N 39/002 . {by deaeration (degasification of liquids [B01D 19/00](#))}
- F16N 39/005 . {by evaporating or purifying (for heating or cooling of filters [B01D 35/18](#), e.g. comprising a vaporising unit [B01D 35/185](#))}
- F16N 2039/007 . {Using strainers}
- F16N 39/02 . by cooling (heat-exchangers in general [F28](#))
- F16N 39/04 . by heating (heat-exchangers in general [F28](#))
- F16N 39/06 . by filtration (filters in general [B01D](#); magnetic separators [B03C 1/00](#); {centrifugal separators or filters [B04B 5/005](#)})
- F16N 2039/065 . . {inlet foot filter}
- F16N 39/08 . by diluting, e.g. by addition of fuel (lubrication of machines or engines in general, of internal-combustion engines [F01M](#))

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**F16N 99/00**      **Subject matter not provided for in other groups of this subclass**

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**F16N 2200/00**      **Condition of lubricant**

- F16N 2200/02 . Oxidation
- F16N 2200/04 . Detecting debris, chips, swarfs
- F16N 2200/06 . Film thickness
- F16N 2200/08 . Acidity, pH-value
- F16N 2200/10 . Temperature
- F16N 2200/12 . Viscosity
- F16N 2200/14 . Treating with electricity
- F16N 2200/16 . using tracers
- F16N 2200/18 . Detecting foaming
- F16N 2200/20 . Detecting water

**Guidance heading:**    **Care of lubricants**

**F16N 2210/00**      **Applications**

- F16N 2210/02 . Turbines
- F16N 2210/025 . . Wind Turbines
- F16N 2210/04 . Vehicles
- F16N 2210/06 . Marine
- F16N 2210/08 . Aircraft
- F16N 2210/09 . . for inverted flight
- F16N 2210/10 . Refrigerators
- F16N 2210/12 . Gearings
- F16N 2210/14 . Bearings
- F16N 2210/16 . Pumps
- F16N 2210/18 . Electric motors
- F16N 2210/20 . Electric generators
- F16N 2210/22 . Centrifuges

- F16N 2210/24 . Conveyers
- F16N 2210/26 . Spinning spindles
- F16N 2210/28 . submerged
- F16N 2210/30 . for reversed rotation
- F16N 2210/32 . Sewing machines
- F16N 2210/33 . Chains
- F16N 2210/34 . Cables and wires

**F16N 2230/00****Signal processing**

- F16N 2230/02 . Microprocessor; Microcomputer
- F16N 2230/06 . using mapping techniques
- F16N 2230/10 . Timing network
  - F16N 2230/12 . . with pneumatic elements
  - F16N 2230/13 . . with hydraulic elements
  - F16N 2230/14 . . with bimetallic elements
  - F16N 2230/16 . . with capacitors
- F16N 2230/18 . Switches
  - F16N 2230/19 . . Photo sensor
  - F16N 2230/20 . . Reed relays
- F16N 2230/22 . using counters

**F16N 2250/00****Measuring**

- F16N 2250/04 . Pressure
  - F16N 2250/05 . . Atmospheric pressure
  - F16N 2250/06 . . for determining flow
- F16N 2250/08 . Temperature
  - F16N 2250/11 . . Ambient temperature
- F16N 2250/16 . Number of revolutions, RPM
- F16N 2250/18 . Level
- F16N 2250/30 . Dielectricum
- F16N 2250/32 . Inductive
- F16N 2250/34 . Transparency; Light; Photo sensor
- F16N 2250/36 . Viscosity
- F16N 2250/38 . Piezo; x-tal
- F16N 2250/40 . Flow
- F16N 2250/42 . Friction
- F16N 2250/50 . Sampling
  - F16N 2250/52 . . magnetic

**F16N 2260/00****Fail safe**

- F16N 2260/02 . Indicating

|                     |  |
|---------------------|--|
| F16N 2260/04        | .. Oil level   |
| F16N 2260/05        | .. Oil flow  |
| F16N 2260/06        | .. Temperature   |
| F16N 2260/065       | ... by means of colours or dye                                     |
| F16N 2260/08        | .. Pressure  |
| F16N 2260/12        | .. using warning lamps   |
| F16N 2260/14        | .. using sound   |
| F16N 2260/16        | .. using recording   |
| F16N 2260/18        | .. necessity of changing oil                                       |
| F16N 2260/20        | . Emergency  |
| F16N 2260/21        | .. limping home  |
| F16N 2260/22        | .. Rupture   |
| F16N 2260/24        | .. using accumulator   |
| F16N 2260/30        | . Clogging filter  |
| F16N 2260/32        | . Pump failure   |
| F16N 2260/40        | . Pre-lubrication  |
| F16N 2260/50        | . After-lubrication  |
| F16N 2260/60        | . Limping home   |
| <b>F16N 2270/00</b> | <b>Controlling</b>   |
| F16N 2270/10        | . Level  |
| F16N 2270/12        | .. using overflow ( <a href="#">F16N 2270/18</a> takes precedence) |
| F16N 2270/14        | .. using float device  |
| F16N 2270/18        | .. using overflow by filling                                       |
| F16N 2270/20        | . Amount of lubricant  |
| F16N 2270/22        | .. with restrictions   |
| F16N 2270/24        | ... using porous, felt, ceramic, or sintered material              |
| F16N 2270/26        | ... variable   |
| F16N 2270/30        | .. intermittent  |
| F16N 2270/32        | ... Fixed pulse, fixed length, fixed amplitude                     |
| F16N 2270/48        | ... pressure-controlled  |
| F16N 2270/50        | . Condition  |
| F16N 2270/52        | .. Viscosity   |
| F16N 2270/54        | .. pH; Acidity   |
| F16N 2270/56        | .. Temperature   |
| F16N 2270/60        | . Pressure   |
| F16N 2270/62        | .. Limit   |
| F16N 2270/64        | .. Set-pressure  |
| F16N 2270/70        | . Supply   |
| F16N 2270/72        | .. on-off  |

F16N 2270/74 . . . only during use

**F16N 2280/00 Valves**

- F16N 2280/02 . electromagnetically operated
- F16N 2280/04 . Variable-flow or proportional valves