SECTION F — MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING

F16 ENGINEERING ELEMENTS OR UNITS; GENERAL MEASURES FOR PRODUCING AND MAINTAINING EFFECTIVE FUNCTIONING OF MACHINES OR INSTALLATIONS; THERMAL INSULATION IN GENERAL

F16N LUBRICATING

Note(s) [2006.01]

Attention is drawn to the following places, which cover lubrication of specific apparatus or in particular processes:

A01D 69/12.....Harvesters
B21B 25/04.....Mandrels for metal tube rolling mills
B21B 27/06.....Rolls for metal rolling mills
B21D 37/18.....Tools for machines for working metal without removing material
B21J 3/00.....Forging or pressing
B22D 11/07.....Moulds for continuous casting of metals
B23C 5/28.....Milling cutters
B23D 59/02, B23D 59/04.....Metal saws
B23Q 11/10, B23Q 11/12.....Machine tools
B25D 17/26.....Portable power-driven percussive tools
B26B 19/40.....Hair-clippers or dry-shavers
B27B 13/12.....Band saw blades for wood or the like
B60R 17/00.....Vehicles
B61B 12/08.....Cable systems for railways
B61C 17/08.....Railway locomotives
B61F 17/00.....Axle-boxes of rail vehicles
B61K 3/00.....Rail or wheel flanges of railways
B62D 55/092.....Endless-track units for vehicles
B62J 31/00.....Cycles
B65G 45/02.....Conveyors
B66B 7/12.....Ropes, cables or guides of elevators
D01H 7/20.....Spindles of machines for spinning or twisting threads or fibres
D04B 35/28.....Knitting machines
D05B 71/00.....Sewing machines
D05C 13/04.....Embroidering machines
E01B 7/26.....Switches for railways
E05B 17/08.....Locks
E05D 11/02.....Hinges
E21B 10/22.....Roller bits for earth drilling
F01C 21/04.....Rotary-piston or oscillating-piston machines or engines
F01D 25/18.....Non-positive-displacement machines
F01M.....Machines or engines in general
F02C 7/06.....Gas-turbine plants
F02F 1/20.....Cylinders of combustion engines
F04B 39/02.....Pumps for liquids
F04C 29/02.....Rotary-piston or oscillating-piston pumps for liquids
F04D 29/04.....Non-positive-displacement pumps
F16C 1/24.....Flexible shafts
F16C 33/10.....Sliding-contact bearings
F16C 33/66.....Ball or roller bearings
F16F 1/24.....Springs
F16H 57/04.....Transmissions
F41A 29/04.....Smallarms or ordnance
G04B 31/08.....Clocks
H01R 39/56.....Rotary current collectors, distributors or interrupters

Subclass index

MODIFICATIONS OF APPARATUS OR MACHINES TO ENSURE LUBRICATION.....1/00

LUBRICATION DEVICES
Stationary; mobile; manual.....7/00, 11/00, 9/00, 3/00, 5/00
Lubricating-pumps.....13/00
Details: reservoirs; conduits; check valves.....19/00, 21/00, 23/00
EQUIPMENT FOR DISTRIBUTION, PROPORTIONING, SAFETY, CONTROL, CLEANING.....23/00-33/00
HANDLING OF LUBRICANTS, STORAGE.....33/00-39/00
SPECIAL LUBRICATION.....15/00, 17/00
SUBJECT MATTER NOT PROVIDED FOR IN OTHER GROUPS OF THIS SUBCLASS.....99/00

Lubrication devices or arrangements for oil or grease

1/00 Constructional modifications of parts of machines or apparatus for the purpose of lubrication [1, 2006.01]

3/00 Devices for supplying lubricant by manual action [1, 2006.01]
3/02 • delivering oil **[1, 2006.01]**
3/04 • • Oil cans; Oil syringes **[1, 2006.01]**
3/06 • • • delivering on squeezing **[1, 2006.01]**
3/08 • • • incorporating a piston-pump **[1, 2006.01]**
3/10 • delivering grease **[1, 2006.01]**
3/12 • • Grease guns **[1, 2006.01]**

5/00 Apparatus with hand-positioned nozzle supplied with lubricant under pressure (F16N 3/00 takes precedence) **[1, 2006.01]**
5/02 • Nozzles or nozzle-valve arrangements therefor, e.g. high-pressure grease guns **[1, 2006.01]**

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 [1, 2006.01]
7/02 • with gravity feed or drip lubrication **[1, 2006.01]**
7/04 • • with oil flow promoted by vibration **[1, 2006.01]**
7/06 • • Arrangements in which the droplets are visible **[1, 2006.01]**
7/08 • • controlled by means of the temperature of the member to be lubricated **[1, 2006.01]**
7/10 • • incorporating manually-operated regulating means, e.g. spindles **[1, 2006.01]**
7/12 • with feed by capillary action, e.g. by wicks **[1, 2006.01]**
7/14 • the lubricant being conveyed from the reservoir by mechanical means (by pumping devices F16N 7/36, F16N 7/38) **[1, 2006.01]**
7/16 • • the oil being carried up by a lifting device **[1, 2006.01]**
7/18 • • • with one or more feed members fixed on a shaft **[1, 2006.01]**
7/20 • • • with one or more members moving around the shaft to be lubricated **[1, 2006.01]**
7/22 • • • • shaped as rings **[1, 2006.01]**
7/24 • • • with discs, rollers, belts, or the like contacting the shaft to be lubricated **[1, 2006.01]**
7/26 • • Splash lubrication **[1, 2006.01]**
7/28 • • Dip lubrication **[1, 2006.01]**
7/30 • the oil being fed or carried along by another fluid **[1, 2006.01]**
7/32 • • Mist lubrication **[1, 2006.01]**
7/34 • • • Atomising devices for oil **[1, 2006.01]**
7/36 • with feed by pumping action of the member to be lubricated or of a shaft of the machine; Centrifugal lubrication **[1, 2006.01]**
7/38 • with a separate pump; Central lubrication systems **[1, 2006.01]**
7/40 • • in a closed circulation system **[1, 2006.01]**

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) **[1, 2006.01]**
9/02 • with reservoir on or in a rotary member **[1, 2006.01]**
9/04 • with reservoir on or in a reciprocating, rocking, or swinging member **[1, 2006.01]**

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 [1, 2006.01]
11/02 • Hand-actuated grease cups, e.g. Stauffer cups **[1, 2006.01]**
11/04 • Spring-loaded devices **[1, 2006.01]**
11/06 • Weight-loaded devices **[1, 2006.01]**
11/08 • with mechanical drive, other than directly by springs or weights (lubricating-pumps F16N 13/00) **[1, 2006.01]**
11/10 • by pressure of another fluid **[1, 2006.01]**
11/12 • by centrifugal action **[1, 2006.01]**

13/00 Lubricating-pumps (oil cans with pump F16N 3/08) **[1, 2006.01]**
13/02 • with reciprocating piston (pumps with distributing equipment F16N 13/22) **[1, 2006.01]**
13/04 • • Adjustable reciprocating pumps **[1, 2006.01]**
13/06 • • Actuation of lubricating-pumps **[1, 2006.01]**
13/08 • • • by hand **[1, 2006.01]**
13/10 • • • with mechanical drive (F16N 13/18 takes precedence) **[1, 2006.01]**
13/12 • • • • with ratchet **[1, 2006.01]**
13/14 • • • • with cam or wobble-plate on shaft parallel to the pump cylinder or cylinders **[1, 2006.01]**
13/16 • • • with fluid drive **[1, 2006.01]**
13/18 • • • relative movement of pump parts being produced by inertia of one of the parts or of a driving member **[1, 2006.01]**
13/20 • Rotary pumps (with distributing equipment F16N 13/22) **[1, 2006.01]**
13/22 • with distributing equipment **[1, 2006.01]**

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; lubrication specially adapted to machines or apparatus provided for in a single other class, see the relevant class for the machine or apparatus) **[1, 2006.01]**

15/02 • with graphite or graphite-containing compositions **[1, 2006.01]**
15/04 • with water **[1, 2006.01]**

17/00 Lubrication of machines or apparatus working under extreme conditions (additives to lubricating oil or lubricating grease C10M) **[1, 2006.01]**
17/02 • at high temperature **[1, 2006.01]**
17/04 • at low temperature **[1, 2006.01]**
17/06 • in vacuum or under reduced pressure (of rotary anodes of X-ray tubes H01J 35/10) **[1, 2006.01]**

Details of lubricators or lubrication systems

19/00 Lubricant containers for use in lubricators or lubrication systems [1, 2006.01]

21/00 Conduits; Junctions; Fittings for lubrication apertures [1, 2006.01]
21/02 • Lubricating nipples **[1, 2006.01]**
21/04 • Nozzles for connection of lubricating equipment to nipples **[1, 2006.01]**
21/06 • Covering members for nipples, conduits, or apertures **[1, 2006.01]**

23/00 Special adaptations of check valves [1, 2006.01]

25/00 Distributing equipment (combined with oil pump F16N 13/22) **[1, 2006.01]**
25/02 • with reciprocating distributing slide valve **[1, 2006.01]**
25/04 • with rotary distributing member **[1, 2006.01]**

27/00 Proportioning devices [1, 2006.01]
27/02 • Gating equipment **[1, 2006.01]**

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 (constructions of apparatus outside the lubricating arrangements or systems, see the relevant classes) **[1, 2006.01]**
29/02 • for influencing the supply of lubricant **[1, 2006.01]**
29/04 • enabling a warning to be given; enabling moving parts to be stopped **[1, 2006.01]**

31/00 Means for collecting, retaining, or draining-off lubricant in or on machines or apparatus [1, 2006.01]
31/02 • Oil catchers; Oil wipers (oil-scraping rings for pistons F16J 9/20) **[1, 2006.01]**

33/00 Mechanical arrangements for cleaning lubricating equipment; Special racks or the like for use in draining lubricant from machine parts [1, 2006.01]

Care of lubricants

35/00 Storage of lubricants in engine-rooms or the like [1, 2006.01]

37/00 Equipment for transferring lubricant from one container to another [1, 2006.01]
37/02 • for filling grease guns **[1, 2006.01]**

39/00 Arrangements for conditioning of lubricants in the lubricating system (cleaning of lubricating oil, lubricating compositions C10M) **[1, 2006.01]**
39/02 • by cooling **[1, 2006.01]**
39/04 • by heating **[1, 2006.01]**
39/06 • by filtration **[1, 2006.01]**
39/08 • by diluting, e.g. by addition of fuel **[1, 2006.01]**

99/00 Subject matter not provided for in other groups of this subclass [2006.01]