

**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.

**Guidance heading:** 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   |

**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      . 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 . { Drip trays }

F16N 2031/008 . { Drain plugs }

F16N 31/02 . Oil catchers; Oil wipers (oil-scraping rings for pistons [F16J 9/20](#); { cleaning means for indicating or measuring dip members, e.g. dipstick wipers [G01F 23/045](#) })

F16N 2031/025 . . { Oil-slinger }

**F16N 33/00** **Mechanical arrangements for cleaning lubricating equipment; Special racks or the like for use in draining lubricant from machine parts**

F16N 2033/005 . { Flushing }

**Guidance heading:** Care of lubricants

**F16N 35/00** **Storage of lubricants in engine-rooms or the like** (storage containers [B65](#))

**F16N 37/00** **Equipment for transferring lubricant from one container to another**

F16N 37/003 . { for filling bearings }

F16N 2037/006	. { Filling }
F16N 37/02	. for filling grease guns
<b>F16N 39/00</b>	<b>Arrangements for conditioning of lubricants in the lubricating system</b> (cleaning of lubricating oil, lubricating compositions <a href="#">C10M</a> )
F16N 39/002	. { by deaeration (degasification of liquids <a href="#">B01D 19/00</a> ) }
F16N 39/005	. { 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> ) }
F16N 2039/007	. { Using strainers }
F16N 39/02	. by cooling (heat-exchangers in general <a href="#">F28</a> )
F16N 39/04	. by heating (heat-exchangers in general <a href="#">F28</a> )
F16N 39/06	. by filtration (filters in general <a href="#">B01D</a> ; magnetic separators <a href="#">B03C 1/00</a> ; { centrifugal separators or filters <a href="#">B04B 5/005</a> } )
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 <a href="#">F01M</a> )
<b>F16N 99/00</b>	<b>Subject matter not provided for in other groups of this subclass</b>

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<b>F16N 2200/00</b>	<b>Condition of lubricant</b>
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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
<b>F16N 2250/00</b>	<b>Measuring</b>
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
<b>F16N 2260/00</b>	<b>Fail safe</b>



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
<b>F16N 2280/00</b>		<b>Valves</b>
F16N 2280/02	.	electromagnetically operated
F16N 2280/04	.	Variable-flow or proportional valves