No. 631,151. Patented Aug. 15, 1899.

C. B. CAMPBELL.

QUICK ACTION VISE.

(Application filed Feb. 10, 1899.)

(No Model.)

Fig. 1.

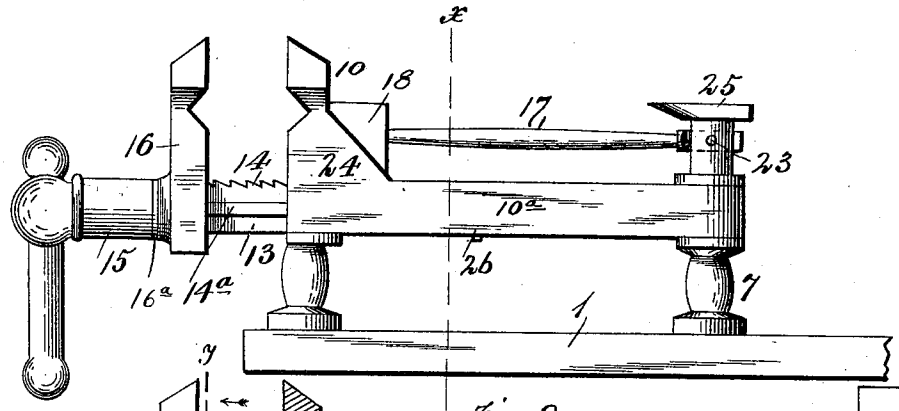


Fig. 2.

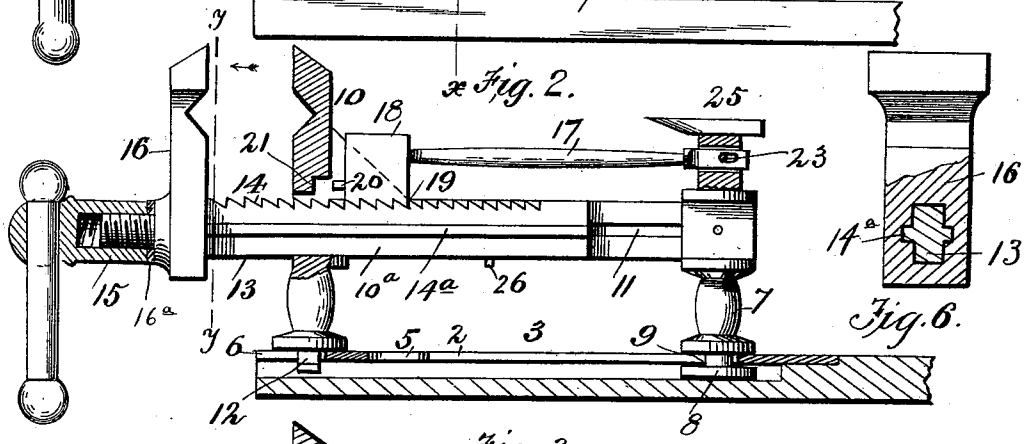


Fig. 6.

Fig. 3

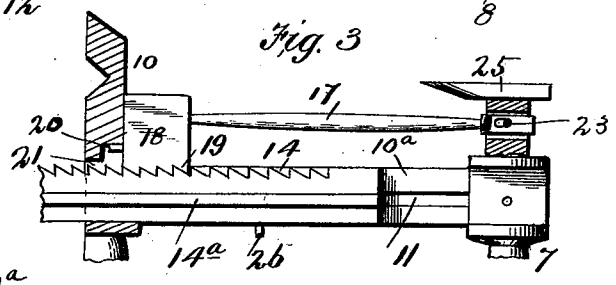
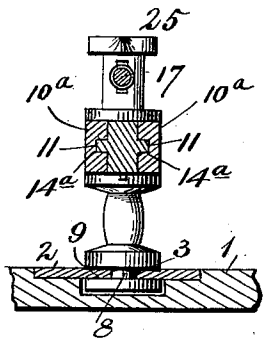


Fig. 5.



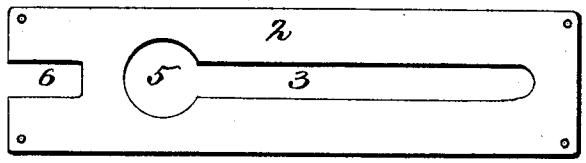


Fig. 4

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CYDNOR B. CAMPBELL, OF GLOUSTER, OHIO, ASSIGNOR OF ONE-HALF TO ISAAC E. CHAPPELEAR, OF TRIMBLE, OHIO.

QUICK-ACTION VISE.

SPECIFICATION forming part of Letters Patent No. 631,151, dated August 15, 1899.

Application filed February 10, 1899. Serial No. 705,184. (No model.)

To all whom it may concern:

Be it known that I, CYDNOR B. CAMPBELL, a citizen of the United States, residing at Glouster, in the county of Athens and State of Ohio, have invented new and useful Improvements in Quick-Action Vises, of which the following is a specification.

My invention relates to that class or description of quick-action vises which comprise in their structure a stationary jaw and a slidable or movable jaw carried by a rack-bar and provided with a pivoted dog for holding the sliding jaw in place when an article is clamped between the jaws; and its object is to provide improved means for holding the dog in engagement with the rack-bar and disengaging it therefrom, so as to enable the rack-bar to be moved in or out.

It is also an object to provide improved means for securing the vise to its plate or other support whereby it may be swung out of the way or altogether removed from said support when desired.

The invention consists in the novel construction and combination of parts hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of a vise constructed in accordance with my invention. Fig. 2 is a central longitudinal section of the same. Fig. 3 is a similar view showing the pivoted dog in engagement with the rack-bar and held against disengagement therefrom by the lug on its front end engaging with a recess in the stationary jaw. Fig. 4 is a plan view of the supporting-plate, the vise being removed. Fig. 5 is a cross-section on the line $x\ x$, Fig. 1. Fig. 6 is a detail sectional view on the line $y\ y$, Fig. 2, looking in the direction of the arrows.

In the said drawings the reference-numeral 1 designates a bench or other object, to which is secured a supporting-plate 2, seated in a recess therein. This plate is formed intermediate its ends with a longitudinal slot 3, having a circular opening or hole 5 at the front end somewhat larger than the slot. The said plate at the front end is formed with a recess 6.

The numeral 7 designates a post, the lower end of which is formed with a head 8, having a peripheral groove 9 therein with which the edges of the slot 3 engage and which hold the post in place in the slot.

The numeral 10 designates the stationary jaw connected with said post by two horizontal bars 10^a, with a space therebetween, which bars are provided with a longitudinal groove 11 in their inner sides, forming a way for a rack-bar, hereinafter described. This jaw is provided with a grooved head 12 similar to head 8, which engages with the recess 6 in the front end of the plate 2 and prevents the jaw and bars from swinging sidewise.

The numeral 13 designates a sliding rack-bar passing through a hole or opening in the stationary jaw and provided on its upper side with rack-teeth 14 and on opposite sides with longitudinal ribs 14^a, engaging with the grooves 11. The outer end of this rack-bar is screw-threaded, with which engages a correspondingly-threaded swivel 15. Carried by said rack-bar and movable thereon is the sliding jaw 16, and interposed between this jaw and the swivel is a washer or collar 16^a. This jaw is formed with a recess through which the rack-bar 13 passes. Pivoted to the upper end of the post 7 is a rod 17, the front end of which is provided with a dog 18, having teeth 19, adapted to engage with the teeth of the rack-bar. The lower front end of this dog is formed with a lug 20, which is adapted to engage with a countersunk recess 21 in the stationary jaw. The said rod at the rear end is provided with an elongated hole, through which the pivot-pin 23 passes, the object of which is to permit the rod to have a limited horizontal movement, so that the lug 20 can be engaged with and disengaged from the recess 21. At the inner ends the said side bars are formed with approximately triangular extensions 24, which form guides for the dog 18. The post 7 at its upper end is provided with an anvil 25.

The numeral 26 designates a pin on the under side of the rack-bar to limit the outward movement of the latter by coming in contact with the stationary jaw.

In practice the swivel is given a turn or two backward, and the movable or sliding dog is

moved outward a short distance, and the dog is thrown out of engagement with the rack-bar. The latter is now pulled outward a distance sufficient to allow the article to be clamped between the jaws to be inserted in place. The dog is then lowered into engagement with the rack-bar, and the sliding jaw is then tightened by turning the swivel. This will cause the said sliding jaw to be forced tightly against the article and at the same time the rack-bar to be pulled outwardly slightly, carrying with it the rod and dog, so the lug 20 of the latter will engage with the recess or slot 21 and its disengagement with the rack-bar be prevented. To remove the article from the jaws, the swivel is turned backward, so as to loosen the sliding jaw, so that it can be moved forward or outward. The rack-bar can now be moved backward, the teeth of the dog riding over the teeth of the same to adjust the device for a different-sized article. At the same time the rod and dog will be moved backward a sufficient distance for the lug 20 to clear the recess 21. By now raising the dogs out of engagement with the rack-bar the latter can be pulled outwardly to adjust the device for a larger article.

To swing the vise out of the way when desired, the post and stationary jaw are pulled outward, so that the lower end of the latter is disengaged from the recess in the front of the plate 2. The vise can now be swung sidewise, the post serving as a pivot. To remove the vise from the plate, it is pulled outward until the head at the lower end of the post comes into coincidence with the hole at the front end of the slot in the plate, when the post can be disengaged by lifting it out through the said hole.

Having thus fully described my invention, what I claim is—

1. In a vise, the combination with the post, the stationary jaw connected therewith having an opening therethrough, the sliding rack-bar, the sliding jaw thereon and the screw-swivel, of the rod pivotally connected with said post provided with a dog at the front end adapted to engage with said rack-bar, substantially as described.

2. In a vise, the combination with the post, the horizontal bars secured thereto, the stationary jaw secured to said bars and formed with an opening, the screw-threaded sliding rack-bar, the screw-swivel at the front of said rack-bar, and the sliding jaw carried by said rack-bar, of the rod having an elongated hole in its rear end, the pivot-pin passing therethrough and through the post, and the dog at the front end of said rod having teeth in its under side and provided with a lug adapted to engage with a recess in the stationary jaw, substantially as described.

3. In a vise, the combination with the post, the horizontal bars secured thereto provided with longitudinal grooves in their inner sides, the stationary jaw secured to said bars and formed with a recess in one side, and an opening intermediate its ends, and the sliding rack-bar formed with longitudinal ribs, the stop-pin secured to said bar, the sliding jaw and the screw-swivel, of the rod having an elongated hole in its rear end, the pivot-pin passing therethrough and through the post and the dog having teeth in its under side and provided with a lug engaging with the recess in the stationary jaw, substantially as described.

4. The combination with the plate having a horizontal slot therein with an intersecting hole at the front end, and said plate formed with a recess or slot at the front end, of the post having a head at the lower end formed with a peripheral groove, the stationary jaw having a similar head adapted to engage with said recess in the front of the plate, the sliding jaw, the rack-bar, and the pivoted rod provided with a dog at the front end, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CYDNOR B. CAMPBELL.

Witnesses:
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KATE AMOS.