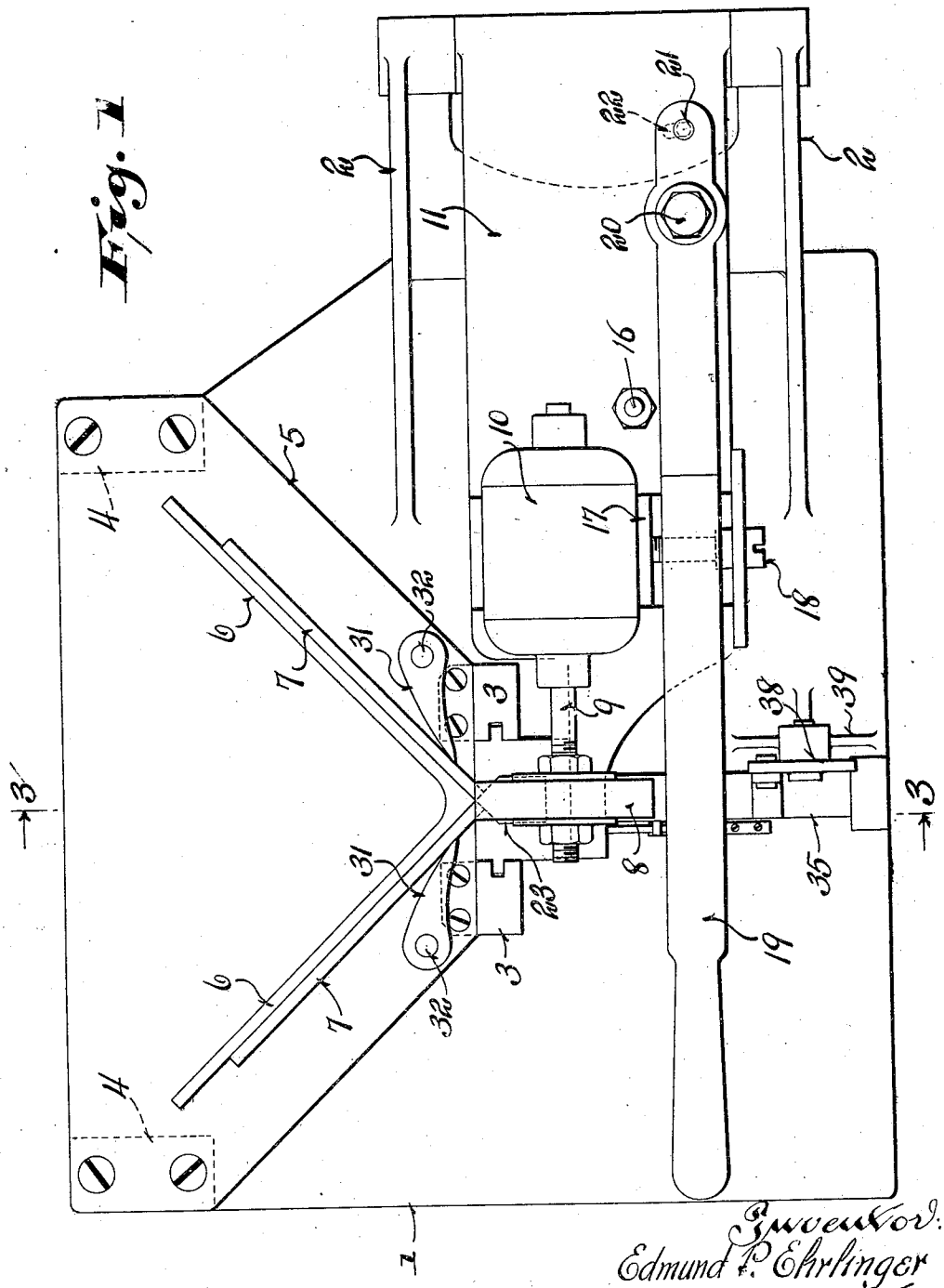
March 18, 1930. E. P. EHRLINGER 1,751,137

POWER DRIVEN MITERING MACHINE FOR PRINTERS

Filed Feb. 27, 1928 3 Sheets-Sheet 1

Fig. 1



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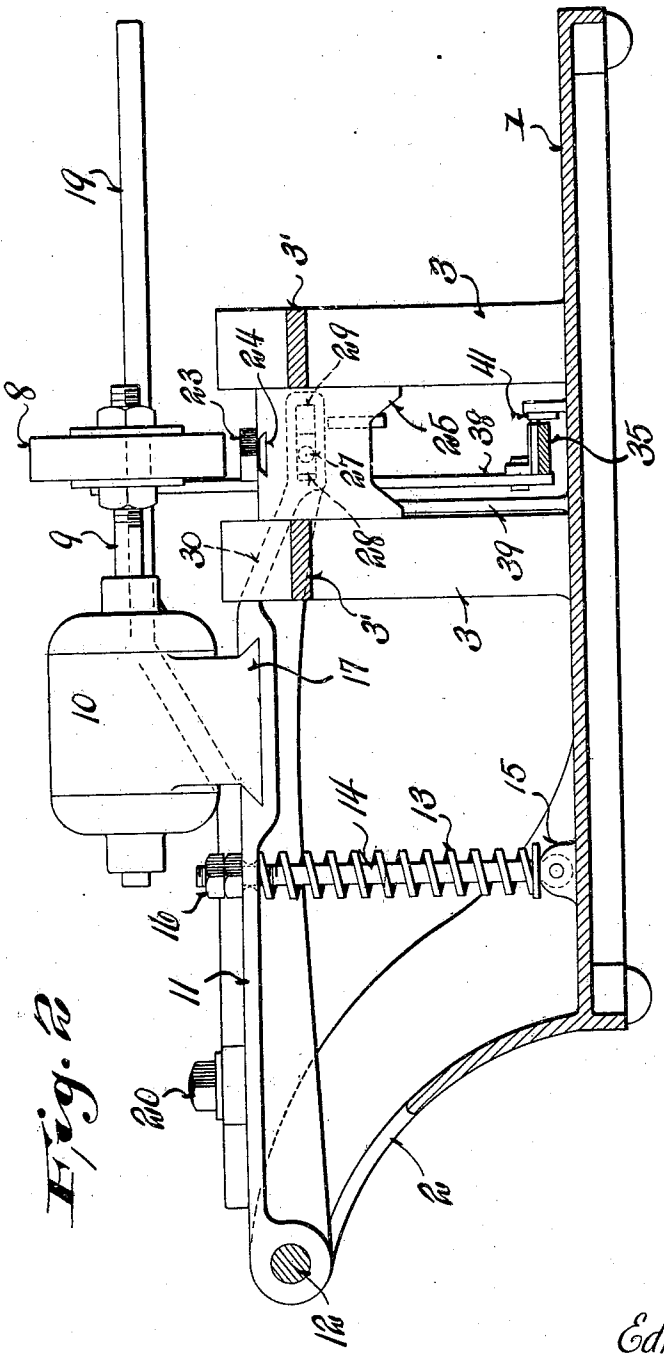


Fig. 2

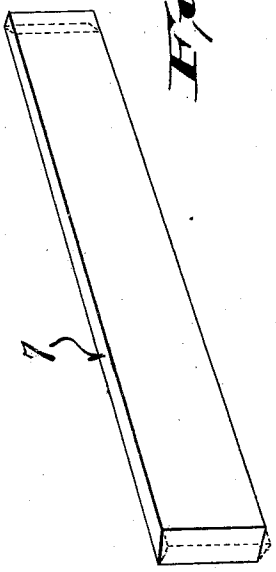


Fig. 5

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POWER DRIVEN MITERING MACHINE FOR PRINTERS

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Fig. 3

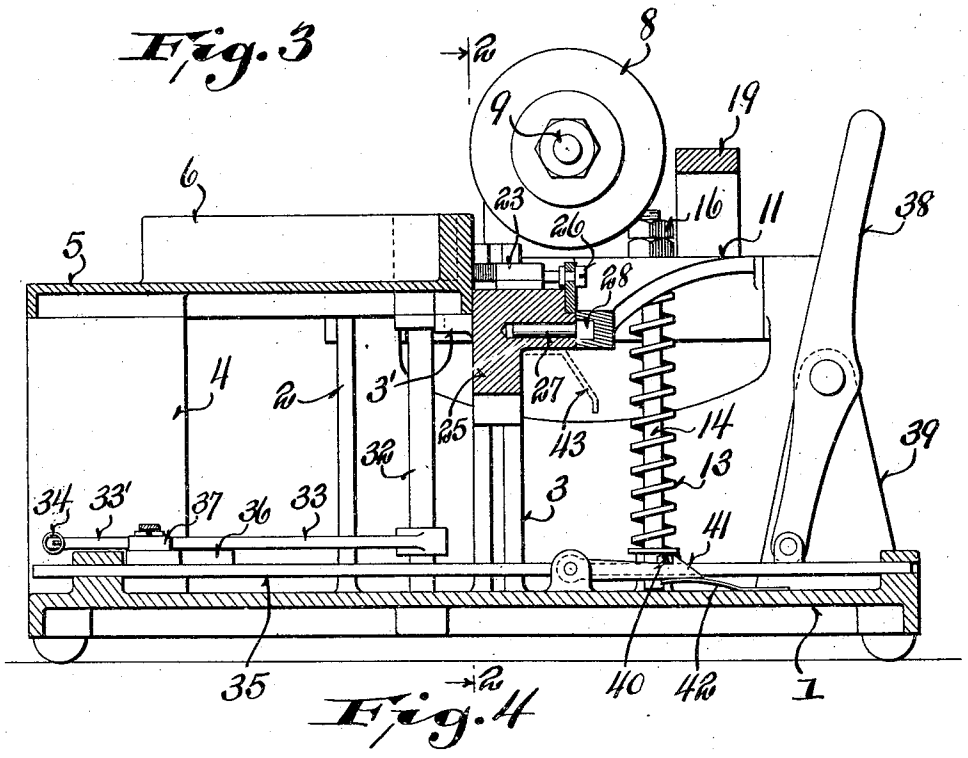
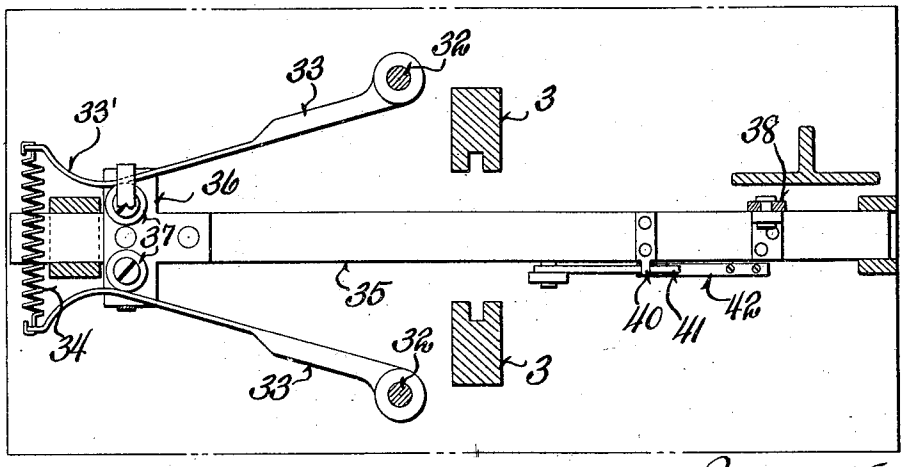


Fig. 4



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Patented Mar. 18, 1930 1,751,137

UNITED STATES PATENT OFFICE

EDMUND PAUL EHRLINGER, OF JANESVILLE, WISCONSIN

POWER-DRIVEN MITERING MACHINE FOR PRINTERS

Application filed February 27, 1928. Serial No. 257,526.

This invention relates to a power driven mitering machine for printers.

In printing, it is frequently necessary to cut the slugs or spacers with mitered ends, so that they can be accurately fitted in the block of type carried by the chase. This operation is difficult to accurately perform and consequently it has usually been relatively crude.

This invention is designed to provide a very simple power driven mitering machine especially adapted for printers' use, although obviously it could be used in other capacities, and which is so constructed that the slugs may be slipped in pairs into position and may be automatically clamped by the machine and quickly cut with mitered ends.

Further objects are to provide a machine in which the cutting is secured by means of a grinding wheel having a cylindrical face so that no accurate angular facing is required for the grinding wheel, but merely a flat facing.

Further objects are to provide a mitering machine for printers' use which is so constructed that the machine will automatically grip a plurality of slugs when the operating hand lever is moved in one direction, and which will release the slugs upon completion of the grinding movement so that the utmost speed may be obtained.

An embodiment of the invention is shown in the accompanying drawings in which:

Figure 1 is a plan view of the entire machine;

Figure 2 is a sectional view on the line 2—2 of Figure 3;

Figure 3 is a sectional view on the line 3—3 of Figure 1;

Figure 4 is a fragmentary plan view of the lower portion of the mechanism;

Figure 5 is a perspective view of one of the slugs showing at one end, in full lines, the bevelled edge produced by the machine, and showing in dotted lines at the other end, the corresponding bevel that can be produced at the other end of the slug, if desired.

Referring to the drawings, it will be seen that the machine comprises a base portion 1 from which rises a supporting arm or bracket 2, such arm projecting laterally of the machine. The base is also provided with a pair of upwardly projecting guides 3 and with a pair of rear spaced pillows 4. A table top 5 is secured to the rear pillows 4 and to inwardly projecting lugs 3′ (see Figure 3) carried by the uprights or guides 3. This table top is provided with a pair of slug guides 6 which are arranged at right angles to each other, as shown in Figure 1, and which may be formed integrally with the table top, if desired. These guides are adapted to have the slugs 7 held in contact therewith and the bottom of the slugs is adapted to rest upon the table top.

The means for cutting away the ends of the slugs to form the bevel, consists of a grinding wheel or other cutting wheel 8 carried by the shaft 9 of a small electric motor 10. This electric motor is carried by a pivotally mounted frame 11. The frame 11 is pivoted upon a pintle pin 12 carried by the arm 2 (see Figures 1 and 2). It is urged upwardly by means of a spring 13 loosely coiled about a rod 14 pivoted at its lower end to a bracket 15 upon the base. The rod passes loosely through an aperture in the frame 11 and is provided with lock nuts 16 which limit the upward motion of the frame 11 under the action of the spring 13. The motor is provided with a base 17 (see Figures 1 and 2) which is dovetailed into guides formed in the pivoted frame 11. It is adjusted towards or from the work by means of the screw 18 (see Figure 1). The frame 11 is rocked by means of a handle or lever 19 which is pivotally held to the frame 11 by means of the bolt 20. The lever projects outwardly from the bolt and carries a pin 21 which rides within an arcuate slot 22 formed in the frame 11 and adapted to limit the rocking motion of the lever with respect to the frame.

The positioning of the slugs is secured by means of a stop 23 which, as may be seen from Figures 1, 2 and 3, is provided with a pointed end with the faces of the pointed ends arranged at right angles to each other and against which the ends of the slugs 7 are adapted to contact. This guide 23 is provided with a portion 24 of dovetail shape,

which fits a corresponding slot formed in a vertically movable crosshead 25 (see Figure 3). It is adjusted by means of the screw 26 (see Figure 3). The crosshead is guided by means of the guides 3 previously mentioned, such crosshead and guides being provided with slot and tongue connections. The crosshead is provided with a pin 27 (see Figures 2 and 3), the pin fitting within a block 28 carried in a rectangular slot 29 formed in a projecting arm 30 of the frame 11. Normally, the crosshead is held in the position shown in the drawing, but it is obvious that when the pivoted frame 11 is depressed by means of the hand lever 11, that the stop 23 will be moved downwardly out of the way of the downwardly moving grinding wheel or cutting wheel 8.

Means are provided for holding the slugs 7 in contact with the guides 6 formed on the table top. These means comprise a pair of arms 31 (see Figure 1) which are rigidly carried by upright shafts 32 projecting upwardly through the table top. The shafts 32, as may be seen from Figures 3 and 4, carry arms 33 which terminate in rounded and somewhat yielding portions 33′ (see Figure 4). The extreme ends of the arms 33 are drawn towards each other by means of the tension spring 34. A slide 35 is guided by the base portion of the device, as shown in Figures 3 and 4, and is provided with a head 36 carrying a pair of spaced rollers 37. These spaced rollers are adapted to force the arms 33 apart when the slide 35 is moved inwardly and, consequently, to force the arms of gripping dogs 31 into engagement with the slugs 7 (see Figure 1). The slide 35 is moved inwardly by means of the lever 38 (see Figures 3 and 4). This lever 38 is connected to the slide at its lower end and is pivotally mounted intermediate its ends upon a bracket 39 carried by the base 1. It is adapted to be moved into the position shown in Figures 3 and 4 by means of the lever or handle 19. This is accomplished by rocking the handle towards the outer side of the machine (see Figure 1). The handle contacts in this position with the lever 38 and consequently rocks the lever outwardly and forces the slide 35 inwardly. This slide carries a pin 40 (see Figures 3 and 4) which is adapted to be engaged by the locking pawl 41, such pawl being urged upwardly by means of a leaf spring 42.

It is apparent, therefore, that when the operator rocks the lever or handle 19 outwardly, that he clamps the slugs 7 against the guides 6. In order to automatically release the slugs, a downwardly projecting tongue 43 is carried by the crosshead 25 (see Figure 3). When the table is depressed, the crosshead is depressed, as previously described, and the tongue 43 contacts with the latch or pawl 41 and thus releases the slide 35. The tension of the spring 34 and the angular relation of the arms 33 cause the slide to move forwardly and cause the locking dogs 31 (see Figure 1) to release the slugs.

It is apparent, therefore, that in operating the machine, all that is necessary is to position the slugs upon the table 5 and slide them forwardly, until their front edges contact with the stop 23. Thereafter, the operator rocks the handle or lever 19 outwardly and thus locks the slugs in place. Thereafter, he depresses the frame 11 by pressing downwardly upon the handle or lever 19 and causes the cylindrical face of the grinding or cutting wheel 8 to pass over the projecting ends of the slugs and correspondingly bevel them. Upon completion of the downward motion, the trip tongue 43 releases the pawl 41 and consequently the dogs 31 move outwardly away from the slugs and release the slugs.

It is to be noted particularly that the angularly set guides 6 converge towards a point, and that the stop 23 has its pointed end at the point of convergence of the angularly set guides. Further, it is to be noted particularly that this stop has its faces set at right angles to each other. The result of this construction is that the machine will automatically take care of any size of width of slugs and cut these slugs for a correct and true miter, irrespective of the width of slug and without any adjustment of the machine whatsoever to take care of this varying width of slug.

It is apparent therefore that a very simple type of power operated printers' miter has been provided by this invention which may be very quickly operated even by an unskilled person.

Further, it is to be particularly understood that other types of cutters may be used besides the grinding wheel indicated.

It is apparent also that various modifications in the precise manner in which the device is formed, may be made without departing from the spirit of the invention, therefore, although the invention has been described in considerable detail, such description is intended as illustrative rather than limiting as the invention may be variously embodied and as the scope of such invention is to be determined as claimed.

I claim:

1. A mitering machine for printers' use comprising a table upon which slugs may be placed, a pair of guides set at ninety degrees to each other against which the slugs may bear, a pair of dogs for clamping said slugs against said guides, an adjustable stop positioned opposite the point of union of said guides and against which the ends of the slugs may be positioned, a slidable crosshead carrying said stop, a pivotally mounted frame operatively connected to said crosshead and adapted to move said crosshead downwardly when said frame is depressed, an electric mo-

tor carried by said frame and having a cylindrical grinding wheel adapted to remove the projecting ends of said slugs, a hand lever pivotally mounted upon said frame for depressing said frame, mechanism operated from said hand lever for rocking said dogs against said slugs, and mechanism for releasing said dogs when said frame completes its downward motion.

2. A mitering machine for slugs comprising a body portion having guides against which slugs may be held, a stop in front of the ends of said guides against which the slugs may bear, means for simultaneously moving the stop out of the way and removing the ends of the slugs.

3. A printer's mitering machine comprising a body portion, an angularly set guide carried by said body portion and against which a slug may be positioned, means for holding said slug against said guide, an adjustable stop normally positioned adjacent the end of the guide and against which the end of the slug may be pressed, means for moving said stop from its normal position, and means for removing the end of the slug.

4. A printer's mitering machine comprising a body portion, an angularly set guide carried by said body portion and against which a slug may be positioned, means for holding said slug against said guide, an adjustable stop positioned adjacent the end of the guide and against which the end of the slug may be pressed, and means for removing the end of the slug.

5. In a printer's mitering machine, the combination of a pair of angularly set converging guides against which slugs may be placed, an adjustable stop for the ends of the slugs, said stop having a pointed end directed to the point of convergence of said guides, said stop having faces arranged at an angle to each other.

6. In a printer's mitering machine, the combination of a pair of angularly set converging guides against which slugs may be placed, a stop for the ends of the slugs, said stop having a pointed end directed to the point of convergence of said guides, said stop having faces arranged at right angles to each other.

In testimony that I claim the foregoing I have hereunto set my hand at Janesville, in the county of Rock and State of Wisconsin.

EDMUND PAUL EHRLINGER.