

July 5, 1949.

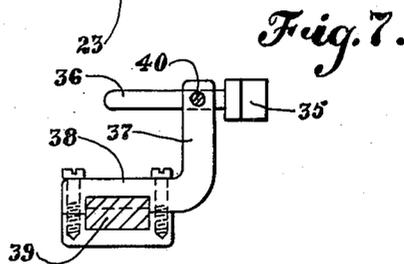
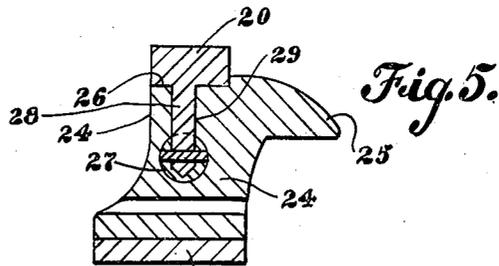
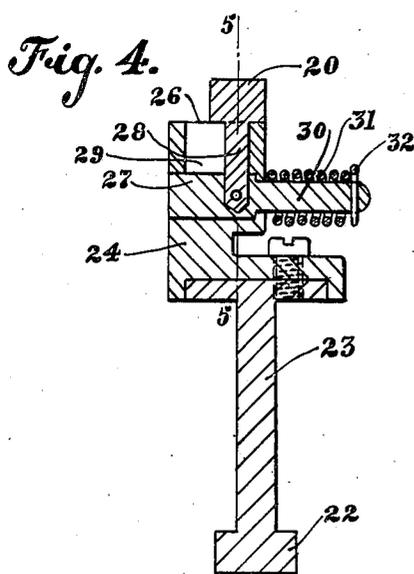
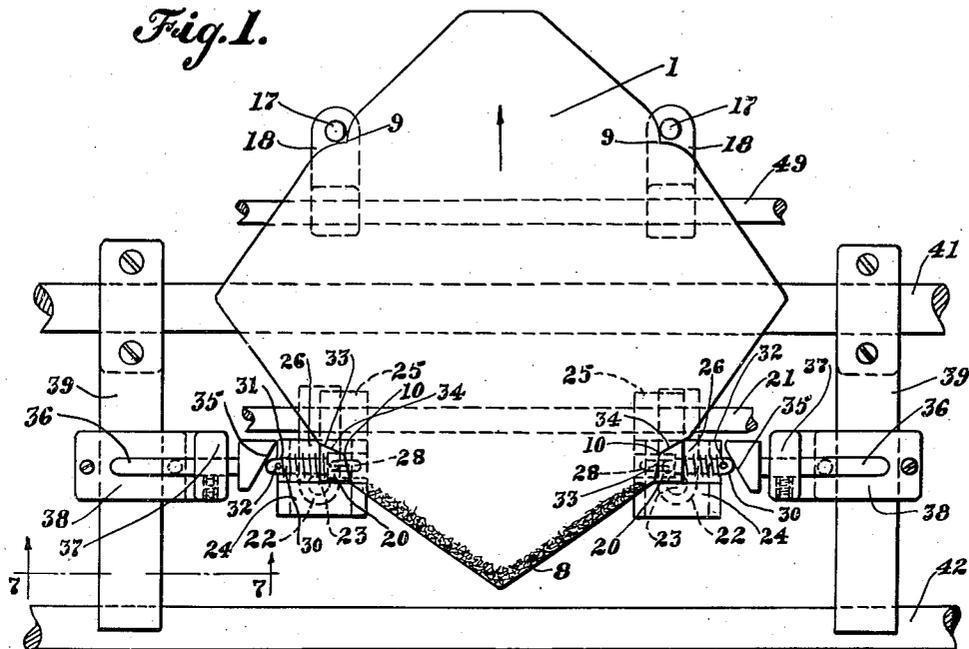
S. W. HENRY

2,474,944

REGISTERING DEVICE FOR ENVELOPE BLANKS

Filed Jan. 12, 1946

3 Sheets-Sheet 1



INVENTOR.

BY Shala W. Henry
Harold Smith & Son
Attys.

July 5, 1949.

S. W. HENRY

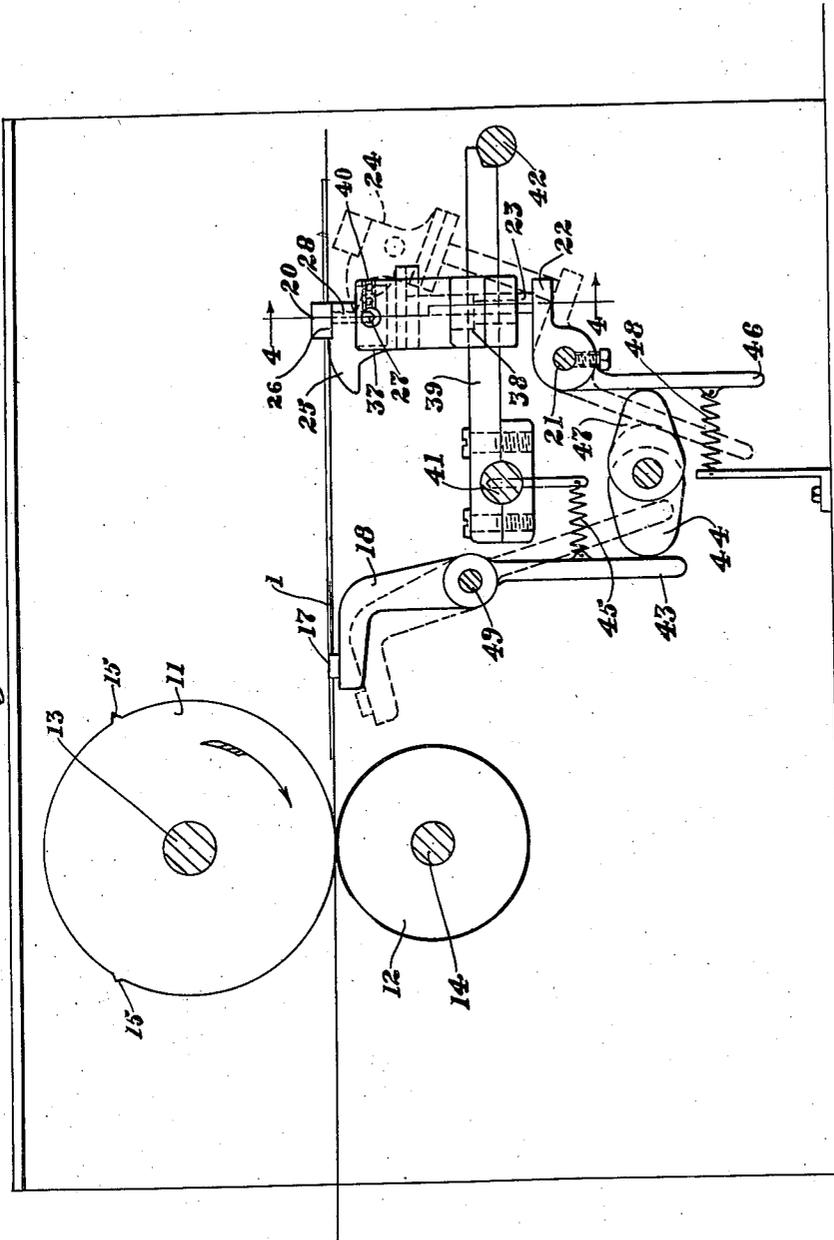
2,474,944

REGISTERING DEVICE FOR ENVELOPE BLANKS

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Fig. 2.



INVENTOR.
Shala W. Henry
BY
Hazard Smith Starnaub
Attys.

July 5, 1949.

S. W. HENRY

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REGISTERING DEVICE FOR ENVELOPE BLANKS

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Fig. 3.

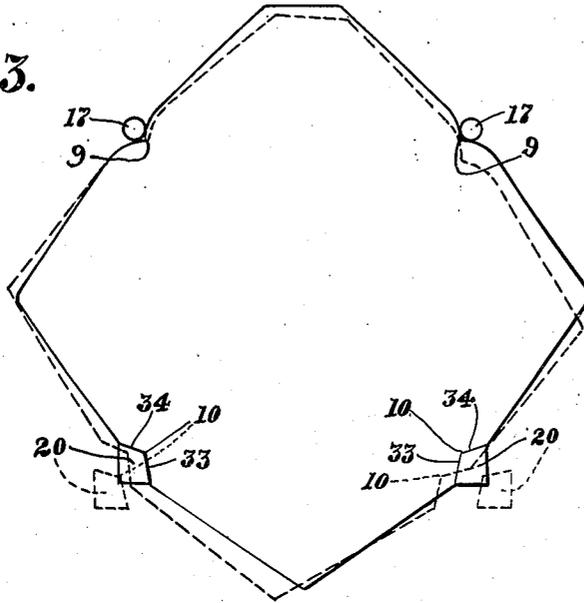
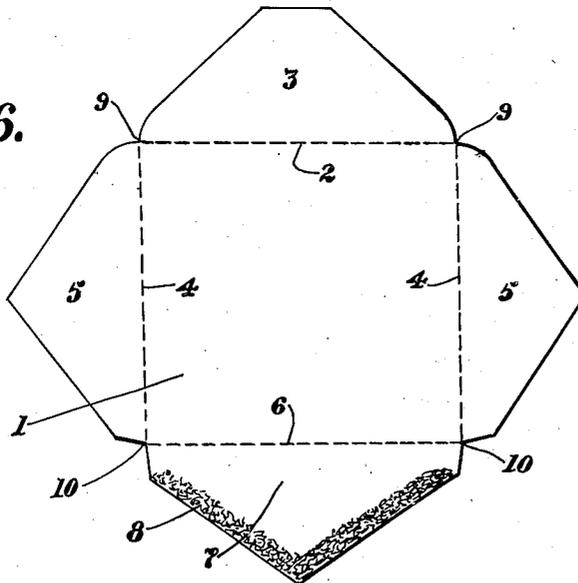


Fig. 6.



INVENTOR.

Shala W. Henry
BY Heard Smith & Stewart
Attys.

UNITED STATES PATENT OFFICE

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REGISTERING DEVICE FOR ENVELOPE
BLANKSShala W. Henry, Westwood, Mass., assignor to
Boston Envelope Co., Dedham, Mass., a corpora-
tion of Massachusetts

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5 Claims. (Cl. 271—2)

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This invention relates to a machine for making envelopes.

Such machines are commonly equipped with creasing means, frequently in the form of creasing rolls, for making in each envelope blank the creases where the blank is to be folded in forming the envelope.

In order that each envelope may be properly formed, it is important that the creases should be correctly placed on the blank.

It is, therefore, one of the objects of my present invention to provide novel means by which each envelope blank is correctly positioned before it is fed to the creasing means, thereby to insure that the creases in each envelope blank will be correctly positioned.

In order to give an understanding of the invention, I have illustrated in the drawings a selected embodiment of my invention which will now be described and after which the novel features will be pointed out in the appended claims.

In the drawings:

Fig. 1 is a fragmentary plan view illustrating my improved means for properly positioning each envelope blank as it is fed to the creasing rolls.

Fig. 2 is a vertical sectional view of the device shown in Fig. 1.

Fig. 3 is a view illustrating the way my improvements function to straighten an improperly placed envelope blank.

Fig. 4 is a section on the line 4—4, Fig. 2.

Fig. 5 is a section on the line 5—5, Fig. 4.

Fig. 6 is a view showing an envelope blank with the creases properly made therein.

Fig. 7 is a section on the line 7—7, Fig. 1.

Referring first to Fig. 6, 1 indicates an envelope blank from which an envelope is to be made, said blank being provided with the crease 2 on which the bottom flap 3 of the envelope is folded over, and the top crease 6 on which the sealing flap 7 is folded over, the latter being shown as provided with the gummed portion 8 for the sealing of the envelope. In the final forming of the envelope the end flaps 5 of the blank are folded over on the fold lines 4.

Envelope blanks are commonly made with the indentations 9 at the points where the creases 2 and 4 meet and other indentations 10 at the points where the creases 4 and 6 meet.

When each one of the uncreased blanks with its indentations is fed to the creasing means of the envelope machine, it is important that the blank should be properly positioned so that when it is acted on by the creasing means, the creases will be formed correctly as indicated in Fig. 6 that is, the crease 6 will be formed so as to extend from the apex of one indentation 10 to that of the other; the crease 2 will be formed to extend from the apex of one indentation 9 to that of the other.

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If the blank is improperly positioned with relation to the direction of feed when it is fed to the creasing means, the creases will not be formed correctly on the blank and the envelope made from the blank will be defective.

As stated above, it is the object of the present invention to provide novel means to insure that each envelope blank will be properly fed to the creasing means.

The creasing means herein shown comprises the usual creasing rollers 11 and 12 which are mounted on suitable shafts 13 and 14 and are driven in any appropriate way. The creasing roll 11 is shown as having the usual creasing bars 15 on its periphery, one of which is commonly made adjustable to adapt the roll for creasing envelope blanks of different sizes. The roll 12 is usually made of rubber. When an envelope blank 1 is fed between the creasing rolls, the creasing bars 15 on the roll 11 will operate to produce the two creases 2 and 6 in the blank as it passes between the creasing rolls.

The means I have herein shown for properly positioning each envelope blank just prior to its delivery to the creasing rolls comprises the usual pair of front gauges 17 adapted to engage in the notches 9 of the blank as it is fed forward, and a pair of rear gauges adapted to engage the notches 10 of the blank and which have not only a movement toward the front gauges but a movement toward each other, such dual movement functioning to shift the position of any improperly positioned blank so as to place it in the correct position for the creasing operation.

Each front gauge 17 is carried by an inverted L-shaped arm 18 which is fast on a rock shaft 49 that is mounted in the frame of the machine. Each gauge 17 is carried by the forward end of the horizontal portion of its supporting arm 18, and when the arm is in operative position, the portion carrying the gauge 17 extends horizontally and the gauge 17 projects slightly above the path of movement of the envelope blanks as they are fed to the creasing rolls. Some suitable or usual means is provided for oscillating the rock shaft 49 so as to move the arms 18 from their operative position shown in full lines Fig. 1 to their inoperative position shown in dotted lines, in which latter position the gauges 17 are moved below the path of the movement of the envelope blank.

The rear gauges which engage the notches 10 are indicated at 20. In accordance with my present invention, said gauges are mounted so that they can not only move toward and from the front gauges, but also toward and from each other thereby to correctly position the envelope blank.

The rear gauges 20 are carried by a suitable rock shaft 21 journaled in the frame of the ma-

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chine and said rock shaft has fast thereon two rearwardly extending arms 22, one for each rear gauge 20, and each arm has a post 23 rigid therewith and rising therefrom. On the top of each post 23 is mounted a head member 24 by which one of the rear gauges 20 is carried. Each head 24 is formed with the curved beak portion 25; at the rear of which the rear gauge 20 is situated, each head 24 having the flat surface 26 on which the gauge can slide transversely. Mounted in each head is a transversely extending plunger 27 which is provided with a laterally extending stem 28 operating in a slot 29 extending from the plunger 27 to the surface 26. The plunger 27 is provided at its inner end with an extension 30 which is surrounded by a coil spring 31, the latter bearing at one end against the head 24 and the other end against a collar or cotter pin 32 carried by the extension 30. The spring 31 normally holds the gauge 20 in its outer position.

During the operation of the machine, the rock shaft 21 is oscillating in timed relation with the feed of the individual envelope blanks to the creasing rolls so that when each blank is being fed forward into engagement with the front gauges 17, the rear gauges 20 have been swung into their inoperative position shown in dotted lines Fig. 1, in which position they are below the path of travel of the envelope blank. When the envelope blank has been forwarded into engagement with the front gauges 17, then the shaft 21 is operated to swing the rear gauges from the dotted line to the full line position Fig. 1, and during this movement said rear gauges move into the notches 10 of the envelope blank. The faces 33 and 34 of each gauge 20 will be of the proper shape and have the proper angle to each other to substantially conform to the shape of the notch 10. As the rock shaft 21 is turned to swing the rear gauges forwardly to bring them into the notches 10 of the blank, said gauges are each moved inwardly on the surface 26 and during such inward movement, any improperly positioned envelope blank will be shifted laterally to bring it into the proper position to have the creases correctly formed thereon. Such laterally shifting movement of the rear gauges 20 is produced by stationary cam members 35 which are situated to be engaged by the ends of the plunger extensions 30 as the gauges move from their inoperative to their operative positions. The cam members 35 are preferably adjustably mounted so that they can be set to accommodate envelopes of different sizes. Each cam member is shown as provided with a stem 36 which extends through the upright portion 37 of a bracket arm 38 that is mounted on a supporting bar 39. Each stem 36 is held in adjusted position by means of a set screw 40. The supporting bar 39 may be secured to the frame of the machine in any appropriate way. As herein shown, it is clamped at its front end to a rod 41 extending transversely of the machine and at its rear end it rests on a second rod 42; these rods being such as are usually found in envelope machines of this type.

The rock shafts 49 and 21 may be operated in timed relation by any suitable means, and I have shown herein a suitable cam mechanism for thus oscillating the shafts. The shaft 49 has an arm 43 depending from it which is actuated by a cam 44; said arm having a pulling spring 45 connected thereto for maintaining contact of the arm with the cam. The shaft 21 is also shown as having a depending arm 46 which is acted on by a suitable cam 47; said arm also being further acted on by

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a pulling spring 48 which holds the arm in engagement with the cam. The two cams 44 and 47 may be driven from any appropriate moving part of the machine.

Fig. 3 illustrates the manner in which the rear gauges operate to straighten up any improperly placed envelope just before it is fed to the creasing rolls.

If it be assumed that an envelope which is being fed to the creasing rolls has the improper angular position shown in dotted lines Fig. 3, it will be apparent that if the envelope were fed to the creasing rolls in such improperly placed angular position, the creases 2 and 6 would not be correctly formed on the blank.

With my invention, however, as the rear gauges move from their inoperative position shown in dotted lines Figs. 1 and 3 into their operative position shown in full lines, the forward movement of the gauges not only holds the envelope blank properly against the front gauges 17, but the transverse movement of the rear gauges 20 caused by the cams 35 will serve to straighten the blank and shift it from its improper angular position illustrated by the dotted lines Fig. 3, to its correct angular position illustrated by the full lines, and therefore when the front gauges are depressed or moved into their inoperative position to allow the envelope blank to be fed to the creasing rolls, said envelope blank will be properly positioned and the creases 2 and 6 will thereby be correctly made in the blank.

I claim:

1. In an envelope machine, a pair of front gauges to engage notches in the two adjacent leading sides of the envelope blank as it is fed forward, a rock shaft extending at right angles to the direction of feed, a pair of brackets carried thereby, a rear gauge mounted on each bracket and movable thereon in a direction toward the other gauge, each rear gauge having a cam-engaging projection, means to oscillate the rock shaft thereby to move the rear gauges toward the front gauges, and a stationary cam with which each projection is brought into engagement during the final portion of the forward movement of the rear gauges and by which said rear gauges are shifted towards each other thereby to straighten any improperly positioned envelope blank which is engaged by the front gauges.

2. In an envelope machine, a pair of front gauges to engage notches in the two adjacent leading sides of an envelope blank as it is fed forward and thereby arrest its forward movement, a rock shaft, a pair of brackets carried thereby, a rear gauge mounted on each bracket and provided with a lateral projection, each rear gauge being movable on its bracket toward and from the other rear gauge, means to oscillate the rock shaft thereby to move the rear gauges toward the front gauges, and a stationary cam situated to be engaged by each projection during the final forward movement of the corresponding rear gauge thereby to move said rear gauges toward each other as they move toward the front gauges.

3. In an envelope machine, a pair of front gauges to engage the two adjacent leading sides of an envelope blank as it is fed forward, a rock shaft, a pair of brackets carried thereby, each bracket having a head portion, a plunger mounted in each head portion for movement relative thereto in a direction transverse to the direction of feeding movement of the envelope blank, a rear gauge carried by each head portion and rigidly connected to the corresponding plunger, means

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to rock said rock shaft thereby to give the rear gauges a movement toward the front gauges, and stationary cam members situated to be engaged by said plungers during the final forward movement of the rear gauges thereby to move the plungers and the gauges connected thereto toward each other.

4. In an envelope machine, a pair of front positioning gauges to engage the two adjacent leading sides of an envelope blank as it is fed forward, a rock shaft, a pair of brackets thereon, a rear gauge mounted on each bracket for limited movement toward and from the other gauge, a spring acting on each rear gauge and normally holding it in an outer extreme portion, means to rock the rock shaft and thereby give the rear gauges a forward swinging movement, and stationary cam means operative during the final forward movement of the rear gauges to move them on the brackets toward each other in opposition to said springs, thereby to correct the position of a misplaced envelope blank.

5. In an envelope machine, a pair of front gauges to engage the two adjacent leading sides

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of an envelope blank as it is fed forward, a rock shaft, a pair of rear gauges mounted thereon to have a limited movement toward and from each other, means to rock said rock shaft thereby to give said rear gauges a forward swinging movement toward the front gauges, each rear gauge having a cam-engaging part, and stationary cams situated to be engaged by said cam-engaging parts during the final forward movement of the rear gauges to move them towards each other thereby to correct the position of a misplaced envelope blank.

SHALA W. HENRY.

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