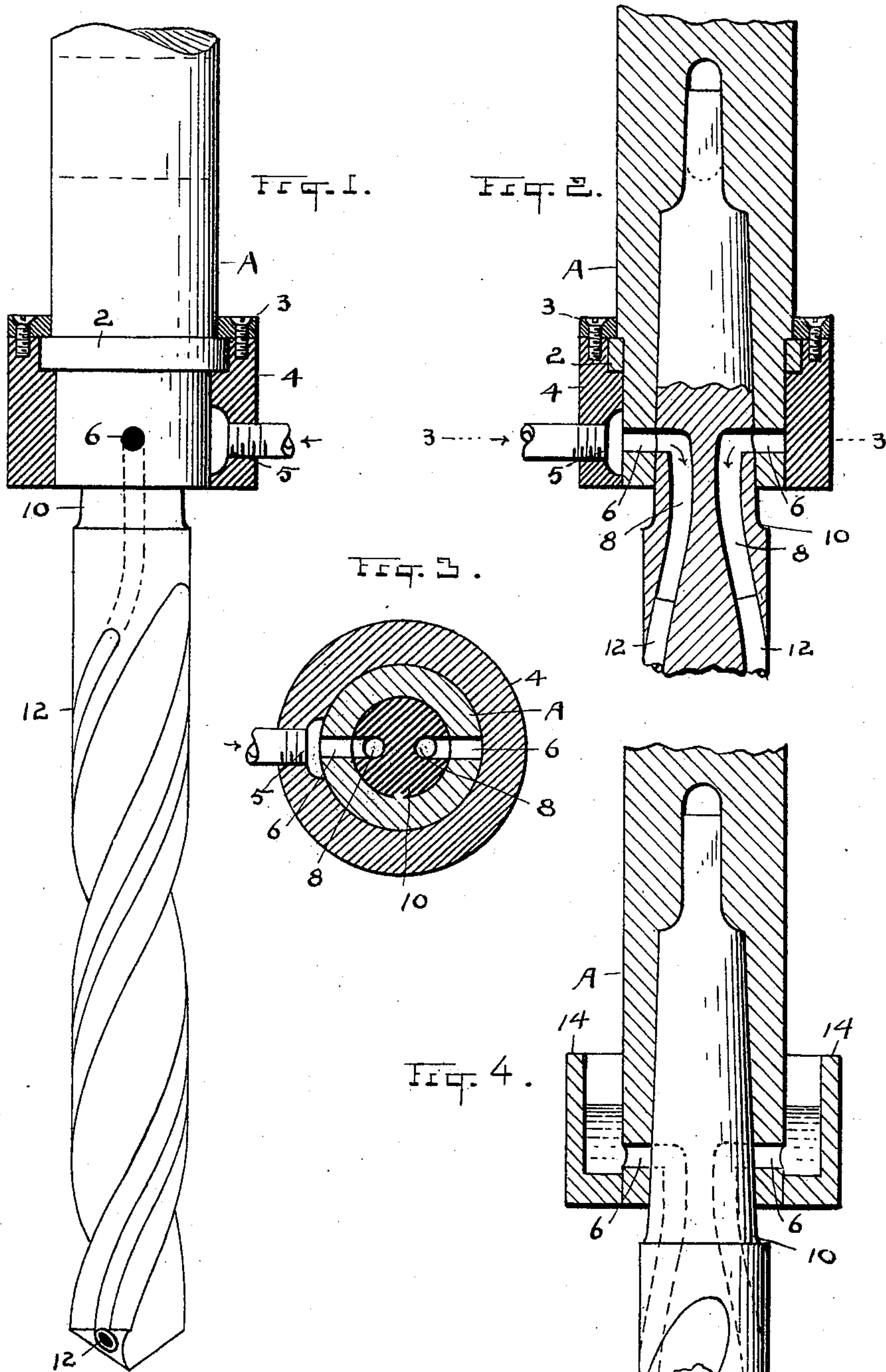


(No Model.)

J. D. COX, Jr.
DRILL SOCKET.

No. 594,330.

Patented Nov. 23, 1897.



ATTEST

T. S. Mudd
H. S. Mudd

INVENTOR

Jacob D. Cox, Jr.

By *H. J. Fisher* ATTY

UNITED STATES PATENT OFFICE.

JACOB D. COX, JR., OF CLEVELAND, OHIO.

DRILL-SOCKET.

SPECIFICATION forming part of Letters Patent No. 594,330, dated November 23, 1897.

Application filed July 19, 1897. Serial No. 645,191. (No model.)

To all whom it may concern:

Be it known that I, JACOB D. COX, Jr., a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Drill-Sockets; and I do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of objects known to the trade as "drill-sockets," and is adapted particularly to hold that class of drills known as "oil-tube" drills or "self-feeding" drills and tubes.

The present invention is in the line of and an improvement on application filed March 24, 1897, Serial No. 629,074, and application filed April 14, 1897, Serial No. 632,063.

In the above-mentioned applications the connection between the oil-tubes of the drill or tool and the oil-passages of the socket are completed by means of pieces of flexible tubing slipped onto the ends of the tubes which project from the drill, on the one hand, and from the end of the socket, on the other.

The above construction is a practical one, and while it works well in actual practice it is open to some objections. First, the projecting tubes both in the drill and socket are liable to become bent and damaged in packing and transportation. Again, they are liable to come in contact with the fingers of the machine-operator when revolving rapidly and to cause him serious injury. Furthermore, the flexible connections are liable to slip off when the tool is in operation or burst when under pressure, and in either event the oil or lubricant would be scattered over the machine and onto the clothing of the operator.

The object of this invention is to overcome any and all of the objections above cited and to produce a socket that will have no projecting parts to be damaged or to come in contact with the fingers or clothing of the operator. How this is accomplished will readily be seen by reference to the accompanying drawings, in which—

Figure 1 is a side elevation of a drill-socket embodying my invention in one form. Fig. 2 is a vertical sectional elevation of the same.

Fig. 3 is a cross-section on line 3 3, Fig. 2. Fig. 4 is a sectional elevation of a modified form of the invention, as hereinafter fully described.

A represents a socket or machine-spindle with a collar 4 secured to it in such a way that the socket or spindle can revolve freely in the collar, but cannot slip longitudinally in it. The longitudinal slip can be prevented in various ways, but I prefer in practice the construction shown. In this construction 2 is a narrow collar firmly fastened to the socket to rotate therewith. The collar 4 is provided with a bore in its upper end, which snugly fits on collar 2 and is flush therewith about the top of the collar. A plate or narrow collar 3 is placed immediately upon parts 2 and 4 and has a nice running fit on the socket and is firmly secured to collar 4 by screws or any other suitable means. When collars 3 and 4 are thus firmly united, they will allow the socket A to revolve freely in them; but it cannot slip longitudinally in either direction, the collar 2 forming a bearing both ways for said parts. The collar 4 has a lateral passage 5 opposite holes 6 in the socket, and the oil-supply connection is made through passage 5 with oil under pressure. (Not shown.)

The object in preventing the socket from moving longitudinally is to be sure that the hole 5 in collar 4 shall at each revolution pass over the holes 6, which are drilled transversely through the socket, as shown in the drawings. The said hole 5 is cut through the collar 4 at any convenient point in line with holes 6 and communicates with the hole or holes 6, which communicate with the oil-passages 8 and 8, running through the shank of the drill 10. These passages 8 are separate and convey the oil from lateral passages 6 to the grooves, channels, or ducts 12, running along the land of the drill to the point thereof, as is now well known.

When it is not necessary or desirable to use pressure for forcing the oil through the tubes or conduits of the drill or tool, as it is designed to do in Fig. 1, a cup 14, as seen in Fig. 4, can be substituted for the collar 4. This cup revolves with the socket and carries the oil within itself.

There is a standard taper-socket for all sizes of twist-drills that has been in continuous

use for more than twenty-five years, so that only five different sizes of shanks are used for more than one hundred and fifty sizes of drills. Every mechanic is familiar with this
5 twist-drill standard taper-socket and knows what number or sized socket each drill will fit. Sockets numbered 1, 2, 3, 4, and 5 are a common article of manufacture and are kept in stock by manufacturers and hardware
10 dealers all over the country as a separate class of articles from drills. Drills are sold without the sockets and likewise sockets are sold without the drills. Now it is plain to be seen that a socket which contains in itself all
15 the elements necessary to supply oil or other lubricant to an oil-tube drill and permits the free interchange of different sizes of drills in the same socket without any alteration or disconnection of parts and is equally serviceable
20 whether used as a socket for oil-tube drills or drills without oil-tubes is a valuable invention and worthy of all the protection the patent laws afford.

What I claim as new, and desire to secure by Letters Patent, is—

1. A tool-socket having lateral openings from the inside to the outside of the socket, and a stationary collar in which said socket revolves and having an orifice to register with the lateral openings in said socket, in combination with a tool having oil-passages opening into the oil-passages in the socket, substantially as described. 25 30

2. A tool-socket having lateral oil-passages through the wall of the socket and a source of supply at the outside of said socket, in combination with a tool having oil-passages through its shank communicating with said lateral passages, substantially as described. 35

Witness my hand to the foregoing specification this 5th day of June, 1897. 40

JACOB D. COX, JR.

Witnesses:

H. T. FISHER,
R. B. MOSER.