

Jan. 24, 1933.

W. STEINMEYER

1,895,054

WOODWORKING MACHINE

Filed Sept. 6, 1932

4 Sheets-Sheet 1

Fig. 1.

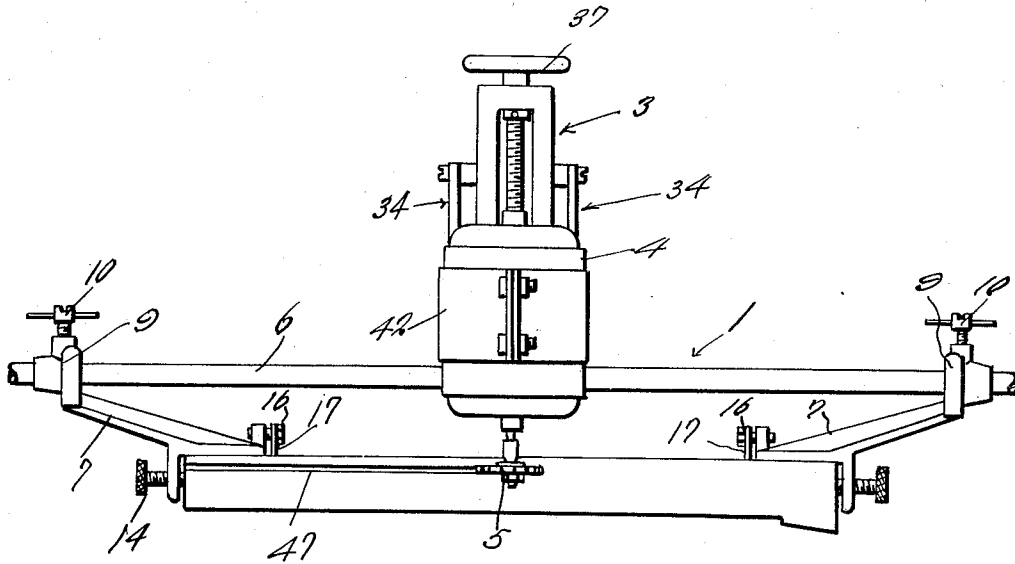
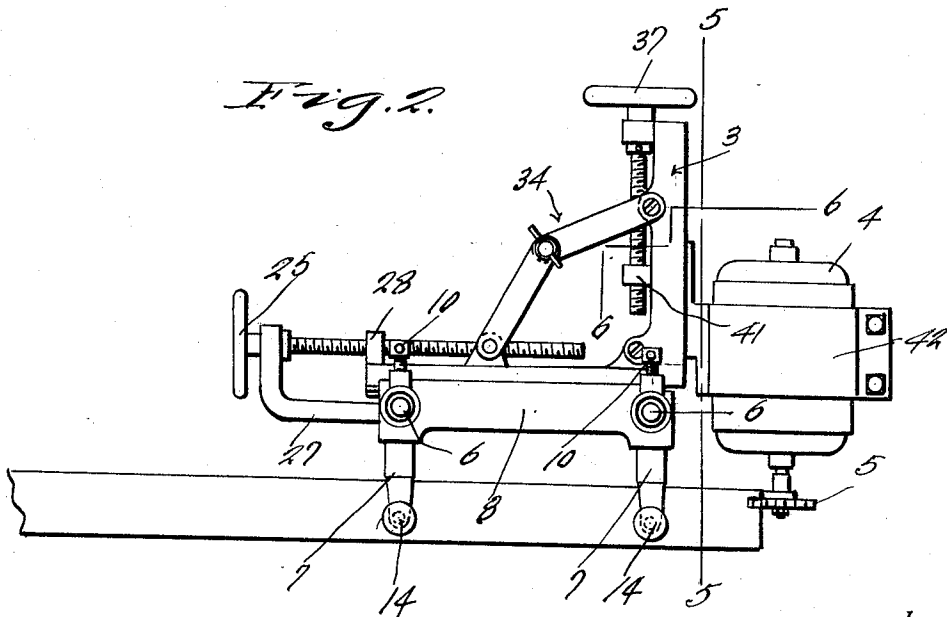


Fig. 2.



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Fig. 3.

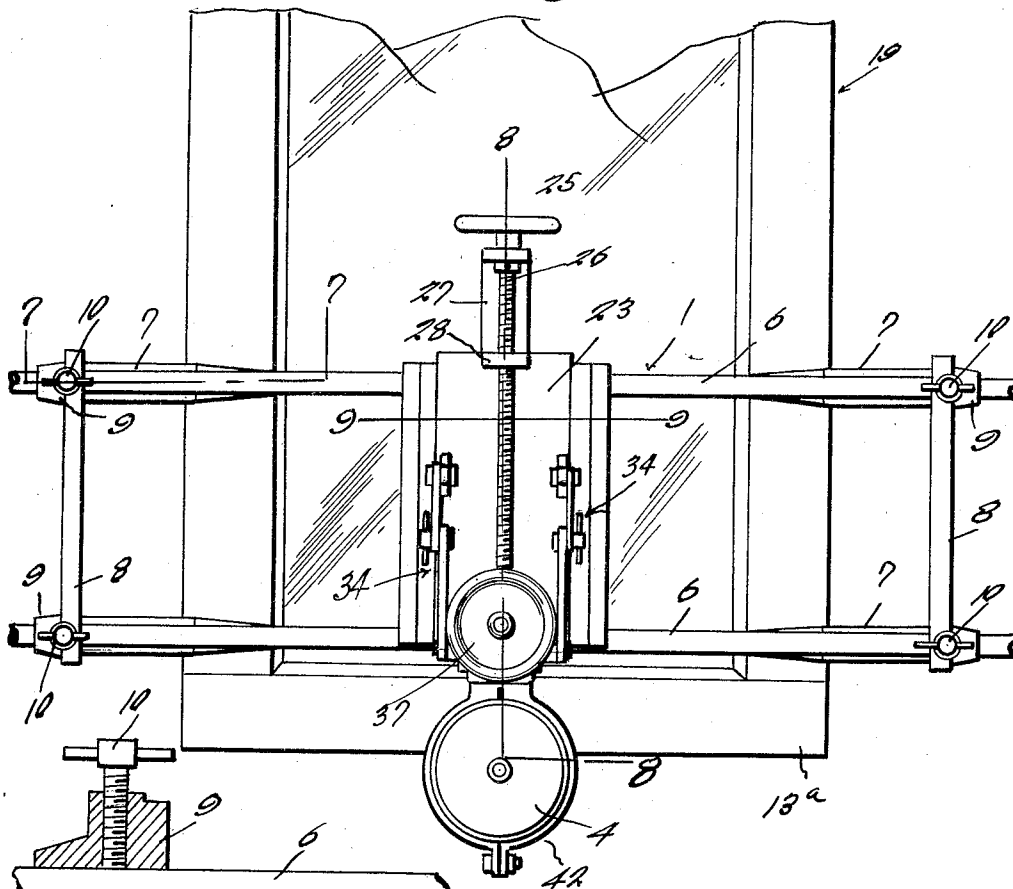
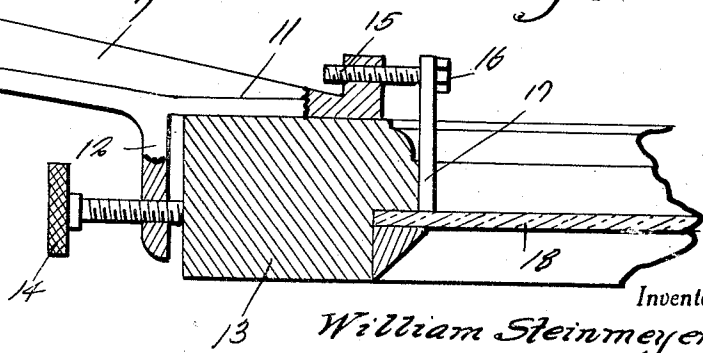


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Fig. 4

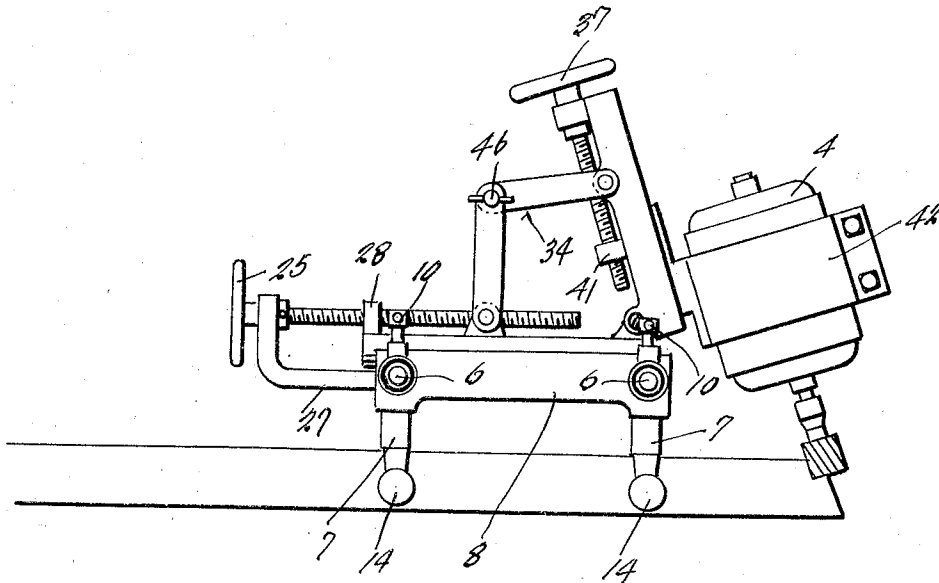


Fig. 5

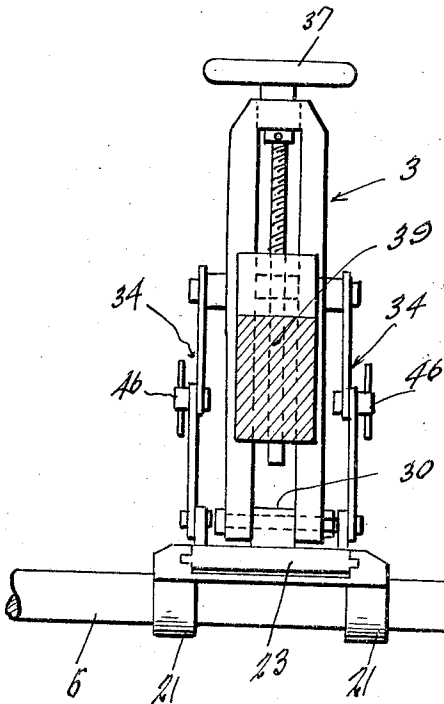
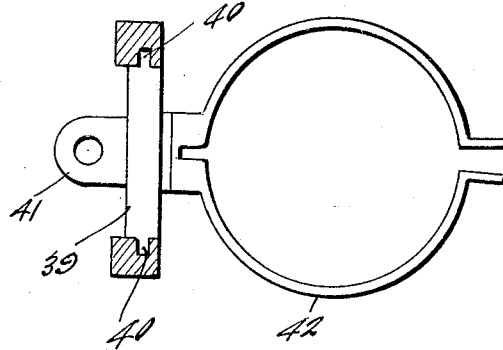


Fig. 6



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Fig. 8.

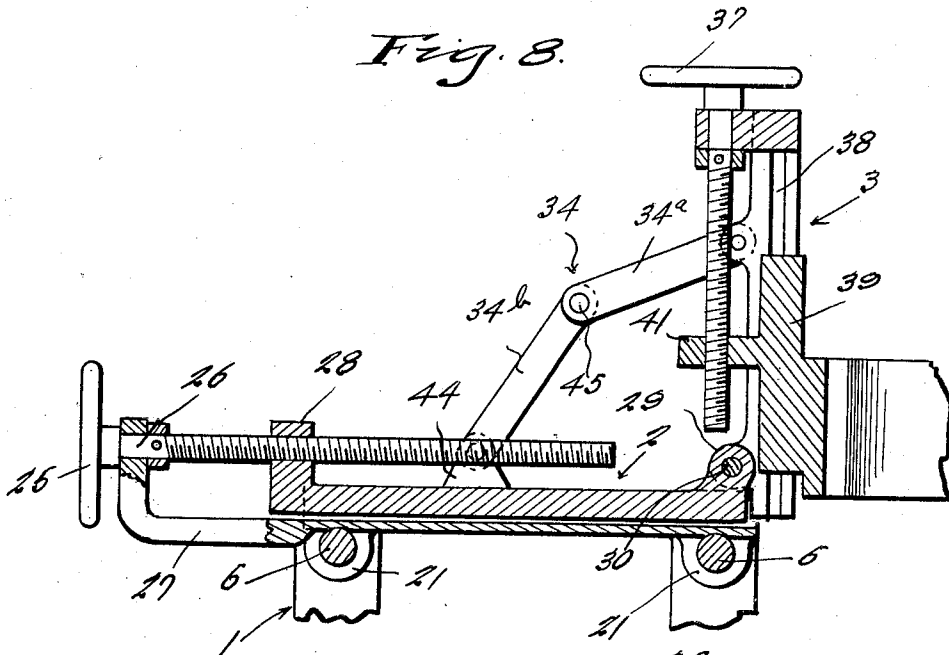


Fig. 10.

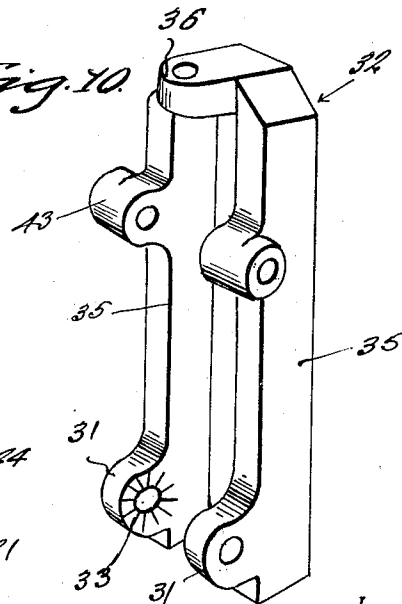


Fig. 9.

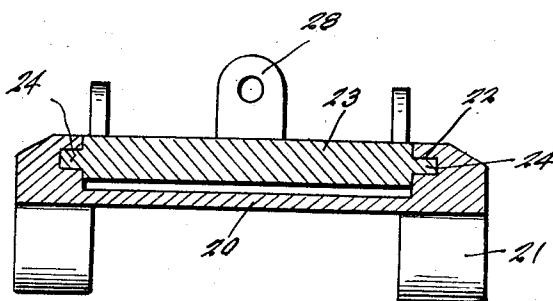
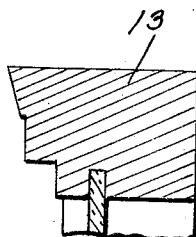


Fig. 11.

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UNITED STATES PATENT OFFICE

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WOODWORKING MACHINE

Application filed September 6, 1932. Serial No. 631,925.

This invention relates to wood working machines and is especially directed to machines of the hand power type designed for use in conjunction with weatherstripping operations for the purpose of grooving or routing sashes, doors or the like as is now required for the application of metal weatherstripping to sashes, doors or the like and to perform such operation in a quick, convenient and economical manner and by means of which the output of the machine is materially increased over the ordinary type of hand operating machine, less labor being required in grooving or routing the window sash, door or the like, and the doing of the work with greater perfection and accuracy.

The invention together with its numerous objects and advantages will be best understood from a study of the following description taken in connection with the accompanying drawings wherein:

Figure 1 is an elevational view of the machine, the same being shown when used for grooving purposes.

Figure 2 is a side elevational view thereof.

Figure 3 is a view illustrating the application of the machine to a window sash.

Figure 4 is a view similar to Figure 2 but illustrating the manner of using the machine for routing purposes.

Figures 5 and 6 are sectional views taken substantially on the lines 5—5 and 6—6 respectively of Figure 2.

Figures 7, 8 and 9 are sectional views taken substantially on the lines 7—7, 8—8 and 9—9 of Figure 3.

Figure 10 is a perspective view of a pivoted guide member.

Figure 11 is a fragmentary sectional elevational view taken through a portion of a sash showing the upper member of the sash after a completion of the routing operation.

With reference more in detail to the drawings it will be seen that my improved machine in the preferred embodiment thereof comprises broadly a frame 1, a carriage 2 mounted on the frame for longitudinal travel, a motor support 3 pivotally mounted on the carriage and adapted to be angularly

adjusted relative thereto, an electric motor 4 and a cutter 5.

The frame comprises a pair of relatively spaced parallel longitudinal bars or rods 6, and on each end of each rod 6 there is mounted for longitudinal movement an attaching bracket 7 and the brackets 7 at corresponding ends of the bars 6 are connected by cross bars 8.

As will be seen from a study of Figure 7 each of the brackets 7 comprises a body portion extending at a suitable angle to a bar 6 and provided at one end with an integral sleeve 9 through the bore of which a rod 6 extends, and the screw threadedly engaged with the sleeve 9 is an adjusting screw 10 arranged to engage a bar 6 for holding the bracket 7 at the desired adjustment.

At its free end the body of the bracket 7 is provided with an L-shaped notch to provide angularly arranged lugs 11, 12, of which the lug 11 is adapted to flatly engage a sash member 13 at one side of the sash, and the other lug 12 is adapted to overlies and extend in parallelism to the free outer edge or face of the member 13 of the sash as shown in Figure 7.

The lug 12 has threadedly engaged therewith a screw 14 that is adapted to engage the member 13 of the sash as shown, while the lug 11 has integral therewith an apertured flange 15 with which is threadedly engaged a bolt 16 passing through one end of a clamping plate 17, which plate 17 is adapted to engage the inner edge of the member 13 of the sash at one side of the pane 18, and as apparent, when the brackets 7 are thus engaged with relatively opposite members 13 of the window sash 19 the said frame 1 will be fixedly supported on the sash and extend transversely thereof as shown in Figure 3.

The carriage 2 comprises a plate like body 20 provided on its top side with a longitudinal groove, and on its under side and adjacent relatively opposite ends with pairs of apertured lugs 21 extending transversely thereof to receive the rods 6 as will be clear from a study of Figures 8 and 9.

The sides of the groove in the top of the plate 20 are provided on their inner faces

with grooves 22, and constrained to shift longitudinally of the plate 20 transversely of the frame, and operate within the aforementioned groove is a slide or platform 23
 5 provided with ribs 24 engaging the grooves 22. Slide or platform 23 may be readily shifted relative to the carriage 20, and secured at the desired adjustment, through the medium of an adjustment screw or bolt 25
 10 that is rotatably supported as indicated generally at 26 on the upturned end of an arm 27 projecting from one end of the carriage 20, and this screw 25 has screw threaded engagement with a lug 28 provided on one end
 15 of the slide or platform 23. Obviously by rotating the screw 25 the platform 23 may be readily shifted in the desired direction longitudinally of the channel in carriage 20.

On that end of the platform 20 remote
 20 from the lug 28 there are provided ears 29 receiving a pivot bolt 30, and the bolt 30 also extends through a pair of ears 31 provided on the lower end of a combined guide and supporting member designated generally by the
 25 reference character 32. As shown in Figure 10 the ears 31 on their inner side are provided with ratchet teeth or otherwise roughened as at 33 to cooperate with correspondingly roughened faces on the lugs 29 and thereby
 30 assist foldable braces 34 in supporting the member 32 at the desired angular adjustment relative to the platform 23

The member 32 comprises sides 35 on the lower ends of which are formed the aforementioned ears 31 and the upper ends of
 35 which are connected by a web that is extended and apertured as at 36 to provide a supporting means for an adjusting screw 37.

On the inner faces of the sides 35 are
 40 grooves 38, and constrained to shift between the sides 35 is a block or slide 39 provided with tongues or ribs 40 engaging the grooves 38. The slide or block 39 is also provided with an apertured lug 41 with which is thread-
 45 edly engaged the screw 37, so that obviously by rotating the screw in the proper direction slide 39 may be raised or lowered, or in other words shifted longitudinally of the member 32 as found desirable.

Suitably connected with the block 39, as by
 50 being integral therewith is a split clamping ring 42 that embraces and secures to the block 39 the electric motor 4.

There are two of the aforementioned fold-
 55 able braces 34, and each of the braces 34 include a section 34a pivoted at one end to a lug 43 on one of the sides 35 of the member 32, together with a second section 34b pivoted at one end to a lug 44 provided on the plat-
 60 form 23 adjacent the side edge of the same intermediate the ends of the platform. The sections 34a, 34b are pivotally connected together through the medium of a bolt 45 with which is threadedly engaged a thumb nut
 65 46, and obviously by tightening the thumb

nuts 46, the sections 34a, 34b may be secured at the desired angular adjustment relative to one another and thereby brace and support the member 32 at its desired angular adjust-
 70 ment relative to the platform 23 as will be clear from a study of Figures 4 and 8.

As is well known in the art, when weather-
 stripping a window with metal weatherstrip, metal strips provided with ribs are secured
 75 to the inner side of the vertical members of the window frame and also to the window sill requiring a grooving of the side rails and lower rail of the lower window sash and the side rails of the upper window sash, while
 80 the lower rail of the upper window sash, and the top rail of the lower window sash are routed on one side thereof as suggested in Figure 11 for receiving strips of metal weatherstripping so constructed that when
 85 the window is closed such strips coact to completely seal the space between the lower rail of the upper window sash and the upper rail of the lower window sash.

In using the present invention, both the
 90 grooving and routing of the proper rails of the window sashes may be effected, and for grooving purposes there is suitably connected with the armature shaft of the motor 4 a
 95 cutter 6 of the character shown in Figures 1 and 2, while for routing purposes a cutter of the character shown at Figure 4 is used.

For grooving purposes the frame 1, if it
 is desired to groove a side rail 13, is, of course, extended longitudinally of the win-
 100 dows sash, while, and as shown in Figure 3, if it is desired to groove the lower rail 13a of the lower window sash, the frame 1 is so supported on the sash as to extend transverse-
 105 ly thereof. Assuming that it is desired to groove the lower rail 13a the frame 1 is supported transversely on the window sash 19 as shown in Figure 3 and the cutter such as shown in Figures 1 and 2 is applied to the motor 4.

It will be noted that the frame 1 is set
 110 adjacent the lower rail 13a of the window sash, and that the member 32 is disposed at a right angle to the platform 23 so that the motor when viewed in Figures 1 and 2, is
 115 disposed substantially at right angles to the sash 19 so that the cutter 5 is suitably engaged with the rail, and obviously in carrying out the grooving operation the carriage
 120 2 is moved longitudinally of the frame 1 from one end to the other of the sash rail, and drive being transmitted to the cutter 5 from the motor 4 a grooving of the rail longi-
 125 tudinally thereof is easily accomplished. Obviously by adjusting the block 39 the groove made by the cutter 5 and designated by the reference character 47 may be formed in the under side of the rail adjacent either the front or rear face thereof or at any point
 130 midway between said faces.

For routing purposes the cutter shown in

Figure 4 is substituted for the cutter shown in Figures 1 and 2, and since in routing operation the groove formed is cut on a bias, the member 35 is secured at the desired and
 5 necessary angular relation with respect to the platform 23 and the plane of the window sash 19 as shown in Figure 4, the adjusting of the member 32 being effected as hereinbefore stated.

10 In either grooving or routing operations the depth of the cut made may be easily regulated by properly adjusting the platform 23 relative to the carriage member 20, thus permitting such an adjustment of the depth
 15 of the cut without requiring a shifting of the frame 1.

Even though I have herein shown and described the preferred embodiment of the invention, it is to be understood that the same
 20 is susceptible of further changes, modifications and improvements coming within the scope of the appended claims.

Having thus described my invention, what I claim as new is:

25 1. In a machine for grooving and routing window sashes, a frame having means for clamping it to the window sash, a carriage mounted for movement longitudinally of the frame, a platform shiftably mounted on the
 30 carriage transversely of the frame, a guide structure pivotally mounted on the platform, means for securing the guide structure at the desired angular adjustment relative to the platform, a slide arranged to reciprocate
 35 within the guide structure, means for securing the slide at the desired adjustment, a motor mounted on the slide, and a cutting tool having driving connection with the motor.

40 2. In a machine of the character described, a frame having means for mounting it on a window sash, a carriage mounted on the frame for longitudinal movement, a supporting structure mounted on the carriage and
 45 including a swingably mounted guide, means for securing the guide at the desired angular adjustment relative to the plane of the window sash, a slide constrained to shift on the guide in the plane of the latter, a motor car-
 50 ried by said slide, and a grooving tool having driving connection with said motor.

3. In a machine of the class described, a supporting carriage, a platform mounted on the carriage, a member pivotally mounted on
 55 the platform and having opposed sides provided with grooves, a slide having ribs engaging said grooves, a clamp carried by said slide and adapted to embrace and secure to the guide a power driven tool, and foldable
 60 braces connected with the platform and sides of said member and having means for holding said member in rigid position.

4. In a machine of the class described, a frame having means for securing it in posi-
 65 tion, a carriage mounted on the frame for

longitudinal movement, a platform on the carriage constrained to shift transversely to the movement of the carriage, a member pivotally connected with said platform, a pivot
 70 for said member extending transversely of the platform, brace means for said member connected to the platform and having means for holding said member in the desired angular adjustment relative to the platform, and
 75 a tool carrying slide constrained to shift longitudinally of said member.

5. In a tool of the class described, a platform, a member pivoted at one end to the platform and provided with opposed sides, foldable braces pivotally connected with the
 80 platform and the sides of said member, and having means for holding said member at the desired angular adjustment relative to the platform, a slide engaged with the sides of said member and constrained to shift longi-
 85 tudinally thereof, means engaging said member and slide for securing the latter at the desired adjustment, a motor mounted on said slide and a cutting tool having driving connection with said motor.
 90

6. In a machine of the class described, a frame, means adjustably engaged with the frame for securing it in position, a carriage on the frame and movable longitudinally
 95 relative thereto, a platform slidably supported on the carriage, a member pivotally connected with the platform, foldable braces connecting said member to the platform and having means for holding said member in
 100 rigid position, a slide engaging said member, a motor embracing clamp carried by said slide, a motor embraced by said clamp, and a cutting tool having driving connections with said motor.

In testimony whereof I affix my signature.
 WILLIAM STEINMEYER.

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