

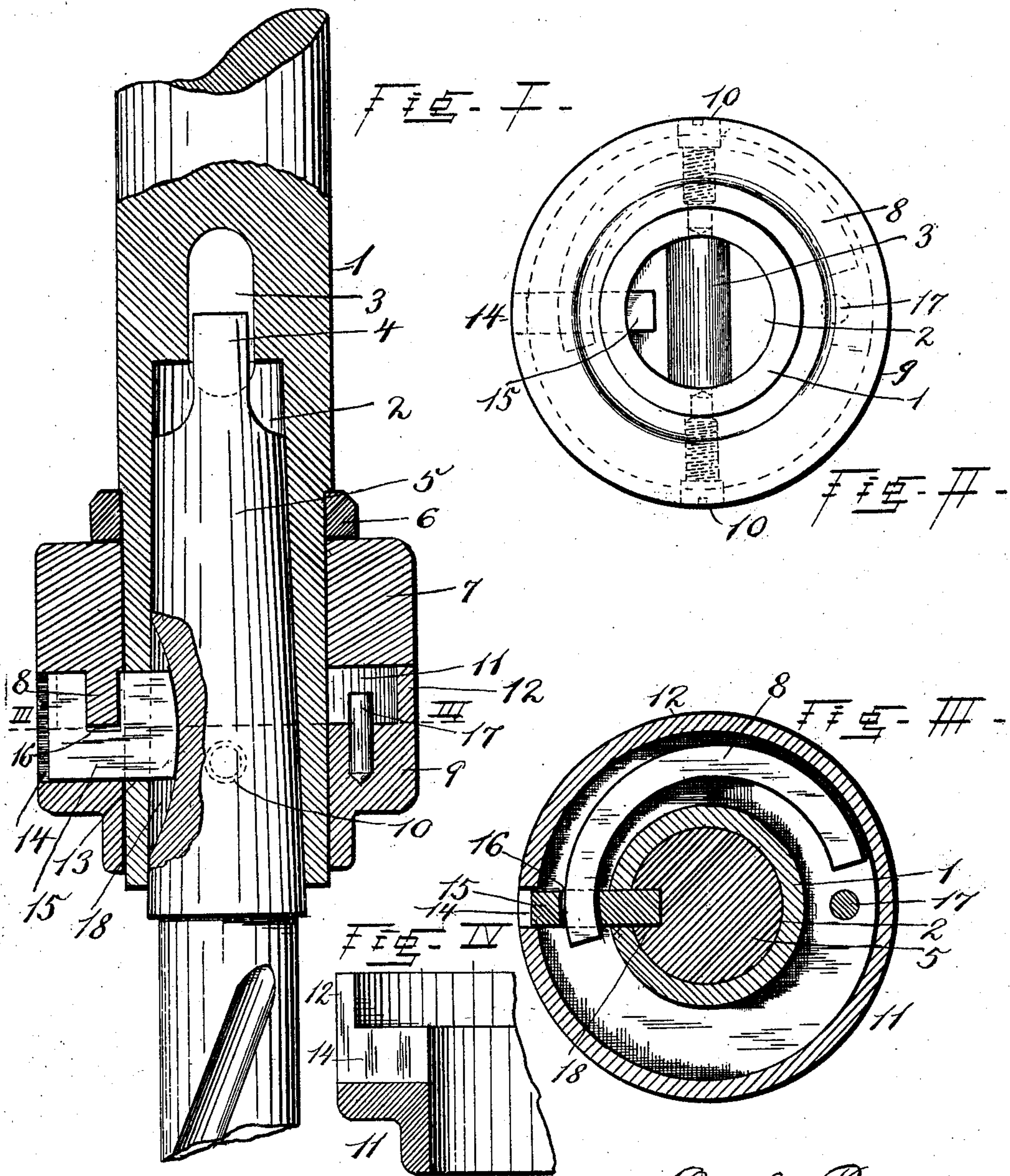
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O. A. PARPART.
DRILL SOCKET.

(Application filed Nov. 20, 1900. Renewed Nov. 14, 1901.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

OTTO A. PARPART, OF CLEVELAND, OHIO, ASSIGNOR TO THE STANDARD TOOL COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

DRILL-SOCKET.

SPECIFICATION forming part of Letters Patent No. 690,764, dated January 7, 1902.

Application filed November 20, 1900. Renewed November 14, 1901. Serial No. 82,291. (No model.)

To all whom it may concern:

Be it known that I, OTTO A. PARPART, a citizen of the United States, residing at Cleveland, county of Cuyahoga, and State of Ohio, have
5 invented certain new and useful Improvements in Drill-Sockets, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that
10 principle so as to distinguish it from other inventions.

The annexed drawings and the following description set forth in detail one mechanical form embodying the invention, such detail
15 construction being but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings, Figure I represents an axial section of my improved drill-socket; Fig. II, a face-end view of the socket; Fig. III, a transverse section of the socket on the line III III in Fig. I, and Fig. IV a sectional detail view of one side of the cap of the
20 socket.

The present invention applies to that style of sockets for twist-drills and other boring tools in which the socket is formed with a flat recess in its bottom for the reception of a flat nib at the end of the drill-shank to thus hold
25 the drill from turning in the revolving socket. Said nib is liable to be twisted off or broken by rough usage, thereby rendering the drill useless. For the purpose of preventing this injury to the drill-shank, and particularly for
30 the purpose of enabling a drill thus injured to be still employed, drills have been made with a longitudinal groove of greater or less length in the shank, which groove is engaged by a tongue or locking-bolt radially movable
35 in the socket, which tongue or locking-bolt, engaging the groove, holds the drill from turning in the socket whether the drill-shank has the nib intact or not. The socket forming the subject-matter of my invention is a socket
40 of this character and intended for the above purpose.

The drill-stock or spindle 1 is formed with an inwardly-tapering axial bore 2, the inner end of which is intersected by a longitudinal
50 slot 3, which forms the flat recess engaging the flat nib 4 at the end of the drill-shank 5.

A collar 6 is shrunk or otherwise secured or formed upon the drill-stock and forms an inner abutment, against which a sleeve 7 bears, which is fitted to rotate upon the drill-stock. 55
Said sleeve has a plane outer face, upon which a scroll-rib 8 is formed, said scroll-rib being eccentric to the face of the sleeve and extending from diametrically-opposed points around at one side of the stock and being near the
60 axial bore of the sleeve at one end and near the periphery of the face of the sleeve at its other end, as clearly illustrated in Fig. III. A cap 9 is secured upon the stock, in the illustrated form by means of screws 10, passing through the cap and into the stock, and
65 said cap has a circular recess 11 in its inner face, into which the scroll-rib projects and may rotate, a flange 12 surrounding and enclosing the recess, a radial and longitudinal
70 slot 13 is formed in the side of the drill-stock socket and registers with a similar slot 14, formed in the bottom of the recess of the cap and through the flange and side of the latter, as illustrated in Fig. IV. A flat locking-bolt 75
15 fits to slide in these radial slots and has a rectangular notch 16 in one edge, which notch fits upon the scroll-rib, which is preferably of rectangular cross-sectional shape. The inner end of the locking-bolt is shaped
80 to fit into the groove 18 in the drill-shank, in the present instance of a segmental shape. A stop-pin 17 projects from the bottom of the recess in the cap at a point diametrically opposite to the guide-slot for the locking-bolt 85
and serves as a stop against which the ends of the scroll-rib may abut when the sleeve is turned one-half of a revolution in either direction. As the cap and its guide-slot is rigid upon the drill-stock and the locking-bolt has
90 only radial motion, rotation of the sleeve will cause said bolt to move in or out in its guide-slots as the eccentric scroll-rib slides through the notch in the bolt and engages the same with a portion nearer to or farther from the
95 center. The radial movement of the bolt is very gradual, as the curve of the rib is circular, and the force by which the bolt is moved is consequently proportionately considerable. The locking-bolt is guided and
100 supported in the slot in the stock and in the radial recess and slot in the cap, so that it is

sufficiently supported to bear the strain upon it when engaging the drill-shank during the operation of drilling. When the drill-shank has the flat nib intact, the locking-bolt will simply serve as a safeguard against twisting said nib off, and when the drill has no nib the bolt will lock the drill in the socket against rotary and longitudinal displacement, thus admitting of a drill being employed in which such nib has been twisted off and preventing such a drill from being condemned as useless. When the stock and socket and the drill therein are rotated during the operation of drilling, the lateral strain upon the locking-bolt will be carried by the sides of the slots, and the outward radial strain will be transversely exerted against the rib, so that the bolt will be locked against outward movement and the sleeve will be held from rotating by the transverse strain upon the rib.

Other modes of applying the principle of my invention may be employed for the mode herein explained. Changes may therefore be made as regards the mechanism thus disclosed, provided the principles of construction set forth, respectively, in the following claims are employed.

I therefore particularly point out and distinctly claim as my invention—

1. The combination of a drill-stock formed with a socket having a radial guide-slot, a cap secured upon said stock and formed with a registering radial guide - slot extending through the flange of the cap and in the bot-

tom of the internal recess of the same, a sleeve secured to rotate upon the stock and having its face abutting against the flange of the cap and formed with an eccentric scroll-rib upon said face and engaging the notch in the locking-bolt to move the latter radially in the guide-slots, and a stop-pin projecting from the bottom of the recess in the cap to be engaged by the ends of the scroll-rib, substantially as set forth.

2. The combination of a drill-stock formed with a socket having a radial guide-slot, a cap secured upon said stock and formed with a registering radial guide - slot extending through the flange of the cap and in the bottom of the internal recess of the same, a sleeve secured to rotate upon the stock and having its face abutting against the flange of the cap and formed with an eccentric scroll-rib upon said face extending to one side of the stock between diametrically opposite points and engaging the notch in the locking-bolt to move the latter radially in the guide-slots, and a stop-pin projecting diametrically opposite the slot from the bottom of the recess in the cap to be engaged by the ends of the scroll-rib, substantially as set forth.

In testimony that I claim the foregoing to be my invention I have hereunto set my hand this 13th day of November, A. D. 1900.

OTTO A. PARPART.

Witnesses:

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WM. SECHER.