

**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 183 through 65 for vacuum-type devices and subclass 192 for grapple-actuating system using a piston.  
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, SUB-CLASS:  
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, SUB-CLASS:  
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, SUB-CLASS:  
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, SUB-CLASS:  
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, SUB-CLASS:  
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, SUB-CLASS:  
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, SUB-CLASS:  
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, SUB-CLASS:  
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, SUB-CLASS:  
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 coats 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, SUBCLASS:  
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, SUBCLASS:  
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 in 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, SUBCLASS:  
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.





















