

CLASS 279, CHUCKS OR SOCKETS**SECTION I - CLASS DEFINITION**

This is the generic class for a chuck or a socket, per se, that is not elsewhere classified, and which includes a means for making a permanent or temporary and readily-releasable connection between a holder and an object, such as a tool, work-piece, or rod-like body, where the gripping means or seat is on or within the holder or base member.

This class includes a recessed handle, a spindle, and the like, adapted to receive a tool, a tang, a rod or like body, whether permanently or in such manner as to be readily released.

This class also includes a typical machine-chuck with jaws and a tool-holding socket with a detent to grip the object held against a torsional strain, a rock-drill chuck, a punch-holder, etc., where no torsional strain is applied, and in general any socketed holder and any symmetrical clamping device which may be deemed to be a receiver for positively holding an object against relative movement in at least one direction, generally in symmetrical relation concentric with the holding member, but in some instances eccentric.

SECTION II - REFERENCES TO OTHER CLASSES**SEE OR SEARCH CLASS:**

- 12, Boot and Shoe Making, subclass 103 and 123, for a chuck in a tool specialized to that art.
- 16, Miscellaneous Hardware, subclasses 18+, and particularly subclass 43, for a caster having socket structure.
- 24, Buckles, Buttons, Clasps, etc., appropriate subclasses, for a clasp, a fastener or holder not belonging to any art, but novel only to its structure.
- 29, Metal Working, subclass 559, for a process of work holding, per se.
- 30, Cutlery, subclasses 329+, for a hand cutter having a blade holder.
- 69, Leather Manufactures, subclasses 19+ and 20, for a chuck in a tool specialized to that art.
- 81, Tools, subclasses 300+ for a pair of pliers and a plural-handle wrench, subclass 487, for a hand held holder or a holder having a clamp, and subclasses 52+, for a single-handle wrench or screwdriver.

- 82, Turning, subclass 148 and 165-170, for a chuck in a tool specialized to that art.
- 142, Wood Turning, subclass 48 and 49, for a tool rest and a work support, 53, for a lathe center, 54, for a hollow mandrel, 55 for a turning machine attachment, 56, for a tool, and 57, for a work holder, all of which may have a chuck or a socket.
- 221, Article Dispensing, subclass 239 and 294, for an article dispenser not otherwise provided for, which delivers dispensed articles to a clamp or a hold down, and subclasses 201+, for a device in which a gripping type discharge assistant is effective to remove articles from a source of supply.
- 226, Advancing Material of Indeterminate Length, subclass 158, for a reciprocating gripper which advances material longitudinally.
- 248, Supports, subclasses 637+, for a machinery support, and subclasses 500+ for a hold down.
- 269, Work Holders, appropriate subclasses. Class 269 is the residual locus for patents to a device for clamping, supporting and/or holding an article in position to be operated on or treated. See notes thereunder for other related loci.
- 294, Handling: Hand and Hoist-Line Implements, for a holding device and a grappling element combined with a handle, a terminal element, or an attachment peculiarly adapted for engaging or supporting an article or a material for handling or manipulation purposes, especially subclass 99.2, for a tweezer or a pair of tongs.
- 401, Coating Implements With Material Supply, subclasses 49+, for a mechanical pencil including a chuck, particularly subclass 53, for a mechanical pencil including a chuck and means to limit the projection of a piece of lead (graphite); subclass 54, for a chuck resiliently supported in a pencil to cushion the lead; subclasses 65+, for a chuck included in step-by-step lead feed of a mechanical pencil; and subclasses 92+, residual for a mechanical pencil including a chuck.
- 407, Cutters, for Shaping, subclasses 66+, for a holder having a seat for an inserted cutting tool.
- 408, Cutting by Use of Rotating Axially Moving Tool, subclasses 238+, for a tool-holder or a chuck particularly adapted to be utilized in the operation of that class.
- 409, Gear Cutting, Milling, or Planing, subclasses 232+, for a milling cutter spindle holder, subclass 234, for a milling cutter holder, and sub-

- classes 345+, for a planing machine including a chuck.
- 433, Dentistry, subclasses 127+, for a dental hand-piece with a tool holding chuck structure.
- 440, Marine Propulsion, subclasses 106+ for an oar-lock.
- 470, Threaded, Headed Fastener, or Washer Making: Process and Apparatus, subclasses 73+ for means for closing a threading-die analogous to those used in closing chuck-jaws, subclass 58, for a work-holder used in screw threading, except as provided for in Class 408, subclasses 123+, for a work-holder or a socket used for mounting die stocks, and subclasses 141+ for a tap holder.
- 483, Tool Changing, generally for a process or apparatus including a tool transfer means combined with a tool support or storage means.
- 623, Prosthesis (i.e., Artificial Body Members), Parts Thereof, or Aids and Accessories Therefor, subclasses 57+, for a chuck or socket used in mounting an artificial hand or an article on an artificial arm.

SUBCLASSES

2.01 EXPANDING:

This subclass is indented under the class definition. A device wherein the object being held has a hollow or recess into which the means for making the connection is inserted and enlarged so as to internally grip the object.

SEE OR SEARCH CLASS:

- 72, Metal Deforming, subclass 393, for a wedge expanded segmental pipe expander, and subclasses 120+, for the same which rotates and/or travels circumferentially around a pipe.
- 82, Turning, subclass 169, for an expandible mandrel for a work driver.
- 242, Winding, Tensioning, or Guiding, subclass 529 and 571+ for expandible means to hold a coil or core and the like.
- 408, Cutting by Use of Rotating Axially Moving Tool, subclasses 79+, for a work-engaging structure other than a tool or a tool-support that frictionally engages sides of an opening in the work.

- 451, Abrading, subclasses 463+ for an expandible abrading tool.

2.02 Collet type:

This subclass is indented under subclass 2.01. A device wherein the means for making the connection is a generally cylindrical sleeve which has jaws for gripping defined thereon by circumferentially spaced longitudinal slits.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 4.07+, for a socket type collet having a fluid-pressure actuator.
- 46.1+, for a socket with spring biased jaws.

2.03 Fixed jaws and moving cam:

This subclass is indented under subclass 2.02. A device wherein the jaws are expanded by forcing a wedge into the collect which is stationary with respect to the holder.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 47, through 50, for a spring jaws socket with a moving cam actuator.
- 56, and 57, for a loose jaws socket with a moving cam actuator.

2.04 Fixed cam and moving jaws:

This subclass is indented under subclass 2.02. A device wherein the jaws are expanded by forcing the collet onto a wedge which is stationary with respect to the holder.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 51+, for a spring jaws socket having a fixed cam and moving jaws.
- 58+, for a loose jaws socket having a fixed cam and moving jaws.

2.05 Jaws mounted on flexible member; i.e. diaphragm:

This subclass is indented under subclass 2.01. A device wherein the means for making the connection is secured to a thin, resiliently deformable member which is deformed in such a manner as to produce radial movement of the connection means.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

4.05, for a chuck or socket with fluid-pressure actuator having jaws mounted on a flexible member.

139, for a chuck having jaws mounted on a flexible member.

2.06 Fluid-pressure actuator:

This subclass is indented under subclass 2.01. A device having a liquid or gas receiving expandible chamber for activating the means for making the connection.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

4.01+, for a chuck or socket with fluid-pressure actuator.

2.07 Directly expanding jaws:

This subclass is indented under subclass 2.06. A device wherein the means for making the connection is directly acted upon by the pressure of the fluid without intervening connecting means.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

4.11, for a chuck or socket having radially reciprocating jaws which are directly moved by a fluid pressure actuator.

2.08 Jaw is expandible chamber; i.e., bladder type:

This subclass is indented under subclass 2.07. A device wherein the expandible chamber is the means for making the connection.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

4.03, for a chuck or socket with fluid-pressure actuator wherein the jaw is an expandible chamber.

2.09 Expanding jaws via mechanical connection:

This subclass is indented under subclass 2.06. A device wherein the means for making the connection is coupled to the fluid pressure actuator by means of a linkage.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

4.12, for a chuck or socket with fluid-pressure actuator having radially reciprocating jaws wherein fluid pressure moves the jaws via mechanical connections.

2.1 Axially moving actuator:

This subclass is indented under subclass 2.01. A device wherein the means for making the connection expand is a mechanical linkage which translates in a direction generally perpendicular to the direction of expansion.

2.11 Wedge:

This subclass is indented under subclass 2.1. A device having an inclined surface which acts as a cam for converting an axial motion of the actuator into a radial expansion of the means for making the connection.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

70, for a socket having radially reciprocating jaws with a moving cam actuator including a threaded sleeve and a wedge.

121, for a chuck having radially reciprocating jaws which are wedge actuated.

2.12 Internal cone:

This subclass is indented under subclass 2.11. A device wherein the wedge is a cylinder which has a diameter that increases along a direction defined by the axis of the cylinder.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

108, for a pivoted jaw chuck which is internally cone actuated.

120, for a chuck with radially reciprocating jaws which are lever actuated and include an internal cone.

2.13 With jaw positively interlocked with wedge; e.g., dovetail or T-slot:

This subclass is indented under subclass 2.11. A device wherein a portion of the means for making the connection is engaged within a portion of the wedge so that the wedge positively moves said means.

2.14 With resilient means contacting nonresilient jaw:

This subclass is indented under subclass 2.11. A device wherein the means for making the connection is engaged by a resilient means thereby tending to move the connection making means radially inward.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 43.7, for a resilient split socket having a nonresilient member biased by a resilient member.
- 46.7, for a socket having spring biased jaws including a nonresilient member biased by a resilient member.

2.15 Constricting band, annulus, or clip:

This subclass is indented under subclass 2.14. A device wherein the resilient means surrounds and confines the connection making means.

2.16 Toggle:

This subclass is indented under subclass 2.1. A device having an intermediate linkage pivotally connected at both ends between the translating linkage and the means for making the connection.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 109, for pivoted jaws which are toggle actuated.
- 118, for radially reciprocating jaws which are toggle actuated.

2.17 Axially compressible element expands radially:

This subclass is indented under subclass 2.1. A device wherein the means for making the connection is an elastomeric, generally cylindrical member which expands in diameter when shortened lengthwise.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 46.1+, for a socket with spring biased jaws.

2.18 Lever:

This subclass is indented under subclass 2.1. A device having an intermediate linkage between the axially moving actuator and the

means for making the connection which is pivotally mounted intermediate its ends.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 119+, for radially reciprocating jaws which are lever actuated.

2.19 Rotary actuator:

This subclass is indented under subclass 2.01. A device having means adapted to expand the means for making the connection by rotating about the longitudinal axis of the chuck or socket.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 71+, for a socket with radially reciprocating jaws actuated by a moving cam which includes a rotary eccentric-cam sleeve.
- 81, for a socket with a side detente and a rotary cam sleeve.

2.2 Clutch or self-actuating type:

This subclass is indented under subclass 2.19. A device wherein rotation of the device or tangential force on the object being held acts to expand the means for making the connection.

2.21 Jaw structure:

This subclass is indented under subclass 2.01. A device wherein the means for making the connection has specific gripping structure for contacting the wall of the recess, or specific structure for attaching the means for making the connection to the chuck body.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 123+, for radially reciprocating jaw structure, per se.
- 152+, for a jaw insert component or accessory.

2.22 Resilient:

This subclass is indented under subclass 2.21. A device having an elastomeric element for the gripping structure.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 22, and 23, for a self-grasping socket having yielding grasping jaws.

- 151, for a padded or cushioned jaw component or accessory.
- 2.23 Ball or roller:**
This subclass is indented under subclass 2.21. A device having a sphere or cylinder for the gripping structure.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
22, for a self-grasping socket having yielding grasping jaws including ball or roller.
152+, for a jaw insert component or accessory.
- 2.24 Pivoted:**
This subclass is indented under subclass 2.21. A device having gripping structure that is hinged to the holder.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
35+, for a socket having pivoted jaws.
106+, for a chuck having pivoted jaws.
- 3 VACUUM:**
This subclass is indented under the class definition. Chucks adapted to hold work-pieces, etc., by external atmospheric pressure produced by exhausting air from the side of the article against the chuck body or holder.
- SEE OR SEARCH CLASS:
156, Adhesive Bonding and Miscellaneous Chemical Manufacture, particularly subclasses 569+ for label pickers in combinations with a laminating operation.
226, Advancing Material of Indeterminate Length, subclass 95 for pneumatic means to cause material being advanced to be urged toward the advancer.
248, Supports, subclass 206.1, for vacuum-type brackets; 362, for vacuum-type hold-downs, 363, for miscellaneous vacuum-type supports.
271, Sheet Feeding or Delivering, appropriate "pneumatic" subclasses.
294, Handling: Hand and Hoist-Line Implements, subclasses 64.1+, for vacuum-type devices, and subclass 88, for pneumatic grapples.
- 451, Abrading, subclass 388 for a vacuum work holder for use with an abrading machine.
- 4.01 WITH FLUID-PRESSURE ACTUATOR:**
This subclass is indented under the class definition. A device having a chamber adapted to receive a gas or liquid, which device expands to force the gripping structure of a hollow holder to translate radially into contact with an external surface of the object inserted therein.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
2.06+, for an expanding chuck or socket having a fluid pressure actuator.
3, for a vacuum actuated device.
- 4.02 With measuring, indicating or control means:**
This subclass is indented under subclass 4.01. A device having means to sense and/or display the existence or degree of a specified parameter, such as fluid pressure or gripping force, or means to influence a programmed sequence of events related to holder operation, such as fluid flow, depending whether the specified parameter has been detected.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
126, for a chuck with measuring, indicating or control means.
- 4.03 Jaw is expansible chamber; i.e., bladder type:**
This subclass is indented under subclass 4.01. A device wherein the gripping structure is an external surface of the expansible chamber.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
2.08, for an expanding chuck or socket which is fluid pressure actuated with directly expanding jaws wherein one jaw is an expansible chamber.
- 4.04 Pneumatic type:**
This subclass is indented under subclass 4.01. A device wherein the fluid is a gas.

- 4.05 Jaws mounted on flexible member; i.e., diaphragm:**
This subclass is indented under subclass 4.01. A device having the gripping structure secured to a generally thin resiliently bendable member activated by the expansible chamber.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
2.05, for an expanding chuck or socket which has jaws mounted on a flexible member.
139, for jaws mounted on a flexible member, in general.
- 4.06 Socket type:**
This subclass is indented under subclass 4.01. A device wherein the holder has a recess or depression with which to receive the object, and means for gripping an exterior surface of the object therein.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
9.1+, for a socket, per se.
- 4.07 Collet:**
This subclass is indented under subclass 4.06. A device wherein the gripping means is a generally cylindrical sleeve having jaws thereon defined by circumferentially spaced lengthwise extending slits.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
2.02+, for an expanding chuck or socket of the collet type.
46.1+, for a socket with spring biased jaws.
- 4.08 Fixed cam and moving jaws:**
This subclass is indented under subclass 4.07. A device wherein the collet jaws are radially contracted onto the object by pushing or drawing the collet into a wedge that is stationary with respect to the holder.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
51+, for a socket with spring biased jaws having a fixed cam and moving jaws.
58+, for a socket with loose jaws having a fixed cam and moving jaws.
- 4.09 Moving cam and fixed jaws:**
This subclass is indented under subclass 4.07. A device wherein the collet jaws are radially contracted onto the object by pushing or drawing a wedge onto the collet that is stationary with respect to the holder.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
47, through 50, for a socket having spring biased jaws which are actuated by a moving cam.
56, through 57, for a loose jaws socket actuated by a moving cam.
- 4.1 Radially reciprocating jaws:**
This subclass is indented under subclass 4.01. A device wherein the gripping structure translates in a direction generally normal to the gripped surface of the object.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
110+, for a chuck with radially reciprocating jaws.
- 4.11 Fluid pressure directly moves jaws:**
This subclass is indented under subclass 4.1. A device wherein the gripping structure is directly acted upon by the pressure of the fluid without intervening connection means.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
2.07+, for an expanding chuck or socket having fluid pressure actuation and directly expanding jaws.
- 4.12 Fluid pressure moves jaws via mechanical connection:**
This subclass is indented under subclass 4.1. A device wherein the means for making the connection is coupled to the fluid pressure actuated by means of a linkage structure.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
2.09, for an expanding chuck or socket with fluid pressure actuation and expanding jaws via a mechanical connection.

5 ANGULARLY ADJUSTABLE OR INDEXING:

This subclass is indented under the class definition. Chucks wherein the holding means may be rotated with respect to the chuck-body, angularly positioning the work and enabling a tool to engage different angular points on the work, as in successively cutting multiple threads or working otherwise on angularly-separated points.

SEE OR SEARCH CLASS:

74, Machine Element or Mechanism, subclasses 813+ for assemblies of general utility having means to index rotary members, and see the Notes thereto.

6 ECCENTRIC:

This subclass is indented under the class definition. Chucks adjustable so as to hold articles eccentric to the chuck-axis.

7 THREADED GRIP:

This subclass is indented under the class definition. Chucks adapted to hold short threaded pieces, as of pipes or rods, without marring the threads. Includes "nipple-chucks".

SEE OR SEARCH THIS CLASS, SUBCLASS:

99+, for shanks threaded into a holder or socket.

8 LONGITUDINAL SCREW CLAMP:

This subclass is indented under the class definition. Chucks to which the article is secured by screw-clamps whose axes are parallel to the axis of the chuck.

9.1 SOCKET TYPE:

This subclass is indented under the class definition. A device wherein the holder has a recess or depression with which to receive the object, and means for gripping the exterior surface of the object therein.

- (1) Note. This subclass includes machine chucks, drill or other tool holders, and rod-sockets, whether or not the connection formed thereby is permanent or temporary, provided the held member enters a socket in the holding member.

SEE OR SEARCH CLASS:

403, Joints and Connections, appropriate subclasses for joints in general involving a socket.

14 Multiple alternative:

This subclass is indented under subclass 9.1. Devices wherein a plurality of sockets are provided in one holder, but only one is adapted to be used at a time.

16 Self-centering of floating:

This subclass is indented under subclass 9.1. Devices in which the held article or socket member therefore is free to move in any direction or out of alignment with the axis of the chuck body.

SEE OR SEARCH CLASS:

464, Rotary Shafts, Gudgeons, Housings, and Flexible Couplings for Rotary Shafts, appropriate subclasses for a coupling between a shaft and driven member having angularly related or misaligned axes.

17 Radially reciprocating jaws:

This subclass is indented under subclass 16. Devices in which the jaws close by reciprocating radially.

18 Transverse holder and setscrew:

This subclass is indented under subclass 16. Devices in which an article is clamped to a floating socket member by a transverse screw or by a clamp actuated by a screw.

19 Lost motion:

This subclass is indented under subclass 9.1. Devices wherein the object held in the socket is permitted a limited free reciprocating movement.

- (1) Note. These devices are used mostly for impact-drills, riveters and punches.

19.1 Swinging external yoke or detent:

This subclass is indented under subclass 19. Devices in which there is combined with the socket a yoke or detent mounted externally of the socket for swinging motion.

- 19.2 Rotary socket:**
This subclass is indented under subclass 19.1. Devices in which the socket is constructed to rotate relative to the socket holder.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
19.3, for other rotary sockets.
- 19.3 Rotary socket:**
This subclass is indented under subclass 19. Devices in which the socket is constructed to rotate relative to the socket holder.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
19.2, for other rotary sockets.
- 19.4 Spreading elements:**
This subclass is indented under subclass 19. Devices in which two or more elements are mounted for motion away from each other to release a tool from the socket and for motion toward each other to retain a tool in the socket.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
19.5, for single elements movable relative to the socket for retaining a tool in the socket.
- 19.5 Key retainer:**
This subclass is indented under subclass 19. Devices in which a single element is mounted for movement in guideways for retaining a tool in the socket.
- 19.6 Sleeve type retainer:**
This subclass is indented under subclass 19. Devices in which a substantially annular member coacts with the socket to retain a tool therein.
- (1) Note. In this subclass are placed sleeves mounted externally of the socket.
- 19.7 Sleeve in socket:**
This subclass is indented under subclass 19.6. Devices in which the sleeve is mounted within the socket.
- 20 Fluid-conduit drill holding:**
This subclass is indented under subclass 9.1. Devices having a fluid-conduit to admit oil, water, air, or other fluid to the drill or work.
- SEE OR SEARCH CLASS:
285, Pipe Joints or Couplings, subclasses 184+ for couplings permitting adjusting the angle between tubular members, and subclasses 189+ for a joint between a pipe end and pipe side.
- 20.1 Feed type:**
This subclass is indented under subclass 9.1. A device wherein the recess has a through-hole for receiving an object of indeterminate length which extends therethrough and the device is adapted to advance the object intermittently.
- 22 Ball or roller:**
This subclass is indented under subclass 9.1. Devices having self-grasping yielding jaws in the form of rolling members moving on an inclined way.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
75, for similar structure in radially reciprocating jaw sockets.
- 23.1 Spring jaws:**
This subclass is indented under subclass 9.1. A device wherein the gripping means are self-grasping yielding jaws of resiliently deformable material.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
102, for a device with friction type jaws.
- 24 Yielding detent:**
This subclass is indented under subclass 9.1. Devices having self-grasping means wherein an excessive stress will cause a detent to move and permit movement of the article in or from the socket.
- 28 Wedge:**
This subclass is indented under subclass 9.1. Devices of the self-grasping one-way-clutch type, including jaws having a wedging action.

- SEE OR SEARCH CLASS:
403, Joints and Connections, subclass 206 wherein an axially curved or bent portion of a rod is a joint component.
- 29 Side detent:**
This subclass is indented under subclass 9.1. Devices of the self-grasping one-way-clutch type wherein a detent permits the article to move one way in the socket, but binds when stress is exerted in the opposite direction.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
87, for wedge-detents longitudinal of the socket-axis and rigidly holding the tool or object against all movement in the socket.
- SEE OR SEARCH CLASS:
403, Joints and Connections, subclass 105 for similar structure in a joint of general utility.
- 30 Ball or roller:**
This subclass is indented under subclass 29. Devices which include a binding-detent comprising a ball or roller adapted to move over an inclined surface.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
22, for similar devices having yielding jaws.
- 32 Conical clamp threaded in socket:**
This subclass is indented under subclass 9.1. Devices in which an article is held in the socket by a conical screw-threaded perforated binder, which is in two or more parts or divided part way of its axis, so as to be compressed on the article is the socket when screwed into the socket-walls.
- SEE OR SEARCH CLASS:
285, Pipe Joints or Couplings, subclasses 339+, for screw glands. See the search notes thereunder.
- 33 Transversely oscillating jaws:**
This subclass is indented under subclass 9.1. Devices in which the jaws swing in a curved path in a plane at right angles to the axis of the chuck.
- 34 Screw actuated:**
This subclass is indented under subclass 33. Devices in which the jaws are closed by a screw.
- 35 Pivoted jaws:**
This subclass is indented under subclass 9.1. Devices wherein two or more jaws swing toward each other in substantially radial planes on pivots or hinges.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
33, for jaws which oscillate transversely.
77, for pivoted detents that oscillate or rotate into and out of contact with the object therein.
106, for pivoted jaws that oscillate in closing.
- 36 Threaded cam sleeve:**
This subclass is indented under subclass 35. Devices wherein a sleeve threaded to the chuck-body advances and closes the jaws by inclined-surface engagement.
- 37 Reciprocating cam sleeve:**
This subclass is indented under subclass 35. Devices wherein a reciprocating sleeve closes the jaws by an inclined-surface engagement.
- 38 Fixed cam and moving jaws:**
This subclass is indented under subclass 35. Devices wherein the jaws are closed by being moved into contact with a part on the body, effecting an inclined-surface engagement.
- 39 Axial screw actuator:**
This subclass is indented under subclass 38. Devices in which the jaws are pivoted to a screw-threaded member that is screwed into the socket.
- 40 Threaded-sleeve actuator:**
This subclass is indented under subclass 38. Devices which include pivoted jaws connected to a threaded member engaging a screw-

- threaded sleeve. When the sleeve is rotated, the pivoted jaws move axially of the socket without the sleeve advancing.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
52, for similar structure in spring jaw sockets.
59, for similar structure in loose jaw socket.
- 42 Threaded cam sleeve:**
This subclass is indented under the unnumbered subclass, Resilient split socket. Devices wherein a sleeve is threaded to the body and moves longitudinally thereon to clamp the parts together by an inclined-surface contact.
- SEE OR SEARCH CLASS:
285, Pipe Joints or Couplings, subclasses 339+ and 386+, for screw thimble, clamping thimble joints. See the search notes thereunder.
- 43 Reciprocating cam sleeve:**
This subclass is indented under the unnumbered subclass, Resilient split socket. Devices wherein the sleeve slides longitudinally on the split socket and cams along the walls upon the inserted article.
- 43.1 Unitary:**
This subclass is indented under subclass 9.1. A device wherein the gripping means is made of elastomeric or spring material and is of one piece construction, such as a tubular body divided or/slit lengthwise on one or more sides to permit the socket walls to grip the object therein.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
46.2, for a socket having spring biased jaws of unitary construction.
- 43.2 Split at one end only:**
This subclass is indented under subclass 43.1. A device wherein all slits in the tube extend lengthwise from a single terminal end.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
46.3, for a socket having spring biased jaws of unitary construction which are split at one end only.
- 43.3 Transverse screw actuator:**
This subclass is indented under subclass 43.2. A device having a threaded fastener which draws opposing lengthwise edges of the slit closer together.
- 43.4 Cam actuator:**
This subclass is indented under subclass 43.2. A device having a wedge mechanism which pushes opposing lengthwise edges of the slit closer together.
- 43.5 Split end to end:**
This subclass is indented under subclass 43.1. A device wherein the lengthwise slit extends over the entire length of the gripping means.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
46.5, for a socket having spring biased jaws of unitary construction which are split end to end.
- 43.6 With jaw pads or insert:**
This subclass is indented under subclass 43.1. A device wherein the gripping means has removeable object-gripping surfaces or separate, permanently attached gripping surfaces.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
46.6, for a socket having spring biased jaws of unitary construction with jaw pads or insert.
152+, for a chuck or socket jaw insert component or accessory.
- 43.7 Nonresilient member biased by a resilient member:**
This subclass is indented under subclass 9.1. A device wherein the socket is itself a substantially rigid gripping means which is forced into contact with the object by an elastic means.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
2.14+, for an expanding chuck or socket having an axially moving wedge actuator including a resilient means contacting a nonresilient jaw.
- 46.7, for a socket having spring biased jaws including a nonresilient member biased by a resilient member.
- 43.8 Resilient member reinforced by another resilient member:**
This subclass is indented under subclass 9.1. A device wherein the socket is itself a gripping means divided or split lengthwise, made of elastomeric or spring material, and has another force applying means adding to the gripping force on the object therein.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
46.8, for a socket having spring biased jaws including a resilient member reinforced by another resilient member.
- 43.9 With means to exclude contaminants; e.g., seal, shield:**
This subclass is indented under subclass 9.1. A device having a gasket or other barrier means which prevents undesired material from entering the resilient split socket.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
46.9, for a socket having spring biased jaws and including means to exclude contaminants.
- 44 One movable side:**
This subclass is indented under subclass 9.1. Devices wherein the socket is split in two relatively movable parts.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
77, for detent pivoted to the socket to oscillate or rotate in or out of contact with the object.
- 45 Sleeved:**
This subclass is indented under subclass 44. Devices wherein a sleeve is adapted to be moved over the movable side member and force it to or hold it in clamping position.
- 46.1 Spring biased jaws:**
This subclass is indented under subclass 9.1. A device wherein the gripping means is separate from the chuck body, and is (a) made of resilient or spring material, such as a tubular body slit lengthwise, or (b) biased by resilient or spring material.
- (1) Note. This subclass includes a socket of elastomeric material which expands radially when compressed axially, thus gripping an object in the socket aperture.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
2.17, for an expanding chuck or socket having an axially moving actuator including an axially compressible element which expands radially.
- 43.1+, for a split resilient socket of unitary construction.
- 46.2 Unitary:**
This subclass is indented under subclass 46.1. A device wherein the gripping means is of a single piece construction.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
43.1+, for a split resilient socket of unitary construction, per se.
- 46.3 Split at one end only:**
This subclass is indented under subclass 46.2. A device wherein the lengthwise slit extends from a single terminal end of the gripping means, and the other terminal end is continuous therearound.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
43.2+, for a split resilient socket of unitary construction which is split at one end only.

46.4 Split at both ends:

This subclass is indented under subclass 46.2. A device wherein both terminal ends of the gripping means have a lengthwise slit extending therein.

46.5 Split end to end:

This subclass is indented under subclass 46.2. A device wherein the gripping means has a single lengthwise slit extending from one terminal end thereof to the other.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

43.5, for a split resilient socket of unitary construction which is split end to end.

46.6 With jaw pads or insert:

This subclass is indented under subclass 46.2. A device wherein the gripping means has removeable object-gripping surfaces, or separate, permanently attached gripping surfaces.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

43.6, for a split resilient socket of unitary construction having jaw pads or insert.

152+, for a jaw insert component or accessory, per se.

46.7 Nonresilient member biased by a resilient member:

This subclass is indented under subclass 46.1. A device wherein the gripping means has a substantially rigid gripping structure that is forced into contact with the object by an elastomeric element.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

2.14+, for an expanding chuck or socket having an axially moving wedge actuator including a resilient means contacting a nonresilient jaw.

43.7, for a split resilient socket having a nonresilient member biased by a resilient member.

46.8 Resilient member reinforced by another resilient member:

This subclass is indented under subclass 46.1. A device having an elastic gripping means and a second elastic means that applies force, which force adds to the gripping force on the object.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

43.8, for a split resilient socket having a resilient member reinforced by another resilient member.

46.9 With means to exclude contaminants; e.g., seal, shield:

This subclass is indented under subclass 46.1. A device having a gasket or other barrier means which prevents undesired material from entering the chuck body.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

43.9, for a split resilient socket with means to exclude contaminants.

157, for an accessory or component of a chuck or a socket which accessory or component includes protection means such as a cover or a seal.

47 Threaded sleeve and wedge:

This subclass is indented under the unnumbered subclass, Moving-cam actuator. Devices wherein a spring-collet or other spring-jaw member seated in the socket is controlled by an annular or other wedge pushed into wedging engagement with the jaws by a screw member threaded to the body or jaw member.

48 Threaded cam sleeve:

This subclass is indented under the unnumbered subclass, Moving-cam actuator. Devices wherein the jaws are moved by a rotary sleeve threaded to the body and moving longitudinally to engage the jaws by an inclined-surface contact.

49 Loose jaws:

This subclass is indented under subclass 48. Devices wherein the spring jaw member is loosely inserted in the socket.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
54, for loose spring jaws having actuators of other types.
56, for jaws that are loose in the socket.
- 50 Reciprocating cam sleeve:**
This subclass is indented under the unnumbered subclass, Moving-cam actuator. Devices wherein a longitudinal sliding sleeve moves the jaws into cam-closing engagement with the socket.
- 51 Fixed cam and moving jaws:**
This subclass is indented under subclass 46.1. Devices wherein the jaws are closed by being moved longitudinally into camming engagement with the walls of the socket.
- 52 Threaded-sleeve actuator:**
This subclass is indented under subclass 51. Devices in which the sleeve rotates without longitudinal movement and the spring-jaws have screw-threaded connection with the threads on the sleeve.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
40, for pivoted jaws actuated by a threaded cam sleeve.
58, for loose jaws actuated by their movement against a fixed cam.
- 53 Axial screw actuator:**
This subclass is indented under subclass 51. Devices wherein the spring-jaws are screw-threaded at the inner end to the socket or connected to a threaded member, whereby they may be moved axially of the socket and closed by cam contact with the socket-walls.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
39, for pivoted jaws moved against a fixed cam by an axial screw actuator.
- 54 Loose jaws:**
This subclass is indented under subclass 46.1. Devices wherein the spring-jaw member is loosely inserted in the socket and secured by friction, by a binding-screw, or a screw-sleeve, and not otherwise secured.
- 55 Loose jaws:**
This subclass is indented under subclass 9.1. Devices wherein the jaws are separate members loose in the socket until clamped on the inserted article. Jaws pivoted together, spring-united, integrally united, or guided in ways are not included.
- SEE OR SEARCH CLASS:
407, Cutters, for Shaping, subclasses 66+ for a tool chuck or socket limited to use in a lathe.
- 56 Threaded cam sleeve:**
This subclass is indented under subclass 55. Devices the jaws are clamped on the article by the cam sleeve threaded on the body and adapted to wedge the jaws to a closed position by its longitudinal motion.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
49, for spring jaws loosely mounted.
- 57 Reciprocating cam sleeve:**
This subclass is indented under subclass 55. Devices wherein a longitudinally-sliding sleeve wedges the jaws by cam action upon the inserted article.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
37, 50 and 74, for similar actuators in conjunction with other types of jaws.
- 58 Fixed cam and moving jaws:**
This subclass is indented under subclass 55. Devices wherein the jaws are movable longitudinally into wedging contact with the socket to close the jaws.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
38, for similar chucks having pivoted jaws. 40 and 52 for similar chucks having other type jaws.
- 59 Threaded sleeve and body:**
This subclass is indented under subclass 58. Devices wherein a sleeve threaded to the body of the holder member engages the jaws and moves them.

- 60 Obliquely guided reciprocating jaws:**
This subclass is indented under subclass 9.1. Devices wherein the jaws in closing reciprocate at an angle to the axis of the chuck in a plane substantially radial of the chuck-axis.
- 61 Threaded sleeve and jaw:**
This subclass is indented under subclass 60. Devices wherein the jaws are closed by a rotating screw-threaded sleeve, the threads on the sleeve engaging corresponding threads or equivalent on the jaws or a part connected to them, advancing the jaws, the sleeve not advancing.
- 62 Conical sleeve:**
This subclass is indented under subclass 61. Devices wherein the sleeve is internally cone shaped.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
114, for radially reciprocating jaws actuated by a cam or scroll.
- 63 Threaded central cone and jaw:**
This subclass is indented under subclass 60. Devices wherein an internal cone is screw-threaded to the jaws and a relative motion of revolution between jaws and cone is effected by the sleeve.
- 64 Threaded sleeve and body:**
This subclass is indented under subclass 60. Devices wherein a sleeve threaded to the chuck-body engages the jaws and moves them.
- 65 Reciprocating jaw advancing sleeve:**
This subclass is indented under subclass 60. Devices wherein the jaws are moved by a sleeve reciprocating longitudinally.
- 66 Radially reciprocating jaws:**
This subclass is indented under subclass 9.1. Devices having a socket to receive an article or portion of an article to be held and jaws movable in a substantially radial direction to grasp or release the article seated in the socket.
- 67 Transverse-screw actuated:**
This subclass is indented under subclass 66. Devices wherein two jaws are actuated by a single screw-threaded rod having right and left screw-threads.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
110+, for nonsocket type radially reciprocating jaws having various types of actuator.
- 68 Interlaced jaws:**
This subclass is indented under subclass 67. Devices wherein the jaws interlace with each other when closed, so as to receive small tangs or shanks.
- 69 Threaded cam sleeve:**
This subclass is indented under subclass 66. Devices in which a sleeve threaded to the body closes the jaws when it is rotated by reason of an inclined-surface engagement between jaws and sleeve.
- 70 Threaded sleeve and wedge:**
This subclass is indented under subclass 66. Devices wherein a screw-threaded sleeve reciprocates wedges which engage the jaws to close them.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
121, for a nonsocket type jaw actuated by a wedge.
- 71 Rotary eccentric-cam sleeve:**
This subclass is indented under subclass 66. Devices comprising a rotary sleeve with eccentric cam-surfaces thereon engaging the jaws.
- SEE OR SEARCH CLASS:
408, Cutting by Use of Rotating Axially Moving Tool, subclasses 147+, for structure for cutting in the manner of that class including means to adjust the tool by moving it radially.

- 470, Threaded, Headed Fastener, or Washer Making: Process and Apparatus subclasses 74+ for a screw threading, collapsing die closed by a cam or lever, except as provided for in Class 408.
- 72 Roller and rocking jaw:**
This subclass is indented under subclass 71. Devices wherein a rocking member or ball or roller seated on an incline forms the biting portion of the jaws to increase the bite when torsion is applied to the article held.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
33, for transversely oscillating jaws of the socket type.
75, for ball or roller jaws having a reciprocating cam sleeve.
- 73 Worm actuated:**
This subclass is indented under subclass 71. Devices wherein the cam - sleeve is actuated by screw and worn gear.
- 74 Reciprocating cam sleeve:**
This subclass is indented under subclass 66. Devices wherein the jaws are closed by a sleeve reciprocating longitudinally and closing the jaws by reason of an inclined-surface engagement between jaws and sleeve.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
22, for self grasping ball or roller jaws of the socket type.
122, for nonsocket type radial reciprocating jaw actuated by an external cone.
- 75 Ball or roller jaws:**
This subclass is indented under subclass 74. Devices wherein the jaws are balls or rollers.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
22, 30, for similar jaws in different chucks.
33, for transversely oscillating jaws in the socket-type chuck.
- 76 Side detent:**
This subclass is indented under subclass 9.1. Devices wherein the article held approximately fits in the socket and a locking member or detent engages the article on one side and holds said article against removal or rotation with respect to the socket.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
97, for chucks having a transverse pin to retain an object in said chuck.
- SEE OR SEARCH CLASS:
407, Cutters, for Shaping, subclass 66 + for a tool chuck or socket limited to use in a lathe.
- 77 Pivoted or rotary:**
This subclass is indented under subclass 76. Devices wherein the detent is pivoted to the socket, so as to oscillate or rotate into and of contact with the inserted object.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
44, for resilient socket split in two parts wherein one side is movable and the other stationary.
- SEE OR SEARCH CLASS:
407, Cutters, for Shaping, subclasses 66+ for a tool chuck or socket limited to use in a lathe.
- 78 Sleeved:**
This subclass is indented under subclass 77. Devices wherein a reciprocating or rotary sleeve locks or releases the pivoted detent, according to position of the sleeve.
- 79 Spring:**
This subclass is indented under subclass 76. Devices wherein the side detent is a spring engaging the article in the socket.
- (1) Note. A detent adapted to be pressed to engaging position by a spring member forced against it, but not connected to it, is not deemed to be a spring-detent.

- 80 Sleeved:**
This subclass is indented under subclass 79. Devices , the spring side detent is forced to or held in engaging position by a surrounding movable sleeve.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
97, for transverse pin to retain an object in a socket-type chuck.
- 81 Rotary cam sleeve:**
This subclass is indented under subclass 76. Devices wherein a rotary cam sleeve locks the detent to the article.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
30, 71, 75, 78, and 80, for sleeves to actuate various types of jaws.
- 82 Reciprocating sleeve:**
This subclass is indented under subclass 76. Devices wherein the detent is locked in engagement by a reciprocating sleeve.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
37, 74, 75, and 80, for other sleeves to actuate various types of jaws.
- 83 Set screw:**
This subclass is indented under subclass 76. Devices wherein a bolt or pin threaded in the socket engages the article seated therein.
- SEE OR SEARCH CLASS:
407, Cutters, for Shaping, subclasses 66+ for a tool chuck or socket limited to use in a lathe.
- 84 U-clamp:**
This subclass is indented under subclass 76. Devices wherein a U-shaped clamp embraces a detent member and binds the tool or object to a rigid member of the socket.
- 85 Plural bolt:**
This subclass is indented under subclass 76. Devices wherein the detent is secured in holding position by a plurality of bolts.
- 86 Single transverse bolt:**
This subclass is indented under subclass 76. Devices wherein a bolt transverse to the axis of the socket and having a hooked or eyed head binds the detent to the article.
- 87 Longitudinal clamping wedge:**
This subclass is indented under subclass 76. Devices having a wedge driven lengthwise of the socket to rigidly clamp the object against movement in any direction.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
28, for a similar one way clutch-type wedge.
- 89 Shouldered-tang holding:**
This subclass is indented under subclass 9.1. Devices wherein the article or tang has an enlargement, recess or integral collar utilized to secure the tang to the holder.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
93, for an offset tang adapted to fit in the socket of the chuck.
- 90 Cap:**
This subclass is indented under subclass 89. Devices provided with a cap sleeved on or connected to the holder and having an inward-extending flange or projection, which bears against the shoulder of the tang and holds it in the socket.
- 91 Screw:**
This subclass is indented under subclass 90. Devices wherein the cap is screw-threaded to socket.
- 93 Tang offset within socket:**
This subclass is indented under subclass 9.1. Devices wherein the tang has a side projection within the socket.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
104, for devices wherein the tang is provided with barbs or prongs.

- 94 Tang offset without socket:**
This subclass is indented under subclass 9.1. Devices wherein the axis of the tang is not in line with the part secured thereto; for example, the handle of the tool is offset from or not in line with the tool.
- 95 Bottomless:**
This subclass is indented under subclass 9.1. Devices wherein a handle or other holder is perforated so that a passage extends longitudinally and completely through the holder or to another passage transverse of the axis of the holder.
- (1) Note. These are typical of connections between screw-driving and similar bits and their handles.
- 96 Friction grip:**
This subclass is indented under subclass 95. Devices wherein a tool, tang or other shank is held in the socket by friction.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
102, for tangs retained in a socket-type chuck by friction.
- 97 Transverse pin:**
This subclass is indented under subclass 9.1. Devices wherein a pin or wedge transverse the axis of the socket engages a hole or notch in the tool-shank or other object to prevent removal.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
76, for a tool held in a socket by a detent.
83, for a tool held in a socket by a set screw.
86, for a tool held in a socket by a single transverse bolt.
- 99 Screw threaded:**
This subclass is indented under subclass 9.1. Devices wherein the shank is threaded and screwed into a socket in holder.
- SEE OR SEARCH CLASS:
285, Pipe Joints or Couplings, subclasses 333+ for a coupling with a particular interface comprising a threaded conically tapered surface, and subclasses 390+ for a screw coupling of general utility. See the search notes thereunder.
403, Joints and Connections, subclasses 343+ for screw-connected members.
- 100 Nut lock:**
This subclass is indented under subclass 99. Devices provided with locking means to prevent the unscrewing of the held article accidentally.
- SEE OR SEARCH CLASS:
285, Pipe Joints or Couplings, subclasses 81+ for a coupling with means blocking release of the means holding the joint together, especially subclass 92 for a thread lock.
411, Expanded, Threaded, Driven, Headed, Tool-Deformed, or Locked-Threaded Fastener, subclasses 81+ for a threaded fastener (i.e., a bolt or nut) and means for restricting the rotation thereof relative to a coating substructure; and subclasses 190+ for a threaded bolt and nut and means for coupling them against rotation relative to one another.
- 101 Threaded sleeve:**
This subclass is indented under subclass 100. Devices, the locking member comprising a screw-threaded sleeve or sleeve and wedge.
- SEE OR SEARCH CLASS:
403, Joints and Connections, subclasses 342+ for a screw thimble.
- 102 Friction grip:**
This subclass is indented under subclass 9.1. Devices wherein the tool shank, tang, or rod is held in the socket by friction.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
23, for yielding grasping spring jaws.
96, for friction gripped tools in the bottomless-type chuck.
104, for barbed or pronged tong.
- 103 Drill type:**
This subclass is indented under subclass 102. Devices of the conical shank or socket type.

- 104 Barbed or pronged tang:**
This subclass is indented under subclass 9.1. Devices the tang provided with prongs, barbs, or the like, that enter the walls of the socket and prevent withdrawals.
- 105 Molded or cast-in tang:**
This subclass is indented under subclass 9.1. Devices , the shank united to the socket by solder or other plastic molded or cast material.
- SEE OR SEARCH CLASS:
403, Joints and Connections, subclasses 265+ wherein the joint is secured by soldering, welding, casting, cementing, or the use of other adhesive, or otherwise united in a bonded joint.
- 105.1 Adjustable length or size:**
This subclass is indented under subclass 9.1. A device including means to axially vary the position of the gripped object with respect to the socket.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
156, for an accessory which limits the depth of insertion of the object within the chuck or socket.
- 106 PIVOTED JAW:**
This subclass is indented under the class definition. Devices , the jaws pivoted to oscillating in closing.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
35, for socket-type pivoted jaws.
- 107 Cam-sleeve actuated:**
This subclass is indented under subclass 106. Devices wherein a sleeve placed externally closes the jaws by an inclined-surface engagement therewith.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
36, 37, 42, 43, 48, 49, 50, 56, 59, 69, and 81, for other cam sleeve actuators.
- 108 Internal-cone actuated:**
This subclass is indented under subclass 106. Devices wherein an internal cone engages the jaws to close them.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
120, for radially reciprocating jaw chuck having an internal cone actuator.
- 109 Toggle actuated:**
This subclass is indented under subclass 106. Devices wherein toggle-levers connected to the jaws close or open them.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
118, for radially reciprocating jaw chucks having a toggle actuator.
- 110 RADIALLY RECIPROCATING JAWS:**
This subclass is indented under the class definition. Devices comprising chucks other than those of socket type having jaws that reciprocate radially.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
66+, for various types of radially reciprocation jaws of the socket type.
- 111 With indicator:**
This subclass is indented under subclass 110. Devices , the chuck provided with means to indicate the size of the opening between the jaws.
- 112 Transverse-screw actuated:**
This subclass is indented under subclass 110. Devices wherein the jaws are reciprocated in a radial direction by a screw.
- 113 Annular rack:**
This subclass is indented under subclass 112. Devices comprising screws actuated by an annular rack engaging pinions on the screws.
- 114 Spiral cam or scroll actuated:**
This subclass is indented under subclass 110. Devices wherein the jaws are reciprocated by engagement with a rotary plate or other body having a spiral groove or rib.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
62, for radially reciprocating jaws of the socket type which are actuated by threads on thereon and in engagement with threads on a sleeve.
- 63, for radially reciprocating jaws of the socket type actuated by a cone threaded to the jaws.
- 115 Worm:**
This subclass is indented under subclass 114. Devices wherein the spiral scroll has a gear engaged by a worm to rotate it.
- 116 Bevel pinion:**
This subclass is indented under subclass 114. Devices wherein the scroll is provided with a toothed annular rack engaged by a bevel-pinion to actuate said scroll.
- 117 Rack-and-pinion actuated:**
This subclass is indented under subclass 110. Devices wherein a pinion meshes with a rack on the jaw to actuate said rack.
- 118 Toggle actuated:**
This subclass is indented under subclass 110. Devices provided with a toggle-lever mechanism to reciprocate the jaws.
- 119 Lever actuated:**
This subclass is indented under subclass 110. Devices wherein a lever other than a toggle combination actuates the jaws.
- 120 Internal cone:**
This subclass is indented under subclass 119. Devices wherein the levers are actuated by a cone located inside the chuck.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
108, for similar actuators for pivoted jaws.
- 121 Wedge actuated:**
This subclass is indented under subclass 110. Devices provided with a wedge adapted to close the jaws.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
70, for radially reciprocating jaws of the socket-type chuck actuated by a threaded sleeve and wedge.
- 122 External-cone actuated:**
This subclass is indented under subclass 110. Devices provided with an external cone-sleeve adapted by its movement to wedge the jaws closed.
- 123 Jaws:**
This subclass is indented under subclass 110. Structure of the jaw itself.
- 124 With means to facilitate jaw removal:**
This subclass is indented under subclass 123. A device having structure especially adapted for permitting ready detachment of the jaws from the holder.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
901, for a cross-reference art collection of chuck or chuck jaw changing means.
- 125 WITH SAFETY FEATURE:**
This subclass is indented under the class definition. A device having means to protect the integrity of the chuck or socket or the operator thereof, such as an interlock.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
157, for an accessory or component of a chuck or socket which has protection means such as overstress prevention.
- 126 WITH MEASURING, INDICATING OR CONTROL MEANS:**
This subclass is indented under the class definition. A device having means to sense and/or signal the existence or degree of a specific parameter, such as gripping force of the means for making the connection, or means for providing condition responsive influence over the holder operating sequence.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
4.02, for a fluid-pressure actuated chuck or socket with measuring, indicating or control means.
- 127 DOUBLE ACTING:**
This subclass is indented under the class definition. A device having a means for making the connection with the facility to hold an object by either expanding therein or contracting thereon.
- 128 WITH MAGNETIC OR ELECTRO-STATIC MEANS:**
This subclass is indented under the class definition. A device wherein the means for making the connection utilizes electromagnetic force or electric attraction.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
8, for a chuck or socket having a magnetic holder.
- 129 BY CENTRIFUGAL FORCE:**
This subclass is indented under the class definition. A device having means to utilize the resultant force due to angular acceleration when the chuck is rotated.
- 130 To counterbalance jaws:**
This subclass is indented under subclass 129. A device wherein the resultant force is used to maintain a constant gripping force by the means for making the connection on the object.
- 131 To grip tool or workpiece:**
This subclass is indented under subclass 129. A device wherein the resultant force is used to actuate the means for making the connection so as to grip the object.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
2.2, for an expanding chuck or socket having a rotary actuator which has a clutch or is of the self-actuating type.
- 132 COMPENSATION FOR ECCENTRICITY:**
This subclass is indented under the class definition. A device wherein the means for making the connection includes means for centrally aligning an off-center object within the chuck.
- 133 WITH CENTERING MEANS:**
This subclass is indented under the class definition. A device including means for ensuring that the object is concentrically aligned with the chuck.
- SEE OR SEARCH CLASS:
82, Turning, subclass 170, is the generic place for a centerer, per se, not elsewhere classified.
- 134 SEPARATE CHUCK-ACTUATING POWER SOURCE:**
This subclass is indented under the class definition. A device having means other than the spindle, such as a motor, for activating the chuck.
- 135 Self contained:**
This subclass is indented under subclass 134. A device wherein the activating means is housed within the chuck.
- 136 FOR GEAR OR SPLINE MOLDING:**
This subclass is indented under the class definition. A device especially adapted to hold a toothed object.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
138, for a chuck having a torsion mandrel.
- 137 MORE THAN ONE SET OF GRIPPING MEANS:**
This subclass is indented under the class definition. A device having a plurality of distinct means (a) for making the connection so as to redundantly grip the object or (b) for gripping a plurality of objects.
- 138 TORSION MANDREL:**
This subclass is indented under the class definition. A device wherein the holder is inserted into an internally splined hole in the object and has normally misaligned sections which are aligned during insertion, then allowed to return

- to their normal position to clamp the internal spline.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
136, for a device especially adapted to hold a toothed object.
- 139 JAWS MOUNTED ON FLEXIBLE MEMBER; I.E., DIAPHRAGM:**
This subclass is indented under the class definition. A device wherein the means for making the connection is fastened to a generally thin, resiliently bendable member which is deformed in such a manner as to cause a radially inward deflection thereof into gripping contact with the object.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
2.05, for an expanding chuck or socket having jaws mounted on a flexible member; i.e. diaphragm.
4.05, for a fluid-pressure actuated chuck or socket having jaws mounted on a flexible member; i.e., diaphragm.
- 140 MEANS TO PREVENT JAW LOOSENING:**
This subclass is indented under the class definition. A device having means to lock the means for making the connection into gripping contact with the object.
- 141 MEMBER APPLIES AXIAL FORCE COMPONENT:**
This subclass is indented under the class definition. A device having means which exerts pressure on the object in a direction toward or away from the holder.
- 142 ACCESSORY OR COMPONENT:**
This subclass is indented under the class definition. A subcombination of a device, or a perfecting or ancillary device not elsewhere provided for.
- 143 Adapter:**
This subclass is indented under subclass 142. A device which attaches to a chuck or socket to extend or enhance the utility of the chuck or socket.
- 144 Drive conversion:**
This subclass is indented under subclass 143. A device having means for attaching to a chuck or socket and which is especially adapted for changing a first configuration of spindle attachment means to a second configuration of spindle attachment means.
- 145 For particular tool or workpiece:**
This subclass is indented under subclass 143. A device having means which permits the chuck or socket to hold a specifically shaped, or sized object.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
136, for a device especially adapted to hold a toothed object.
- 146 Sliding cam chuck actuator:**
This subclass is indented under subclass 142. A device having translatable collar means with cam means for effecting, via a mechanical linkage, movement of a drawbar which actuate a chuck or socket.
- 147 Chuck key:**
This subclass is indented under subclass 142. A device for manually and mechanically actuating the means for making the connection of the chuck into gripping contact with the object.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
134+, for a device having a separate chuck-actuating power source.
- 148 Safety feature; e.g., ejector, interlock:**
This subclass is indented under subclass 147. A device having means to protect the physical integrity of the key or the operator thereof.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
125, for a chuck having a safety feature.
- 149 Key holder or attaching means:**
This subclass is indented under subclass 147. A device having means for supporting the key in a nonuse position.

150 Nonseparable or built in:

This subclass is indented under subclass 147. A device which is permanently attached to the chuck.

151 Padded or cushioned jaw:

This subclass is indented under subclass 142. A device wherein the means for making the connection has relatively soft object-contacting surfaces.

152 Jaw insert:

This subclass is indented under subclass 142. A device which is especially adapted for attachment to the means for making the connection for making gripping contact with the object.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

43.6, for a split resilient socket having jaw pads or insert.

46.6, for an unitary socket with spring biased jaws having jaw pads or insert.

153 Machinable jaw:

This subclass is indented under subclass 152. A device which is specifically adapted to have material removed therefrom in such a manner as to be able to grip a particularly shaped, or sized object.

154 Locking or positioning means:

This subclass is indented under subclass 153. A device including means (a) to hold the machinable jaw while material is removed therefrom, or (b) to position the jaw for a machining process.

155 Tool or workpiece ejector:

This subclass is indented under subclass 142. A device having means to separate the object from the chuck or socket.

156 Tool or work stop or locator:

This subclass is indented under subclass 142. A device having means to limit the depth of insertion of the object in the chuck or socket.

157 Protection means; e.g., cover, seal, overstress prevention, air blast:

This subclass is indented under subclass 142. A device which includes means for preserving the physical integrity, for limiting access thereto or for indicating tampering on the chuck or socket.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

43.9, for a feed type socket with means to exclude contaminants.

46.9, for a socket having spring-biased jaws and including means to exclude contaminants.

158 MISCELLANEOUS:

This subclass is indented under the class definition. A device having means to hold a tool or workpiece not provided for above.

CROSS-REFERENCE ART COLLECTIONS

900 ADAPTED FOR AUTOMATIC TOOL CHANGER:

This subclass is indented under the class definition. Cross-reference art collection of documents especially for use with a machine that executes a programmed sequence of operations which include changing objects, or chucks.

SEE OR SEARCH CLASS:

483, Tool Changing, subclasses 16+ for a machine tool combined with a tool transfer means.

901 CHUCK OR CHUCK JAW CHANGING MEANS:

This subclass is indented under the class definition. Cross-reference art collection of documents to an ancillary tool especially adapted for removing or installing a chuck or a part thereof from a support, or the means for making the connection from the chuck.

SEE OR SEARCH CLASS:

483, Tool Changing, subclass 20 for a workpiece turning machine tool combined with a workpiece holder (e.g., chuck, etc.) transfer means.

- 902 KEYLESS TYPE SOCKET:**
This subclass is indented under the class definition. Cross-reference art collection of documents which include a depression for receiving the object, and means for making the connection which translate into gripping contact with the object upon manual rotation of a sleeve actuator.
- 903 NEEDLE ROLLER TYPE SOCKET:**
This subclass is indented under the class definition. Cross-reference art collection of documents which include a depression for receiving the object, and cylinders extending therein having central axes generally inclined in such a manner as to draw the object into the depression when rotated thereabout.
- 904 QUICK CHANGE SOCKET:**
This subclass is indented under the class definition. Cross-reference art collection of documents which include a depression for receiving the object, and a retractable projection or detent which extends into the depression to lock the object therein.
- 905 With ball detent:**
This subclass is indented under subclass 904. Cross-reference art collection of documents wherein the projection is a sphere.
- 906 SELF-GRASPING SOCKET:**
This subclass is indented under the class definition. Cross-reference art collection of documents which include a depression for receiving the object, and means for making the connection therein which is actuated by insertion of the object.
- 907 WASHER TYPE JAW OR ACTUATOR:**
This subclass is indented under the class definition. Cross-reference art collection of documents wherein the means for making the connection includes at least one thin, generally flat member having an aperture therein through which the object passes, the sidewalls of the aperture being laterally displaced into gripping contact with the object.

END