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N. D. McCOLLUM

VISE

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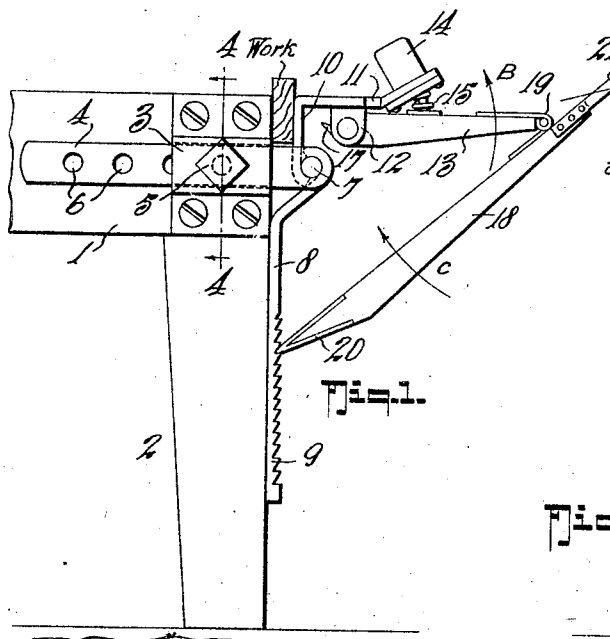


Fig. 1.

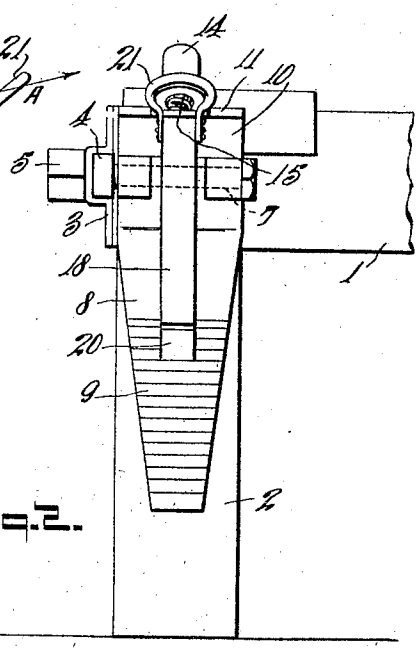


Fig. 2.

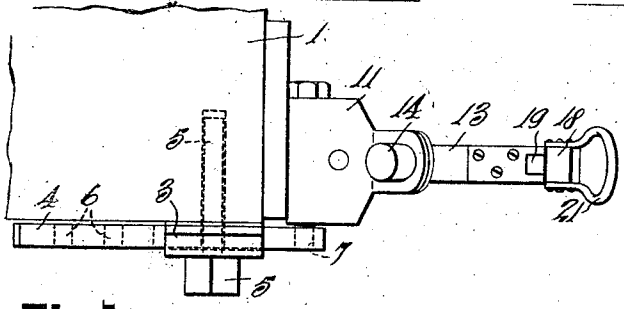


Fig. 3.

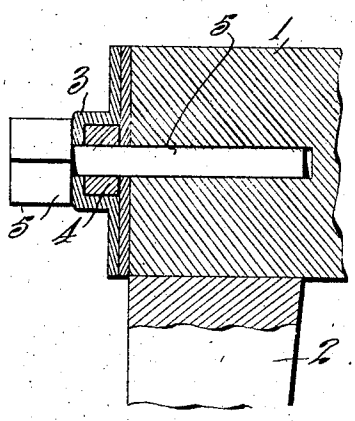


Fig. 4.

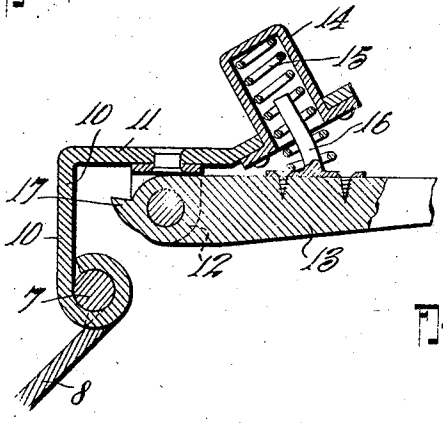


Fig. 5.

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UNITED STATES PATENT OFFICE.

NORMAN D. McCOLLUM, OF GORE, GEORGIA.

VISE.

Application filed February 8, 1924. Serial No. 691,449.

To all whom it may concern:

Be it known that I, NORMAN D. McCOLLUM, a citizen of the United States, residing at Gore, in the county of Chattooga and State of Georgia, have invented certain new and useful Improvements in Vises, of which the following is a specification.

The invention resides in the provision of certain new and useful improvements in vise structures.

The invention generally has for its object to provide a new and improved vise structure which is of a construction simple to operate and inexpensive to manufacture and in which the clamping action may be effected by lever action in a quick and effective manner.

In its more detailed nature the invention seeks to provide a new and improved construction of vise which may be readily applied to a work bench or other support, in which the clamping action is quickly and effectively accomplished by a simple pull lever action and in which means are provided for greatly varying the range of operation of the device.

With the above and other objects in view the invention resides in those novel details of construction, combination and arrangement of parts, all of which will be first fully described, then be particularly pointed out in the appended claims, reference being had to the accompanying drawing in which:

Figure 1 is a side elevation illustrating the invention in use, so much of a work bench structure being illustrated as is necessary to show the application thereof.

Figure 2 is an edge view of the parts illustrated in Figure 1.

Figure 3 is a plan view of the parts illustrated in Figure 1.

Figure 4 is a detail vertical section on the line 4—4 on Figure 1.

Figure 5 is a detail longitudinal section taken through the clamping jaw and a portion of the pivoted lever connected thereto.

In the drawing, in which like numerals of reference indicate like parts in all of the figures, 1 indicates the bed and 2 one of the legs of a work bench. In carrying out the invention I provide a slide bracket 3 which is secured to the work bench in the manner illustrated in Figure 1 and which is formed to provide a slide guide for the bar 4, and the said bracket is apertured, as is the bed of the bench also, to receive a securing pin 5 adapted to pass therethrough and through the selected one of the apertures 6 provided in the bar 4.

The adjustable bar 4 carries a pivot pin 7 which projects therefrom in a plane parallelling the adjacent face of the bench bed and is adapted to provide a pivot for the pendent plate 8 which is notched, as at 9, for a purpose later to be described.

A clamp jaw 10 is also pivoted to the pin 7 in a manner for projecting the clamp face thereof in parallel relation with the adjacent face of the bench bed for the purpose of cooperating therewith in effecting the clamp action. The clamp jaw member 10 includes the horizontally bent portion 11 to which is secured, in the manner illustrated in Figure 5 of the drawing, a bifurcated pivot bracket 12 which serves to provide a pivot for the lever 13.

The portion 11 is also provided with a socket bearing 14 for receiving the cushion spring 15 which is adapted to be engaged by the centering post 16, and the lever 13 by which the latter is carried, for a purpose later to be described. The lever 13 may be provided with a lug or extension 17 which may project therefrom in a manner for engaging the portion 11 to prevent displacement of the spring 15.

An adjusting lever 18 is pivoted, as at 19, to the lever 13, and this adjusting lever is provided with a metal reinforce toe 20 adapted to engage the notches 9 hereinbefore referred to. The lever 18 may be extended slightly beyond its connection 19 with the lever 13 and provided with a bale-shaped handle 21.

In operation the work would be placed between the opposing faces of the clamp jaw 10 and the bench bed (which constitutes a fixed jaw) and the operator, by a simple, quick, hard pull on the bale handle 21, upwardly outwardly in the direction indicated by the arrow A on Figure 1, would immediately effect the clamp action. By pulling the bale handle 21 in the direction indicated, the lever 13 is not only moved to the direction indicated by the arrow B but the lever 18 will also be moved, simultaneously, in the direction indicated by the arrow C, thus effecting, by this single simple operation, both the clamp action and the locking of the clamp jaw to the clamping position.

It will be readily understood that by varying the position of the bar 4, by utiliz-

ing the means 5 and 6, the range of action between the clamp jaw 10 and the cooperating bench portion may be greatly varied.

In a device where any other but a screw action for bringing together the clamp jaws is utilized, much difficulty is encountered in obtaining a perfect clamping action, unless the device is equipped as is the case in my invention by the spring devices 14, 15 and 16.

It will be readily understood that this spring action will compensate for any imperfect cooperation between the perfect clamp position and the respective relation of toe 20 and notch 9, the spring always permitting such movement as is necessary, after the perfect clamping position has been reached by the jaw 10, for the levers to adjust themselves to the next notch position and after the spring has cushioned sufficient of the clamping energy to render the clamping action perfectly effective.

It will be noticed that, as clearly shown in Figures 1 and 2, the plate 8 can swing on the axis 7 since the pin 7, as heretofore described, provides a pivot for the pendent plate 8. If the plate 4 is adjusted outwardly, so that the securing pin 5 passes through one of the notches toward the left hand end in Figure 1, the pendent plate 8 will swing on its pivot to maintain contact with the leg 2, the leg 2, as is clearly obvious from Figure 1 of the drawing, serving as an abutment or back stop for the plate 8.

From the foregoing description, taken in connection with the accompanying drawing, it is thought that the novel details of construction, the manner of operation, and the advantages of my invention will be readily apparent to those skilled in the art to which it relates.

What I claim is:

1. In a vise, a fixed jaw, a pivoted jaw, a pivot pin for the pivoted jaw, a notched plate pendent from the pivot pin, pivoted levers for actuating the pivoted jaw and for engaging the notched plate to hold the levers to position said notched plate adapted to have pivotal movement on the axis of the pivot pin, and means forming a stop abutment for said notched plate.

2. In a vise, a fixed jaw, a pivoted jaw, a pivot pin for the pivoted jaw, a notched plate pendent from the pivot pin, pivoted levers for actuating the pivoted jaw and for engaging the notched plate to hold the levers to position, and means for adjusting the position of the pivot pin to vary the range of action of the jaws independently of the range of action of the pivoted levers said notched plate adapted to have pivotal movement on the axis of the pivot pin, and means forming a stop abutment for said notched plate.

3. In a vise, a fixed jaw, a pivoted jaw, a pivot pin for the pivoted jaw, means for adjusting the position of the pivot pin to vary the relation of the jaws, a notched plate pendent from the pivot pin, a pivoted lever pivoted to a part of the pivoted jaw, an actuating lever pivoted to the pivoted lever for moving the same to effect a clamping action of the jaws and having a heel adapted to engage the notched plate to lock the levers at jaw clamped positions said notched plate adapted to have pivotal movement on the axis of the pivot pin, and means forming a stop abutment for said notched plate.

4. In a vise, a fixed jaw, a pivoted jaw, a pivot pin for the pivoted jaw, means for adjusting the position of the pivot pin to vary the relation of the jaws, a notched plate pendent from the pivot pin, a pivoted lever pivoted to a part of the pivoted jaw, an actuating lever pivoted to the pivoted lever for moving the same to effect a clamping action of the jaws and having a heel adapted to engage the notched plate to lock the levers at jaw clamped positions, and means cooperating with the pivoted lever and the pivoted jaw part in providing a degree of resiliency for permitting perfect locking action between the heel and the respective ones of the plate notches said notched plate adapted to have pivotal movement on the axis of the pivot pin, and means forming a stop abutment for said notched plate.

5. In a vise, the combination with a portion of a work bench and a supporting leg thereof, a pivot pin, a jaw pivoted upon the pin and adapted to oppose the adjacent portion of the bench in clamping cooperation, means supported by the work bench portion for carrying the pivot pin, a notched plate pendent from the pivot pin and adapted to lay against the bench leg, a pivoted lever pivoted to a part of the pivoted jaw, an actuating lever pivoted to the pivoted lever for moving the same to effect a clamping action of the jaws and having a heel adapted to engage the notched plate to lock the levers at jaw clamped positions.

6. In a vise, the combination with a portion of a work bench and a supporting leg thereof, a pivot pin, a jaw pivoted upon the pin and adapted to oppose the adjacent portion of the bench in clamping cooperation, means supported by the work bench portion for carrying the pivot pin, means for adjusting the pivot carrying means, a notched plate pendent from the pivot pin and adapted to lay against the bench leg, a pivoted lever pivoted to a part of the pivoted jaw, an actuating lever pivoted to the pivoted lever for moving the same to effect a clamping action of the jaws and having a heel adapted to engage the notched plate to lock the levers at jaw clamped positions, and means cooperating with the pivoted lever and the pivoted jaw part in providing a de-

gree of resiliency for permitting perfect locking action between the heel and the respective ones of the plate notches.

7. In a vise, a fixed jaw, a pivoted jaw, a pivot pin for the pivoted jaw, means for adjusting the position of the pivot pin to vary the relation of the jaws, a notched plate pendent from the pivot pin, a pivoted lever pivoted to a part of the pivoted jaw, an actuating lever pivoted to the pivoted lever for moving the same to effect a clamping action of the jaws and having a heel adapted to engage the notched plate to lock the levers at jaw clamped positions, and means whereby the clamping action and the locking action may be effected simultaneously by a simple pull action.

8. In a vise, a fixed jaw, a pivoted jaw, a pivoted pin for the pivoted jaw, means for adjusting the position of the pivot pin to vary the relation of the jaws, a notched plate pendent from the pivot pin, a pivoted lever pivoted to a part of the pivoted jaw, an actuating lever pivoted to the pivoted lever for moving the same to effect a clamping action of the jaws and having a heel adapted to engage the notched plate to lock the levers at jaw clamped positions, the actuating lever being extended beyond its pivot and provided with a handle for effecting the clamping and locking action simultaneously by a simple pull action.

9. In a vise, the combination with a portion of a work bench and a supporting leg thereof, a pivot pin, a jaw pivoted upon the pin and adapted to oppose the adjacent portion of the bench in clamping cooperation, means supported by the work bench portion for carrying the pivot pin, means for adjusting the pivot carrying means, a notched plate pendent from the pivot pin and adapted to lay against the bench leg, a pivoted lever pivoted to a part of the pivoted jaw, an actuating lever pivoted to the pivoted lever for moving the same to effect a clamping action of the jaws and having a heel adapted to engage the notched plate to lock the levers at jaw clamped positions, and means cooperating with the pivoted lever and the pivoted jaw part in providing a degree of resiliency for permitting perfect locking action between the heel and the respective ones of the plate notches, the actuating lever being extended beyond its pivot and provided with a handle for effecting the clamping and locking action simultaneously by a simple pull action.

NORMAN D. McCOLLUM.