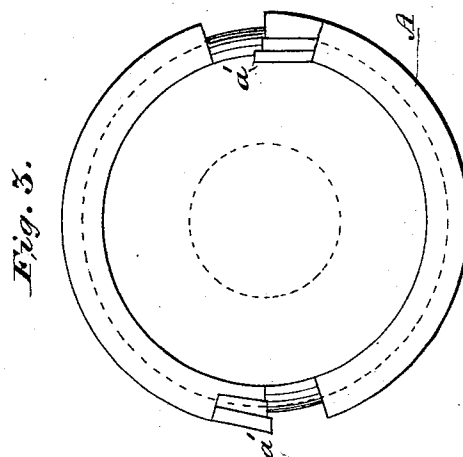
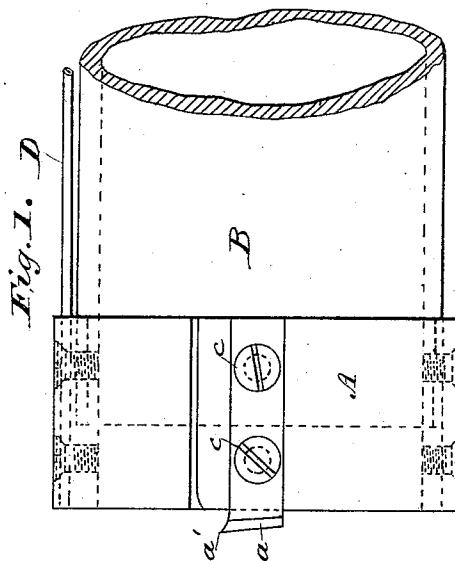
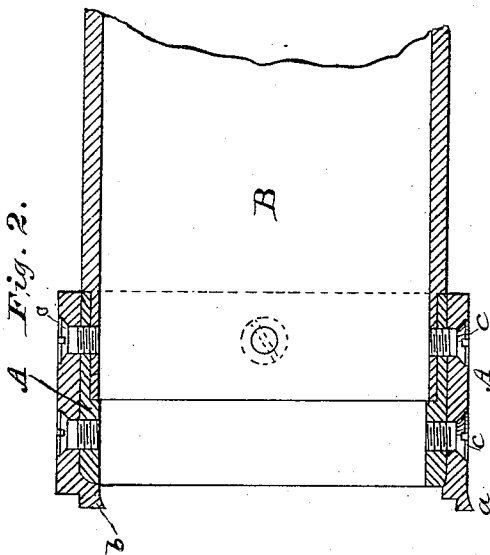


(No Model.)

J. B. DAVIS.
BORING DEVICE.

No. 313,405.

Patented Mar. 3, 1885.



Witnesses:

T. C. Bracht
Swid. med.

Inventor:

James B. Davis
By Y. M. C. L. L. L.

Attorney.

UNITED STATES PATENT OFFICE.

JAMES B. DAVIS, OF WASHINGTON, DISTRICT OF COLUMBIA.

BORING DEVICE.

SPECIFICATION forming part of Letters Patent No. 313,405, dated March 3, 1885.

Application filed March 21, 1884. (No model.)

To all whom it may concern:

Be it known that I, JAMES B. DAVIS, a citizen of the United States, residing at Washington, District of Columbia, have invented new and useful Improvements in Boring-Instruments, of which the following is a specification.

My invention relates to certain new and useful improvements in boring-instruments particularly adapted for use in boring cannon and similar uses, when it is desirable to remove the part taken out in one piece, so that this removed portion may be utilized.

The object of the invention is to produce a boring-tool of the kind referred to, by the peculiar construction and arrangement of which the cutting-edges may be readily removed when worn, for the purpose of regrinding or substituting new ones therefor, the escape of the chips provided for, and the general effectiveness of the tool secured.

With these objects in view my invention consists of a hollow shaft having detachably secured to the end thereof two cutters, one adapted to cut the inner portion of a circular channel into the article to be hollowed out, and the other the outer portion thereof, into which channel the boring-instrument advances as the work proceeds, and the core which is separated enters the passage in the hollow shaft, the said cutters being secured in position upon the hollow shaft by means of a collar, to which they are screwed, which collar is provided with grooves near the point at which the cutters are attached, through which the shavings are allowed to escape.

The invention further consists of various details of construction, whereby the proper supply of lubricant is furnished to keep the metal being operated upon from becoming heated.

In order that those skilled in the art to which my invention relates may know how to make and use my invention, I will now proceed to describe the same in connection with the accompanying drawings, in which—

Figure 1 is a side elevation. Fig. 2 is a central longitudinal section, the section being taken through two of the cutters; and Fig. 3 is an end elevation showing the arrangement of the cutters and the channels for carrying off the chips.

In the drawings, B represents a hollow shaft, to which are secured by suitable inter-

mediate devices two cutters, *a b*. These cutters are made of hardened steel, and they are set in grooves in a collar, A, which collar is attached to the end of the hollow shaft by means of the same screws which secure the cutters to the collar. Only two cutters are shown, and under ordinary circumstances no more are required; but of course a larger number may be employed when it is necessary or expedient that they be.

In hollowing out the cannon or the like with my device, a circular channel is cut around the body of metal to be removed, and this is accomplished by the cutters *a b*. The cutter *a* is adapted to cut the metal to form the outer wall of this channel, while the cutter *b* is adapted to form the inner wall. The form and arrangement of these cutters are such that each cuts an opening sufficient for the passage of all parts of its fellow except the cutting portion.

The manner of securing the cutters in place is by screws passing through their square shanks, which rest in grooves in the collar A, and these grooves are of sufficient width to leave a space for the escape of the shavings when the cutters are in place.

In order to secure the collar carrying the tools to the operating-shaft in such a manner that it will not be forced back by the pressure exerted in the operation of the tool, I form the hollow shaft with a shoulder against which the collar bears, and I also form the interior of the said collar with a shoulder against which the end of the shaft bears, and the two are bound together by screws which pass through the tool and this collar and shaft.

D represents a pipe, which conveys oil from a suitable reservoir to the front of the tool, where it is distributed over the surface of the metal to be bored.

Having thus described my invention, what I claim is—

1. A tool for boring cannon and the like, consisting of a hollow shaft having the detachable collar carrying the removable tools, one of said tools cutting the inner and the other the outer portion of a circular channel into which the hollow shaft and tools enter.

2. A tool for boring cannon and the like, consisting of a hollow shaft having the detachable collar carrying the removable tools, one of

said tools having its cutting-edge extending inwardly and the other having its cutting-edge extending outwardly from the said collar, substantially as and for the purpose set forth.

5 3. A boring-instrument consisting of a hollow shaft having mounted upon the end thereof a detachable collar carrying the cutters, the said collar being provided with grooves of
10 a width to receive the cutter and leave a space for the escape of the chips separated in the operation of boring.

4. A tool for boring cannon and the like, consisting of a hollow shaft having removably

secured to the end thereof the tools *a b*, one 15 cutting the inner and the other the outer portion of a circular channel in which the tool enters, in combination with the tube *D*, extending from a suitable oil-reservoir to the point at which the boring takes place. 20

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JAMES B. DAVIS.

Witnesses:

JOHN B. DAVIS,
WILLIAM J. PALMER.