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.

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)

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}

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

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 . Dialectricum

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