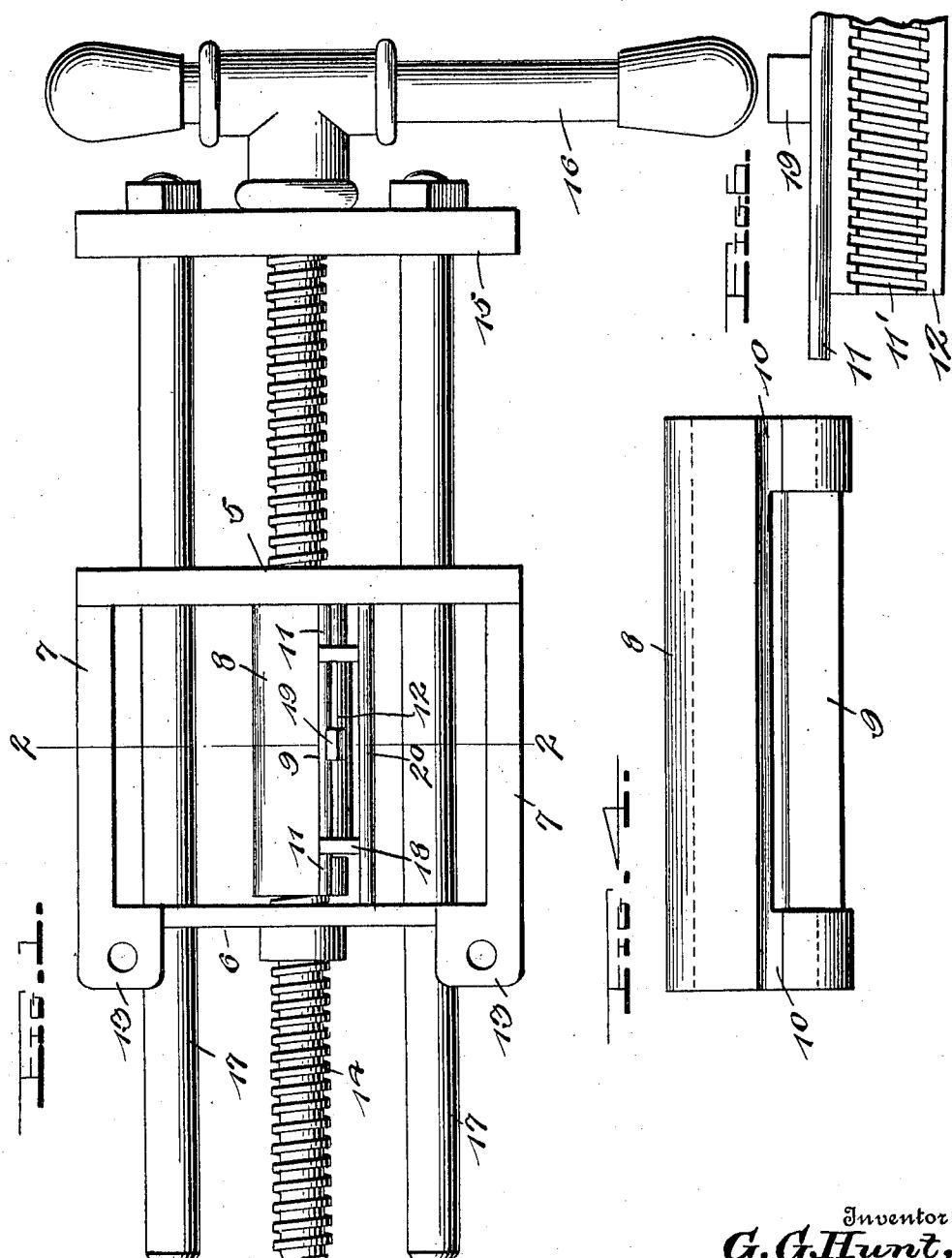


G. G. HUNT.
QUICK ACTING VISE.
APPLICATION FILED APR. 17, 1912.

1,055,278.

Patented Mar. 4, 1913.

2 SHEETS-SHEET 1.



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2 SHEETS—SHEET 2.

FIG. 2.

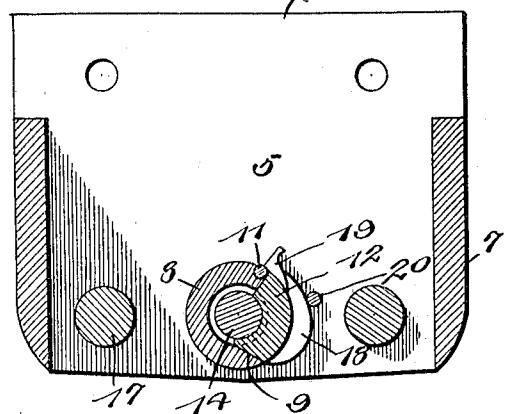


FIG. 3.

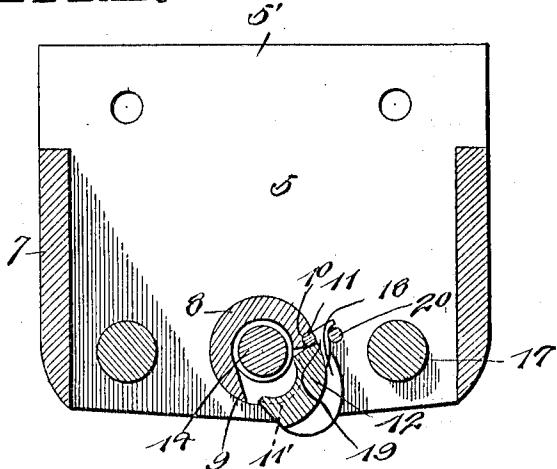
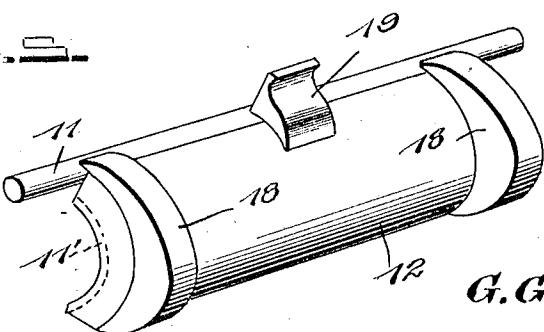


FIG. 4.



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UNITED STATES PATENT OFFICE.

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QUICK-ACTING VISE.

1,055,278.

Specification of Letters Patent.

Patented Mar. 4, 1913.

Application filed April 17, 1912. Serial No. 691,467.

To all whom it may concern:

Be it known that I, GEORGE G. HUNT, a citizen of the United States, residing at Plano, in the county of Kendall and State 5 of Illinois, have invented certain new and useful Improvements in Quick-Acting Vises, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to improvements in quick acting vises and has for its primary object to provide a device of this character wherein the operating parts are compactly arranged within the frame of the vise so 15 that the vise can be mounted and used in a comparatively limited space.

A further and more specific object of the invention resides in the provision of a frame, one wall of which constitutes the 20 fixed jaw of the vise, an adjusting screw movable longitudinally through the frame and having the movable jaw mounted upon one end thereof, and a movable toothed segment supported upon the screw for gravity 25 movement into and out of engagement therewith.

A further object of the invention is to 30 materially simplify and improve the construction of a vise of the above type wherein by the durability and efficiency of the same is enhanced and the cost of manufacture of said vise is reduced to a minimum.

With the above and other objects in view 35 the invention consists in the novel features of construction and in the combination and arrangement of the several parts herein- after more fully described, pointed out in the claims and shown in the accompanying drawings, in which—

40 Figure 1 is a top plan view of the vise detached from its support; Fig. 2 is a section taken on the line 2—2 of Fig. 1, showing the movable toothed plate in operative engagement upon the threads of the adjusting screw; Fig. 3 is a similar view showing 45 said plate in its inoperative position to permit of the longitudinal movement of the screw through the frame; Fig. 4 is a side elevation of the sleeve upon which the toothed plate is mounted; Fig. 5 is a detail 50 perspective view of the toothed screw engaging plate. Fig. 6 is a detail fragmentary elevation of the movable plate showing the threaded face thereof.

55 Referring in detail to the drawings 5 and

6 indicate the front and rear walls respectively of a frame which are connected by the side walls 7, said walls being preferably formed integral with each other and adapted to be secured to a work bench or other suitable support. For this purpose the front wall 5 of the vise frame is vertically extended above the side walls as indicated at 5' for engagement upon the edge face of the top of a work bench, said extended portion 60 of the frame wall having suitable openings therein to receive the fastening screws. The rear wall 6 at opposite sides of the frame is provided with lugs 13 also having openings 65 therein to receive the fastening screws. 70

14 designates a screw threaded rod which is loosely disposed through openings in the front and rear walls of the frame, the rear frame wall being preferably provided with a collar or flange surrounding the opening 75 therein to form a comparatively extensive bearing for the rod.

The movable jaw 15 of the vise is secured in any preferred manner upon one end of the rod 14 so that said rod may freely rotate 80 in the jaw. The end of the rod is provided with the usual handle 16 attached thereto in any preferred manner. To the movable jaw 15 the guide rods 17 are rigidly secured at one of their ends, said rods being movable through alining openings in the front and rear walls of the frame. 85

Upon the screw threaded rod 14 between the front and rear walls of the frame the sleeve 8 is mounted, the inner wall of said sleeve frictionally engaging the periphery of the screw thread upon the rod. This sleeve as shown in Fig. 4 is provided with an intermediate elongated cutaway portion or slot 9 which terminates at points equally distant from the ends of said sleeve. The periphery of the sleeve 8 has longitudinal grooves 10 formed therein which extend from the ends of the slot 9 to the ends of the sleeve. A plate 12 of arcuate form in cross section and co-extensive in length with the slot 9 in the sleeve 8 is provided with a longitudinally extending pintle 11. This pintle is loosely disposed in the groove 10 formed adjacent to one edge of the slot 9 95 in the sleeve. At each end of the plate 12 and projecting from the convex surface thereof the cam flanges 18 are formed. A stop lug or shoulder 19 is formed upon the convex surface of the plate 12 at one of its 100 105 110

longitudinal edges and intermediate of its ends and is adapted to engage with the longitudinal rod 20 which is fixed at its ends in the front and rear walls of the vise frame.

5 The concave face of the plate 12 is provided with threads 11' which are adapted to be engaged or disengaged with the screw thread of the rod 14 in the adjustment of the movable jaw as will be seen from the following description.

10 As shown in Fig. 3, in the practical operation of my improved vise when the plate 12 mounted upon the sleeve 8 swings outwardly by gravity from the opening 9 in said sleeve 15 until the stop lug 19 engages upon the rod 20, the teeth of the plate 12 are disengaged from the teeth of the screw rod 14. It will thus be apparent that said screw rod and the guide rods 17 attached to the movable jaw 20 may be forced longitudinally through the frame of the vise without rotating the screw rod, so that the movable jaw may be quickly disposed in engagement with the work which is positioned between the same and the front 25 wall 5 of the frame. After the movable jaw has been so disposed, the operator turns the rod 14 to the right, and owing to the frictional engagement of the sleeve 8 upon said rod, said sleeve and the plate 12 carried 30 thereby will be turned, during which movement the plate 12 gravitates downwardly and inwardly into the opening 9 in the sleeve as the cam faces of the flanges 18 bear against the rod 20. This turning movement 35 of the sleeve continues until the plate 12 engages the rod 20 when said plate will be entirely disposed within the opening in the sleeve and the threads of said plate engaged with the screw thread of the rod 14. It will 40 thus be apparent that in the continued rotation of the rod 14 the movable jaw will be drawn against the work to securely clamp the same in position between the vise jaws. The work may be instantly removed from 45 the vise by simply reversing the rotation of the rod 14 or turning the same to the left so as to throw the plate 12 out of the opening in the sleeve and disengage its threads from the threads on the rod. By pulling outwardly 50 upon the handle 16, the movable jaw will be moved away from the work, the screw rod and the guide rods moving freely through the openings in the frame.

From the foregoing it will be seen that I 55 have devised a vise structure wherein the movable jaw may be easily and quickly clamped upon the work or disengaged therefrom. As the operating parts are all entirely housed within the frame and are compactly arranged, it will be obvious that the 60 same can be easily and quickly assembled or disassembled when necessary. Owing to the simplicity of my improved vise it will further be seen that the same is positive and reliable in its action, of durable construc-

tion and can be manufactured at a greatly reduced cost in comparison with similar vises now in general use.

It will further be obvious that if desired the stop rod 20 may be eliminated and one of the guide rods 17 employed for this purpose, said rod being disposed in closer relation to the screw rod than as shown in the drawing and the sleeve 8 increased slightly in diameter.

75 From the foregoing it is believed that the construction and manner of operation of my improved vise will be clearly understood.

80 While I have specified the preferred construction and arrangement of the various elements it will be apparent that the invention is susceptible of further modification than as above referred to, without departing from the essential features or sacrificing any of the advantages thereof.

85 What I claim is:—

1. The combination with an axially movable rotatable screw threaded rod, of a sleeve mounted upon said rod and frictionally engaged with the thread thereof, said 90 sleeve being provided with a longitudinal opening, and a plate having threads upon one face for engagement with the threads on said rod and movable into and out of the opening in the sleeve to prevent axial movement of the rod therethrough or to admit of such axial movement.

2. The combination with a frame and a screw threaded rod adapted for axial movement therethrough without rotating the rod, of a sleeve mounted upon said rod and frictionally engaged with the thread thereof, said sleeve being provided with an opening, a plate having a threaded face to engage the thread of said rod, said plate being pivotally 105 mounted upon the sleeve and movable by gravity into and out of the opening therein.

3. The combination with a rotatable and axially movable screw threaded rod, of a sleeve frictionally engaged upon said rod, said sleeve being provided with a longitudinal opening, a plate pivotally mounted upon said sleeve at one edge of the opening for movement into and out of the same, said plate being provided with threads upon one face for engagement with the threads of said rod to prevent its axial movement through the sleeve or to admit of such movement, and stationary means to hold said sleeve and plate against rotation with said rod.

110 4. The combination with a frame having front and rear walls and a screw threaded rod axially movable through said frame walls without rotating the rod, of a sleeve 115 extending between the frame walls and frictionally engaging said rod, said sleeve being provided with a longitudinal opening, a plate pivotally mounted upon the sleeve for swinging movement into and out of said opening when the rod is turned in opposite 120 directions.

directions, said plate having a threaded face for engagement with the thread of said rod, a stationary element, and cam-like projections on said plate to co-act with said element and retain the plate in the opening in the sleeve when the rod is turned in one direction.

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

GEORGE G. HUNT.

Witnesses:

R. C. FREEZE,
R. W. SIBLEY.

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