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TILTABLE CLUTCH PLATE AND SLIDABLE VISE JAW
OPERATED BY LEVER-ACTUATED ECCENTRIC
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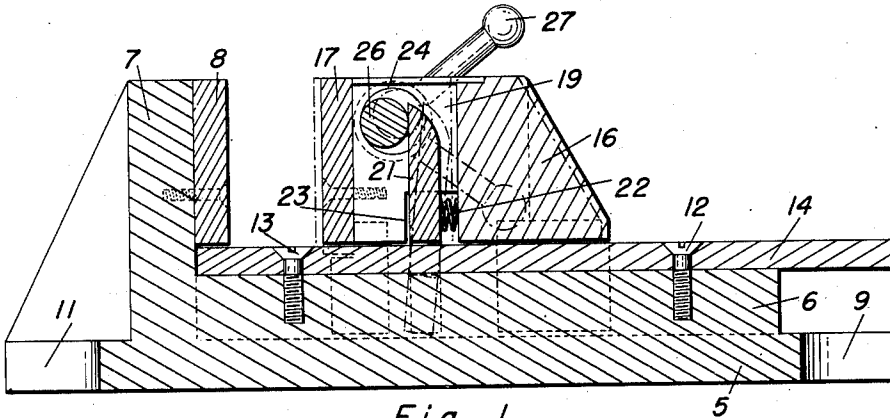


Fig 1

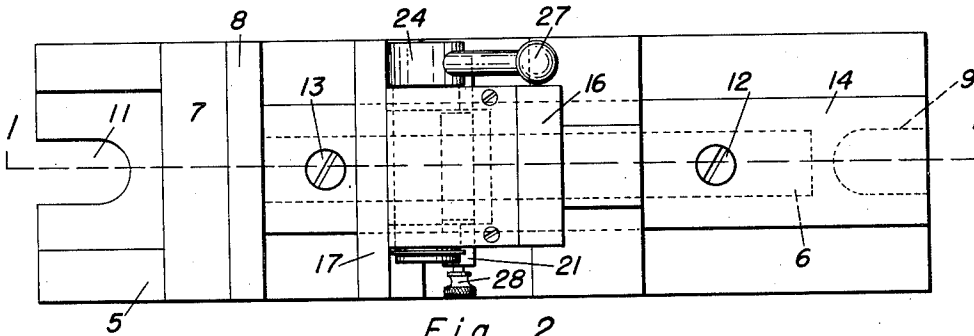


Fig 2

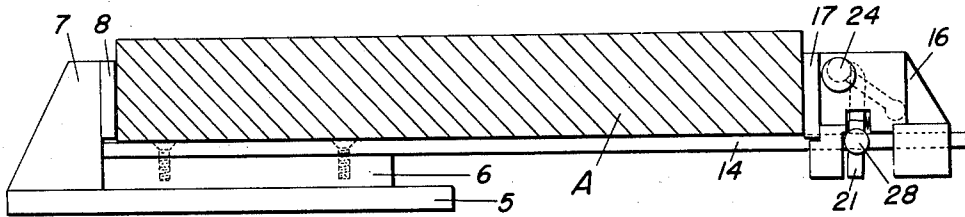


Fig 3

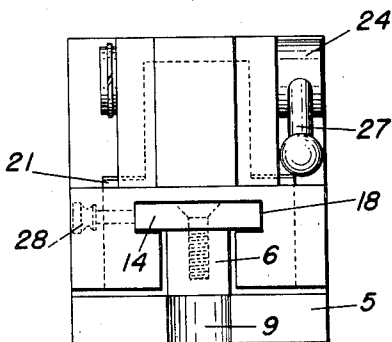


Fig 4

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TILTABLE CLUTCH PLATE AND SLIDABLE
VISE JAW OPERATED BY LEVER-ACTU-
ATED ECCENTRIC

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2 Claims. (Cl. 81—26)

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This invention relates to improvements in quick-acting vises and has particular reference to a vise which may be quickly adjusted to engage work of any width and to clamp the same securely between the jaws of the vise.

A further object is to provide a vise which may be elongated or shortened, as necessity dictates.

A further object is to produce a vise which is economical to manufacture.

A further object is to produce a vise which may be used in several positions, as, for instance, while resting upon its base, or upon its sides.

A still further object is to provide means whereby one of the jaws of the vise may be adjusted and then locked against movement other than the movement necessary to tighten the jaw against the work, thus eliminating the constant adjustment of a jaw and then the tightening of the same.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings,

Fig. 1 is a cross-sectional view taken on the line 1—1 of Fig. 2.

Fig. 2 is a top-plan view of my vise, as shown in Fig. 1.

Fig. 3 is a side elevation of my vise, showing the same used with an extension bar, and on a reduced scale, and

Fig. 4 is a rear elevation of Fig. 1, and showing the handle in locked position.

The ordinary vise consists of a pair of jaws which may be moved toward each other, either through the use of a clamping screw or by hydraulic means, one of the jaws being immovable, while the other is slidable toward the immovable jaw. Such vises are cumbersome in operation, slow to manipulate, and when production work must be accomplished, delays the production very materially. These jaws also cannot be expanded to take work beyond the normal limits of the vise.

I have, therefore, produced a vise wherein the movable jaw may be freely slid toward or away from the immovable jaw and by manipulating a single lever, the movable jaw becomes clamped to the bar on which it slides and, thereafter, is advanced further into clamping engagement with the work positioned between the two jaws.

By referring to the drawings in detail, the numeral 5 designates a base having an upstanding web, 6, and an upstanding jaw, 7, which jaw carries a face plate, 8.

This base, 5, is provided with a pair of slots, 9,

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and 11, so that bench bolts may be used to position the same upon a work bench.

Secured to the web, 5, through the medium of screws, 12 and 13, is a bar, 14, upon which a sliding jaw, 16, moves.

This jaw, 16, has a face plate, 17, and is provided with a T slot, 18, through which slot the bar, 14, passes.

Formed within the jaw, 16, is an opening, 19, within which is positioned a clutch, 21, which has a T-shaped opening formed therein and is also slidable on the bar, 14.

A spring, 22, normally maintains the face of the clutch against the shoulder 23, formed in the jaw.

Rotatively mounted in the jaw is a shaft, 24, having an offset cam, 26, which cam engages the face of the clutch, 21.

A handle, 27, is used to rotate the shaft, 24.

At 28, I have shown a locking screw, the purpose of which will be hereinafter described.

In Fig. 3, it will be noted that I have removed the short bar, as shown in Fig. 1, and have added a long bar whereby the two jaws may be moved a great distance apart and yet may function to engage the work which is shown in A.

The result of this construction is that, when the parts are assembled and it is desired to clamp a piece of material between the two jaws, the material is abutted against the face plate, 8, of the immovable jaw and the sliding jaw is moved against the work, so that its plate, 17, engages the same.

By now moving the handle, 27, so as to rotate the shaft, 24, the first action will be that of canting the clutch, as shown in dotted lines in Fig. 1. This causes the clutch to pinch the bar, 14, after which further movement of the handle, 27, will cause the cam to force the jaw, 16, forwardly, thus compressing the work between the two jaws.

To release the jaw, 16, it is merely necessary to move the handle, 27, in a reversed direction.

If it is desired to clamp a large number of parts of the same size, the thumb screw, 28, may be caused to bear against the side of the bar, 14, thus holding the clutch against a sliding movement, but permitting a canting movement.

It will thus be seen that I have produced a vise which will accomplish all of the objects above set forth.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same and that various changes relative to the material,

size, shape and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. In a vise, a longitudinally extending base having a fixed jaw at one end, a T-shaped guide member extending from said jaw longitudinally of the base, the head of said T-shaped member having portions which overhang the stem of said T-shaped member, said portions having parallel upper and lower surfaces, a movable jaw slidably mounted on said member and provided with a vertical opening therethrough, said opening having lateral recesses at the side remote from the fixed jaw to provide a pair of shoulders facing away from said fixed jaw, an inverted T-shaped clutch member having an open end slot in its head to receive the stem of said guide member, said slot having confronting notches loosely embracing the overhanging portions of the guide member, the head of said inverted T-shaped clutch member projecting into said lateral recesses, spring means urging said clutch member to a vertical position against said shoulders, a cam mounted on said movable jaw and positioned in said opening and engaging the stem of the inverted T-shaped clutch member, said cam being

operable to tilt the clutch member against the action of said spring so that the confronting notched positions of the clutch member grip the overhanging portions of the guide member, the cam being further operable to advance the movable jaw towards the fixed jaw, and means to operate said cam.

2. The vise structure as defined in claim 1, in which the clutch member carries a thumb screw engageable with the guide member to hold said clutch member on said guide member whereby only the cam needs to be operated when using the vise to grip work pieces of like size.

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