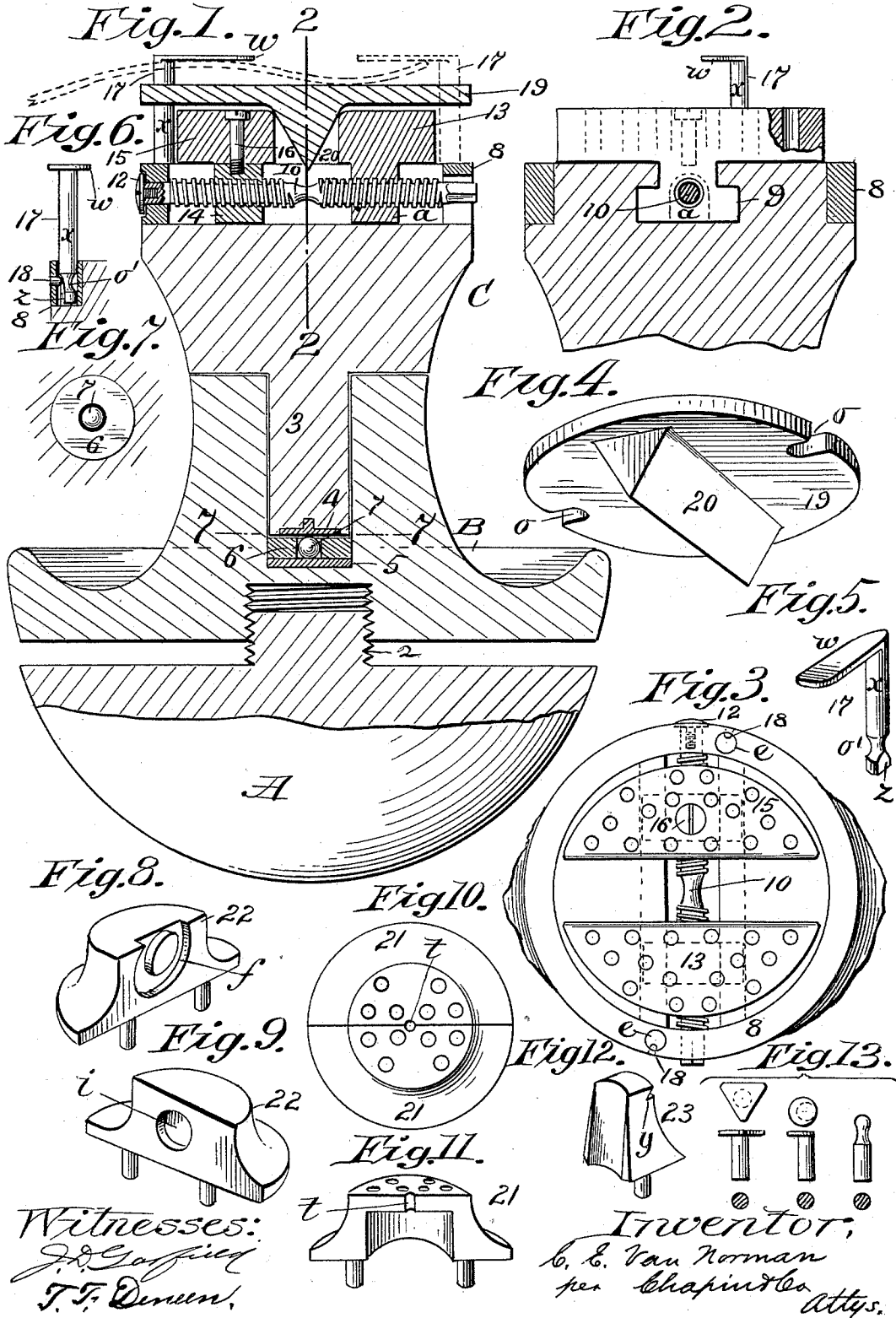


(No Model.)

C. E. VAN NORMAN.
WORK CLAMPING BLOCK FOR ENGRAVERS.

No. 476,951.

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UNITED STATES PATENT OFFICE.

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WORK-CLAMPING BLOCK FOR ENGRAVERS.

SPECIFICATION forming part of Letters Patent No. 476,951, dated June 14, 1892.

Application filed December 24, 1891. Serial No. 416,053. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. VAN NORMAN, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Work-Clamping Blocks for Engravers, of which the following is a specification.

This invention relates to engravers' work-clamping blocks, the object being to provide an improved construction thereof; and the invention consists in certain details of construction in said blocks, all as hereinafter fully described, and more particularly pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a vertical sectional view of an engraver's work-holding block embodying my improvements. Fig. 2 is a sectional view on line 2 2, Fig. 1. Fig. 3 is a top plan view without the clamping-posts. Figs. 4 to 13, inclusive, illustrate detail parts hereinafter fully described.

In the drawings, A indicates a metallic semi-spherical attachment to the base B of the block. Said attachment A is made, preferably, of cast-iron, and the said base and the top of the block C are made, preferably, of suitable metal. Said attachment A has a screw-threaded stud 2 thereon screwing into a socket in said base B, as shown in Fig. 1, whereby said attachment may be removed when it is desirable that the block should rest in a vertical position upon the lower end of the base B, and when the work to be performed on the block requires that its work-holding end may be given a lateral motion in any desired direction by the engraver to facilitate his work the semi-spherical attachment is screwed to said base. The said top C of the block is provided with a pending centrally-arranged shank 3, in the lower end of which is set a hardened-metal plate 4. Said shank 3 is fitted to turn freely in a socket in the upper part of the base B, and at the lower end of said socket is a hard-metal plate 5, and resting on said plate is a metal ring 6, in which is placed loosely a bearing-ball 7. Said ball 7 is sufficiently large to project somewhat above the upper side of said ring 6 and provide a centrally-located rolling bearing-point in said socket in the base B, on which rests

the lower end of said pending shank 3, said plate 4 being interposed between the end of said shank and the ball, thereby providing a permanent hard bearing-surface for the latter. Fig. 7 is a plan view of said ring and ball.

The above-described arrangement of a ball-bearing for the top of the block C provides for a perfectly-free rotary movement of the top of the block C on the base B for the convenience of the engraver when turning his work in the usual manner.

On the upper end of the top C are secured the work and fixture holding devices, as follows: On said top is fixed a metallic ring 8, preferably of brass. Transversely across said top is formed therein an inverted-T-shaped groove 9, broadest at its base. A right-and-left screw 10, preferably square-threaded, is hung to be turned in said ring 8 and extends longitudinally through said groove 9 and is partially secured against endwise movement by a screw 12, which enters one end thereof and has its head bearing against the outside of the ring. A shoulder on the screw-holding end of the screw 10 also contributes to prevent said endwise movement. A solid jaw 13, having a series of perforations in its upper face, has a lower extremity *a* fitting said T-shaped groove 9 and adapted to slide therein, and a like-formed nut 14 is also fitted to slide in said groove, to which is attached a movable jaw 15 by a screw 16. As clearly shown in Fig. 1, said right and left screw 10 passes through and engages with the lower extremity *a* of said jaw 13 and with said nut 14, and hence when said screw is rotated by the application of any suitable implement to its squared end the said jaw and the nut and jaw carried thereon are given a movement toward or from each other. Two work-holding clamps 17 are provided for use with the herein-described block, and have a form substantially as shown in Figs. 1, 2, 5, and 6—that is to say, each clamp consists of a shank *x*, having an annular groove *o* around it near its lower end, and having one side of the latter below said groove slabbed off, as at *z*, and of an arm *w*, preferably flattened, extending at a right angle to said shank. The said ring 8 on the top of the block is provided with two perforations *e* (see Fig. 3) to receive the

shanks of said clamps 17. Two stop-pins 18 are fixed in said ring 8, one opposite each of said perforations *e*, which extend more or less within the latter, as shown in Figs. 6 and 3, and into said annular groove around the shanks of the clamps 17 when the latter are in the operative positions shown in Fig. 1—that is, with their arms *w* extending inwardly from the border of the top C—thereby preventing said clamps from being lifted out of said ring by any force acting upwardly under and against said arms. To remove said clamps from the ring 8 or to place them therein, they are so held as to bring the said slabbed-off side of the clamp-shank opposite the end of said pin 18. This construction provides for attaching and detaching said clamps much quicker than by means of a screw, as ordinarily practiced. A work-supporting metal plate 19, (see Fig. 4,) having two recesses *o o* in its border and a transverse V-shaped rib 20 on its under side, is adapted to be laid on said top C in the position shown in Fig. 1, and as there shown with the shanks of said clamps 17 rising within said recesses, thereby steadying and holding said plate in place on said top, said V-shaped rib meanwhile dropping between the jaws 13 and 15 and presenting its inclined sides to each of said jaws, to the end that when said jaws shall be forced toward each other by operating the screw 10 said plate shall rise toward the clamp-arms *w* and bind an object therebetween so that it shall be held for engraving, as indicated by the dotted lines in Fig. 1, which outline the form of the handle of a spoon or fork. The reverse operation of said screw draws the said jaws apart and away from the inclined side of said rib, thus permitting the plate 19 to drop down and release the clamped article. When it shall be desired to use the block for holding articles such as sleeve-buttons, bangles, thimbles, cane-heads, watch-caps, bracelets, &c., for engraving, the clamps 17 are removed, as described, and the plate 19 is taken off, thus leaving the top of the block appearing as represented in Fig. 3, wherein are clearly shown the fixture-perforations in the jaws 13 and 15. For holding said sleeve-buttons and bangles the perforated fixture 21 (in pairs) is used, having the central perforation *t*. To hold buttons for engraving, the said fixtures are slightly separated by operating the screw 10. The button is then held in a position between the fixtures opposite the recesses which form together the said central perforation *t*, and said screw is turned to draw the fixtures together and clamp and hold the button firmly. This provides a work-clamp having such a restricted surface that a workman can get quite close to the piece he may be operating upon, and it is especially adapted to holding sleeve and collar buttons and is located and held on said jaws by the engagement of the studs on its lower end with the said jaw perforations. For holding thimbles the fixtures 22, Figs. 8

and 9, are used, the former having an abutment-face *f* and the latter a socket *i* to receive the top of the thimble. For holding cane-heads, watch-caps, bracelets, and other articles fixtures 23, as represented in Fig. 12, are employed. When holding a watch-cap, however, the latter has its inner border engaged in the notch *y* when the fixtures such as are illustrated in Fig. 13 are being attached either to the jaws 13 and 15 or to the fixtures 21 (the latter being also perforated therefor) in the manner above described.

Fig. 10 illustrates in plan view a pair of the fixtures 21 placed side by side.

Having thus described my invention, I claim—

1. In an engraver's work-holding block, the base B, having a flat lower end, and the body C, constituting a support for the work-holding devices of the block, surmounting said base and resting thereon, combined with the semi-spherical attachment A, detachably connected to said base, substantially as set forth.

2. In an engraver's work-holding block, the base B, having a flat lower end in which is a screw-threaded socket, and the body C, constituting a support for the work-holding devices of the block, surmounting said base and resting thereon, combined with the semi-spherical attachment A, having a screw-threaded stud thereon for engagement with said socket, substantially as set forth.

3. In an engraver's work-holding block, a metal ring surrounding the top thereof having one or more sockets therein to receive the shank of a clamp, and a pin fixed in said ring and extending into said socket, combined with a clamp-shank having an annular groove into which said pin enters and having a part thereof between said groove and its end slabbed off or flattened, substantially as set forth.

4. In an engraver's work-holding block, the jaws 13 and 15, a right and left screw with which said jaws are connected, whereby they are given simultaneous movements toward and from each other, combined with a work-supporting plate 19, having thereon a transverse V-shaped rib with which said jaws engage when moved toward each other, substantially as set forth.

5. In an engraver's work-holding block, the top C, having a pending stud thereon, on the end of which is fixed a metal plate, combined with the base B, having a socket to receive said stud, a metal plate at the base of said socket, a metal ring interposed between said two metal plates, and a metallic bearing-bell placed within said ring, substantially as set forth.

6. The combination, with the perforated jaws 13 and 15 and a screw for moving the same, of a pair of fixtures 21, having studs thereon to enter the perforations in said jaws, and the clamping-opening *t*, formed partly in each of the meeting edges of said fixtures, substantially as set forth.

7. The combination, with the perforated jaws 13 and 15 and a screw for moving the same, of a pair of thimble-holding fixtures 22, having studs thereon to enter the perforations 5 in said jaws and one thereof having a socket *i* therein to receive the top of the thimble and the other an abutment-face opposite said socket, substantially as set forth.

10 8. The combination, with the perforated jaws 13 and 15 and a screw for moving the same, of several fixtures 23, adjustable there-

on relative to their adjoining straight borders and each having a stud thereon to enter a perforation in said jaws and each having the notch *y* in its side to engage the inner portion 15 of the border of a watch-cap, substantially as set forth.

CHAS. E. VAN NORMAN.

Witnesses:

H. A. CHAPIN,
WM. S. BELLOWS.