Feb. 26, 1957 A. LEVY, JR 2,782,819

WORK CLAMPING DEVICE

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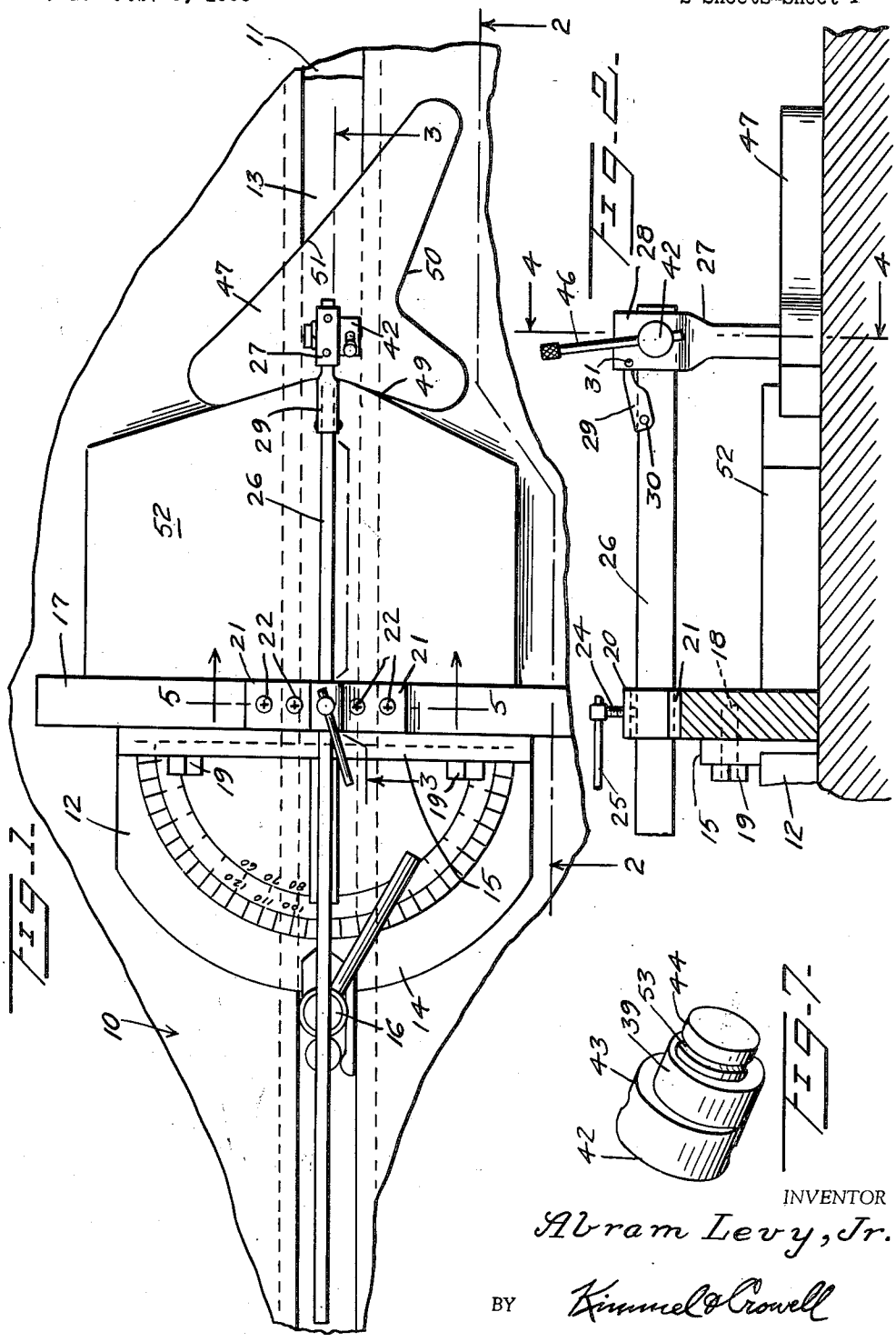


FIG. 1.

FIG. 2.

FIG. 7.

INVENTOR

Abram Levy, Jr.

BY Kimmel & Crowell

ATTORNEYS

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Fig. 3.

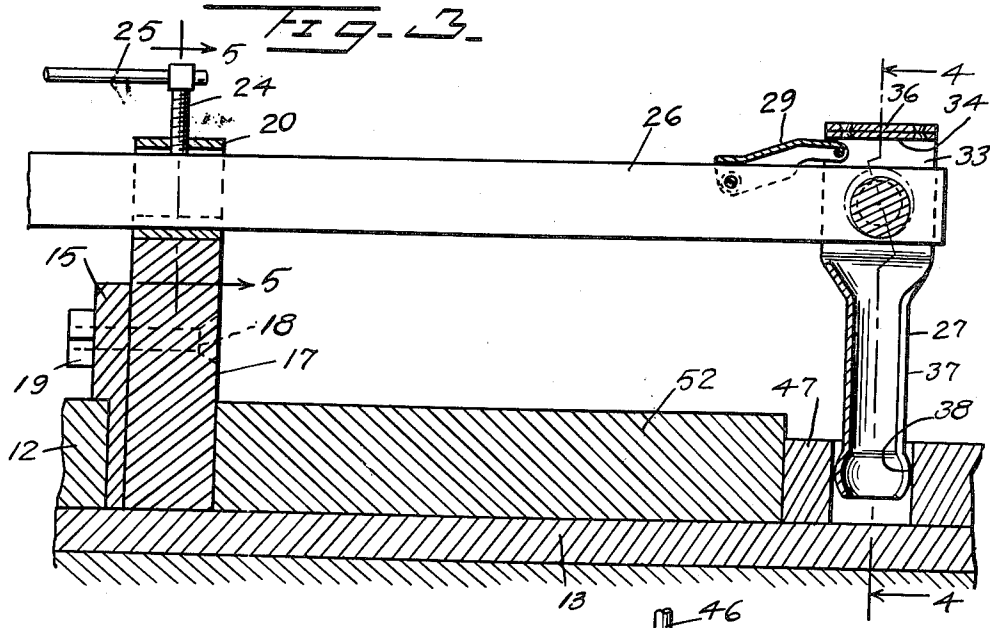


Fig. 5.

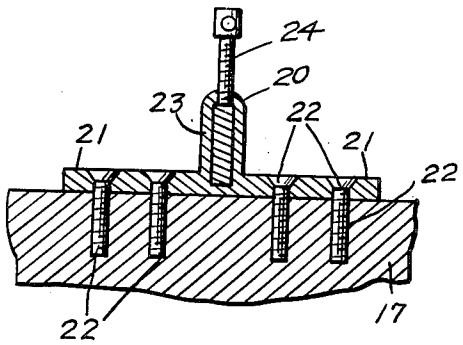
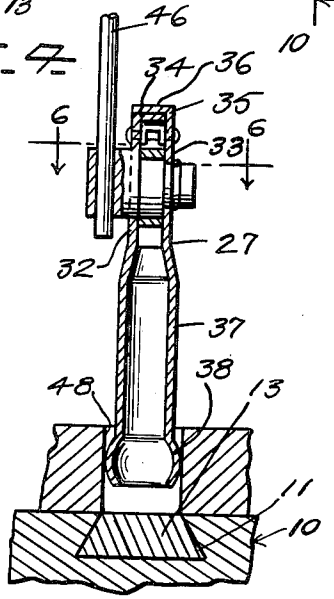


Fig. 4.



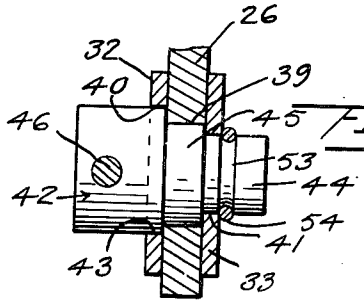


Fig. 6.

INVENTOR
Abram Levy, Jr.

BY Kimmel & Crowell

ATTORNEYS

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WORK CLAMPING DEVICE

Abram Levy, Jr., Atlanta, Ga.

Application February 3, 1956, Serial No. 563,316

1 Claim. (Cl. 144—290)

The present invention relates to work clamping devices, and more particularly to such devices which are adapted to be attached to the miter square of a work table associated with a power tool such as a saw.

This application is a continuation-in-part of my copending application for a Straight Beam Adjustable Jaw Clamp, Serial No. 275,773, filed March 10, 1952, now Patent No. 2,750,972.

The primary object of the present invention is to provide a readily adjustable work clamp associated with the work engaging bar of the miter square to lock the work to the miter square during hte operation of the tool on the work.

Another object of the invention is to provide a device of the class described which can be readily adjusted for different sizes of work pieces and then further adjusted to lock the work against the miter bar.

A further object of the invention is to provide a device of the class described above having a work engaging member which is provided with a plurality of varying shaped work engaging faces which may be pivoted into work engaging position.

A still further object of the invention is to provide a work clamping device of the class described above which will be inexpensive to manufacture and assemble, simple to operate and durable, having a long useful life.

Other objects and advantages will become apparent in the following specification when considered in the light of the attached drawings, in which:

Figure 1 is a fragmentary plan view illustrating the invention attached to a miter square of a work table.

Figure 2 is a longitudinal section taken along the line 2—2 of Figure 1, looking in the direction of the arrows with the invention illustrated in elevation.

Figure 3 is an enlarged fragmentary longitudinal section taken along the line 3—3 of Figure 1, looking in the direction of the arrows.

Figure 4 is a fragmentary vertical cross-section taken along the line 4—4 of Figure 3, looking in the direction of the arrows.

Figure 5 is an enlarged fragmentary vertical section taken along the line 5—5 of Figures 1 and 3, looking in the direction of the arrows.

Figure 6 is an enlarged fragmentary horizontal section taken along the line 6—6 of Figure 4, looking in the direction of the arrows.

Figure 7 is a perspective view of the cam used in the clamp.

Referring now to the drawings in detail wherein like reference numerals indicate like parts throughout the several figures, the reference numeral 10 indicates generally the work table of a power saw, joiner, planar, sander, or other power tools having a table for supporting the work.

The table 10 is provided with a dovetail shaped miter bar solt 11 extending generally parallel to the tool (not shown) with which the table 10 is associated. The slot 11 in some instances is formed with rectangular shoulders rather than sloped side walls. A miter square 12 is provided with a longitudinal bar 13 which is adapted to be positioned in the slot 11 and reciprocate therein.

The miter 12 is provided with an arcuate portion 14 having an upstanding flange 15 formed along one edge thereof. The arcuate portion 14 is pivotally secured to the bar 13 and is adapted to be clamped in an adjusted position by the clamp 16. The table 10, slot 11, miter 12 and clamp 16 are of conventional construction and form no part of the present invention.

A bar 17 is secured to the flange 15 by means of bolts 18 having nuts 19 thereon. A bracket 20 is provided with a base portion 21 having a plurality of screws 22 extending therethrough securing the bracket 20 to the upper edge of the bar 17. A yoke 23 extends upwardly from the base 21 and has a screw clamp 24 projecting downwardly therethrough. A handle 25 extends through the upper end of the screw clamp 24 and is adapted to rotate the screw clamp 24 with relation to the yoke 23 to clamp against work within the yoke 23. A rectangular bar 26 is slidably mounted within the yoke 23 and is adapted to be clamped against movement therein by the clamp screw 24.

A finger 27 is provided with an upper bifurcated portion 28 and is engaged over the outer end of the bar 26 and secured thereto by means of a link 29 pivoted at 30 to the bar 26 and pivoted at 31 to the bifurcated portion 28 of the finger 27. The bifurcated portion 28 of the finger 27 comprises a flat panel 32 and a second flat panel 33 parallel thereto and spaced apart therefrom. The upper edges of the flat panels 32 and 33 are provided with inwardly directed overlapping flanges 34 and 35 which are riveted or otherwise secured together at 36. The lower portion of the finger 27 is formed into a tubular extension 37 having a bulbous lower end portion 38.

The outer end of the bar 26 is provided with a transversely extending bore 39. The panel 32 is provided with a bore 40 having a diameter somewhat larger than the bore 39 and the panel 33 is provided wtih a bore 41 having a diameter somewhat smaller than the bore 39.

A cam generally indicated at 42 is provided with a cylindrical surface 43 which is adapted to be rotatably seated in the bore 40. A cylindrical extension 44 is formed integrally with the cam 42 and is adapted to be rotatably carried within the bore 41 of the panel 33. The cylindrical surface 43 and the cylindrical portion 44 are formed on the same axis. A cylindrical surface 45 is integrally formed on the cam 42 between the cylindrical surface 43 and the cylindrical portion 44 and has a diameter somewhat smaller than the cylindrical surface 43 and somewhat larger than the cylindrical portion 44.

The axis of the cylindrical surface 45 is offset with relation to the axis of the cylindrical surface 43 and cylindrical portion 44 so that the cylindrical surface 45 is eccentric with relation to the cylindrical surface 43 and the cylindrical portion 44. The cylindrical portion 45 is rotatably mounted in the bore 39 of the bar 26 and the cam 42 is provided with a handle 46 for rotating the cam 42.

Upon rotation of the cam 42 the panels 32 and 33 are caused to move eccentrically with relation to the bore 39 and the link 29 secured to the upper portion of the finger 27 supports the upper end of the finger 27 against movement so that the bulbous end 38 thereof is caused to move in an arc toward and away from the bar 17.

A work engaging jaw 47 is provided with a bore 48 which is adapted to receive the bulbous end 38 of the finger 27. The jaw 47 is provided with a plurality of work engaging surfaces 49, 50 and 51 which can be pivoted about the finger 27 to engage work such as 52

having different shapes. The pivotal action of the jaw **47** with relation to the finger **27** permits the jaw **47** to adjust to the condition of the work **52** to prevent the work from disengaging from the jaw **47**.

The cam **42** is provided with an annular groove **53** on the cylindrical portion **44**. A split retainer ring **54** is adapted to be seated in the groove **53** and engage against the outer face of the panel **33** to secure the cam **42** to the bar **26** and the finger **27**.

In the use and operation of the invention, a work piece **52** is positioned against the miter bar **17**, and the bar **26** is moved through the yoke **23** until the jaw **47** is nearly in contact with the opposite face of the work **52**. In this position, the bar **26** is locked within the yoke **23** by means of the screw **24** and the cam **42** is rotated by the handle **46** to move the bulbous portion **38** along with the finger **27** toward the bar **17** causing the jaw **47** to clamp the work **52** tightly thereagainst. The work **52** is then slid across the table **10**, past the blade of a power tool, and the desired operation is performed thereon. The clamp described above will also act as a hold-down for the work **52** since the device is secured to the table by means of the dovetail slot **11**.

Having thus described the preferred embodiment of the invention, it should be understood that numerous modifications and structural adaptations may be resorted to without departing from the scope of the appended claim.

What is claimed is:

A work clamp for a work table of the type having a miter square connected thereto for sliding engagement thereover comprising a yoke clamp detachably secured to said miter square, a horizontal bar longitudinally slidable in said yoke clamp and adapted to be locked therein in adjusted position, a bifurcated finger encompassing the outer end of said horizontal bar and pivotally secured thereto by means of a link, an eccentric cam pivotally mounted in said bar and engaging said finger whereby said finger is caused to oscillate with relation to said bar upon rotation of said eccentric, and a jaw pivotally connected to said finger for engagement with the work to be clamped, said jaw having a plurality of work clamping faces.

References Cited in the file of this patent

UNITED STATES PATENTS

822,775	Schnurr	June 5, 1906
1,536,310	Rothlisberger	May 5, 1925
1,560,748	Wilderson	Nov. 10, 1925
2,308,996	Miller	Jan. 19, 1943

FOREIGN PATENTS

273,155	Switzerland	Apr. 16, 1951