F. PLOTNIK.

VISE.

APPLICATION FILED MAR. 2, 1917.

1,239,620.

Patented Sept. 11, 1917.

Fig. 1

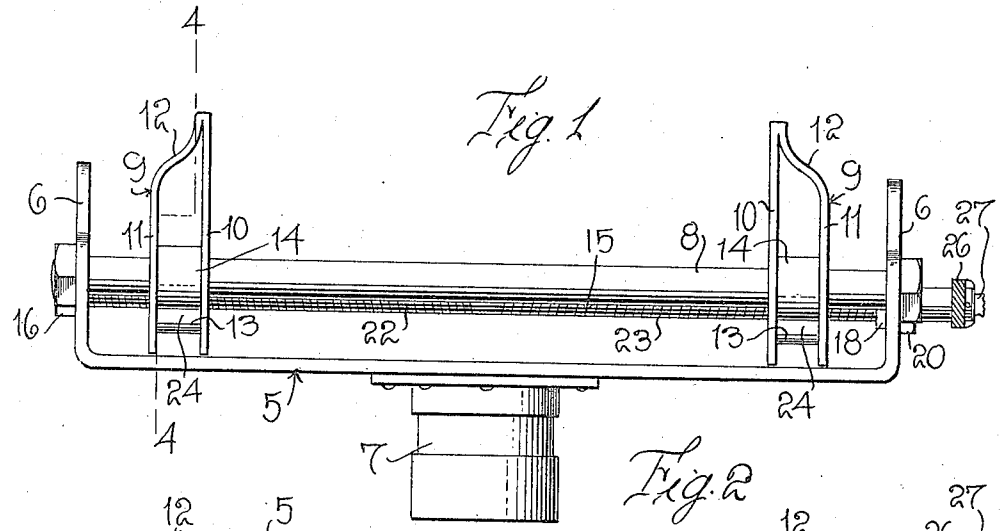


Fig. 2

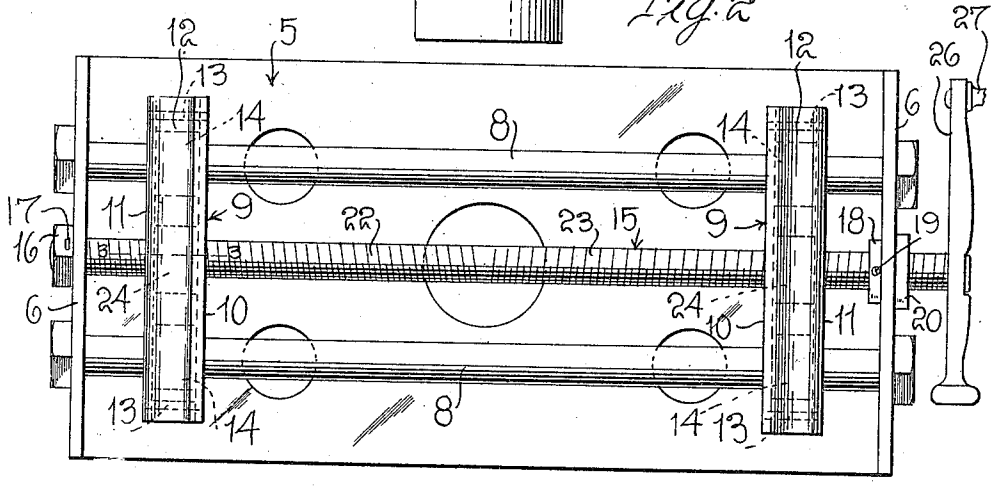


Fig. 3

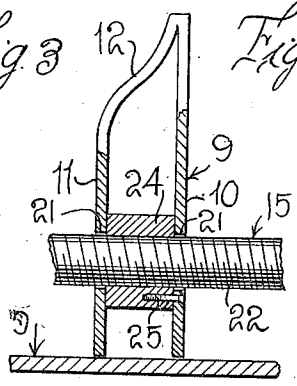
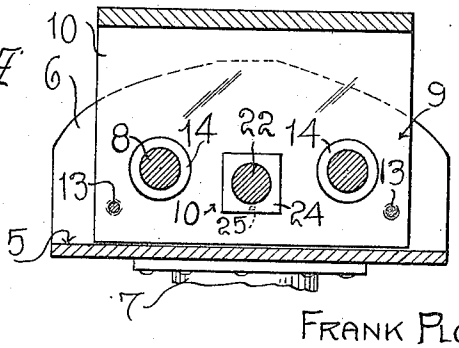


Fig. 4



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VISE.

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To all whom it may concern:

Be it known that I, FRANK PLOTNIK, a citizen of the United States, residing at Browerville, in the county of Todd and State of Minnesota, have invented certain new and useful Improvements in Vises, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to an improved vise and has for its object to provide a very simply constructed and serviceable device of this character which may be used in connection with a drill brace to securely hold the object to be drilled in place, but which is also applicable to various other analogous uses.

It is an additional object of the invention to provide an improved construction and mounting of the vise jaws and operating means to move these jaws toward or from each other and engage or disengage the same with or from the object to be held.

It is a further general object of the invention to provide a very durable vise construction and one which may be easily operated with a minimum of manual labor.

With the above and other objects in view, my invention consists in the novel features of construction, combination and arrangement of parts to be hereinafter more fully described, claimed and illustrated in the accompanying drawing, in which,

Figure 1 is a side elevation of my improved device;

Fig. 2 is a top plan view thereof;

Fig. 3 is an enlarged vertical section taken on the line 3—3 of Fig. 2; and

Fig. 4 is a section taken on the line 4—4 of Fig. 1.

Referring in detail to the drawing, 5 designates the base plate which is in the form of a metal casting having its ends vertically disposed as shown at 6. A sleeve or socket member 7 is riveted or otherwise securely fixed to the under side of this base plate, whereby the same may be conveniently mounted upon a supporting standard. As the present invention, however, is intended to be employed in tool or machine shops for various purposes, I have not illustrated any particular attaching or fastening means for the base of the vise in the accompanying drawing.

The upwardly disposed end portions 6 of the base plate are connected together by the spaced, cylindrical rods 8, upon which the jaws 9 are mounted for free longitudinal movement. Each of these jaws is formed from a metal plate bent intermediate of its ends to provide the wall 10 constituting the inner face of the jaw and a second wall 11 disposed in spaced parallel relation to the wall 10 for the greater portion of its length but having its upper end obliquely inclined, as at 12, to the end of the wall 10. The walls 10 and 11 are also rigidly connected to each other and braced by the rods 13. In addition to these bracing rods, spacing collars 14 are engaged upon the guide rods 8 between the parallel walls of each jaw.

The operating screw 15 is rotatably mounted in the vertical end portions 6 of the base plate. A nut 16 is engaged upon one end of the screw against the outer face of one vertical end portion 6 of the base plate and is fixed to the rod against turning movement by means of a cotter pin or key 17. A sleeve or collar 18 is also fixed to the screw 15 by means of the cotter pin 19 and extends through an opening in the other vertical end portion 6 of the base plate, said sleeve having a flange 20 on its outer end disposed against the outer face of the plate.

The walls 10 and 11 of the two vise jaws are provided with openings, as shown at 21, through which the screw is freely movable. The screw has coarse, oppositely turned threads as shown at 22 and 23 respectively, extending in opposite directions from the center of the screw. Nuts 24 have threaded engagement upon these oppositely threaded portions of the screw and are disposed between the walls 10 and 11 of the respective jaws. A screw indicated at 25 is disposed through an opening in the wall 10 of each jaw and has threaded engagement in the nut 24 to hold the latter against turning movement with respect to the screw.

A suitable cross bar 26 is fixed in one end of the screw 21, and to one end of this bar a handle 27 is attached by means of which the screw 21 can be conveniently turned or rotated.

In the operation of my improved device, it will be understood that the object to be held is arranged between the spaced jaws 9 and the screw 21 then turned or rotated in the proper direction so that the oppositely threaded portions of the screws cause the

jaws to move toward or approach each other. The inner faces of these jaws are preferably knurled or roughened so that they will have proper gripping engagement with the object and thus more effectually hold the latter against casual displacement. A reverse rotation of the screw will, of course, move the jaws away from each other and release the object. In this manner, it will be seen that by means of my improved device, the part to be held may be easily and quickly secured in the proper position while it is being operated upon by the drill or other tool. The device is of relatively simple construction, exceedingly strong and durable, and can obviously be manufactured at very small cost. It is apparent that the device may be manufactured in various sizes to be employed for different purposes. The construction and arrangement of the several elements of the device are also susceptible of considerable modification and I, therefore, reserve the privilege of adopting all such legitimate changes as may be fairly embodied within the spirit and scope of the invention as claimed.

Having thus fully described my invention, what I desire to claim and secure by Letters Patent is:—

1. In a vise, a supporting base, guide means mounted upon the base, jaws movably supported by the guide means for movement longitudinally with respect to the base, each jaw consisting of a plate bent to provide spaced parallel walls having openings therein, an operating screw extending through said openings, and a nut disposed between the spaced walls of each jaw with which the screw is operatively engaged, said nut also constituting a bracing means between the jaw walls and being rigidly fixed to one of said walls.

2. In a vise, a supporting base, guide means mounted upon the base, jaws movably supported by the guide means for movement longitudinally with respect to the base, each jaw consisting of a plate bent to provide spaced parallel walls having openings therein, an operating screw extending through said openings, a nut disposed between the spaced walls of each jaw with which the screw is operatively engaged, said nut also constituting a bracing means between the jaw walls and being rigidly fixed to one of said walls, and additional bracing means extending between and rigidly fixed in the walls of each jaw at its opposite ends.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

FRANK PLOTNIK.

Witnesses:
ROBT. J. HELIG,
MICKE CZOOK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."