

**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 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

**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 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](#) )

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

**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

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



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