G. A. BADER.

WORK HOLDING BLOCK.

APPLICATION FILED MAR. 13, 1913.

1,071,289. Patented Aug. 26, 1913.

Fig. 1.

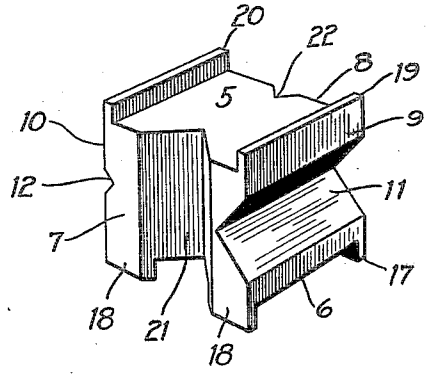


Fig. 2.

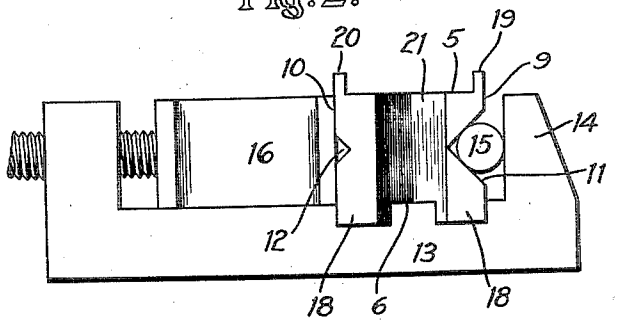
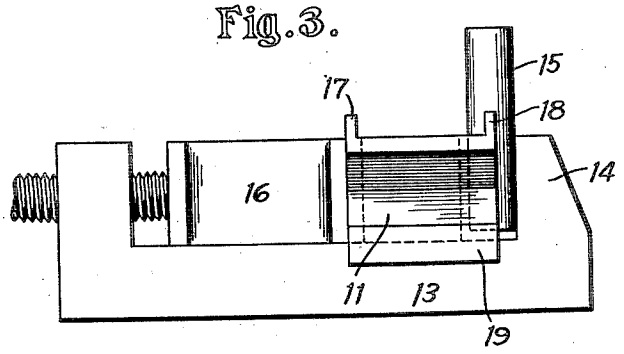


Fig. 3.



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UNITED STATES PATENT OFFICE.

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WORK-HOLDING BLOCK.

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To all whom it may concern:

Be it known that I, GUSTAV A. BADER, a citizen of the United States, and resident of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Work-Holding Blocks, of which the following is a specification.

This invention relates to grooved blocks, such as are employed in connection with work-holding vises and clamps, for holding articles which are round or otherwise irregular in cross-section. Blocks of the type in question are commonly provided with V-shaped grooves and are frequently designated as "V-blocks."

The object of the invention is to provide a work-holding block having a plurality of grooves, preferably of different sizes and arranged at different angles, with abutments or flanges adapted to coöperates with the shank of a work-clamp in such a manner as to hold the block accurately in the several positions in which it may be placed to bring the different grooves in coöperative relation with a jaw of the work-clamp; and particularly to so arrange the grooves and the flanges that the block may be used with equal facility and accuracy for holding round rods, or similar objects, in either horizontal or vertical position.

To the foregoing end the invention consists in a work-holding block having grooves, and clamp-engaging flanges or abutments, formed and arranged as hereinafter described and as defined in the appended claims.

In the accompanying drawings:—Figure 1 is a perspective view of a work-holding block embodying the present invention; Fig. 2 is a side-elevation, showing the block of Fig. 1 as used in connection with a work-holding clamp, and a round article or rod held between the block and the clamp, in horizontal position; and Fig. 3 is a view similar to Fig. 2, except that the block is shown in another position, in which the work is held vertically.

The illustrated embodiment of the invention is a block having the general form of a parallelepiped, with upper and lower flat faces 5 and 6, lateral faces 7 and 8, and front and rear faces 9 and 10, respectively, these faces all being arranged at right-angles to each other.

The front and rear faces 9 and 10 are provided, respectively, with horizontal grooves 11 and 12, V-shaped in cross-section, the groove 11 being larger than the groove 12 so that the two grooves afford provision for holding round articles of a wide range of diameters. The lateral surfaces 7 and 8 are similarly provided with vertical V-shaped grooves 21 and 22, the groove 21 being larger than the groove 22 for the purpose just referred to.

The block is provided, at the angles between its upper face 5 and its front and rear surfaces, respectively, with vertical flanges 19 and 20, while flanges 17 and 18 project downwardly at the angles between the lower face 6 and the lateral faces 7 and 8. The flanges 17 and 18 are interrupted by the grooves 21 and 22, but are otherwise similar to the flanges 19 and 20.

The block just described is intended to be used in connection with a work-holding clamp having a square shank of a width substantially equal to the distance between the flanges 17 and 18, or the flanges 19 and 20. In Figs. 2 and 3 a clamp of a well known form is illustrated, this clamp having a square shank 13 and a fixed jaw 14, together with a sliding jaw 16 which may be operated, in the usual manner, by a screw. When the work-holding block is to be used in connection with this clamp it is laid upon the shank 13 of the clamp, with either its upper surface 5 or its lower surface 6 resting thereon, and with the flanges adjacent such surface engaging the sides of the shank. With the block in this position the flanges hold it accurately upon the clamp without the possibility of lateral movement, and thus assist the user in assembling the clamp, the block, and the work which is to be held between these devices. When a round article or rod is to be held in horizontal position, the block is placed as shown in Fig. 2, with its lower surface 6 resting on the shank of the clamp, and the flanges 17 and 18 engaging the sides of the shank. In this position either of the grooves 11 and 12 may be brought into operative relation with the fixed jaw 14 of the clamp. In Fig. 2 the groove 11 is in this position, and the work 15 is held in horizontal position between this groove and the fixed jaw. To bring the groove 12 into position for use, where smaller work is to be held, it is necessary only to raise the block, thus disengaging the flanges from the

shank of the clamp, and then give the block a half turn about a vertical axis.

When the work is to be held in vertical position the block is placed upon the clamp with its face 5 against the shank 13, and with the flanges 19 and 20 engaging the sides of the shank. In this position either of the grooves 21 and 22 may be brought into coöperative relation with the fixed jaw 14 of the clamp, and thus the work 15 may be held in vertical position, as shown in Fig. 3.

The flanges 17 and 18 are interrupted, as above described, by the grooves 21 and 22, so that each of these flanges constitutes two separate abutments for engagement with the shank of the clamp. Their operation is not substantially different from that of the uninterrupted flanges 19 and 20, however, and while the latter flanges are shown as continuous it will be understood that this is not essential to their operation.

While for convenience of description I have referred to certain faces of the block as constituting specifically its upper and lower faces, and its forward, rear, and lateral faces, it will be understood that the positions of these several faces are interchangeable, and that where I have used corresponding terms in the claims they are intended merely to define the relative positions of the different parts of the block.

I claim:—

1. A work-holding block having a body of the general form of parallelepiped, and provided with two clamp-engaging flanges projecting upwardly at the angles between its upper face and its front and rear faces respectively; a work-holding groove in one of its lateral faces; two clamp-engaging flanges projecting downwardly at the angles between its lower face and its lateral faces respectively; and a horizontal work-engaging groove in its front face; the two pairs of flanges being adapted to coöperate alternately with the shank of a work-clamp according as one or the other of said grooves is to be employed in holding work against a jaw of the work-clamp.

2. A work-holding block having a body of the general form of a parallelepiped, and provided with two clamp-engaging flanges projecting upwardly at the angles between its upper face and its front and rear faces, respectively; horizontal work-holding grooves of different sizes in its front and rear faces, respectively; two clamp-engaging flanges projecting downwardly at the angle between the lower face and the two lateral faces of the block, respectively; and two vertical work-holding grooves of different sizes in the lateral faces of the block, respectively; the flanges adjacent to the upper face being adapted to coöperate with the shank of a work-clamp when the vertical grooves are in coöperative relation with a jaw of the clamp, and the flanges adjacent to the lower face being adapted to coöperate with the shank of the work-clamp when the horizontal grooves are in coöperative relation with the jaw of the work-clamp.

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