

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)

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.....	Conveyers
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	9/02	• with reservoir on or in a rotary member
		9/04	• with reservoir on or in a reciprocating, rocking, or swinging member
3/00	Devices for supplying lubricant by manual action	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
3/02	• delivering oil	11/02	• Hand-actuated grease cups, e.g. Stauffer cups
3/04	• • Oil cans; Oil syringes	11/04	• Spring-loaded devices
3/06	• • • delivering on squeezing	11/06	• Weight-loaded devices
3/08	• • • incorporating a piston-pump	11/08	• with mechanical drive, other than directly by springs or weights (lubricating-pumps F16N 13/00)
3/10	• delivering grease	11/10	• by pressure of another fluid
3/12	• • Grease guns	11/12	• by centrifugal action
5/00	Apparatus with hand-positioned nozzle supplied with lubricant under pressure (F16N 3/00 takes precedence)		
5/02	• Nozzles or nozzle-valve arrangements therefor, e.g. high-pressure grease guns	13/00	Lubricating-pumps (oil cans with pump F16N 3/08)
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	13/02	• with reciprocating piston (pumps with distributing equipment F16N 13/22)
7/02	• with gravity feed or drip lubrication	13/04	• • Adjustable reciprocating pumps
7/04	• • with oil flow promoted by vibration	13/06	• • Actuation of lubricating-pumps
7/06	• • Arrangements in which the droplets are visible	13/08	• • • by hand
7/08	• • controlled by means of the temperature of the member to be lubricated	13/10	• • • with mechanical drive (F16N 13/18 takes precedence)
7/10	• • incorporating manually-operated regulating means, e.g. spindles	13/12	• • • • with ratchet
7/12	• with feed by capillary action, e.g. by wicks	13/14	• • • • with cam or wobble-plate on shaft parallel to the pump cylinder or cylinders
7/14	• the lubricant being conveyed from the reservoir by mechanical means (by pumping devices F16N 7/36, F16N 7/38)	13/16	• • • with fluid drive
7/16	• • the oil being carried up by a lifting device	13/18	• • • relative movement of pump parts being produced by inertia of one of the parts or of a driving member
7/18	• • • with one or more feed members fixed on a shaft	13/20	• Rotary pumps (with distributing equipment F16N 13/22)
7/20	• • • with one or more members moving around the shaft to be lubricated	13/22	• with distributing equipment
7/22	• • • • shaped as rings	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)
7/24	• • • with discs, rollers, belts, or the like contacting the shaft to be lubricated	15/02	• with graphite or graphite-containing compositions
7/26	• • Splash lubrication	15/04	• with water
7/28	• • Dip lubrication	17/00	Lubrication of machines or apparatus working under extreme conditions (additives to lubricating oil or lubricating grease C10M)
7/30	• the oil being fed or carried along by another fluid	17/02	• at high temperature
7/32	• • Mist lubrication	17/04	• at low temperature
7/34	• • • Atomising devices for oil	17/06	• in vacuum or under reduced pressure (of rotary anodes of X-ray tubes H01J 35/10)
7/36	• with feed by pumping action of the member to be lubricated or of a shaft of the machine; Centrifugal lubrication		
7/38	• with a separate pump; Central lubrication systems		
7/40	• • in a closed circulation system		
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)		

Details of lubricators or lubrication systems

- 19/00 Lubricant containers for use in lubricators or lubrication systems**
- 21/00 Conduits; Junctions; Fittings for lubrication apertures**
- 21/02 • Lubricating nipples
- 21/04 • Nozzles for connection of lubricating equipment to nipples
- 21/06 • Covering members for nipples, conduits, or apertures
- 23/00 Special adaptations of check valves**
- 25/00 Distributing equipment** (combined with oil pump F16N 13/22)
- 25/02 • with reciprocating distributing slide valve
- 25/04 • with rotary distributing member
- 27/00 Proportioning devices**
- 27/02 • Gating equipment
- 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)
- 29/02 • for influencing the supply of lubricant
- 29/04 • enabling a warning to be given; enabling moving parts to be stopped

31/00 Means for collecting, retaining, or draining-off lubricant in or on machines or apparatus

- 31/02 • Oil catchers; Oil wipers (oil-scraping rings for pistons F16J 9/20)
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33/00 Mechanical arrangements for cleaning lubricating equipment; Special racks or the like for use in draining lubricant from machine parts**Care of lubricants****35/00 Storage of lubricants in engine-rooms or the like****37/00 Equipment for transferring lubricant from one container to another**

- 37/02 • for filling grease guns

39/00 Arrangements for conditioning of lubricants in the lubricating system (cleaning of lubricating oil, lubricating compositions C10M)

- 39/02 • by cooling
- 39/04 • by heating
- 39/06 • by filtration
- 39/08 • by diluting, e.g. by addition of fuel
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99/00 Subject matter not provided for in other groups of this subclass [2006.01]