

67 Grinding and polishing

67a Machines, devices and processes for grinding and polishing various articles, surfaces and materials; scouring by grinding, fire polishing, imprint polishing, etc., dressing of grinding tools; protective devices; abrasive tool feeding

67b Sand blast apparatus

67c Grinding tools, structure and manufacture thereof

67a Machines, devices and processes for grinding and polishing various articles, surfaces and materials; scouring by grinding, fire polishing, imprint polishing, etc., dressing of grinding tools; protective devices; abrasive tool feeding (grinding and polishing of wood 38c-2; of wood for paper production 55a-1; of fabrics 8b-25: of leather 28b-15, of footwear 71e-57, 71e-95/20 – 71e-95/24; of saws 49c-22/04; of cards during operations 76b-16; gold leaf polishing 49l-2; of horn and buttons 39a-6/02, 39a3-19/04; of needles 7e-5; of teeth 30b-5/01; fire polishing of glass 32a-31, 32a-32, 32a-29/00; lacquering of wood 75c-5; formation of tooth surfaces, also by grinding, in gears 49d; grinding machines used in the printing art 15e-15/03)

Tool grinding machines

67a-1 Grinding machines for milling cutters and reamers

67a-2 Grinding machines for twist drills

67a-3 Grinding machines for threads and thread dies

67a-4 Machines for grinding and sharpening embroidery machine borers, engraving tools, and ordinary drills

67a-5 Grinding machines for tools of a general nature: awls, chisels, lathe tools, plane bits, various types of hammers, [mining] crown drill bits, hatchets, etc.

Knife grinding and polishing machines

67a-6 Grinding machines for knives and scissors, manually operated, and for machine blades with straight edge (small hand grinding devices with reciprocating sharpening motion 67c-4)

67a-7 Machines and devices with rotary tools for grinding and sharpening razors and razor blades (simple sharpening devices with reciprocating grinding motion 67c-5)

67a-8 Grinding machines for knives designed for special purposes: shear blades, doctor blades, cross-shaped knives, disk knives, mowing machine blades, cutters comprising zigzag or otherwise curved, bent or spiral-shaped cutting edges, band knives (grinding devices for circular disk blades in combination with slicing machines 66b-9)

Machines and devices for grinding and polishing solids of revolution: cylindrical grinding machines

67a-9 Machines for grinding and polishing cylindrical bodies in general, cylindrical, tapered, shaped bodies: shafts, rods, wire, tubes

67a-10 Machines and devices for grinding and polishing crank pins, the outer, inner and lateral faces of all kinds of rings, e.g. piston rings, bushings, hollow vessels, railway wheels

67a-11 Machines, etc. for cylindrical grinding in situ, for surfacing and regrinding solids of revolution which have lost their roundness, cylinders, belt pulleys, shafts, collectors (21d1-61/02) etc.

67a-12 Machines and devices for grinding and polishing complete surfaces of balls and other fully rounded bodies (ball grinding drums 67a-23)

Machines and devices for grinding, polishing and cleaning flat surfaces

- 67a-13 Machines and devices for grinding the flat surfaces of metal elements, including sheet metal and of narrow edges of single or stacked metal sheets, and of measuring gauges or members
- 67a-14 Machines and devices for grinding natural or artificial stones, including uneven surfaces (stone processing, general 80d)
- 67a-15 Grinding and polishing machines for plate glass and glass bodies in general (for special glass bodies 67a-16 – 67a-20; processing by sand blast 67b)

Machines for grinding and polishing special-surface glass articles, bevelled edges of all kinds, spherical and parabolic surface portions and other optical surfaces, precious stones and pearls

- 67a-16 Bevelling plate glass (spectacle lenses 67a-19)
- 67a-17 Grinding and polishing machines for hollow glassware
- 67a-18 Bevelling hollow glassware and other glass articles (bevel-edge plates 67a-16)
- 67a-19 Grinding machines for spectacle lenses, edge grinding (for plate glass 67a-16) and grind-boring of holes in spectacle lenses (32a-33; 32a-33/00; 42h; 80d-9), for optical lenses and for spherical, toroidal, multifocal and cylindrical surfaces (67a-31/03; 80d-9)
- 67a-20 Grinding machines for parabolic surfaces and other surfaces produced by conic sections, as well as for reflectors
- 67a-21 Grinding machines for precious stones and pearls

Machines for grinding and polishing various articles, in particular mass-produced articles

- 67a-22 Grinding machines for steel springs and needles (67a-23; 7e-5)
- 67a-23 Grinding, polishing and cleaning drums, also for balls (in combination with sand blast 67b; with chemically active materials 31c-32; 32b-7; 32b-19/00; 48d-2; 48d1-3/00)
- 67a-24/01 Machines for centre-less grinding and polishing of surfaces of revolution and end faces of rollers, bolts, etc.
- 67a-24/02 Grinding and polishing machines for bushings, knobs, small disks, buttons (39a-6/02; 39a3-19/04; 39a7), screw heads, rivet heads, chain links, etc.
- 67a-25 Bottle cap polishing

Auxiliary devices for grinding and polishing machines; grinding and polishing machines of special types and materials; drives, elements

- 67a-26 Machines and devices for truing, dressing and sharpening grinding tools
- 67a-27 Devices for supplying coolants and abrasives to grinding apparatus
- 67a-28 Safety and dust suction devices for grinding machines
- 67a-29 Grinding machines with travelling abrading band (for grinding wood 38c-2)
- 67a-30 Card grinding machines (76b-16)
- 67a-31/01 Simple grindstones, hand or foot operated or mechanically driven
- 67a-31/02 Grinding machines with special frames and spindle arrangements, with several tools, special tools and special drives (drives in particular 67a-32/02, 67a-33)
- 67a-31/03 Grinding machines for special surfaces, e.g. straight and curved grooves, bent, winding, oval, and irregular surfaces, oval chucks (42a; 49)
- 67a-31/04 Grinding machines for the sealing surfaces of valves, slide valves, hatches, stoppers
- 67a-31/10 Machines for grinding and polishing special articles: machine elements (tooth flanks 49d), springs, pointed articles, eyelets, rails (grinding rails in railway tracks and rail joints 19a-31/12), locomotive frames, dies for wire drawing (boring of dies otherwise than by grinding 80d-9), bearing recesses, pointing of rods, centre punches, phonograph needles, reeds for musical instruments, spades, tableware, cutlery, also by means of steel burnishers, horseshoes, etc.
- 67a-31/20 Machines for grinding and polishing miscellaneous special materials
- 67a-31/30 Miscellaneous special grinding processes and devices

Elements and drives for grinding and polishing machines and devices

- 67a-32/01 Workpiece and tool fasteners and holders, work tables (87a-22), supports, guides, couplings, indexing heads, etc.
- 67a-32/02 Drives, table movement, control devices of all kinds, releasing and engaging devices, work-piece feed etc. (hydraulic drives 67a-33)
- 67a-33 Hydraulic and pneumatic drives for grinding machines of all kinds (hydraulic drives, general 47h-22; hydraulic or pneumatic workpiece or tool fastening to grinding machines 67a-15, 67a-19, 67a-32)

67b Sand blast apparatus

Devices for grinding objects, surfaces, materials, by means of whirling sand or similar granular material, including drum-type workpiece holders, processes and elements (cleaning devices for castings 31c-32; treatment of glass by sand blasting 32b-7, 32b-19/00; pipe cleaning 13e-7, 24g-4/01)

- 67b (No subdivision)

67c Grinding tools, structure and manufacture thereof

- 67c-1 Grinding and polishing disks and drums, abrasive paper and cloth, mechanical structure (wire and circular brushes 9b-6)
- 67c-2 Non-rotary grinding and polishing tools (for shoemaking 71c-56, 71c-95/16; 71c-95/18)
- 67c-4 Simple grinding and sharpening tools for cutting edges of all kinds, knives, scissors, etc. (grinding machines 67a-6; whetting machines 45c-4, 45c-3/00)
- 67c-5 Sharpening devices for used razor and razor blades, with reciprocating motion and also with oscillating rotary grinding motion (with rotary tools 67a-7)