Oct. 10, 1944. L. A. THATCHER 2,360,174

PRINTING DEVICE GUIDE MEANS

Original Filed May 5, 1939 3 Sheets-Sheet 1

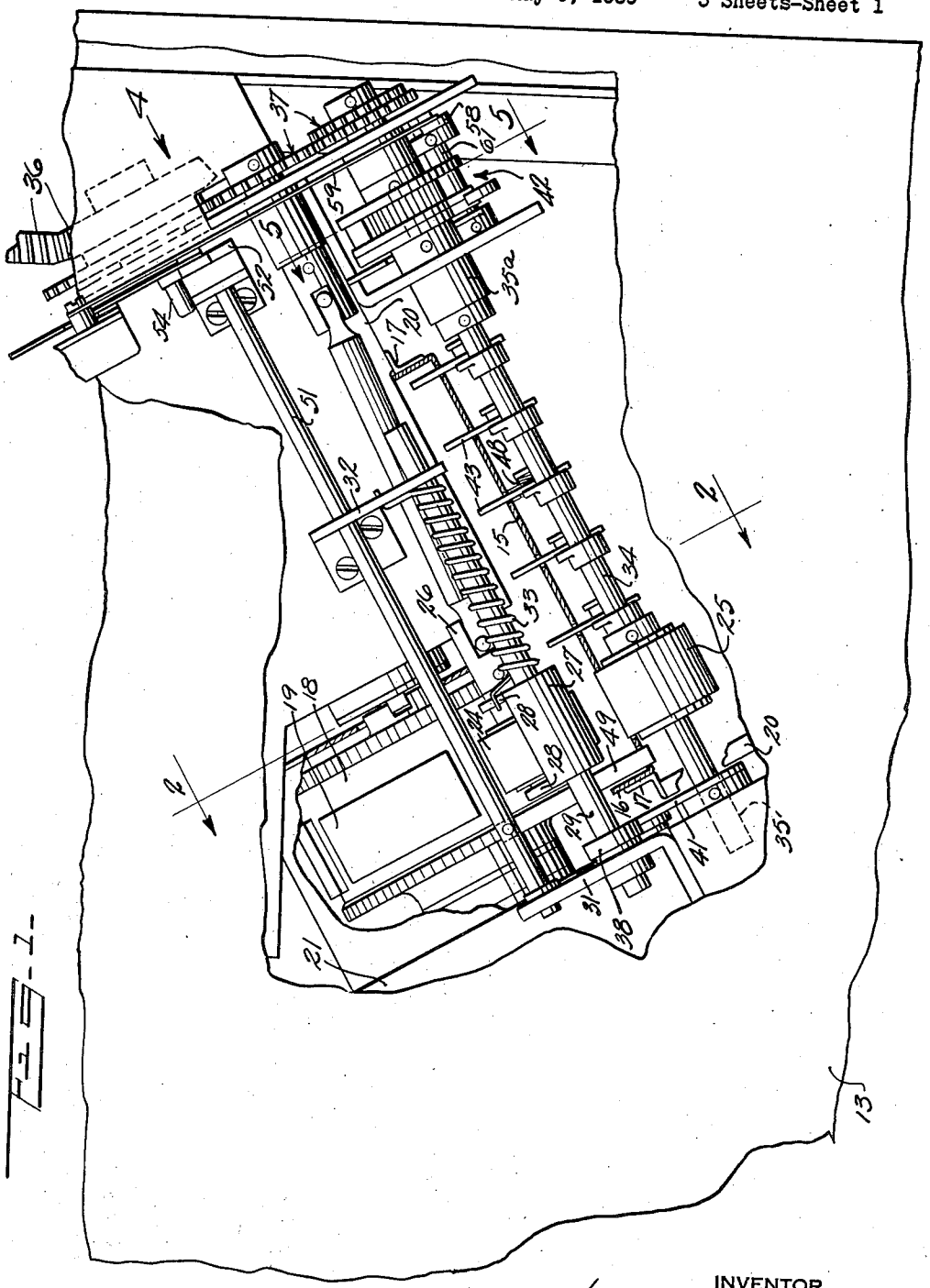


FIG. 1.

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Fig. 2.

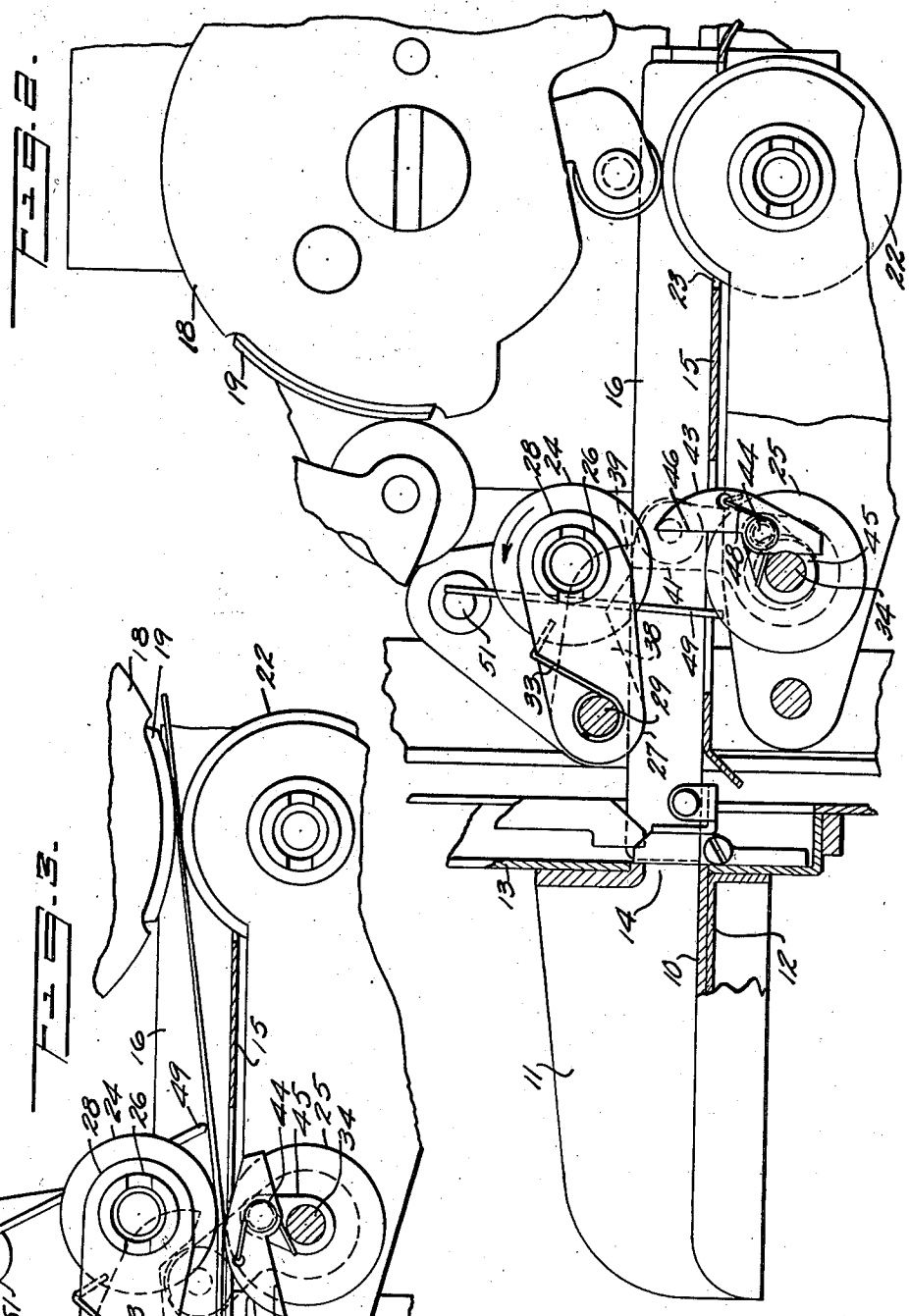


Fig. 3.

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FIG. 6.

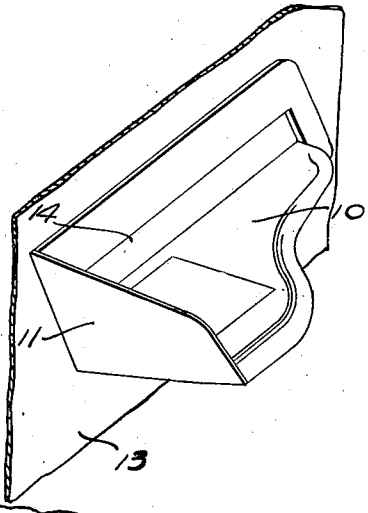


FIG. 5.

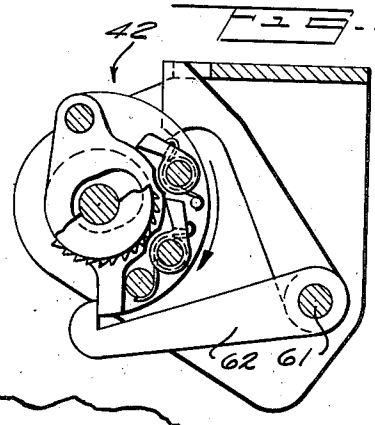


FIG. 4.

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UNITED STATES PATENT OFFICE

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PRINTING DEVICE GUIDE MEANS

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Original application May 5, 1939, Serial No. 271,848. Divided and this application April 4, 1942, Serial No. 437,640

1 Claim. (Cl. 101—235)

This invention relates to a machine of the coin operated type for printing postage upon letters, such as illustrated and described in a co-pending application, Serial Number 271,848 of which the present application is a division. More particularly the invention relates to novel letter guide means, whereby letters are normally positioned in correct alignment with the printing devices.

It is one object of the invention to provide a letter guide outside of the front wall of the machine casing in an angular position, such that when letters are inserted in the machine, the placing of same upon the platform of the guide will normally direct one edge of the letter toward the lower side wall of the guide, which wall is the controlling factor in assuring proper alignment of the letter with the printing means.

It is another object to provide a letter stop means in the form of a plurality of fingers within the machine arranged parallel to the opening in the casing, which fingers cooperate with the letter guide in that they also effect the proper squaring of the letter prior to its passage to the printing devices.

A further object is to provide a letter operated trip device in a position adjacent the side wall of the guide means and in such close relation thereto to assure contact of the letter with the guide wall before tripping can be effected.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that various changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

A preferred embodiment of the invention is illustrated in the accompanying drawings, wherein:

Fig. 1 is a partial front view of the machine casing with a part broken away to show a portion of the printing unit, inner letter guide, and letter feed devices;

Fig. 2 is a part elevational and part sectional view taken along the line 2—2 of Fig. 1;

Fig. 3 is a fragmentary view similar to Fig. 2 showing letter feed rollers in a letter feeding position;

Fig. 4 is an end elevational view taken in the direction of the arrow 4, on Fig. 1, and showing a portion of the drive and trip mechanism;

Fig. 5 is a part elevational and part sectional view along the line 5—5 of Fig. 1, showing a portion of a clutch drive mechanism; and

Fig. 6 is a perspective view of a letter guide extending beyond the front wall of the casing.

In the operation of a postage printing machine of the coin operated type, such as disclosed in the aforesaid co-pending application, an operator must follow directions, which are carefully noted on the machine, to assure that the proper coins are inserted and that proper selection is made of the value which it is desired to have printed, before inserting letters in the machine. The operator is thus particularly concerned with the preliminary operations of coin insertion and selection and ordinarily does not center attention upon the proper positioning of the letter for insertion in the machine. It is important however, that the letter be properly positioned before it is inserted in order that a stamp impression may be properly located on the face of the letter. To assure such proper positioning a letter guide or supporting device is arranged so as to project beyond the front wall of the casing of the machine and in an angularly disposed position.

Referring to the drawings in detail, said letter guide comprises a platform 10 arranged at an angle of approximately 30 degrees and has a side guide wall 11 extending perpendicularly upward therefrom at the lower end thereof. Said platform 10 is suitably supported upon a bracket 12, which bracket is secured to the front wall of the machine casing 13. A slot 14 is also provided in the front wall of the casing, the length of which coincides with the width of the letter platform 10.

Another letter support and guide member is provided inside of the casing and comprises a platform 15 arranged in the same angularly disposed position as the letter platform 10 and in alignment therewith, and further has a side guide wall 16 extending perpendicularly upward therefrom and in alignment with the guide wall 11. Said platform 15 is suitably supported by brackets 17—17 fixed to the machine frame 20.

A stamp printing unit provided within the machine casing includes a printing drum 18 with suitable postage printing die portions 19 thereon, which drum is suitably supported at one end of a portable unit indicated at 21. An impression roller 22, Fig. 2, is mounted directly beneath the printing drum 18 and projects through an opening 23 in the letter guide platform 15.

Owing to the printing drum being positioned a substantial distance in from the front wall of the casing 13, means is provided for feeding the letter to a printing position after it has been inserted a predetermined distance within the machine. Said conveyor means comprises upper and lower feed rollers, 24 and 25 respectively, which are normally spaced apart to permit a letter to be inserted therebetween, and are adapted to become engaged in a driving relation with the opposite surfaces of a letter upon starting a printing cycle of operation. The upper feed roller 24 is mounted upon a shaft 26, which

shaft is supported at the ends of arms 28—28 of a yoked support 27. The yoked support 27 is mounted on a shaft 29, which shaft is carried by stationary brackets 31—32. A spring 33, having one end anchored to the bracket 32 and the other end in enagement with an arm 28 of the yoked support 27, is adapted to normally urge the upper roller 24 downward toward the roller 25. The lower roller 25 is mounted upon a shaft 34, which shaft is suitably carried by bearings 35—35a.

Suitable drive means is provided as fully illustrated in the aforesaid co-pending application and which will be briefly referred to here as a main source of drive 36, Fig. 1, from which a drive is taken through a train of gears 37 to effect the drive of the printing drum 18, impression roller 22 and feed rollers 24 and 25. Said drive is normally inactive and is set in motion for letter feeding and printing operations when a letter has been inserted in the machine a sufficient distance to effect a tripping operation.

As previously stated, the feed rollers 24—25 are normally spaced apart. Such spacing is provided by means of an arm 38 fixed to the shaft 29, which arm is adapted to have its forward end 39 normally rest upon a latch or stop arm 41. Said stop arm 41 is fixed to the shaft 34, which shaft is adapted to be rotated during a printing cycle of operation through one revolution under control of a one revolution clutch mechanism indicated generally at 42. During rotation of the shaft 34, the stop arm 41 rotates therewith and is thus removed from the path of the arm 38 to permit the spring 33 to become effective in rocking the yoked support 27 and roller 24 thereon downwardly, and thereby effect engagement of the roller 24 with the letter.

As previously stated, the important features of this invention pertain to the proper guiding of the letter to ensure correct placement of a postage impression thereon by the printing die surfaces of the printing drum. Such feeding is primarily assured by the angular position of the combined guide members 10—11 and 15—16.

To further assist in properly guiding the letter when inserting same in the machine, a plurality of stop fingers 43 are arranged in the path of the leading edge of the letter parallel to the slot 14 in the casing, or at right angles to the guide wall 16. Each finger 43 is individually and yieldably mounted. Referring to the mounting of one finger, the same is pivotally mounted on a stud 44 at the outer end of an arm 45, which arm is supported by the shaft 34 and includes an upwardly disposed portion having a vertical letter abutting edge 46 and a downwardly disposed portion 47 having one edge thereof normally urged against the shaft 34 by means of a spring 48.

When a letter is moved along the guides 10—15 with the left edge thereof in engagement with the walls 11 and 16, the leading edge of the letter will squarely engage the vertical edges 46 of the stop fingers, thereby assuring correct alignment of the letter with the printing die portion 19 of the printing drum. If the letter should be slightly askew as it is moved toward the stop fingers 46, its engagement with said stop fingers will cause the letter to become properly positioned.

If the leading edge of the letter is squarely in engagement with the stop fingers, but with the left edge thereof removed from the side guiding walls 11—16, the machine cannot be tripped for a cycle of operation. To provide for the latter restrication, a letter engaging trip finger 49 is positioned directly adjacent the guide wall 16, as best shown in Fig. 1. With the trip finger 49 so arranged, it is obvious that a letter must have one edge in engagement with the guide wall 16 to properly engage the trip finger for a tripping operation.

The trip finger 49 is secured at its upper end to a shaft 51, which shaft is freely mounted in brackets 31—32 and has a lever 52 secured to one end thereof, as shown in Figs. 1 and 4. By means of a spring 53 and a stop pin 54, the shaft 51 and trip finger 49 are urged in a clockwise direction, as viewed from Fig. 4. At the outer end of the lever 52 a hooked link 55 is mounted, which link is adapted to cooperate with a lever 56 to rock said lever about a pivot 57 during a tripping operation. Rocking of said lever 56 will effect the rocking of another lever 58 through link 59, to thereby rock a shaft 61. Rocking of the shaft 61 will rock a lever 62 secured thereto, to thereby effect the release of clutch 42, Figs. 1 and 5, and effect the drive of shaft 34, through the driving gear train 37. The drive of said shaft 34 will effect removal of the stop arm 41 from the path of the arm 38, thereby permitting the upper feed roller 24 to be urged into engagement with the letter. Since the feed rollers 24 and 25 are driven, the letter will be advanced thereby as best shown in Fig. 3.

Coincident with the tripping of the clutch 42, and immediately thereafter, a trip is effected to release the printing drum for its cycle of operation. The mechanism for accomplishing the trip and drive of the drum is not included in this description but may be found in the aforesaid co-pending application.

Upon completing a full revolution of shaft 34, the stop arm 41 will have engaged the end 39 of arm 38, and will have removed the feed roller 24 from engagement with the letter. Further feeding of the letter will be accomplished by the printing drum.

Owing to the yieldable mounting for the stop fingers 43, said fingers are adapted to bear against the lower surface of the letter, as shown in Fig. 3, until the letter has passed free of the rollers 24—25, whereupon the springs 48 will return the fingers to their stop positions as indicated in Fig. 2.

Having described the invention, what is claimed is:

In a machine for printing value stamp impressions upon letters, a rotary printing member, a casing having a wall spaced from the printing member and an inclined slot therein through which letters may be inserted when presenting same for printing, a letter guide projecting outwardly of the casing to provide an approach to the slot and including an inclined platform coinciding with the angularity of the slot, a guide wall at the lower edge of and perpendicular to the platform, whereby a letter upon being placed on the platform will normally move toward the guide wall and be in proper position for insertion through the slot in correct alignment with the printing member, a letter stop back of the casing wall including a plurality of spaced fingers positioned parallel to the slot to further effect proper alignment of the letter before reaching a printing position, and a letter actuated trip member immediately adjacent the guide wall, whereby tripping to effect a printing cycle of operation may be performed only when one edge of a letter is substantially in engagement with the guide wall.

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