No. 633 286. Patented Sept. 19, 1899.

A. KATZKI.

QUICK ACTION VISE.

(Application filed Feb. 8, 1899.)

(No Model.)

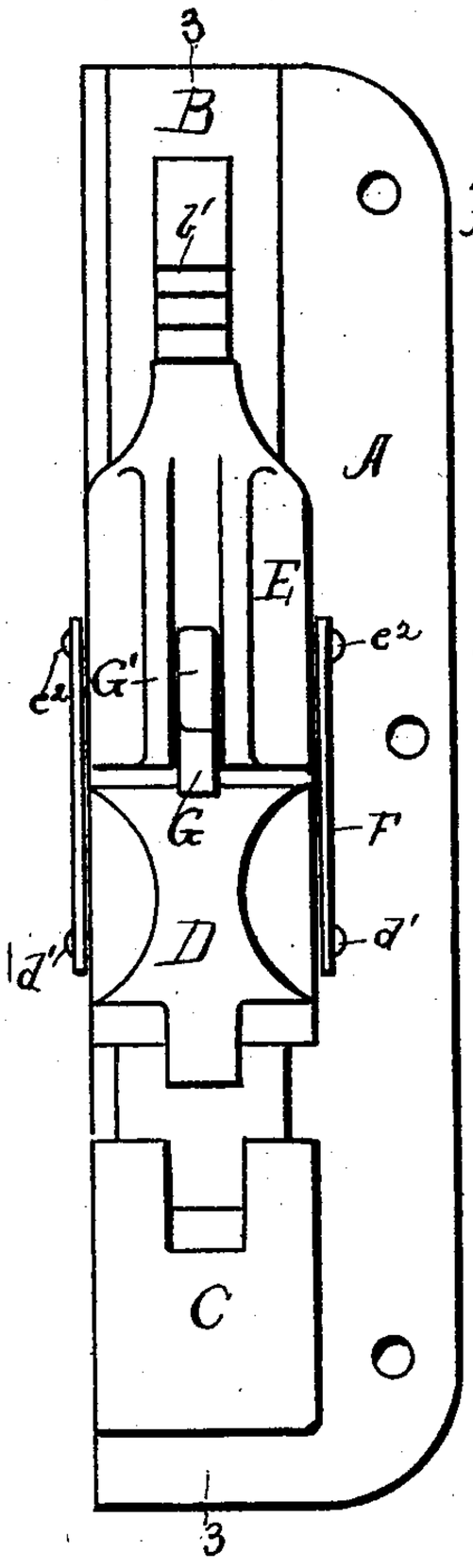

Fig. 1.

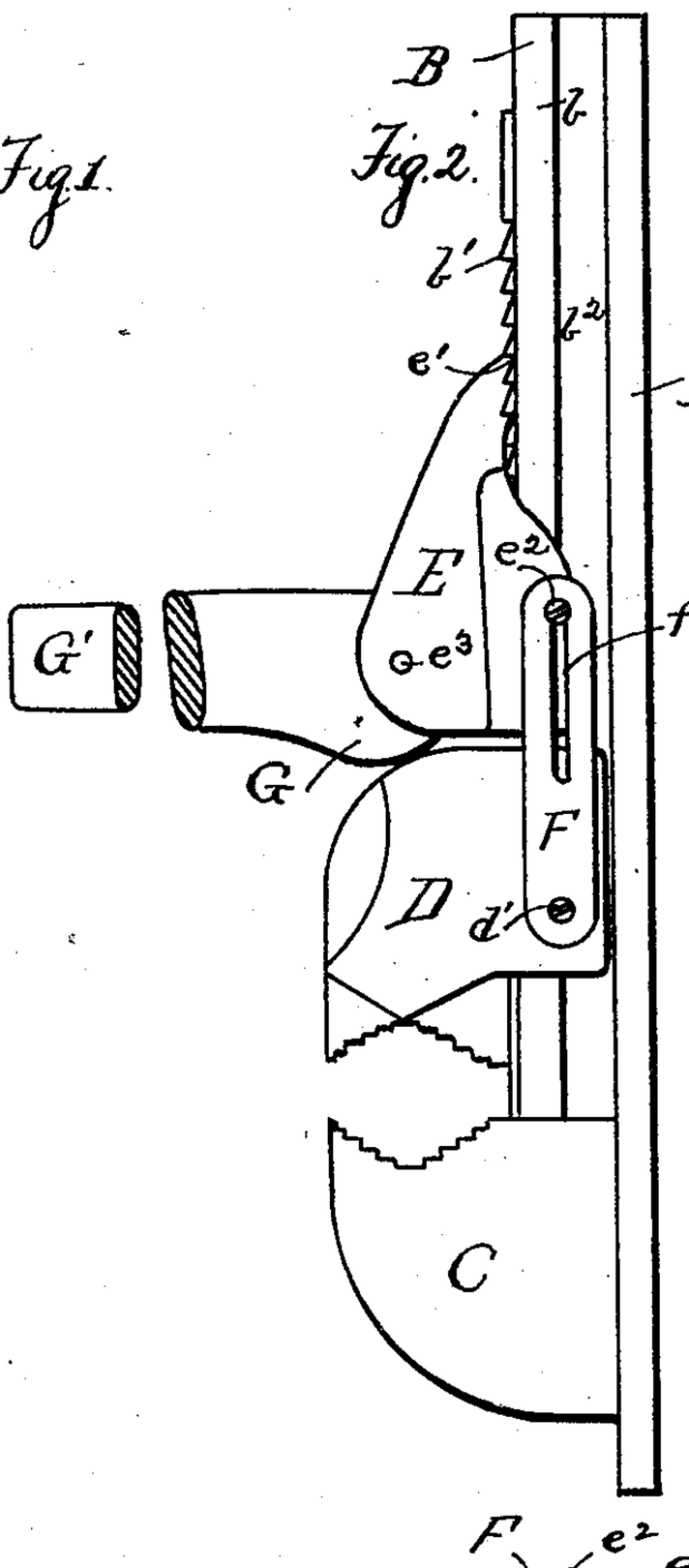

Fig. 2.

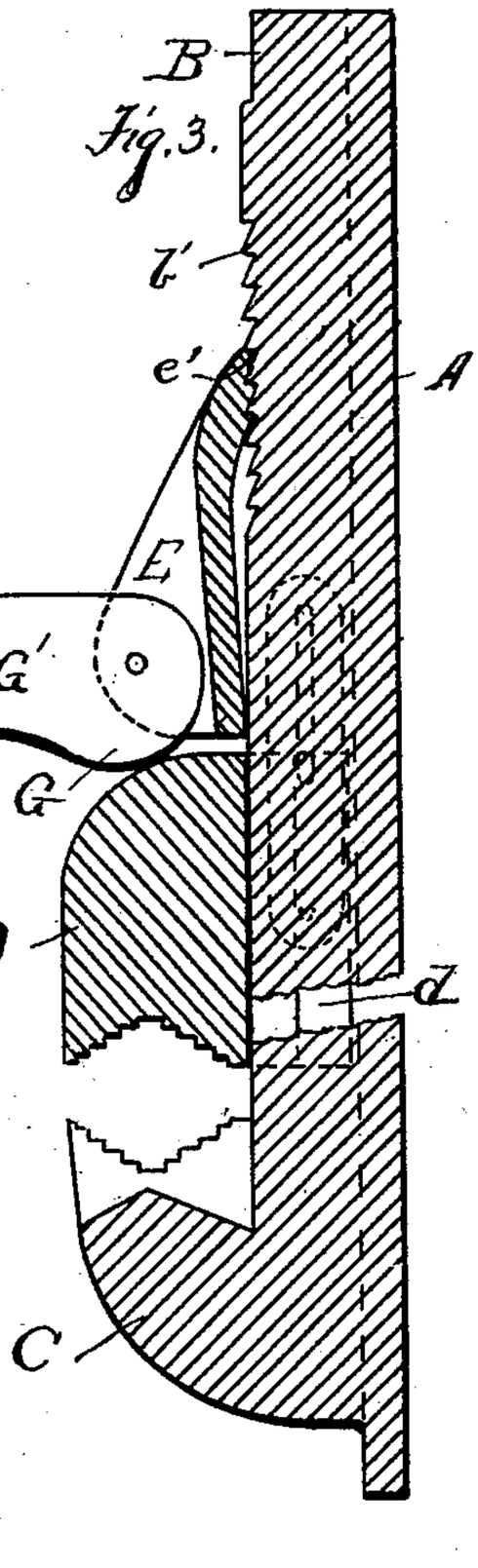

Fig. 3.

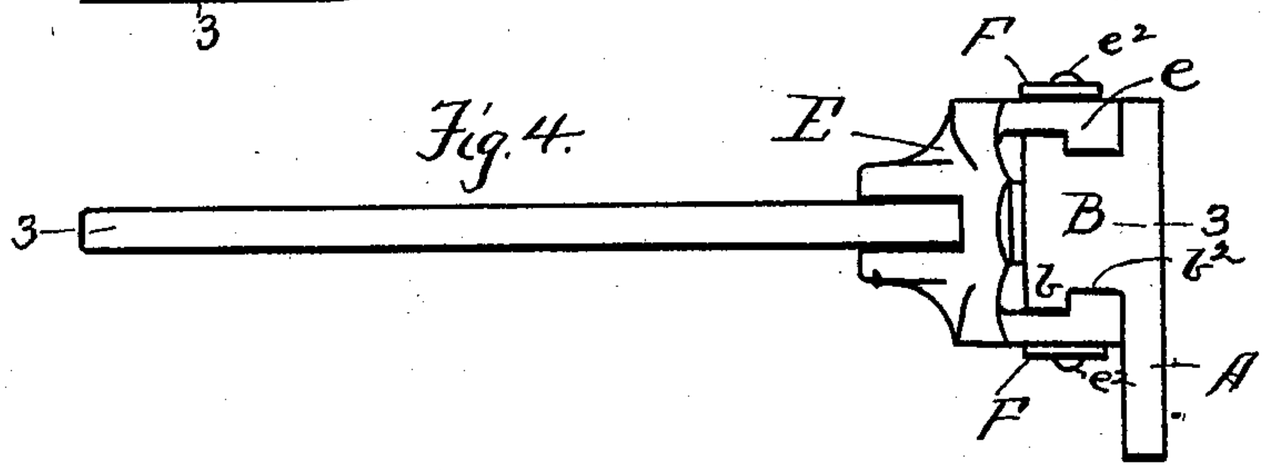

Fig. 4.

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QUICK-ACTION VISE.

SPECIFICATION forming part of Letters Patent No. 633,286, dated September 19, 1899.

Application filed February 8, 1899. Serial No. 704,967. (No model.)

To all whom it may concern:

Be it known that I, ALBERT KATZKI, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Vises; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to vises; and it consists in certain improvements in the construction thereof, as will be hereinafter fully described, and pointed out in the claims.

More particularly this invention relates to that class of devices generally known as "quick-action vises," and especially that class of quick-action vises wherein the movable jaw is first moved to the work, then clamped and set by a cam-operated dog-and-ratchet mechanism.

The invention is illustrated in the accompanying drawings, as follows:

Figure 1 shows a front elevation of the device. Fig. 2 shows a side elevation of the device. Fig. 3 shows a section on the lines 3 3 in Figs. 1 and 4. Fig. 4 shows a plan view of the device.

A marks the frame on which the vise is mounted, B a slide on this frame, usually cast integrally with it, and C a fixed jaw which is secured to the guide B and frame A, the three parts forming usually one casting. A movable jaw D is arranged to slide on the guide B, and is held in place thereon by the ears *d*, which extend inwardly behind the T portion *b* of the guide B into the groove b^2 formed thereby. A catch-block E is also arranged to slide on the guide B and is provided with the inwardly-projecting ears *e*, which retain it on the guide B. These ears *e* are not of sufficient extent, nor do they fit closely enough, to prevent the block E from tilting, so as as to carry the pawl-points *e* into and out of engagement with the ratchet-teeth *b'*, which are arranged on the face of the guide B. A link F is secured to the movable jaw D by a pin *d'* and is provided with the slot *f*, through which a pin e^2 on the catch-block E projects. This link couples the movable jaw with the catch-block and allows a limited movement of the movable jaw to and from the catch-block. A cam G is pivoted at e^3 on the catch-block and arranged to operate upon the movable jaw D in a manner to press the said jaw away from the catch-block E when the cam-lever G' is moved downwardly.

The operation of the device is as follows: The article to be clamped is placed between the jaws of the device and the movable jaw moved down into engagement with the article. This is done with the lever G' extending in an upward direction. With the lever so positioned the catch-block E and movable jaw D will be in contact. As the lever G' is moved downwardly it engages the jaw D and tends to raise the catch-block E. As the point of support e^3 on the catch-block is outside of the center of gravity, the weight of the catch-block presses the inner edge downwardly, and consequently tilts the upper end, having the pawl-points *e*, into engagement with the ratchet-teeth *b'*. As the movement of the lever is continued, the upward movement of the catch-block being stopped by the ratchet-teeth, the movable jaw is forced downwardly and set against the article operated upon. The slot *f* in the link F allows this limited movement of the jaw D relatively to the block E. When it is desired to open the vise, the cam-lever is raised and the movable jaw D pushed upwardly. When it has reached the desired position, the cam-lever G' is again drawn down or allowed to drop, and this has the tendency, as heretofore described, of tilting the block E so long as the jaw D is supported. In order that pressure may be given the pawl-points *e'* when the jaw D is not supported, the link F is arranged to give such a limited movement as to obstruct the separation of the blocks E and D before the cam G has reached the limit of its movement. It will readily be seen that the action of the cam G upon the block E when such obstruction takes place compels a tilting movement of the block E, which forces its upper end into engagement with the guide B. This holds the movable jaw in the upper or open position.

The device is preferably used in the vertical position shown in order that force of gravity may be utilized to accomplish the movements stated; but it will be readily understood that the device may be arranged to operate in a

horizontal position, in which case mechanism should preferably be provided to exert the same force in the same direction as gravity when the device is arranged in a vertical position.

The drawings show a device as designed for use on pipes and rods; but it will be understood that this is not a necessary limitation of its use.

What I claim as new is—

1. In a vise, the combination of a guide having ratchet-teeth thereon; a fixed jaw secured to the guide; a movable jaw arranged to slide on said guide; a catch-block also mounted to slide on said guide independently of the movable jaw and arranged to engage the ratchet-teeth on said guide; a link connecting said movable jaw and catch-block, said link being arranged to allow a limited movement of said movable jaw to and from said catch-block.

2. In a vise, the combination of a guide having ratchet-teeth thereon; a fixed jaw secured to the guide; a movable jaw arranged to slide on said guide; a catch-block also mounted to slide on said guide independently of the movable jaw and arranged to engage the ratchet-teeth on said guide; a cam arranged to press by its movement the catch-block into engagement with the said teeth and the movable jaw away from said catch-block toward said fixed jaw; and a link connecting said movable jaw and catch-block, said link being arranged to allow a sufficient movement between said catch-block and movable jaw to permit a clamping action of the jaw by a movement of the jaw away from said block, and to limit the movement of said jaw away from said block to less than the full extent of the cam action.

3. In a vise, the combination of the fixed jaw, C; the T-shaped guide, B, having the ratchet-teeth, b', thereon; the movable jaw, D, having the inwardly-projecting ears, d, and being arranged to slide on the guide, B; the catch-block, E, having the pawl-points, e', arranged to engage the ratchet-teeth, b', said block being arranged to slide on the guide, B, and having the inwardly-projecting ears, e, for holding said block on said guide; the link, F, connecting the block, E, with the movable jaw, D, said link being arranged to allow a limited movement of the jaw, D, away from the block, E; and the cam, G, pivoted on the block, E, and provided with the cam-lever, G', for operating said cam.

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

ALBERT KATZKI.

Witnesses:
M. BURY,
H. C. LORD.