Feb. 28, 1928.

1,660,333

A. C. HILEMAN

PORTABLE MITERING MACHINE

Filed July 29, 1926

2 Sheets-Sheet 1

FIG. 1.

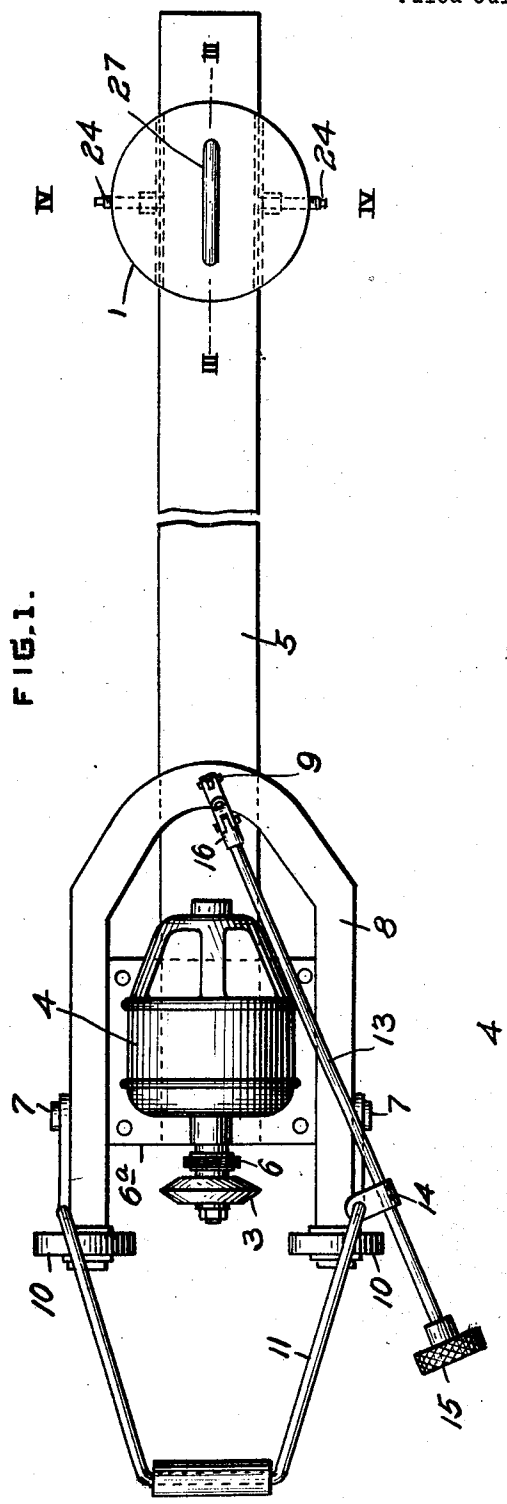
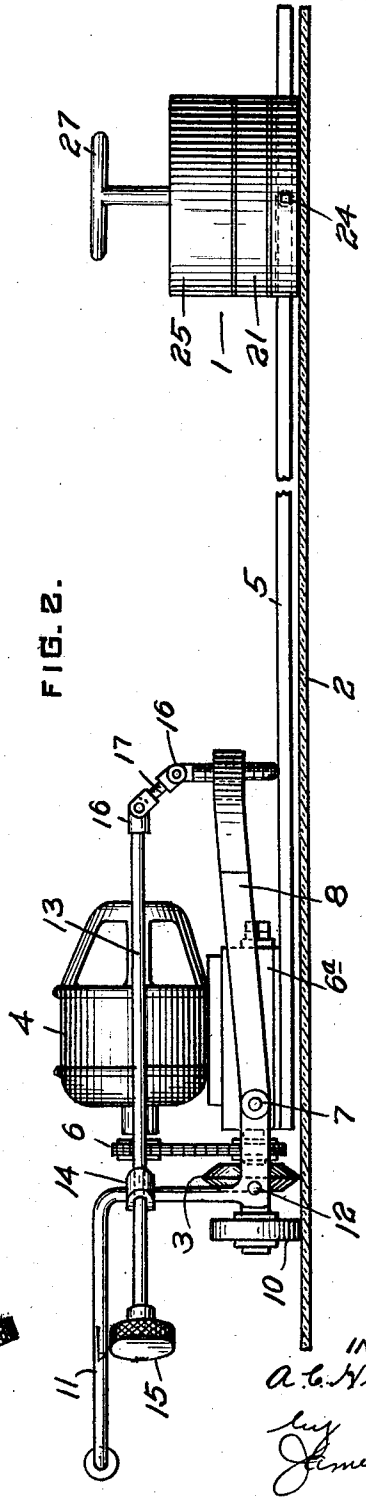


FIG. 2.



INVENTOR

A. C. Hileman.

by James C. Bradley

Atty

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FIG. 4.

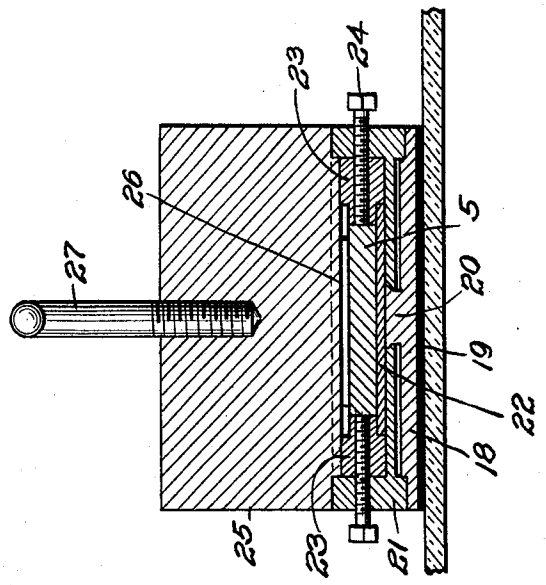
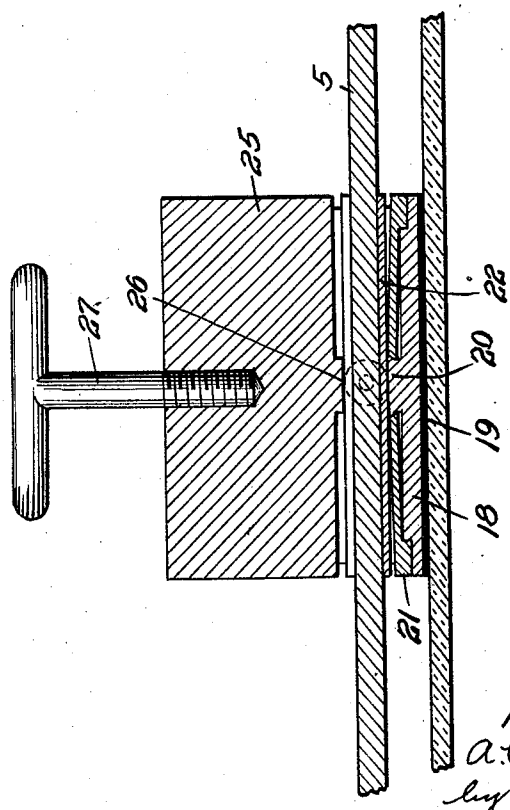


FIG. 3.



INVENTOR
A. C. Hileman.
by
James C. Bradley
Atty

Patented Feb. 28, 1928. 1,660,333

UNITED STATES PATENT OFFICE.

AUSTIN C. HILEMAN, OF FORD CITY, PENNSYLVANIA, ASSIGNOR TO PITTSBURGH PLATE GLASS COMPANY, A CORPORATION OF PENNSYLVANIA.

PORTABLE MITERING MACHINE.

Application filed July 29, 1926. Serial No. 125,774.

The invention relates to portable mitering machines for cutting curved grooves or miters in plates of glass or other sheet material which it is desired to ornament. It has for its principal objects the provision of a cheap, simple machine, which can be operated with rapidity, and which can be used to cut curved miters having widely varying radii of curvature. One embodiment of the invention is shown in the accompanying drawings, wherein:

Figure 1 is a plan view. Fig. 2 is a side elevation. And Figs. 3 and 4 are sections taken on the lines III—III and IV—IV of Fig. 1.

Referring to the drawings, 1 is a weighted member adapted to be seated upon the glass sheet 2 and serve as an anchoring means about which the mitering wheel 3 is swung. The mitering wheel, which is of carborundum composition or other suitable abrading material, is driven from the motor 4 carried by the forward end of the radius bar 5, such drive being accomplished by means of a chain 6 passing around a sprocket on the motor shaft and another sprocket on the shaft which carries the mitering wheel. A plate or block 6^a is provided between the motor and the radius bar and at the sides of this block at the forward end are a pair of pivots 7, 7 carrying the yoke 8.

The yoke is adjustable around the pivots 7, 7 by means of the screw 9 extending through the yoke and bearing against the top of the radius bar. The ends of the yoke carry the rollers or wheels 10, 10 of fiber composition adapted to rest upon the surface of the sheet 2 and carry the weight of the forward end of the radius bar and motor. By rotating the screw 9, the yoke is tilted more or less, and in this manner the depth of cut by the mitering wheel is regulated.

In order to conveniently swing the forward end of the radius bar around the anchoring member as a center, the handle 11 is preferably employed, which handle extends forwardly, as indicated in Figs. 1 and 2. The ends of this handle turn down and are secured by bolts 12, 12 to the arms of the yoke 8. One side of the handle bar acts as a support for the shaft 13 which is used to rotate the screw 9. This shaft is secured to the handle 11 by means of a suitable bearing clip 14 and is provided at its end with a knob or wheel 15. The other end of the shaft is secured to the screw 9 by means of the universal-joints 16, 16 and the coupling 17 therebetween. By reason of this arrangement, the operator may conveniently grasp the handle 11 with one hand to give the device its swinging movement and with his other hand may adjust the knob 15 to give the mitering wheel the proper depth of cut. The arrangement for securing the radius bar 5 to the anchoring member for swinging and also longitudinal movement will be seen by reference to Figs. 3 and 4. The lower part of the device comprises a metal plate 18 faced with the sheet 19 of rubber or other suitable yielding material so that the device will not slip upon the surface of the glass and so that it will not mar the glass. Mounted for movement about the pivot 20 on the plate 18 is a second plate 21. This plate is slotted to receive a third plate 22 which is provided with a pair of pivots 23, 23 pivoted in suitable recesses in the plate 21. The radius bar 5 is slidable through the member 22 and is clamped against longitudinal movement with respect to such member by means of the screw 24. As indicated in Fig. 3, the plate 21 is beveled upon its upper surface, thus permitting a rocking movement of the plate 22, which movement comes into play when mitering wheels of varying diameters are employed or when the mitering wheel is adjusted toward and from the work to regulate the depth of the cut. Seated upon the plates 21 and 22 is the weight 25 which is provided with a transverse rib 26 upon its lower side, such rib serving to prevent the weight from sliding laterally, and also serving to hold the pivot members 23, 23 down in their recesses. A suitable handle 27 is provided for lifting the weight.

The foregoing arrangement provides an anchoring device which serves as a center about which the radius bar pivots, the swinging movement being permitted by reason of the pivot 20 between the plates 18 and 21. The radius bar slides freely through the plate 22 so that the radius about which the mitering wheel swings can be shifted by means of this adjustment. When a very short radius of movement is desired, the weight 25 may be removed from the lower part of the anchoring device and such anchoring device slid beneath the motor, so

that the weight of the motor takes the place of the weight 25, thus bringing the pivot 20 within a few inches of the mitering wheel. A very wide range of adjustment is thus secured. As the radius of swing is reduced, the diameter of the mitering wheels is also reduced in order to avoid cutting miters which are too wide. Any suitable means may be provided for supplying water to the mitering wheel during the cutting operation.

What I claim is:

1. In combination in a portable mitering machine, a motor and a mitering wheel driven thereby, a radius bar therefor for governing the movement of said motor and wheel and an anchoring member adapted to be seated upon the sheet to be mitered and shiftable to any desired location thereon and having a pivotal connection with said bar, said member having its lower surface covered with yielding friction material and being of sufficient weight to maintain the axis of the radius bar immovable in position against the reactionary forces incident to the mitering operation.

2. In combination in a portable mitering machine, a motor and a mitering wheel driven thereby, a radius bar therefor for governing the movement of said motor and wheel, means adjustable vertically with respect to the mitering wheel and engaging the surface of the sheet for supporting a part of the weight of the motor and regulating the depth to which the wheel cuts, and an anchoring member adapted to be seated upon the sheet to be mitered and shiftable to any desired location thereon, and having a pivotal connection with said bar, said member having its lower surface covered with yielding friction material and being of sufficient weight to maintain the axis of the radius bar immovable in position against the reactionary forces incident to the mitering operation.

3. In combination in a portable mitering machine, a motor and a mitering wheel driven thereby, a radius bar therefor for governing the movement of said motor and wheel and an anchoring member adapted to be seated upon the sheet to be mitered and shiftable to any desired location, and having a pivotal connection with said bar and being adjustable longitudinally thereof, said member also having its lower surface covered with yielding friction material and being of sufficient weight to maintain the axis of the radius bar immovable in position against the reactionary forces incident to the mitering operation.

In testimony whereof, I have hereunto subscribed my name this 26th day of July, 1926.

AUSTIN C. HILEMAN.