March 10, 1964 D. E. McCLOUD 3,124,175

MITER GUIDE BOX

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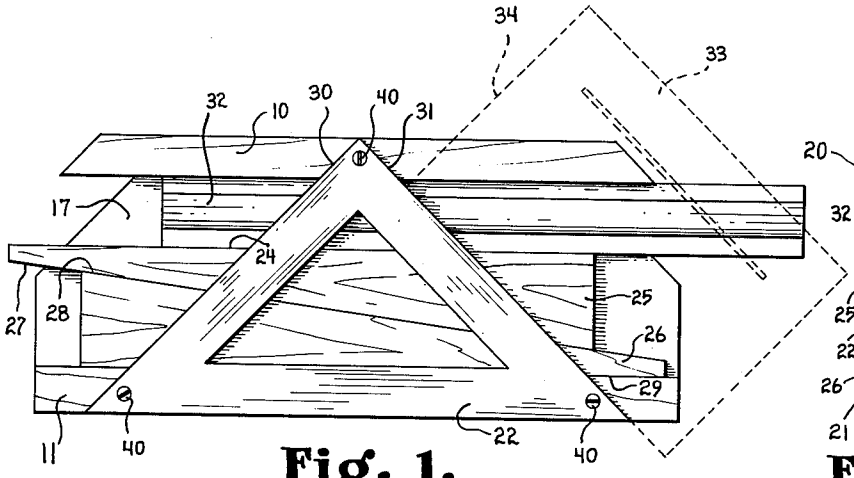


Fig. 1.

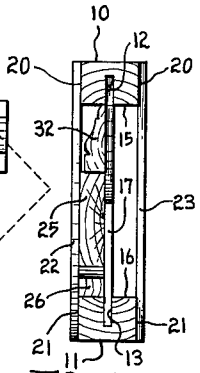


Fig. 2.

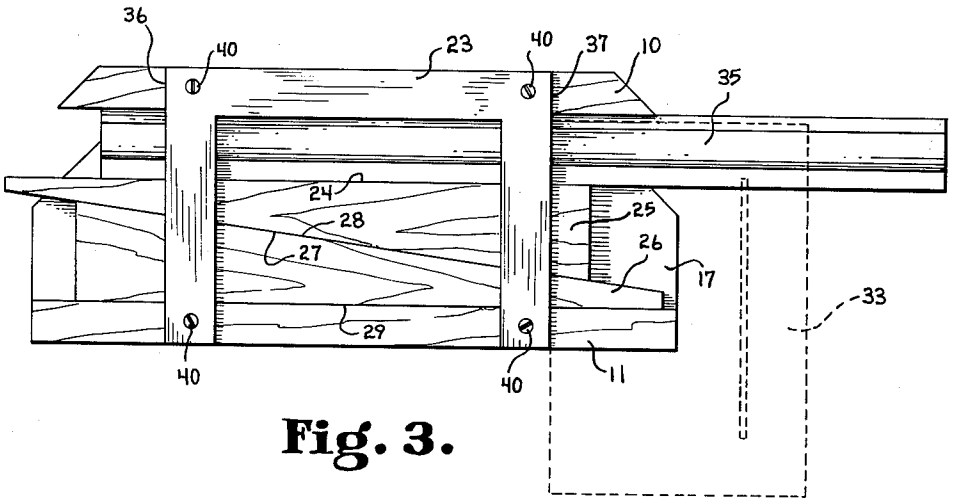


Fig. 3.

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MITER GUIDE BOX

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The present invention relates to a miter box or miter guide particularly adapted for use with a powered hand saw at a building site or the like.

It is well known that powered hand saws such as circular or rotary saws are quite a bit faster to use than the conventional manually powered reciprocating saw but, generally speaking, can be used only for relatively rough work. Accuracy can be produced by the use of the miter box with a manually powered reciprocating saw, however, there is not presently available such a miter box or guide for use with a power saw. Accordingly, one object of the present invention is to provide a miter box capable of use with a powered hand saw.

Another object of the present invention is to provide a miter box capable of improving the accuracy of powered hand saws.

Still another object of the invention is to provide a miter box which is relatively inexpensive and yet is capable of insuring great accuracy.

Related objects and advantages will become apparent as the description proceeds.

One embodiment of the present invention comprises a miter box including a container having parallel internal mutually facing walls. A pair of wedges are received between the walls and have equal apex angles pointing in opposite directions. Each of these wedges has one side in engagement with the other wedge and the other side located in parallel relation to the internal walls of the container. The wedges are arranged so that the outwardly facing, wedging surfaces bear against one of the internal walls and against a work piece received within the container. There is also provided a guide secured to the container for guiding a saw during cutting of the work piece.

The full nature of the invention will be understood from the accompanying drawings and the following description and claim:

FIG. 1 is a side elevation of a miter box constructed according to the present invention, the dotted lines showing the position of a power saw during use of the miter box of the present invention.

FIG. 2 is an end elevation of the structure illustrated in FIG. 1.

FIG. 3 is a side elevation of the structure of FIG. 1 showing the opposite side of the miter box and showing the miter box in a different operating position.

For the purposes of promoting an understanding of the principles of the invention, reference will now be made to the embodiment illustrated in the drawing and specific language will be used to describe the same. It will nevertheless be understood that no limitation of the scope of the invention is thereby intended, such alterations and further modifications in the illustrated device, and such further applications of the principles of the invention as illustrated therein being contemplated as would normally occur to one skilled in the art to which the invention relates.

Referring now more particularly to the drawings, there is illustrated a miter box which includes a pair of parallel elongated elements **10** and **11** which may be formed of wood and which each have a generally rectangular cross section with a groove **12** and **13** in the mutually facing surfaces **15** and **16** thereof. The grooves **12** and

13 extend longitudinally of the elongated elements centrally along the faces **15** and **16** and receive a sheet of pressed hardwood material **17**, for example, peg board or the like, which extends between the two elongated elements.

Secured to the opposite sides **20** and **21** of the elongated elements **10** and **11** are a pair of guides **22** and **23**, the guide **22** having a triangular shape as illustrated in FIG. 1 and the guide **23** having a U-shape as illustrated in FIG. 3. The guides **22** and **23** may be formed of pressed hardwood material such as is commonly referred to as Masonite. A pair of wedges **25** and **26** may be received within either of the guides and the central sheet of material **17**. The wedges have equal apex angles formed by their bearing surfaces **24**, **27**, **28** and **29**, and therefore, their outwardly facing bearing surfaces **24** and **29** are parallel to one another. It should be noted that the thickness of the wedges **25** and **26** is equal to the distance between the central sheet **17** and either of the guides **22** or **23**. For this reason, the outward faces of the wedges are always in alignment either with the sides **20** of the elongated elements **10** and **11** to which guide **22** is attached or the sides to which the guide **23** is attached.

The triangular shaped guide **22** may have any desired angle between its guiding surfaces **30** and **31** and those surfaces may have any desired angle with respect to the length of the elongated elements **10** and **11**. In the illustrated embodiment, the angle between the surfaces **30** and **31** is 90 degrees and the angle of both of those surfaces with respect to the length of the elongated elements is 45 degrees. For this reason, a work piece such as the baseboard material **32** will be cut at a 45 degree angle when a power hand saw **33** is used in the manner illustrated in FIG. 1. It should be noted that in using the saw, the base **34** of the saw is guided by faces **20** of the elongated elements and also by the faces of the wedges **25** and **26** which are in alignment with the faces **20** as well as the guide **22**.

Referring to FIG. 3, the opposite side of the miter box is used in exactly the same manner as the side illustrated in FIG. 1. The wedges **25** and **26** are operated to lock the work piece **35** in position and the base **33** of the saw is guided by the U-shaped element **23**. It can be appreciated that the outside surfaces **36** and **37** of the legs of the U-shaped element are in perpendicular relation to the length of the elongated elements and as a result, the work piece **35** will be cut off perpendicularly to its length.

It can be appreciated that the guides **22** and **23** function to hold the miter box together. More particularly the guides have therethrough screws **40** which extend into the elongated elements to maintain them in spaced parallel relation. Preferably, at least some of the screws **40** also extend into the sheet hardwood material **17** to maintain it fixed in position relative to the elongated elements.

For the above reasons, it can be appreciated that the present invention provides a miter box capable of use with a powered hand saw. It can also be appreciated that the present invention provides a miter box which may be relatively inexpensively constructed but which is capable of providing desired accuracy.

While the invention has been illustrated and described in detail in the drawings and foregoing description, the same is to be considered as illustrative and not restrictive in character, it being understood that only the preferred embodiment has been shown and described and that all changes and modifications that come within the spirit of the invention and the scope of the claim are also desired to be protected.

The invention claimed is:

A miter box comprising a pair of elongated members of rectangular cross section, said members being arranged

in parallel relation and having mutually facing surfaces which are grooved along their length, a sheet of material received in said grooves and extending between said elements, a triangularly shaped guide secured to said elongated members on one side thereof in parallel relation to said sheet of material, a U-shaped guide secured to said elongated members on the opposite side thereof in parallel relation to said sheet of material, said triangularly shaped guide having sides arranged at forty-five degree angles to the length of said elements, said U-shaped guide having sides arranged at ninety degree angles to the length of said elements.

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