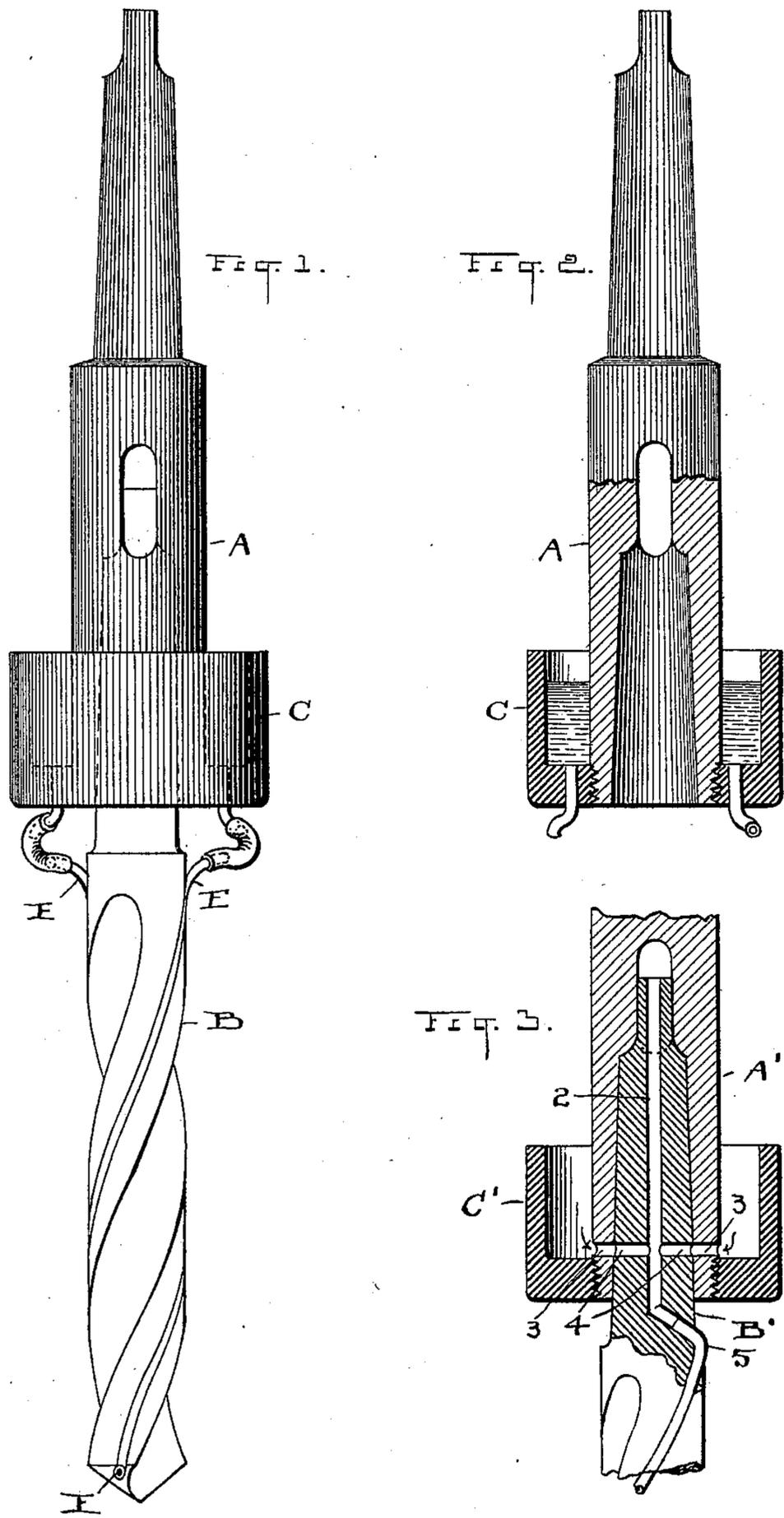


(No Model.)

J. D. COX, Jr.
SOCKET OR COLLET.

No. 594,329.

Patented Nov. 23, 1897.



ATTEST

R. B. Moser
A. J. Watt

INVENTOR

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UNITED STATES PATENT OFFICE.

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

SOCKET OR COLLET.

SPECIFICATION forming part of Letters Patent No. 594,329, dated November 23, 1897.

Application filed March 24, 1897. Serial No. 629,074. (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 Sockets or Collets; 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 "sockets" or "collets" for holding drills and other tools.

It has been found in practice that when oil or other lubricants can be conveyed to the end or working portion of a drill or cutting-tool they can be run at a higher rate of speed and the rate of feed per revolution of the tool increased at the same time, thereby materially increasing the amount of work done. A common expedient to attain this object is the well-known "oil-tube drill," as it is called, which has one or more channels, orifices, or tubes let into or formed in that part of the drill which is left standing when the flutes are cut or otherwise formed and called the "land." The shanks of such drills or tools are hollow or have a central axial bore for the greater part of their length, and these channels, orifices, or tubes are turned inwardly at a point near the shank and connected with the chamber or bore in the shank. Such oil-tube drills or tools are used only in machines especially constructed for their use, with suitable means provided for connecting the oil-supply with the central chamber in the shank; but the great majority of drill presses and machines now in use are so constructed that it is not practicable to connect the supply of oil or lubricant with this central chamber or bore in the shank, and even if it were it would be undesirable, because such channel or bore weakens the tool where it should be strong.

The object of this invention is to provide a socket or collet adapted to the common form of drilling-machine and constructed to hold drills or tools of various sizes and kinds and provided with oil tubes, orifices, or channels and means for supplying and conducting the oil or other lubricant to the tubes,

orifices, or channels of the drills or tools, as hereinafter fully described.

My invention therefore consists in a socket or machine spindle formed or provided with a cup or reservoir having one or more outlets and so constructed that the oil or other lubricant can pass from the cup directly or indirectly to the tubes, conduits, or channels without first entering a central chamber, substantially as shown and described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a drill or tool socket embodying my invention in one of its forms, and Fig. 2 is a central sectional elevation thereof. Fig. 3 is a central sectional elevation of a form of socket and cup adapted to be used with the commonly-used oil-tube drills hereinbefore referred to.

The preferred form of the invention is shown in Figs. 1 and 2, and the adaptation in Fig. 3 is designed more especially to utilize a form of drill which has come into more or less general use and is held in stock, and hence should be provided for in my improvement. Referring, therefore, first to Figs. 1 and 2, we have the usual drill or tool socket or collet A, and a drill B secured in said socket. The shank of this drill or tool is solid throughout, and about the bottom of the socket A is an oil cup or reservoir C, shown in this instance as separate from the socket, but it might as well be made integral therewith or secured on the socket in any suitable way. The drill B has the now well-known oil conduits, conductors, or tubes E let into the land of the drill between the flutes and connected at their upper ends with the oil cup or reservoir through holes in the bottom thereof by means of short pieces of rubber or other suitable tubing making the connections.

In Fig. 3 the drill or tool socket A' has a drill or tool B' socketed therein, which is provided with a central oil chamber or bore 2, and a cup C' surrounds the lower portion of the socket, as in Figs. 1 and 2. To adapt the invention to this form of tool, the socket itself and the drill-shank have one or more oil-passages 3 drilled in laterally from about the bottom of the cup C' to meet the chamber or channel 2 in the tool, and like lateral pas-

sages 4 are formed in the shank of the drill below the cup to establish connection with the oil conductors or conduits 5, which occupy grooves in the land of the drill, as before described.

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

The tool-socket and an oil-reservoir surrounding the lower end thereof and an outlet

for the oil from the bottom of said reservoir, 10 substantially as described.

Witness my hand to the foregoing specification this 22d day of March, 1897.

JACOB D. COX, JR.

Witnesses:

H. T. FISHER,

H. E. MUDRA.