March 2, 1965 T. J. BROWNRIGG 3,171,453

MITER BOX

Filed Aug. 9, 1963

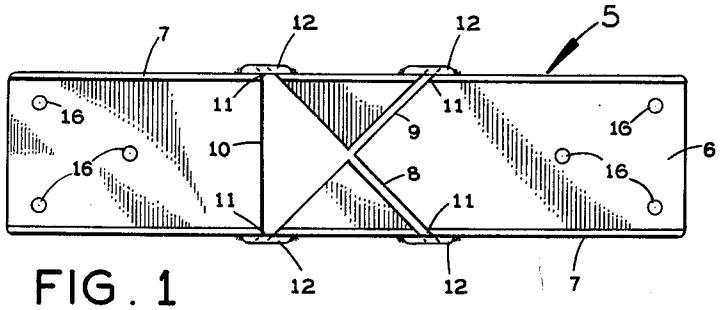


FIG. 1

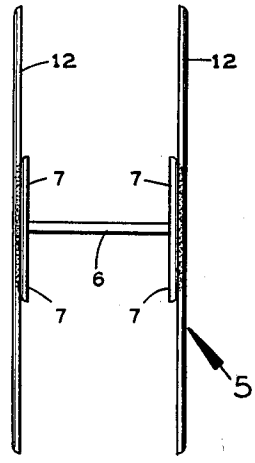


FIG. 3

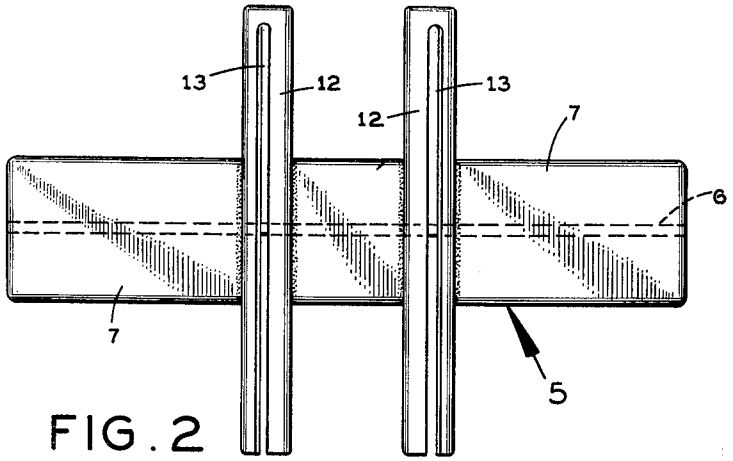


FIG. 2

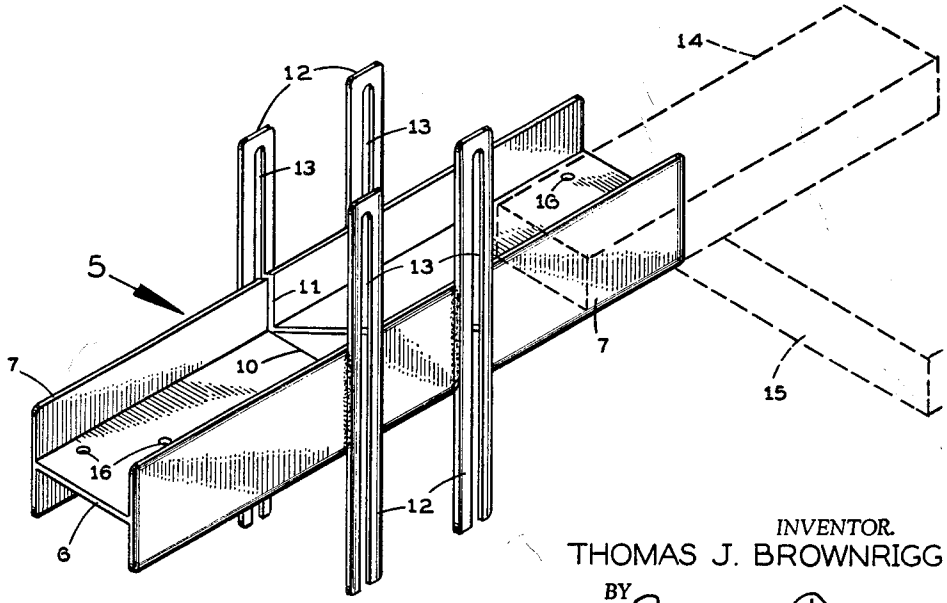


FIG. 4

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MITER BOX

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This invention relates to miter boxes and has particular reference to a metallic miter box of I-beam shape and with the floor of the box being slotted both diagonally in both directions and transversely and with saw guides overlying and connected to the flanges of the box whereby to connect the flanges of the box and the severed floor together to form a relatively rigid structure for mitering molding either as a portable miter box or for fixed engagement with an extension from a workbench.

The invention further contemplates a miter box formed of relatively heavy gauge sheet metal, having a bottom and side flanges and with the box including the bottom and the flanges being slotted entirely therethrough to form guides on both a reverse 45 degree angle and also a transverse slot and with the slots extending through the flanges of the box and united together by vertically extending slotted saw guides that are welded to the side flanges of the box and whereby to form substantially a complete non-flexible structure.

Novel features of construction and operation of the device will be more clearly apparent during the course of the following description, wherein like characters of reference are employed to denote like parts throughout the several figures.

In the drawings:

FIGURE 1 is a top plan view of a miter box constructed in accordance with the invention,

FIGURE 2 is a side elevation thereof,

FIGURE 3 is an end view thereof, and

FIGURE 4 is a perspective view of the device shown in supported engagement with a workbench.

Referring specifically to the drawings, there has been illustrated as a whole a miter box 5. The miter box is of I-beam shape, having a flat bottom 6 and side flanges 7. The flanges 7 extend an equal distance above and below the bottom 6.

The bottom 6 is slotted diagonally on an angle of 45 degrees, as indicated at 8 and 9 and with the slots 8 and 9 extending entirely through the flanges 7. The bottom 6 is further provided with a transverse slot 10 that also extends through the flanges 7.

Welded or otherwise connected to the flanges 7 to overlie the vertical slots 11 of the flanges 7, are metallic strips 12 that are slotted at 13 and with the slots registering with the vertical slots 11 of the flanges 7 and whereby to constitute saw guides. Since the slotting of the bottom 6 and the flanges 7 would create a separation of the bottom 6 and the flanges 7, the strips 12 overlap the vertical slots 11 to such an extent that the flanges are securely connected together to prevent flexing of the box.

The strips 12, as clearly shown extend above and below the flanges 7.

When the miter box is to be used in a permanent position, it is connected to an extension 14 of a workbench 15 and secured thereto by screws that pass through apertures 16, formed in the bottom 6 of the box. The box is of sufficient weight to hold quarter-round or small molding steady against one flange 7 while being cut, thus eliminating vibration when contacted by a saw blade to cut entirely through the molding or the like without bringing the saw into contacting relation with the floor 6 of the box.

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It will be apparent from the foregoing that a novel arrangement of means to constitute a miter box of novel construction wherein the saws have a continued guidance and freedom to move in a slanting position both above and below the floor of the box, giving a clean accurate cut. In the construction of a larger model for mitering wider boards it would be necessary to either separate the cross cut opening from the 45's or run it through the center, as in the ordinary box. In such cases, it would be necessary to use six saw guides one on each side for each slot. By such construction, the board would be supported on both sides of all openings by the floor of the box.

In the use of the device, the box 5 may be carried directly to the point where the mechanic is working and held in the hand. Light molding, such as quarter-round or the like may be rested upon the bottom of the box 6 and pressed against one flange 7. The saw is then inserted through a suitable guide slot 13 corresponding to the particular cut to be made. When the box is to be mounted as a permanent fixture upon a workbench, an extension 14 is secured to the workbench and the floor of the box 6 is fixedly secured thereto positioning the box rigidly for subsequent use. The invention is simple in construction, is strong, durable and most effective as a metallic miter box. The bottom 6 may be varied as to its cross slots 8, 9 and 10 to alter the box for various mitering or transversely cutting other boards or timbers that are relatively wider than a box that is primarily adapted for cutting molding or the like.

It is to be understood that the invention is not limited to the precise construction shown, but that changes are contemplated as readily fall within the spirit of the invention as shall be determined by the scope of the subjoined claims.

I claim:

1. A hand miter box of the character described that comprises an elongated metallic I-beam section having a web portion and flanges along the marginal edges of the web, the web constituting a bottom for the miter box, the miter box being slotted entirely through the bottom and the flanges both diagonally and transversely, strips welded to the flanges upon the outer sides and with the strips being slotted and with the slots of the strips registering with the slots of the miter box, the strips being of such width to overlie and connect the flanges together at the points where the miter box is slotted and whereby to tie the flanges and the bottom together, the strips constituting saw guides, the strips and the slots extending above and below the miter box, the slots of the strips being open at the bottom whereby the saw may pass entirely through a wood molding downwardly entirely through the miter box to be disengaged through the bottom opening of the slots.

2. The structure according to claim 1 wherein the bottom of the miter box is apertured adjacent its opposite ends whereby the miter box may be fixedly connected by screws to an extension from a workbench.

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