No. 637,978. Patented Nov. 28, 1899.

J. F. VALLIÈRE.

MILLWRIGHT VISE.

(Application filed Oct. 7, 1899.)

(No Model.)

Fig. 1.

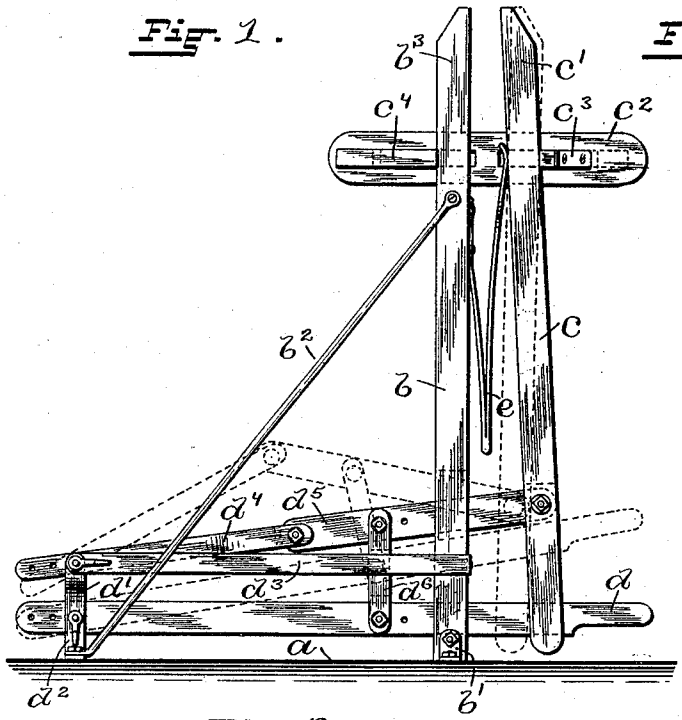


Fig. 2.

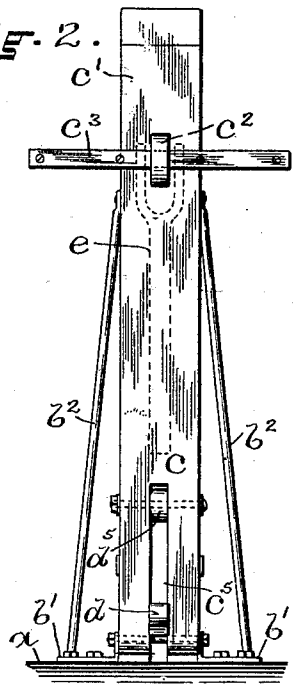


Fig. 3.

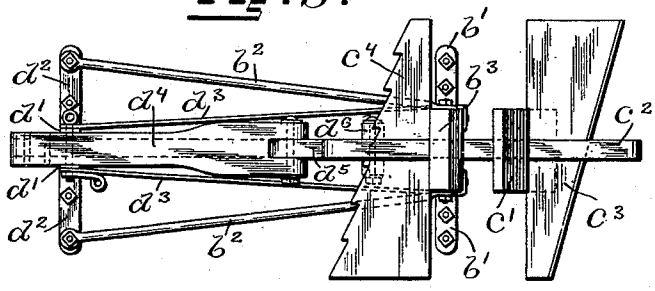


Fig. 4.

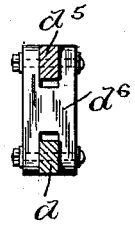
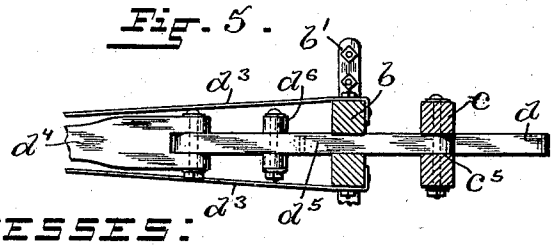


Fig. 5.



WITNESSES:

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JOSEPH F. VALLIÈRE, OF WHITINS, MASSACHUSETTS.

MILLWRIGHT-VISE.

SPECIFICATION forming part of Letters Patent No. 637,978, dated November 28, 1899.

Application filed October 7, 1899. Serial No. 732,870. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH F. VALLIÈRE, a subject of the Queen of Great Britain, residing at Whitins, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Millwright-Vises, of which the following is a specification.

This invention has reference to an improvement in the class of wooden vises used by millwrights and carpenters.

The invention consists in the peculiar and novel construction whereby great latitude is secured in the adjustment, so that lumber and timber varying greatly in thickness may be firmly secured, as will be more fully set forth hereinafter.

In a vise of the nature described it is important that the same may be quickly adjusted to the varying dimensions of the timber or board to be secured without using the operative's hands, which are fully employed in holding the timber.

The object of the invention is to facilitate the adjustment within widely-differing thicknesses of timber or boards.

Figure 1 is a side view showing my improved wooden vise in solid lines in the position occupied by the parts when a piece of timber is clamped in the vise and in broken lines when the vise is released. Fig. 2 is a front view of the same. Fig. 3 is a top view of the vise. Fig. 4 is a view of a block connecting the operative foot-lever with the toggle-jointed lever. Fig. 5 is a top view, partly in section, of the operating-levers.

In the drawings, *a* indicates, preferably, the floor; but it may be a base to which the vise is secured. Wooden vises of the nature described are usually used in connection with a bench. They may be used independent of a bench or secured to a bench in any suitable manner.

The fixed upright *b*, the upper end of which forms the fixed jaw, is secured to the floor or to a suitable base, preferably by means of the angle-irons b' b', secured to the lower end of the upright *b* and to the floor or base. The braces b^2 b^2, secured at one of their ends to the floor or base, have their other ends secured to the upper part of the upright *b* near the fixed jaw b^3.

The movable upright *c*, the upper end of which forms the clamping-jaw c', is supported on the fulcrum-bar c^2, which extends through slots in the uprights *b* and *c* below the jaws b^3 and c'. The fulcrum-bar is transversely slotted, the wedges c^3 and c^4 extending horizontally through the slots in the fulcrum-bar c^2. The wedge c^4 is preferably provided on its beveled edge with ratchet-tooth projections which engage with the fulcrum-bar, so that the same will be securely held in the adjusted position. The lower end of the upright *c* is provided with the longitudinal slot c^5 and the upright *b* with a similar slot.

The foot-lever *d* extends through the slot c^5 and a corresponding slot in the fixed upright *b*. The foot-lever *d* is provided at its rear end with three holes and is pivotally connected to the upward-extending arms d' of the brackets d^2, secured to the floor or base. The upper ends of the arms d' are connected with the upright *b* by the straps d^3. The lever d^4 is also provided at its rear end with two or more holes and is pivotally secured to the arms d', preferably at the points where the straps d^3 are secured. The front end of the lever d^4 is pivotally secured to the lever d^5, the front end of which is pivotally secured to the upright *c*. The lever d^5 is connected with the foot-lever *d* by the strap-block d^6, so that the levers d^4 and d^5, forming toggle-jointed levers, may be operated by the foot-lever. The spring *e* serves to open the jaws of the wooden vise when released.

In operating my improved vise the wedge c^4 is placed in the required position to approximately adjust the fulcrum-bar c^2 to the size of the wood intended to be secured. The wedge c^3 is drawn out so that the narrowest part is in the slot of the fulcrum-bar c^2. The operative now places the board or timber between the jaws c' and b^3 and while holding it pushes, usually with his body, the wedge c^3 inward until the jaw c' bears against the wood or other material to be secured. The operative now presses down the foot-lever *d* with his foot, thereby bringing the toggle-jointed levers d^4 and d^5 into the straight line, as shown in solid lines in Fig. 1, and forcing the lower part of the upright *c* outward and the jaw c' inward to clamp the article and firmly secure the same.

By the use of the fulcrum-bar c^2 and the wedges c^3 and c^4 the vise may be readily adjusted within a wide range, and for extreme differences the foot-lever d and the lever d^4 may be adjusted, while for ordinary use the natural spring of the wooden upright c will be sufficient to bring the toggle-jointed levers into the locked position, as shown in Fig. 1.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a vise of the nature described, the combination with the uprights provided with the clamping-jaws, and a fulcrum-bar supported in slots in the uprights and transversely slotted, of two wedges supported in the slots of the fulcrum-bar and bearing against the uprights, and a toggle-jointed lever operated by a foot-lever, whereby the clamping-jaw may be adjusted and operated, as described.

2. In a vise of the nature described, the combination with the uprights b and c, the slotted fulcrum-bar c^2 and the wedges c^3 and c^4, of the toggle-jointed levers d^4 and d^5, the foot-lever d, and connections between the foot-lever and the toggle-jointed levers; whereby the clamping-upright may be adjusted by a wedge forming the fulcrum of the clamping-upright and the article secured by operating the toggle-jointed lever through the foot-lever, as described.

3. In an organized vise of the nature described, the combination with the fixed upright b secured to a floor or base, the arms d' d' and the braces b^2 b^2, of the movable upright c, the fulcrum-bar c^2, extending through slots in the uprights b and c, below the jaws b^3 and c', transverse slots in the fulcrum-bar, the wedges c^3 and c^4 extending through the slots in the fulcrum-bar and bearing on the uprights, the foot-lever pivoted in the arms d' and extending in front of the vise, the toggle-jointed levers d^4 and d^5 connected with the arms d' and the upright c, the strap-block d^6 connecting the toggle-jointed levers with the foot-lever and the bars d^3 d^3 connecting the arms d' d' with the upright b; whereby the jaws may be adjusted to the dimensions of the timber required to be secured and the strains exerted are firmly resisted, as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH F. VALLIÈRE.

Witnesses:
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J. A. MILLER, Jr.