

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