W. Wimmer,

Bit Stock.

No 54,990. Patented May 22, 1866.

Fig. 1

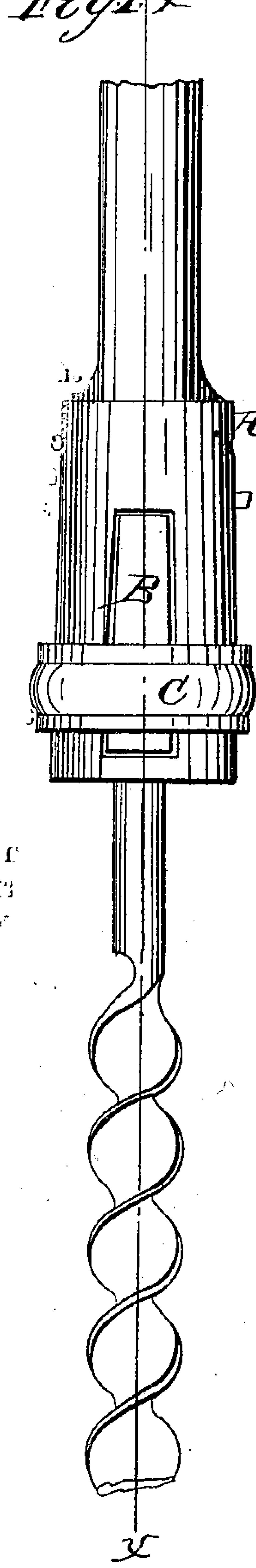


Fig. 2

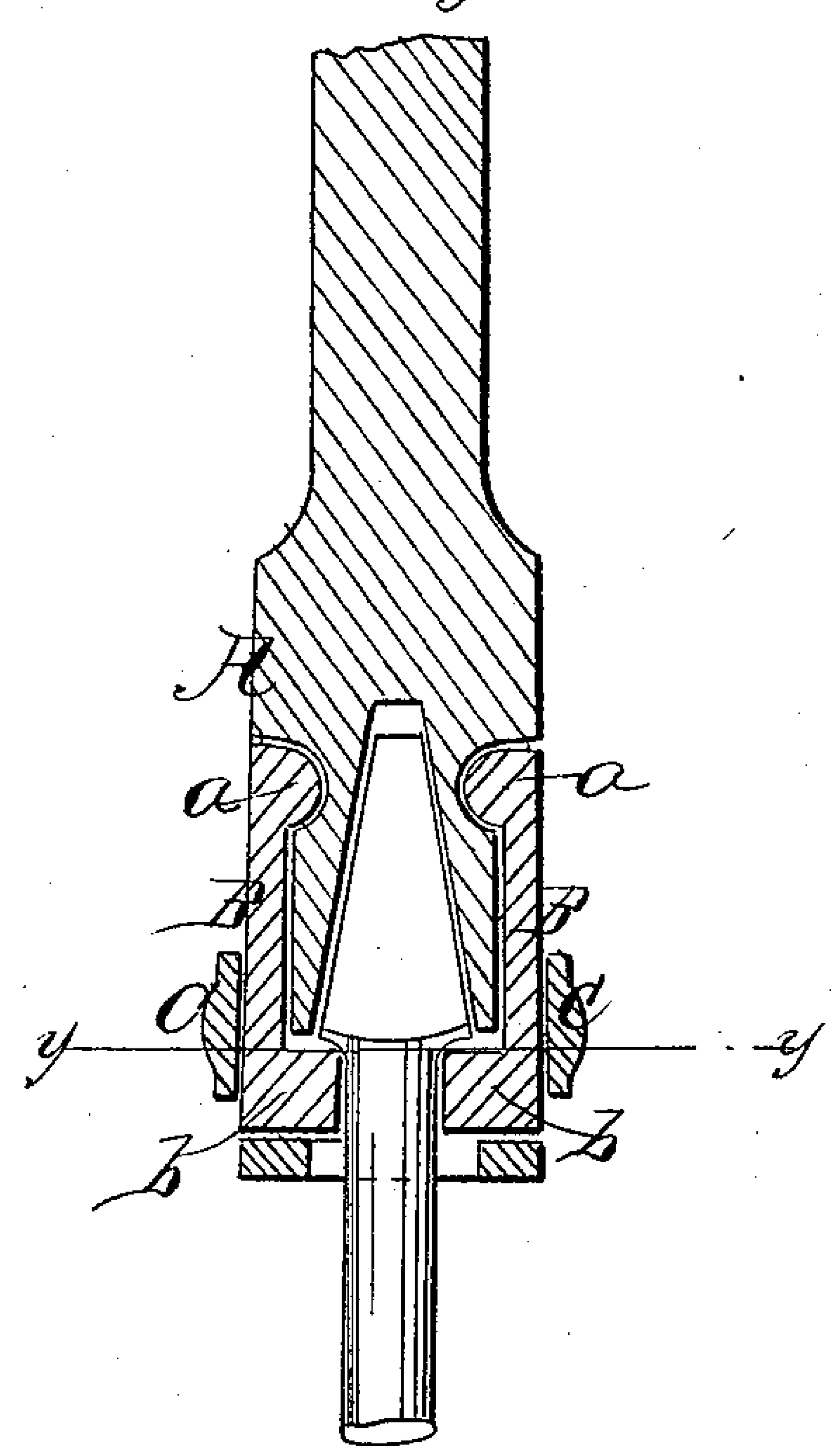
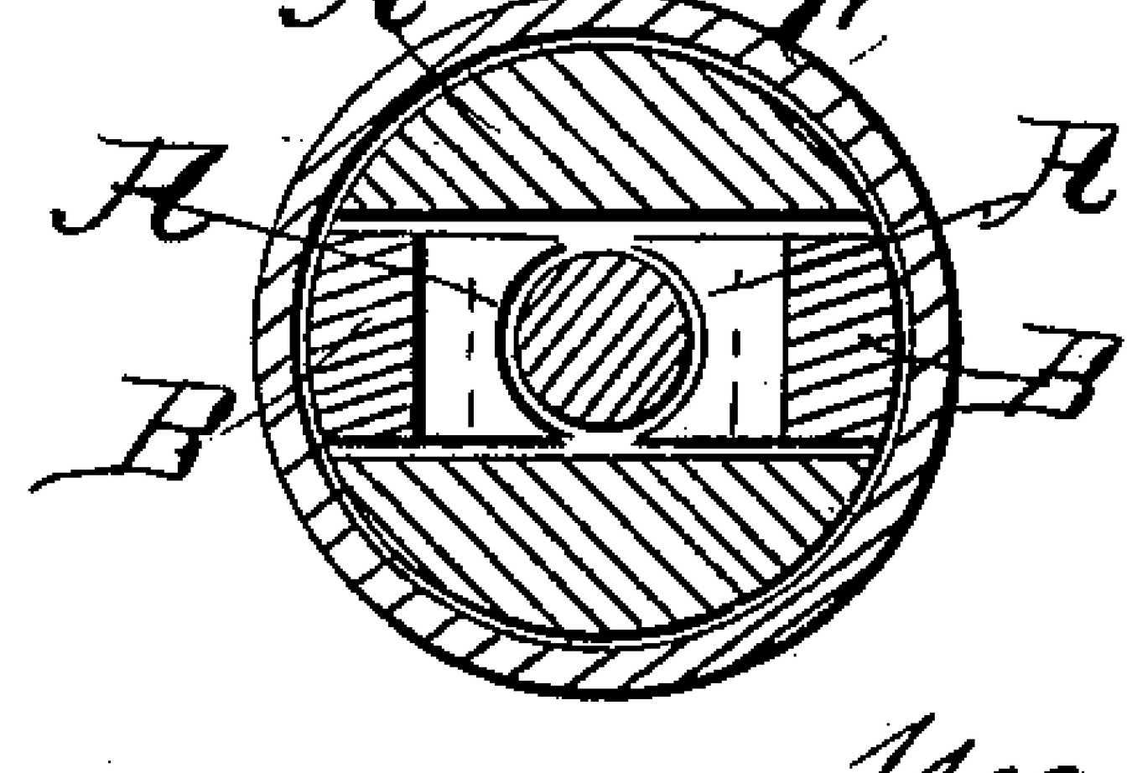


Fig. 3



Witnesses

Wm B. Covington

Wm. Trewin

Inventor

Wm Wimmer

By Munn & Co

attys

AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

WILLIAM WIMMER, OF ELIZABETHPORT, NEW JERSEY.

IMPROVEMENT IN SECURING BITS IN BRACES.

Specification forming part of Letters Patent, No. **54,990**, dated May 22, 1866.

To all whom it may concern:

Be it known that I, WILLIAM WIMMER, of Elizabethport, in the county of Union and State of New Jersey, have invented a new and Improved Mode of Securing Bits in Braces; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view of my invention. Fig. 2 is a vertical section taken on the line *x x*, Fig. 1. Fig. 3 is a cross-section taken in the plane of the line *y y*, Fig. 2.

Similar letters of reference indicate like parts.

My invention consists in constructing a bit-socket with two movable catches, one on each side, so arranged that the flanges on the outer ends will clasp the bit just above the head thereof and hold it firmly in its socket in the brace, when a ring, which encircles the socket, is thrown down for the purpose of preventing the ends of the catches from falling or being thrown outward, as will be presently described.

To enable others to understand my invention, I will proceed to describe it.

A represents the bit-socket, having a cavity in it sufficiently large to receive the whole head of the bit, as shown in Fig. 2. B B are the movable catches, which are fitted in grooves on each side of the bit-socket, so that their outer surface will be flush with the outside of the bit-socket. Each catch has a rounding flange, *a*, on its upper end, which rests in a correspondingly-shaped groove in the bit-socket. By thus making the ends of the catches they will turn freely to permit the insertion and withdrawal of the bit. On the lower end of each catch there is a nose, *b*, which runs through the socket and up against the neck of the bit, the ends being grooved, so as to hug the bit closely above the head or square portion thereof, as shown clearly in Fig. 2.

C is a ring which is placed upon the bit-socket for the purpose of holding the catches up to the bit when it is slid down on the bit-socket for that purpose, the lower end of the bit-socket being, of course, larger than the upper end, and the ring of a size to just reach the lower ends of the catches when fully crowded down; and to prevent the ring sliding over the catches when the brace is reversed a stop pin or piece, *d*, (see Fig. 1,) is secured to the socket. Thus it will be seen that the ring will never fall too far to allow the catches dropping out of their place, and this is necessary when the catches are not otherwise secured in place, as they evidently might be by pivoting their ends *a* to the socket.

The head or squared part of the bit, it will be noticed, need not be notched or otherwise altered to adapt it to the bit-socket, and any ordinary bit can be used, and the catches can be removed and other ones inserted, so as to have those which will fit any sized bit however large or small.

The mode of fastening is very simple. All the parts may be cast, and they will not need much if any filing to fit them to each other, and thus the expense of the brace will be considerably lessened.

The bit, as will be readily seen, will be held firmly in place, and it can be quickly withdrawn by merely shoving the ring down upon the bit-socket. Instead of having the ring C to slide up and down on the socket I propose to cut grooves in its inner face deep enough to allow the catches to fall out far enough to release the bit when the grooves are brought opposite the catches. The catches can of course be thrown in to hold the bit by merely twisting around the ring.

I am aware that catches with rings to cause them to press against the bit have been used; but I have heard of no instance when two catches have been used and so arranged that their lower ends will clasp the bit above the head or squared portion.

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

The combination of the entire socket A, the sliding ring C, and the catches B B, each of said catches being formed with a flange, *a*, and a nose, *b*, to dispense with the customary pivot-pins, and all arranged as herein described, so that the torsional strain shall be sustained by a solid socket, and the bit firmly secured within said socket by the noses *b b* engaging beneath its head.

The above specification of my invention signed by me this 19th day of September, 1865.

WM. WIMMER.

Witnesses:

M. M. LIVINGSTON.

C. L. TOPLIFF.