

**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

- 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 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](#))

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

<b>F16N 19/00</b>	<b>Lubricant containers for use in lubricators or lubrication systems</b>
F16N 19/003	. { <b>Indicating oil level</b> (measuring liquid level in general <a href="#">G01F</a> ) }
F16N 19/006	. { <b>Maintaining oil level</b> (level control in general <a href="#">G05D 9/00</a> ) }
<b>F16N 21/00</b>	<b>Conduits; Junctions (in general <a href="#">F16L</a> ) ; Fittings for lubrication apertures</b>
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
<b>F16N 23/00</b>	<b>Special adaptations of check valves (check valves in general <a href="#">F16K</a> )</b>
<b>F16N 25/00</b>	<b>Distributing equipment {with or without proportioning devices }</b>
F16N 25/02	. with reciprocating distributing slide valve
F16N 25/04	. with rotary distributing member (combined with oil pump <a href="#">F16N 13/22</a> )
<b>F16N 27/00</b>	<b>Proportioning devices (liquid meters <a href="#">G01F</a> )</b>
F16N 27/005	. { <b>using restrictions</b> }
F16N 27/02	. Gating equipment (multiple-way valves <a href="#">F16K</a> ; metering cocks <a href="#">G01F</a> )
<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 (in bearings <a href="#">F16C</a> ; constructions of apparatus outside the lubricating arrangements or systems, see the relevant classes)</b>
F16N 29/02	. for influencing the supply of lubricant
F16N 29/04	. enabling a warning to be given; enabling moving parts to be stopped
<b>F16N 31/00</b>	<b>Means for collecting, retaining, or draining-off lubricant in or on machines or apparatus (oil separators for separating oil from exhaust steam <a href="#">F22G</a> )</b>
F16N 31/002	. { <b>Drain pans</b> }
F16N 31/004	. . {combined with container }
F16N 31/006	. { <b>Drip trays</b> }
F16N 31/02	. Oil catchers; Oil wipers (oil-scraping rings for pistons <a href="#">F16J 9/20</a> ; { <b>cleaning means for indicating or measuring dip members, e.g. dipstick wipers <a href="#">G01F 23/045</a> }</b> )

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

**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 37/02                    .    for filling grease guns

**F16N 39/00**                    **Arrangements for conditioning of lubricants in the lubricating system** (cleaning of lubricating oil, lubricating compositions [C10M](#) )

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 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 39/08                    .    by diluting, e.g. by addition of fuel (lubrication of machines or engines in general, of internal-combustion engines [F01M](#) )

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

**F16N 2013/00**                    **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 2013/02                    .    with reciprocating piston (pumps with distributing equipment [F16N 13/22](#))

F16N 2013/06                    . .    Actuation of lubricating-pumps

F16N 2013/063                    . . .    with electrical drive

F16N 2013/066                    . . .    with electromagnetical drive

F16N 2013/20                    .    Rotary pumps (with distributing equipment [F16N 13/22](#))

F16N 2013/205                    . .    Screw pumps

<b>F16N 2021/00</b>	<b>Conduits; Junctions (in general <a href="#">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 (oil separators for separating oil from exhaust steam <a href="#">F22G</a> )</b>
<a href="#">F16N 2031/008</a>	. Drain plugs
<a href="#">F16N 2031/02</a>	. 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> })
<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 (cleaning of lubricating oil, lubricating compositions <a href="#">C10M</a> )</b>
<a href="#">F16N 2039/007</a>	. Using strainers
<a href="#">F16N 2039/06</a>	. 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> })
<a href="#">F16N 2039/065</a>	. . inlet foot filter
<b>F16N 2200/00</b>	<b>Condition of lubricant</b>
<a href="#">F16N 2200/02</a>	. Oxidation
<a href="#">F16N 2200/04</a>	. Detecting debris, chips, swarfs
<a href="#">F16N 2200/06</a>	. Film thickness
<a href="#">F16N 2200/08</a>	. Acidity, pH-value
<a href="#">F16N 2200/10</a>	. Temperature
<a href="#">F16N 2200/12</a>	. Viscosity
<a href="#">F16N 2200/14</a>	. Treating with electricity
<a href="#">F16N 2200/16</a>	. 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
<b>F16N 2280/00</b>		<b>Valves</b>
F16N 2280/02	.	electromagnetically operated
F16N 2280/04	.	Variable-flow or proportional valves