C. A. ERICKSON.

QUICK ACTION VISE.

APPLICATION FILED MAY 28, 1918.

1,298,919. Patented Apr. 1, 1919.

Fig. 1.

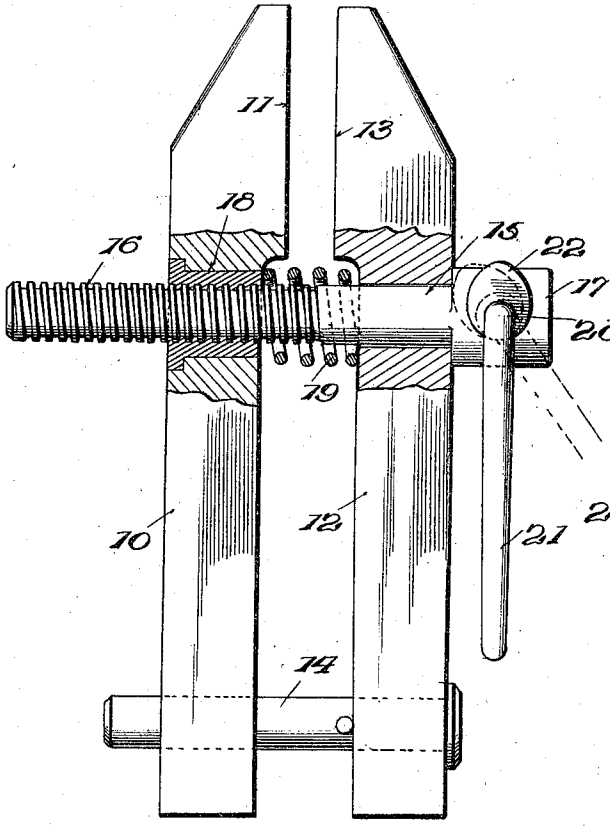
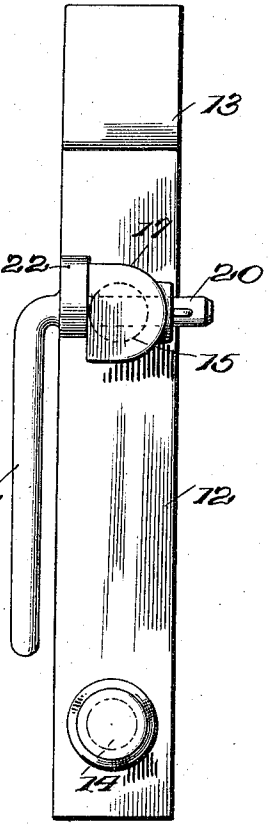


Fig. 2.



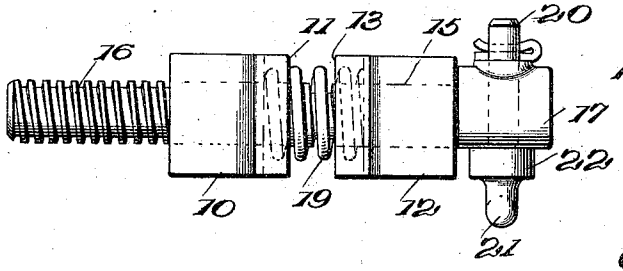


Fig. 3.

Inventor

C. A. Erickson.

By Lacey Lacey

Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES A. ERICKSON, OF OSWEGO, NEW YORK.

QUICK-ACTION VISE.

1,298,919. Specification of Letters Patent. Patented Apr. 1, 1919.

Application filed May 28, 1918. Serial No. 236,990.

To all whom it may concern:

Be it known that I, CHARLES A. ERICKSON, a citizen of the United States, residing at Oswego, in the county of Oswego and State of New York, have invented certain new and useful Improvements in Quick-Action Vises, of which the following is a specification.

This invention relates to devices for clamping objects, and commonly known as quick-action vises, and has for one of its objects to improve the construction and increase the utility and efficiency of devices of this character.

With these and other objects in view, the invention consists in certain novel features of construction, as hereinafter shown and described and then specifically pointed out in the claims; and in the drawings illustrative of the preferred embodiment of the invention—

Figure 1 is a side elevation, partly in section, of the improved device.

Fig. 2 is an edge view of the parts shown in Fig. 1.

Fig. 3 is a plan view of the parts shown in Figs. 1 and 2.

The improved device may be applied without material structural change to clamping devices of various forms, but is designed more particularly to be associated with a vise, and for the purpose of illustration is shown applied to a carpenter's vise including a body member 10 having a clamping jaw 11 at one end. The member 10 is adapted to be permanently attached to a suitable support, such as a bench when employed as an ordinary vise, but when applied to a hand vise or similar implement, the member 10 will be left detached from any support.

Opposed to the member 10—11, is a similar member comprising a body portion 12 and an opposing jaw 13. The members 10—11 and 12—13 are disposed in constant parallel relation, and the member 12—13 is arranged to be moved toward and away from the member 10—11. Near its lower end the body member 12 is provided with a guide pin 14 which is disposed slidably through the body member 10, thus operating to assist in maintaining said members in constant parallel relation.

Mounted for rotation through one of the body members, for instance, the member 12 is a clamping pin 15 having a portion threaded as shown at 16 and provided with a laterally enlarged head 17 bearing against the outer face of the body member 12. The threaded portion 16 of the clamping pin 15 operates in a nut 18 embedded in the member 10. A relatively heavy spring 19 encircles the pin 15 between the members 10—12 and thus operates to maintain the member 12 in constant yieldable engagement with the head 17 of the pin 15, or to maintain the jaws 11—13 yieldably in distended position. Mounted for rotation through the head 17 is a short shaft 20 provided with an angularly disposed operating handle 21. Attached to the handle 21 at the shaft 20, and preferably integral therewith, is a cam member 22. The head 17 is less in width than the member 12, and the cam device 22 is located in position to bear against the adjacent face of the member 12 when the handle 21 is disposed in one position. The handle 21 coacts with the shaft 20 to enable the pin 15 to be rotated when the handle is moved in parallel relation to the adjacent face of the member 12 and its jaw 13, thereby causing the threaded portion 16 to move the jaw 13 toward the jaw 11, and the device to act as an ordinary vise. When it is desired to quickly move the jaw 13 toward the jaw 11, or against an article held between the jaws, the handle 21 is moved into the position shown by dotted lines in Fig. 1 which causes the cam 22 to engage the member 12 and quickly move the latter toward the member 10—11, and instantly apply a clamping force to an object held between the jaws. One side of the head 17 of the clamping pin is preferably flat, as shown in Fig. 2, for contact with the adjacent flat side of the cam 22 and also to form an extended bearing surface for said cam when the handle 21 is rotated to adjust the clamping pin to effect the clamping of an object between the jaws. The cam device will engage against the adjacent face of the member 12 no matter in what position it may be. For instance, if the pin 15 has been rotated a sufficient extent to cause the handle 21 to extend upwardly, and if the cam is to be engaged with the member 12 while the handle 21 is in this upward position, the face of the cam opposite to the one used when the handle member is in its downward position, will engage the member 12. The usefulness and capacity of the cam device is thus materially increased. It will be noted that the cam device is uniform in outline,

so that either face may be employed, depending upon the position of the handle.

Having thus described the invention, what is claimed as new is:

1. A vise including relatively stationary and movable jaws, a clamping pin having one end thereof threaded in the stationary jaw and its other end passing loosely through the movable jaw and provided with an enlarged head, a spring interposed between said jaws and encircling the pin, a stub shaft extending transversely through the head and having one end thereof bent at substantially right angles thereto to form an operating handle, and a cam rigidly secured to the stub shaft and adapted to bear against the adjacent face of the movable jaw for forcing said jaws together against the tension of the spring.

2. A vise including relatively stationary and movable jaws, an interiorly threaded bushing carried by the stationary jaw, a clamping pin having one end thereof threaded and engaging the bushing and its other end extended loosely through the movable jaw and provided with an enlarged head, a spring encircling the pin and interposed between the jaws, a stub shaft extending transversely through the head and having one end thereof bent at substantially right angles thereto to form an operating handle, and a cam rigidly secured to the stub shaft at its junction with the handle, said handle when moved in one direction serving to rotate the clamping pin and when moved in another direction to cause the cam to bear against the outer face of the movable jaw and force said movable jaw in the direction of the stationary jaw against the tension of the spring.

3. A vise including relatively stationary and movable jaws, a clamping pin having one end thereof threaded in the stationary jaw and its other end passing loosely through the movable jaw and provided with an enlarged head, one face of which is flat to provide a bearing surface, a stub shaft extending transversely through the head of the pin at said bearing surface and provided with an angularly disposed operating handle, and a cam rigidly secured to the stub shaft and engaging the flat bearing surface, said handle when rotated in one direction serving to operate the clamping pin to effect the clamping of an object between the jaws and when moved in another direction forcing the cam in engagement with the outer face of the movable jaw to quickly move said movable jaw toward the stationary jaw.

4. A vise including relatively stationary and movable clamping jaws, a bushing threaded in the stationary jaw, a pin having one end thereof engaging threads on the bushing and its other end devoid of the threads and passing loosely through the movable jaw and provided with an enlarged head, one side of which is cut away to form a flat bearing surface spaced from the adjacent longitudinal edge of the movable jaw, a spring encircling the clamping pin and interposed between the jaws, a stub shaft extending transversely through the enlarged head of the pin at the flat bearing face thereof and having one end thereof bent at substantially right angles thereto to form an operating handle, and a cam rigidly secured to the stub shaft and having one side thereof engaging the flat bearing surface of the head of the pin and its other side disposed substantially flush with the adjacent longitudinal edge of the movable jaw, said handle when moved in one direction serving to rotate the clamping pin to effect the clamping of the jaws and when moved in another direction to cause the cam to engage the face of the movable jaw and force said jaw in the direction of the stationary jaw.

In testimony whereof I affix my signature.

CHARLES A. ERICKSON.

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