

This heading comprises only the following subject matter:

- . boring and drilling by a relative rotary cutting motion between work and tool *and embraces:*
- . apparatus for drilling pipes under pressure and making connections
- . augers, gimlets and wood-boring bits
- . boring, facing and milling machines
- . braces and like hand and breast drills
- . centring work for drilling
- . drilling and boring jigs
- . drilling diamonds and other gems and glass
- . drills and drilling cutters, boring-bars, and reamers
- . drill supports
- . kinds or types of drilling and boring machines
- . machine details specially adapted and arranged for use in boring and drilling machines
- . non-adjustable hollow-cutter heads
- . rotary rock drills

but does not include the following subject matter, which is to be found in the headings indicated:

- . tripod stands—A4L, Furniture &c
 - . dental drilling—A5R, Medical, dental and veterinary equipment
 - . applications of flywheels—B3B, Machine tool details
 - . applications of optical apparatus for observing tools and work—B3B, Machine tool details
 - . applications of swash-plate motors and pumps—B3B, Machine tool details
 - . arrangements and applications of dashpots—B3B, Machine tool details
 - . automatic control of machine cycle by programme recorded in code form, by plug-board or by use of rotary selector switches—B3B, Machine tool details
 - . beds, frames, stands and sliding carriages—B3B, Machine tool details
 - . chucks and sockets—B3B, Machine tool details
 - . compensating for, preventing, or allowing for, temperature fluctuations—B3B, Machine tool details
 - . detecting worn or broken tools—B3B, Machine tool details
 - . devices for supporting drills and boring-tools while attaching to, or removing from, spindles—B3B, Machine tool details
 - . gauging, setting, measuring and machine tool control arrangements—B3B, Machine tool details
 - . indexing (circular)—B3B, Machine tool details
 - . indicating direction of movement of carriages, slides, spindles and tables—B3B, Machine tool details
 - . joystick control—B3B, Machine tool details
 - . lubricating and cooling—B3B, Machine tool details; F2A, Bearing, lubricating &c
 - . machine details applicable to other metal cutting machines—B3B, Machine tool details
 - . preventing backlash—B3B, Machine tool details
 - . supporting work by frozen or solidified material—B3B, Machine tool details
 - . tool and work spindles (*including* mounting)—B3B, Machine tool details
 - . transferring blanks and finished workpieces—B3B, Machine tool details
 - . work holders and work or tool tables—B3B, Machine tool details
 - . boring and turning mills—B3T, Turning
 - . horizontal lathes without a tailstock for boring and surfacing rotating work—B3T, Turning
 - . turning metal and other materials—B3T, Turning
 - . forming holes by means of high energy beams—B3V, Miscellaneous working of metals &c
 - . forming holes or discs by punches with screwed shanks by which the punches are simultaneously rotated and axially operated—B4B, Cutting &c
 - . percussive drills—B4C, Impelling-tools &c
 - . tools for setting-out work—B4X, Work benches, miscellaneous tools &c
 - . construction of mechanism for balancing parts—B8B, Winches, tackles &c; counterbalancing (*counterweighting*); F2X, Miscellaneous machine parts
 - . deep-boring—E1F Earth and rock working &c
 - . tunnelling and well and shaft sinking—E1F, Earth and rock working &c
 - . pipeline pigs and moles of general interest—F2P, Pipes and tubes
 - . machine attachments for performing operations other than boring or drilling *headings for such operations*
 - . hoods and like collectors for removing dust and like—F4X, Gas distribution, liquid heating vessels &c
 - . attachments for testing efficiency of drills—G1S, Measuring and testing physical properties
- Drilling machines or details operating by both rotary and percussive action are indexed also in B4C Impelling-tools &c*

The exclusion references listed in this heading are not exhaustive. Reference should be made to the appropriate general heading/s for processes, materials, elements or devices which may be more widely applicable than can appropriately be classified in this heading

Relationship with the Universal Indexing Schedules (heading U1S)

In addition to recording the nature of broader processes or apparatus with or in which inventions classified here may be used, U1S is used, subject to its indexing rules, to index materials operated on and useful products obtained

Operative date for Key entries

The operative date of the terms in this heading is earlier than that of Edition A

In this heading there are some terms which are only assigned to those features with which novelty is associated. Thus it is not possible to use a combination of terms for searching in all cases

- C1D apparatus for performing boring or drilling and also one or more other operation (*other than* mere attachments designed for separation from machine)
- C1B1 . combined turning and boring or drilling machines. *See* B3T, Turning
- C1B2 . yielding drive and reversing drill holders. *See* B3N, Screwing and tapping
- C1B2 balancing parts, applications of mechanism for
 . balancing slides. *See* B3B, Machine tool details
 . correcting for unbalance of workpiece by machining. *See* B3B, Machine tool details
- C1B22 bits. *See* drills &c
- C1B23 boring-bars. *See* drills &c
 braces and other hand-drills. *See* machines, kinds &c (portable &c)
- C1B23 brakes and brake-actuating mechanism, arrangement and applications of
- C1B23 cuttings, catching and removing (*other than* drills and cutters modified for)
 . removing cuttings by a stream of fluid applied to the tool or work. *See* B3B, Machine tool details
- drills, bits, cutters and cutter-bars—
 . diamond and like tools. *See* B3D, Abrading; B5E, Working stone &c
 . drills and drilling heads, for use with hole lining casings during boring earth or rock. *See* E1F, Earth and rock working &c
 . drills, broken, extracting from holes. *See* B4C, Impelling-tools &c
 . drills with roller, ball, and like edges operating by crushing. *See* E1F, Earth and rock working &c
 . ground augers and terriers. *See* E1F, Earth and rock working &c
 . rifling-bars. *See* B3L, Planing metals &c
 . screwdriver bits. *See* B3N, Screwing and tapping
 . adjustable, detachable and expanding cutter, with, (*other than* reamers and boring-bars and boring-heads)
 . . cutter blades secured by—
 . . . welding and brazing
 . . . screws
 . . . wedges and cams
 . . . unclassified means
 . . . unclassified
- C1B6A1 annular sweep, and tubular (*other than* reamers but including non-adjustable hollow-cutter heads)
- C1B6A2 attachments and modifications for—
- C1B6A3 . . catching and removing cuttings (*otherwise than* by flutes)
- C1B6A4 . . conducting lubricants and cooling fluids to cutting-edges (*otherwise than* by flutes)
- C1B6AX . . gauging depth of hole
- C1B6B . . performing a secondary cutting operation (*other than* annular cutters with central guiding drill bit)
- C1B6B augers, gimlets, and wood boring bits
 . . bradawls and awls. *See* B4B, Cutting &c; D1G, Sewing
 . . gimlet-ended taps and vent pegs. *See* B8T, Bottling, stoppers &c
- C1B6H . boring-bars and boring-heads (including internal tube cutters)
 . . vibration damping—*See* B3B, Machine tool details
- C1B6H countersinking
- C1B6L . cutting lips and points
- C1B6L . facing (including hollow conical cutters for valves)
- C1B6M . non-circular hole, for producing, (*other than* boring-bars and boring-heads)
- C1B6M . reamers—
 . . adjustable and detachable (*other than* pipe burr)
 . . pipe-burr
 . . unclassified
 . shanks
 . . cross-sections to fit special sockets. *See* B3B, Machine tool details
- C1B6P . twist and fluted (*other than* reamers)
- C1B6K . with non-cutting guiding pin
- C1B14A . types, unclassified
- C1B14B
- C1B14X
- C1B6N
- C1B6J
- C1B6Q
- C1B6X

- drill-withdrawing motions. *See* feed-motions
- driving machine spindle by—
 - . electric motor. *See* machines &c
 - . fluid pressure motor. *See* machines &c
 - . spring mechanism, power-storing. *See* F2S, Energy absorbing and storing; vibrating
 - . stop-motions. *See* stop-motions
- C1B7J
 - . archimedean screw
 - . . in hand and breast drills. *See* machines &c (portable &c)
- C1B7A
 - . belt and chain
- C1B7C
 - . clutch-operating mechanism
- C1B7G
 - . flexible-shaft
- C1B7D
 - . friction gearing
- C1B7E
 - . hand
 - . miscellaneous—
- C1B7X1
 - . . driving-mechanism started by contact of drill with work
- C1B7X3
 - . . servomotor
- C1B7H
 - . multiple crank
- C1B7F
 - . toothed gearing
- C1B7B
 - . yielding-means *other than* friction gearing
- C1B4
 - electric heating, applications of
 - feed-motions—
 - . for boring-bar tools. *See* drills &c (boring-bars &c)
 - . treadle and lever. *See* machines &c (treadle &c feed)
- C1B8A
 - . automatic stop
- C1B8H
 - . belt, rope and chain
- C1B8R
 - . cam and crank
- C1B8G
 - . depth of feed, determining and indicating, (*otherwise than by* automatic stop)
- C1B8B
 - . feed screws and nuts
- C1B8F
 - . fluid pressure
- C1B8C
 - . friction
- C1B8J
 - . independently-driven
- C1B8D
 - . intermittent
 - . miscellaneous—
- C1B8X3
 - . . centrifugal
- C1B8X4
 - . . gravity
- C1B8X5
 - . . hand feed automatically changed to power on encountering resistance
- C1B8X6
 - . . hand feed changed to power by manipulation of hand feed lever
- C1B8X1
 - . . hand feed clutch normally disengaged by spring
- C1B8X7
 - . . hand pressure applied directly to spindle
- C1B8X14
 - . . interlocking hand and power feeds
- C1B8X9
 - . . rate of feed, indicating
- C1B8X10
 - . . solenoid
- C1B8X11
 - . . spring
- C1B8X13
 - . . treadle, fluid pressure, or other yielding feed means limited by power-actuated abutment
- C1B8X12
 - . . Whitworth quick return
- C1B8E
 - . toothed
 - guides for drills and cutters. *See* jigs
 - hand and breast drills. *See* machines &c (portable &c)
 - indicating cutting-speed. *See* speed &c
- C1B11
 - jigs
 - machines, kinds or types of—
 - . percussive. *See* B4C, Impelling-tools &c
 - . slot-drilling. *See* B3K, Milling; B5L, Sawing, woodworking &c; E1F, Earth and rock working &c
 - . toy. *See* A6S, Toys &c
- C1A12
 - . angularly-adjustable spindle
- C1A1
 - . annular-cutter and sweep-cutting
- C1A2
 - . bench and wall
- C1A3
 - . boring-bar and boring-head
 - . . boring by cutters having a planetary motion. *See* B3K, Milling; B5L, Sawing, woodworking &c
 - . . cutting stereotype plates by broad cutters. *See* B6C, Printing &c
 - . . portable machines for engine and like cylinders. *See* portable &c
- C1A13
 - . centring work for
 - . . centring bells and like drill jigs. *See* jigs *above*
 - . circumferential rows of holes, for. *See* pitched-hole; with two &c
 - . hand. *See* portable &c
- C1A5
 - . non-circular hole
- C1A6
 - . pillar
- C1A7
 - . pitched-hole

- . portable and travelling—
 - . . end facing and valve-seat trueing. *See* B3T, Turning
 - . . general purpose stands or supports for portable machines. *See* B3B, Machine tool details
 - . . rock and mine tunnel drilling, for. *See* special work &c (rock drilling)
- C1A8B . . drilling and tapping (*including* vessels and pipes under pressure)
- C1A8C . . engine and like cylinder boring
- C1A8E . . hand and breast
- C1A8F . . railway and tramway rails on track
 - . . ratchet—
 - . . . double-acting
 - . . . reversible
 - . . . self-feeding
 - . . . with drill at each end of spindle
 - . . . unclassified
 - . . self-contained motor, with—
 - . . . electric
 - . . . fluid-pressure
 - . . suspended
 - . . types, unclassified
- C1A8H1 . . radial-arm
- C1A8H2 . . portable machines mounted on stands that enable drill to operate over sector of circle. *See* portable &c above
- C1A8J . . swinging. *See* swinging
- C1A8X . . reamering, modified for
- C1A9 . . rotating-work
 - . . self-contained motor, with, (*other than* portable)—
 - . . electric
 - . . fluid-pressure
 - . . swinging
 - . . treadle and lever feed
 - . . treadle-driven
 - . . vertically-adjustable spindle head
 - . . vertical adjustment of radial arm. *See* radial-arm
- C1A14 . . vertically-adjustable table
- C1A15 . . with two or more tool-spindles—
 - . . axially-opposite
 - . . inclined axes (*other than* radial)
 - . . parallel axes
 - . . radial axes, in same plane
 - . . turret
 - . . . rotating and locking means. *See* work-holders &c (turrets)
 - . . types unclassified
- C1A16A . . pressure, drilling vessels and pipes under. *See* machines &c (portable &c)
- C1A16B . . processes, special (*comprising only* processes independent of construction of apparatus)
- C1A18 . . heating electrically during machining. *See* electric &c
- C1A19 . . machining in inert atmosphere. *See* B3B, Machine tool details
- C1A22 . . special work, for. *See* special &c
- C1A20 . . ratchet and like braces. *See* machines &c (portable &c)
- C1A21 . . reamers. *See* drills &c
- C1A4A . . reversing-mechanism
 - . . Archimedean screw. *See* driving &c
 - . . for reversing rotation of drill spindle without retracting drill. *See* B3N, Screwing and tapping
 - . . special work, apparatus and processes designed for—
 - . . rifling. *See* B3L, Planing metals &c
- C1A4B . . brush stocks
- C1A4C . . button drilling and cutting out
- C1A4D . . curved cylinders
- C1A4E . . diamonds and other gems and glass
- C1A7A . . long holes
- C1A7B . . rock drilling
- C1A7C . . submerged work
- C1A7E . . speed controlling and indicating mechanism
- C1A7G . . stop-motions
- C1A7H . . automatic stop feed-motions. *See* feed-motions
- C1A7F . . work, preparatory treatment of
- C1B20
- C1B19
- C1B24