

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

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	. { Drip trays }
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 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**

Guidance heading:

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

- F16N 2021/00 Conduits; Junctions ([in general F16L](#)) ; Fittings for lubrication apertures**

- F16N 2021/005 . Modulair units

- F16N 2031/00 Means for collecting, retaining, or draining-off lubricant in or on machines or apparatus ([oil separators for separating oil from exhaust steam F22G](#))**

- F16N 2031/008 . Drain plugs

- F16N 2031/02 . 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 2033/00 Mechanical arrangements for cleaning lubricating equipment; Special racks or the like for use in draining lubricant from machine parts**

- F16N 2033/005 . Flushing

- F16N 2037/00 Equipment for transferring lubricant from one container to another**

- F16N 2037/006 . Filling

- F16N 2039/00 Arrangements for conditioning of lubricants in the lubricating system ([cleaning of lubricating oil, lubricating compositions C10M](#))**

- F16N 2039/007 . Using strainers

- F16N 2039/06 . by filtration ([filters in general B01D](#) ; [magnetic separators B03C 1/00](#); { [centrifugal separators or filters B04B 5/005](#) })
- F16N 2039/065 . . inlet foot filter

Guidance heading:

- 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