June 19, 1956 A. LEVY, JR 2,750,972

STRAIGHT BEAM ADJUSTABLE JAW CLAMP

Filed March 10, 1952

Fig. 1.

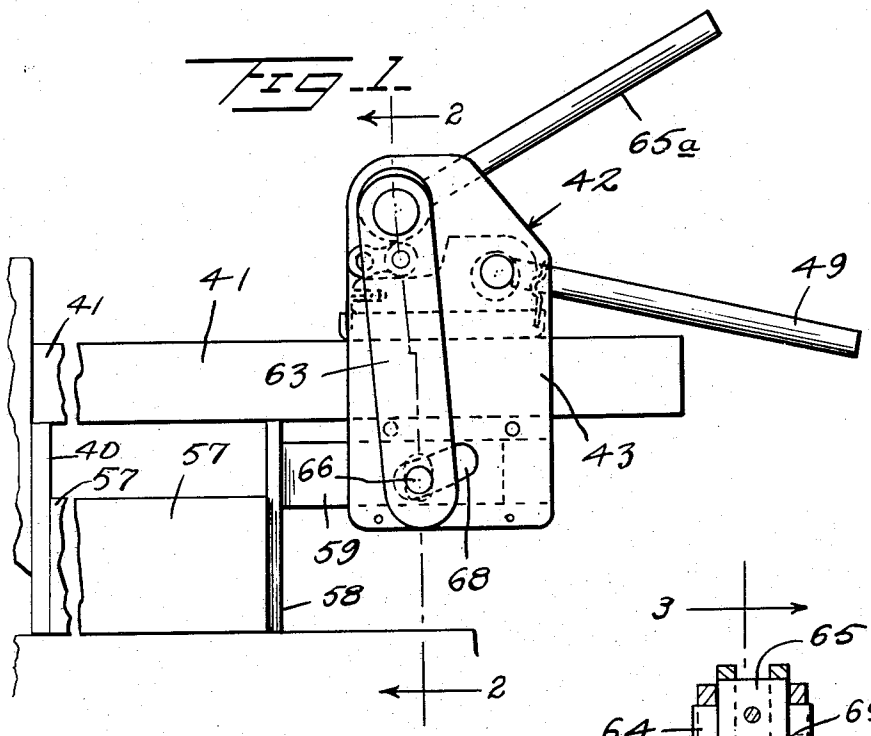


Fig. 2.

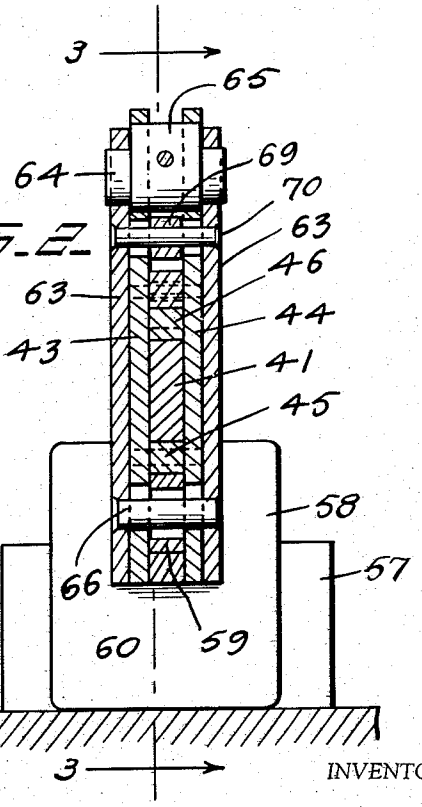
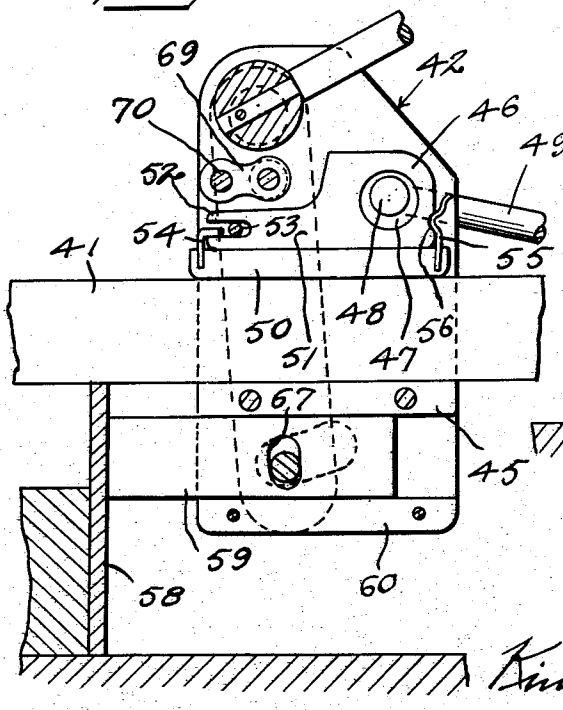


Fig. 3.



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United States Patent Office 2,750,972 Patented June 19, 1956

2,750,972

STRAIGHT BEAM ADJUSTABLE JAW CLAMP

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Application March 10, 1952, Serial No. 275,773

3 Claims. (Cl. 144—303)

This invention relates to a work clamping device.

An object of this invention is to provide an improved clamping device embodying an elongated bar, a jaw which is adjustable along the length of the bar, and a second jaw which may be fixed to the bar or adjustable therealong, the second jaw including means independent of the means for securing the second jaw to the bar for applying pressure to the work positioned between the jaws.

Another object of this invention is to provide an improved pressure applying jaw structure which is cam operated and will lock in pressure applying position.

A further object of this invention is to provide an improved pressure applying clamp which includes an insert or adapter whereby the one clamp may be used on bars of different widths.

With the above and other objects in view, my invention consists in the arrangement, combination and details of construction disclosed in the drawings and specification, and then more particularly pointed out in the appended claims.

In the drawings:

Figure 1 is a detailed side elevation of this invention.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1.

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

Referring now more specifically to Figures 1, 2, and 3, there is disclosed a form of pressure applying clamp which is adapted to be adjustably mounted on an elongated clamping bar 41, and it will be understood that any kind of a stationary stop or jaw similar to stop 40 may be used in cooperation with the pressure applying clamping member generally designated at 42, shown in Figures 1, 2 and 3. The clamping member 42 comprises a pair of plates 43 and 44 which engage on opposite sides of the bar 41. A spacer bar 45 is fixed between the plates 43 and 44 and engages the lower edge of bar 41.

A bar clamping jaw 46 is disposed between the plates 43 and 44 and a cam member 47 is rotatably disposed through the jaw 46. The cam member 47 is carried by a shaft 48 journalled through the plates 43 and 44, and a handle or lever 49 is fixed to one end of the shaft 48. In order to provide a means whereby the clamping member 42 may be used with bars of different widths, I have provided a shim or adapter bar 50 which is interposed between the lower edge of the jaw 46 and the upper edge of bar 41.

The jaw 46, which is reduced at its inner end as indicated at 51, is provided with a slot 52 through which a pin 53 engages, the pin 53 being secured between the plates 43 and 44. One end of the shim or adapter 50 is provided with an L-shaped member 54 which is adapted to hook into the inner end of the slot 52, and the other end of the shim or adapter 50 has extending upwardly therefrom a resilient latching member, which is adapted to latch into a keeper 56 formed in the adjacent or outer end of the jaw 46.

In order to provide a means whereby the work piece 57 may be tightly clamped relative to the bar 41, I have provided a work engaging clamping jaw 58, which is carried by an elongated bar 59 slidable between the plates 43 and 44. The upper edge of the bar 59 slidably engages against the spacer bar 45, the lower edge of the bar 59 slidably engages another spacer bar 60 secured between the plates 43 and 44.

A pair of pressure applying levers 63 are disposed on the outer sides of the plates 43 and 44 and are mounted on cam studs 64, which extend from the opposite ends of the cam 65. The studs 44 are journalled through the upper portions of the plates 43 and 44, and a cam operating lever 65*a* is secured to and extends away from the cam 65.

A jaw operating pin 66 is secured between the lower portions of the levers 63 and extends through a vertically elongated opening 67 formed in the bar 59. The plates 43 and 44 are provided with elongated openings 68 so that the pin 66 may swing inwardly or outwardly with the levers 63 when the plates 43 and 44 are locked or clamped relative to the bar 41. The levers 63 are adapted to swing relative to the plates 43 and 44 by means of a link 69 which engages a pin 70 secured between the levers 63.

The link 69 is also pivoted to a pin 70*a* secured between the plates 43 and 44. The link 69 provides a means whereby the levers 63 will be given a rocking movement at their lower ends, and the levers may also move vertically when the shaft 65 is rocked and cam studs 64 are also rotated.

In the use and operation of this clamping structure, the clamping member 40 is fixedly secured to the bar 41 and the pressure applying clamp, shown in Figures 1, 2 and 3, is adjusted along the length of bar 41 by initially releasing the jaw 46 upon downward swinging of lever 49. The initial rough adjustment of the clamp 42 is then set by swinging lever 49 upwardly to effect tight engagement of jaw 46 with the upper edge of bar 41. The desired clamping pressure of jaw 58 against the work 57 can then be applied by rocking lever 65 in a counterclockwise direction, as viewed in Figures 1 and 2. With a clamping means as shown in Figures 1, 2 and 3, the stationary clamping member 40 is adapted to be used and a flat bar having straight opposite edges can be used so that any desired adjustment may be effected along the length of the bar.

I do not mean to confine myself to the exact details of construction herein disclosed, but claim all variations falling within the purview of the appended claims.

What is claimed is:

1. A clamping device comprising an elongated bar having a pair of clamping members mounted thereon, one of said clamping members being movable on said bar relative to the other of said clamping members, said movable clamping member comprising a pair of plates disposed on opposite sides of said bar in confronting relation, a spacer bar disposed between said plates and slidably engaging an edge of said bar, a bar clamping jaw disposed between said plates, a cam journalled for rotation in said clamping jaw, said cam being mounted on a shaft which extends on opposite sides of said cam, the outer ends of said shaft being journalled for rotation in said plates, an operating lever having an end thereof fixedly secured to said cam, a second spacer bar disposed between and secured to said plates, a bar slidably engaging said spacer bars and positioned between said plates, a work engaging clamping jaw having a side thereof fixedly secured to one end of said last mentioned bar, said last mentioned bar and adjacent portions of said plates each having an elongated confronting slot formed therein, a second cam, said second cam being journalled for rotation in said

plates and having a pair of cam studs extending on opposite sides of said plates, a handle having an end thereof fixedly secured to said second cam, a pair of links disposed on opposite sides of said plates and having one of their respective ends mounted on said cam studs, a pin extending through said slots and connecting the other ends of said links, said plates having opposed openings adjacent said second cam, a link positioned between said plates and having an end pivotally mounted thereon, and a pin extending through the other end of said link and having the ends thereof projecting through said openings, said ends of said last named pin being secured to said links.

2. A clamping device as defined in claim 1, and at least one shim, and means detachably securing said shim to said bar clamping jaw whereby said device may be used with bars of various dimensions.

3. A clamping device comprising an elongated bar having a pair of clamping members mounted thereon, one of said clamping members being movable on said bar relative to the other of said members, means on said one member fixedly securing said one member on said bar in selected position, a housing carried by said means, a second bar slidably mounted in said housing for reciprocation toward and away from the other of said clamping

members, a clamping jaw fixedly secured to the outer end of said bar, a cam mounted for rotation on said means, and cam actuated links extending between and connected with said cam and said second bar to effect reciprocation of said second bar upon actuation of said cam.

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