

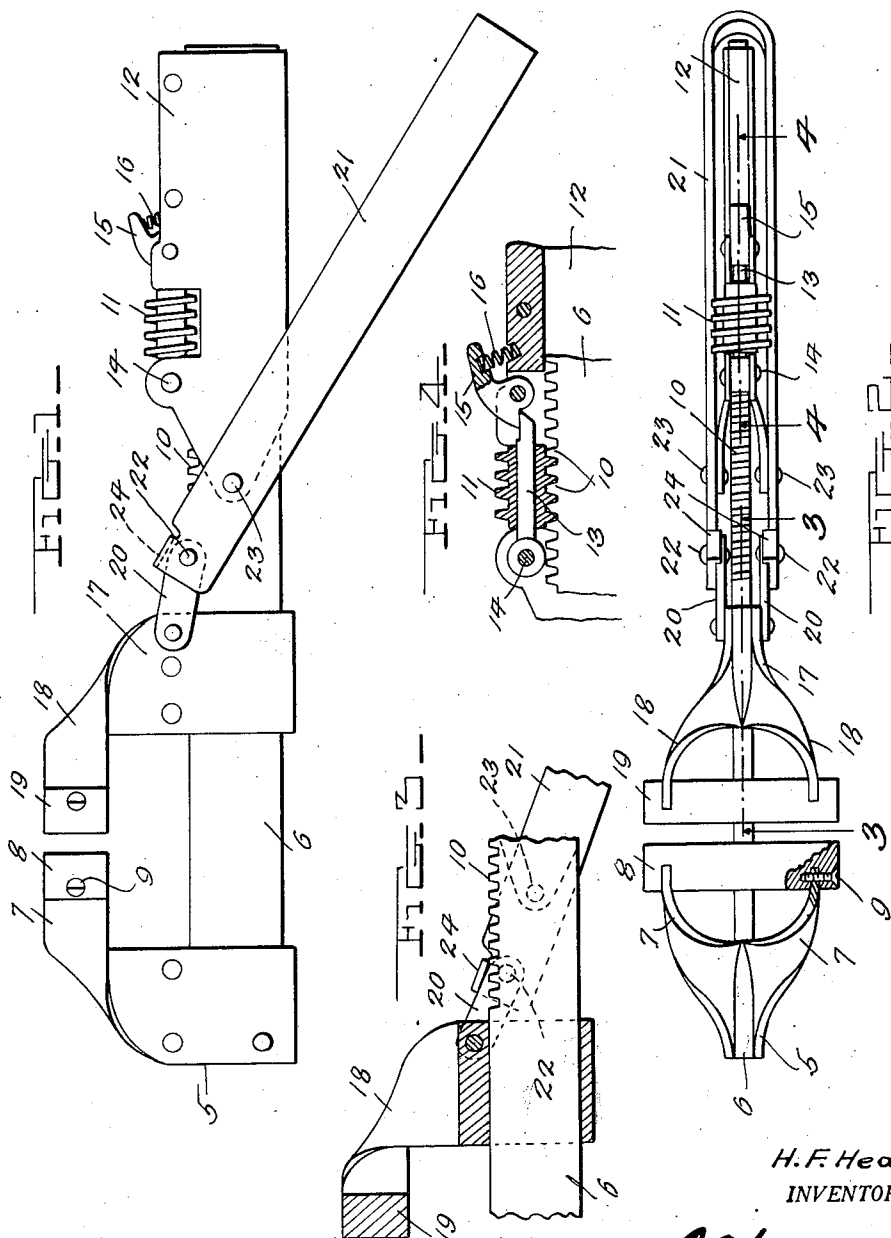
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ADJUSTABLE CLAMP

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ADJUSTABLE CLAMP

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4 Claims. (Cl. 144—303)

This invention relates to clamps, and more particularly to portable clamps known as vice clamps.

The primary object of the invention is to provide a vice clamp of the adjustable type, which is exceptionally quick acting, and one which can be operated to securely grip the article with which the clamp is used.

Another object of the invention is to provide a clamp having means for adjusting the movable jaw thereof with respect to the stationary jaw, and an operating lever for imparting the final clamping movement to the movable jaw, the operating lever being connected to the movable jaw in such a way that the movable jaw will be securely held against movement when it has been moved to its clamping position.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein described, may be made within the scope of what is claimed, without departing from the spirit of the invention.

Referring to the drawing:

Figure 1 is an elevational view of a clamp constructed in accordance with the invention.

Figure 2 is a plan view thereof.

Figure 3 is a sectional view taken on line 3—3 of Figure 2.

Figure 4 is a sectional view taken on line 4—4 of Figure 2.

Referring to the drawing in detail, the reference character 5 designates the stationary jaw of the clamp, which is mounted at one end of the bar 6, the stationary jaw embodying spaced parallel arms 7 to which the jaw face 8 is secured, the jaw face 8 embodying a heavy metallic member formed with recesses to receive the ends of the arms 7, as shown by Figure 2 of the drawing.

Screws indicated at 9 extend into threaded openings formed in the ends of the jaw face 8, and pass through openings formed in the ends of the arms 7, the openings in the arms 7, registering with the openings in the jaw face 8.

Formed along the upper edge of the bar 6, are teeth 10 that cooperate with the worm 11 to adjust the tubular handle 12, longitudinally of the bar 6. This worm 11 is mounted for rotary movement on the shaft 13 that in turn is pivotally mounted on the tubular member 12, at

14. One end of the shaft 13 extends beyond the end of the worm 11, where it is engaged by the latch 15, the latch being normally held into engagement with the shaft 13, by means of the coiled spring 16 mounted in a recess formed in the handle 12. Thus it will be seen that pressing on the latch 15, releasing the shaft 13, the shaft 13 may be swung upwardly moving the worm 11 out of engagement with the teeth 10, permitting the handle to slide freely. By this movement of the handle, the main adjustment of the vice may be quickly made.

The sliding jaw of the clamp, is indicated by the reference character 17 and also embodies a length of metal bent upon itself to provide an opening through which the bar 6 extends, the movable jaw being slidable on the bar 6. The ends of the material of which the movable jaw is constructed, extend forwardly providing arms 18 that are connected by the jaw face 19. Pivotaly connected to the movable jaw, are links 20, which links also have pivotal connection with the lever 21 at 22, the lever 21 also being connected with the forward end of the tubular handle 12 at 23. Formed on the inner end of the lever 21, are inwardly extended flanges 24 that are adapted to engage over the upper edges of the links 20 providing stops, to limit the downward movement of the forward end of the lever 21.

In operating the clamp, the clamp is positioned over the article to be held therein, and the latch 15 is operated, releasing the worm 11. The handle 12 is now moved to move the jaw 17 into engagement with the article to be clamped. The worm 11 is now moved into engagement with the teeth 10 of the bar 6, and the latch is moved to engage the shaft 13, whereby the worm 11 is held into engagement with the teeth 10. The lever 21 is now moved upwardly causing the movable jaw to closely engage the article being clamped. As the lever 21 swings upwardly towards the handle 12, the point of connection between the links 20 and lever 21, moves downwardly past dead center, locking the movable jaw in its clamping position.

From the foregoing it will be seen that I have not only provided an exceptionally quick-acting vice, but a vice which, when positioned on an article will securely grip the article, insuring against movement of the vice with respect to the article gripped.

What is claimed is:

1. A quick-acting clamp, comprising a bar,

teeth formed along one edge of the bar, a stationary jaw at one end of the bar, a removable jaw on the bar, a handle mounted for movement longitudinally of the bar, a pivoted shaft mounted on the handle, a worm on the shaft and adapted to engage the teeth of the bar whereby the handle is adjusted along the bar, means for holding the bar and worm in their active positions with respect to the teeth, said shaft adapted to swing upwardly disengaging the worm and teeth whereby the handle may be slid along the bar, a lever mounted on the handle, links connecting the lever and movable jaw, and said lever adapted to operate the jaw independently of the handle.

2. A quick-acting clamp, comprising a bar, teeth formed along one edge of the bar, a stationary jaw at one end of the bar, a movable jaw on the bar, a vertically swinging shaft mounted on the handle, a worm on the shaft and adapted to engage the teeth of the bar whereby the handle is adjusted longitudinally of the bar, a latch adapted to engage the shaft and hold the shaft against vertical movements whereby the worm is held into engagement with the teeth, said latch member adapted to release the shaft and worm, whereby the handle may move longitudinally of the bar, a lever mounted on the handle, links connecting the lever and movable jaw, and said lever adapted to operate the movable jaw with respect to the stationary jaw, independently of the handle.

3. A quick-acting clamp, comprising a bar, teeth formed along one edge of the bar, a sta-

tionary jaw at one end of the bar, a movable jaw on the bar, a handle slidable over the bar, a worm carried by the handle and adapted to engage the teeth of the bar whereby rotary movement of the worm adjusts the handle longitudinally of the bar, means for mounting the worm for vertical swinging movement, said means comprising a shaft, a latch for normally holding the shaft in its active position adjacent to the bar, a lever pivotally connected with the handle, and links connecting the lever and movable jaw for operating the movable jaw independently of the handle.

4. A quick-acting clamp, comprising a bar, teeth formed along one edge of the bar, a stationary jaw at one end of the bar, a movable jaw mounted on the bar, a handle movable longitudinally of the bar, said handle having a cut-out portion, a shaft pivotally mounted on the handle adjacent to the cut-out portion, a worm mounted on the shaft and adapted to engage the teeth of the bar whereby the handle is adjusted longitudinally of the bar, a latch member on the handle adapted to engage the shaft by holding the shaft in its active position, said latch member adapted to release the shaft whereby the shaft and worm are swung upwardly to disengage the bar, whereby the handle may move freely along the bar, a lever connected with the handle, links connecting the lever with the movable jaw, and said lever adapted to operate to move the movable jaw independently of the handle.

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