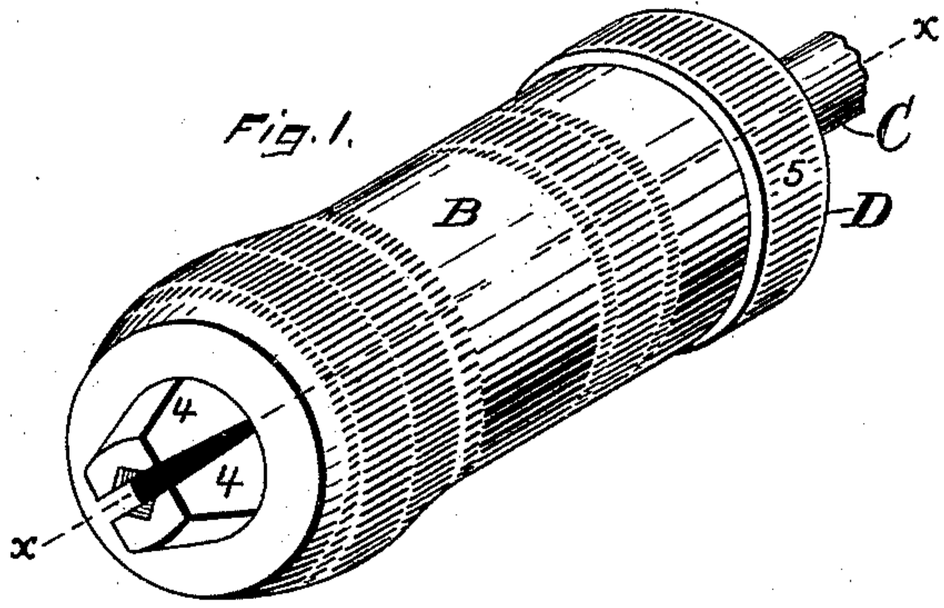
(No Model.)

H. S. BARTHOLOMEW.

BIT HOLDER.

No. 405,522. Patented June 18, 1889.



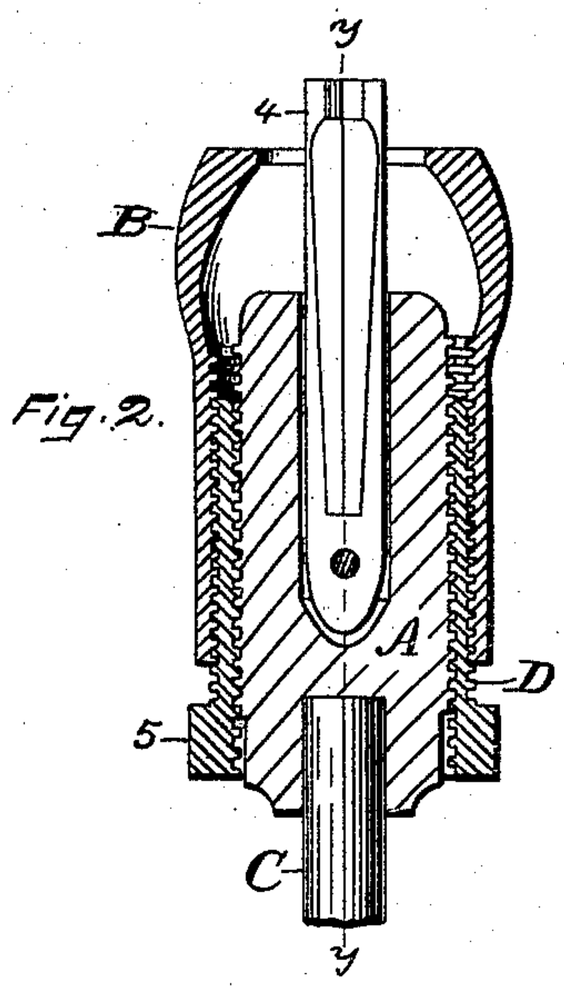


Fig. 2.

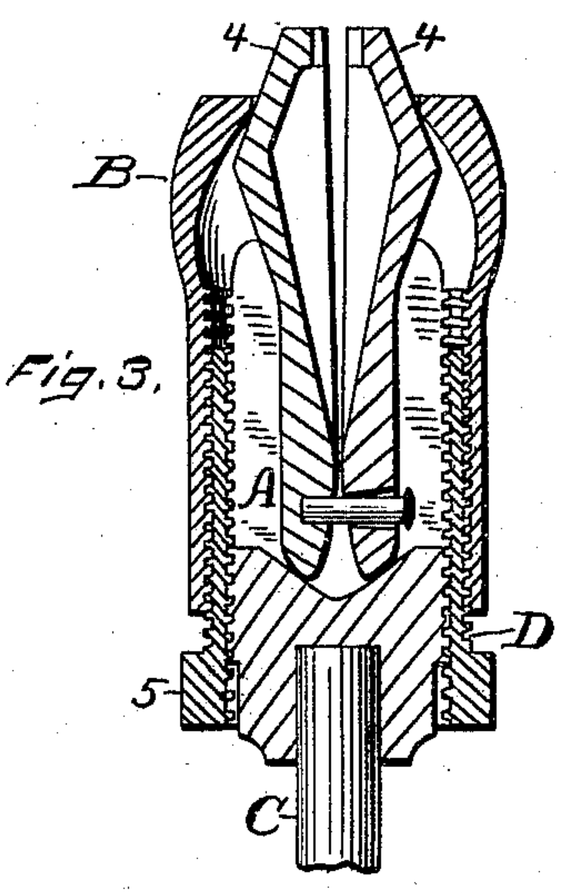


Fig. 3.

Witnesses.
John Edwards Jr.
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UNITED STATES PATENT OFFICE.

HARRY S. BARTHOLOMEW, OF BRISTOL, CONNECTICUT.

BIT-HOLDER.

SPECIFICATION forming part of Letters Patent No. 405,522, dated June 18, 1889.

Application filed February 5, 1889. Serial No. 298,703. (No model.)

To all whom it may concern:

Be it known that I, HARRY S. BARTHOLOMEW, a citizen of the United States, residing at Bristol, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Bit-Holders, of which the following is a specification.

My invention relates to improvements in holders for bits and other tools of the class in which the jaws are arranged in a transversely-slotted socket, and are forced together under the action of a screw sleeve or thimble, and are also provided with an additional mechanism for operating in connection with said parts for grasping the jaws to a further extent; and the object of my invention is simplicity of construction and general convenience and efficiency.

In the accompanying drawings, Figure 1 is a perspective view of my bit-holder. Fig. 2 is a central longitudinal section thereof on the line *x x* of Fig. 1, and Fig. 3 is a like section on the line *y y* of Fig. 2.

4 4 designate the jaws arranged to move to and from each other in the transversely-slotted head or socket A in the ordinary manner of bit-holders of this class.

B designates the outer sleeve or screw thimble, which bears upon the inclines at the outer ends of the jaws 4 4 and forces them endwise down into the socket for drawing them together, the same as in the ordinary bit-holder, with an exception hereinafter noted.

My tool-holder is principally designed to use upon bit-stocks, hand-drills, and analogous instruments, and I have shown the head or socket A as connected to the end C of an ordinary brace-bow; but it is of course evident that this head may be attached to any other revolving shaft. As in the ordinary bit-stock, this head is provided with a peripheral thread, which I have illustrated as having twelve threads to the inch. The outer sleeve or thimble B is interiorly threaded, and is in general of the ordinary form, excepting that its threaded portion is of a larger diameter, so as to permit the introduction of the inner sleeve D between it and the head or socket A. This inner sleeve is threaded on its interior to match the threads of the head or socket A, and on its exterior to match the interior threads of the outer sleeve B. I have shown the threads on the exterior of the inner sleeve D and interior of the outer sleeve B as containing thirteen threads to the inch, whereby the outer and inner sleeves have differential threads. I prefer to make the inner thread the coarsest, as illustrated; but this is not essential so long as the screws at the outer and inner faces of the inner sleeve are differential. The inner sleeve D is provided at its lower end with a projecting head 5, whose surface is knurled for convenience of manipulation. The surface of the outer sleeve B is also knurled, as in the ordinary bit-stock.

In operation the outer and inner sleeves are both grasped and revolved together to carry them outwardly upon the head or socket A until the highest point of the jaws fall into the enlarged chamber at the outer end of said sleeve or thimble to permit the jaws to open sufficiently to receive the tool to be inserted; or, if desired, instead of grasping them both at one time, the inner sleeve may be screwed outwardly until the projecting head 5 strikes the inner end of the outer sleeve B, after which a continued movement of the inner sleeve will necessarily rotate the outer sleeve with it. After the tool is inserted the outer and inner sleeves are screwed down simultaneously by grasping them both at one time, or by grasping only the outer sleeve and turning it, when, if the friction of the parts does not also cause the inner sleeve to revolve with the outer one, it will be so caused to revolve as soon as said outer sleeve comes to a bearing on the projecting head 5 of the inner sleeve. When both sleeves revolve together, the jaws are forced toward each other under the influence of the outer sleeve or thimble B, drawing them down endwise into the socket, the parts turning on the inner thread of the inner sleeve, which is the coarsest and moves the fastest. After the jaws have been thus pinched or clamped to a certain extent, or as tightly as it is convenient to grip them by the direct action of a single screw and nut, the inner sleeve is unscrewed from the outer sleeve, and by means of the differential threads a very powerful pressure is imparted upon the jaws within their slotted socket. This differential movement requires about thirteen

turns of the inner sleeve in order to move the outer sleeve longitudinally a distance equal to one thread, and consequently it imparts a powerful pressure. The reverse of the operation will release the hold of the jaws upon the tool.

I claim as my invention—

The combination of the transversely-slotted head or socket exteriorly threaded, the holding-jaws resting in the slot of said socket, and the inner and outer sleeves fitted to each other and to said head or socket with differential threads at the exterior and interior of the inner socket, substantially as described, and for the purpose specified.

HARRY S. BARTHOLOMEW.

Witnesses:
CHAS. S. TREADWAY,
EDWARD L. DUNBAR.