

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

Attention is drawn to the following places:

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

**Lubrication devices or arrangements for oil or grease**

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|------------------|--|
| <b>F16N 1/00</b> | <b>Constructional modifications of parts of machines or apparatus for the purpose of lubrication</b>   |
| <b>F16N 3/00</b> | <b>Devices for supplying lubricant by manual action</b> ( <a href="#">draining equipment for liquid containers B65D</a> )  |
| 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   |
| <b>F16N 5/00</b> | <b>Apparatus with hand-positioned nozzle supplied with lubricant under pressure</b> ( <a href="#">F16N 3/00</a> takes precedence)  |
| F16N 5/02        | . Nozzles or nozzle-valve arrangements therefor, e.g. high-pressure grease guns  |
| <b>F16N 7/00</b> | <b>Arrangements for supplying oil or unspecified lubricant from a stationary reservoir or the equivalent in or on the machine or member to be lubricated</b> ( <a href="#">axle-box lubrication for railway rolling-stock B61F 17/00</a> ) |
| 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 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 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 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](#))

**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 21/02 . Lubricating nipples
- F16N 21/04 . Nozzles for connection of lubricating equipment to nipples
- F16N 21/06 . Covering members for nipples, conduits or apertures

**F16N 23/00 Special adaptations of check valves (check valves in general [F16K](#))****F16N 25/00 Distributing equipment {with or without proportioning devices}**

- F16N 25/02 . with reciprocating distributing slide valve
- F16N 25/04 . with rotary distributing member (combined with oil pump [F16N 13/22](#))

**F16N 27/00 Proportioning devices (liquid meters [G01F](#))**

- F16N 27/005 . {using restrictions}
- F16N 27/02 . Gating equipment (multiple-way valves [F16K](#); metering cocks [G01F](#))

**F16N 29/00 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 (in bearings [F16C](#); constructions of apparatus outside the lubricating arrangements or systems, see the relevant classes)**

- F16N 29/02 . for influencing the supply of lubricant
- F16N 29/04 . enabling a warning to be given; enabling moving parts to be stopped

**F16N 31/00 Means for collecting, retaining, or draining-off lubricant in or on machines or apparatus (oil separators for separating oil from exhaust steam [F22G](#))**

- F16N 31/002 . {Drain pans}
- F16N 31/004 . . {combined with container}

F16N 31/006	<ul style="list-style-type: none"> <li>. {Drip trays}</li> </ul>
F16N 31/02	<ul style="list-style-type: none"> <li>. Oil catchers; Oil wipers (oil-scraping rings for pistons <a href="#">F16J 9/20</a>; { cleaning means for indicating or measuring dip members, e.g. dipstick wipers <a href="#">G01F 23/045</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>
	<b>Care of lubricants</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>. {for filling bearings}</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	<ul style="list-style-type: none"> <li>. {by deaeration (degasification of liquids <a href="#">B01D 19/00</a>)}</li> </ul>
F16N 39/005	<ul style="list-style-type: none"> <li>. {by evaporating or purifying (for heating or cooling of filters <a href="#">B01D 35/18</a>, e.g. comprising a vaporising unit <a href="#">B01D 35/185</a>)}</li> </ul>
F16N 39/02	<ul style="list-style-type: none"> <li>. by cooling (<a href="#">heat-exchangers in general F28</a>)</li> </ul>
F16N 39/04	<ul style="list-style-type: none"> <li>. by heating (<a href="#">heat-exchangers in general F28</a>)</li> </ul>
F16N 39/06	<ul style="list-style-type: none"> <li>. by filtration (<a href="#">filters in general B01D</a>; <a href="#">magnetic separators B03C 1/00</a>; {<a href="#">centrifugal separators or filters B04B 5/005</a>})</li> </ul>
F16N 39/08	<ul style="list-style-type: none"> <li>. by diluting, e.g. by addition of fuel (<a href="#">lubrication of machines or engines in general, of internal-combustion engines F01M</a>)</li> </ul>
<b>F16N 99/00</b>	<b>Subject matter not provided for in other groups of this subclass</b>
<b>F16N 2013/00</b>	<b>Lubricating-pumps</b> ( <a href="#">oil cans with pump F16N 3/08</a> ; <a href="#">pumps for liquids in general F04</a> )
F16N 2013/003	<ul style="list-style-type: none"> <li>. Flexible-wall pumps</li> </ul>
F16N 2013/006	<ul style="list-style-type: none"> <li>. Jet pumps</li> </ul>

F16N 2013/02	. with reciprocating piston ( <a href="#">pumps with distributing equipment F16N 13/22</a> )
F16N 2013/06	.. Actuation of lubricating-pumps
<a href="#">F16N 2013/063</a>	... with electrical drive
<a href="#">F16N 2013/066</a>	... with electromagnetical drive
F16N 2013/20	. Rotary pumps ( <a href="#">with distributing equipment F16N 13/22</a> )
<a href="#">F16N 2013/205</a>	.. Screw pumps
<b>F16N 2021/00</b>	<b>Conduits; Junctions (<a href="#">in general F16L</a>); Fittings for lubrication apertures</b>
<a href="#">F16N 2021/005</a>	. Modulair units
<b>F16N 2031/00</b>	<b>Means for collecting, retaining, or draining-off lubricant in or on machines or apparatus (<a href="#">oil separators for separating oil from exhaust steam F22G</a>)</b>
<a href="#">F16N 2031/008</a>	. Drain plugs
F16N 2031/02	. 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> })
<a href="#">F16N 2031/025</a>	.. Oil-slinger
<b>F16N 2033/00</b>	<b>Mechanical arrangements for cleaning lubricating equipment; Special racks or the like for use in draining lubricant from machine parts</b>
<a href="#">F16N 2033/005</a>	. Flushing
<b>F16N 2037/00</b>	<b>Equipment for transferring lubricant from one container to another</b>
<a href="#">F16N 2037/006</a>	. Filling
<b>F16N 2039/00</b>	<b>Arrangements for conditioning of lubricants in the lubricating system (<a href="#">cleaning of lubricating oil, lubricating compositions C10M</a>)</b>
<a href="#">F16N 2039/007</a>	. Using strainers
F16N 2039/06	. by filtration ( <a href="#">filters in general B01D</a> ; <a href="#">magnetic separators B03C 1/00</a> ; { <a href="#">centrifugal separators or filters B04B 5/005</a> })
<a href="#">F16N 2039/065</a>	.. inlet foot filter
<b><a href="#">F16N 2200/00</a></b>	<b>Condition of lubricant</b>
<a href="#">F16N 2200/02</a>	. Oxidation
<a href="#">F16N 2200/04</a>	. 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

### 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

#### **F16N 2270/00 Controlling**

- F16N 2270/10 . Level
- F16N 2270/12 .. using overflow ([F16N 2270/18](#) 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
<b>F16N 2280/00</b>		<b>Valves</b>
F16N 2280/02	.	electromagnetically operated
F16N 2280/04	.	Variable-flow or proportional valves