

L. E. MORRISON & S. H. PLUM, 2D.
MECHANISM FOR SEPARATING ENVELOPS.
APPLICATION FILED AUG. 10, 1909.

1,101,467.

Patented June 23, 1914.

3 SHEETS—SHEET 1.

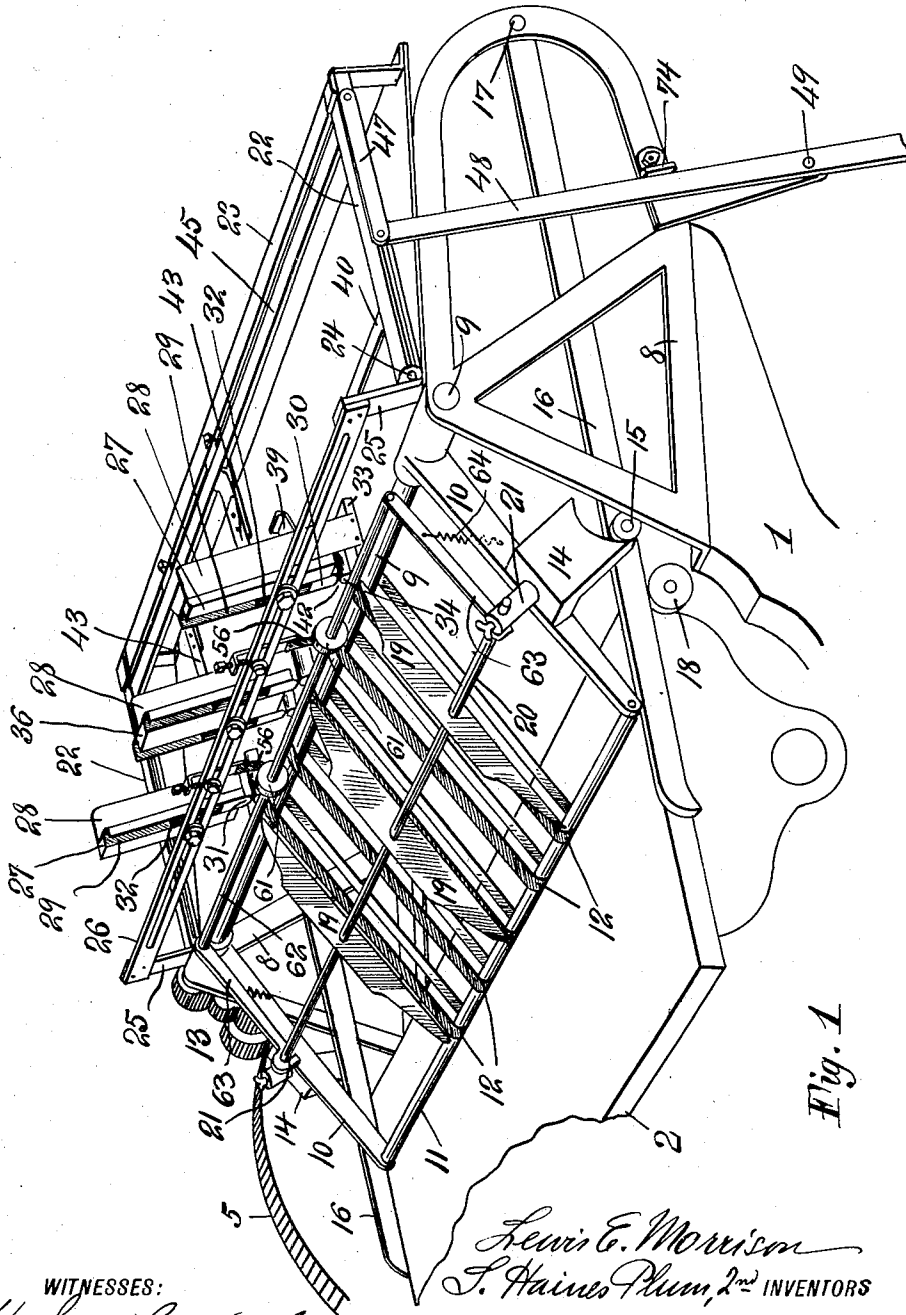


Fig. 1

WITNESSES:

H. G. Leard

M. M. Riemann

Lewis E. Morrison
S. Haines Plum, 2nd INVENTORS

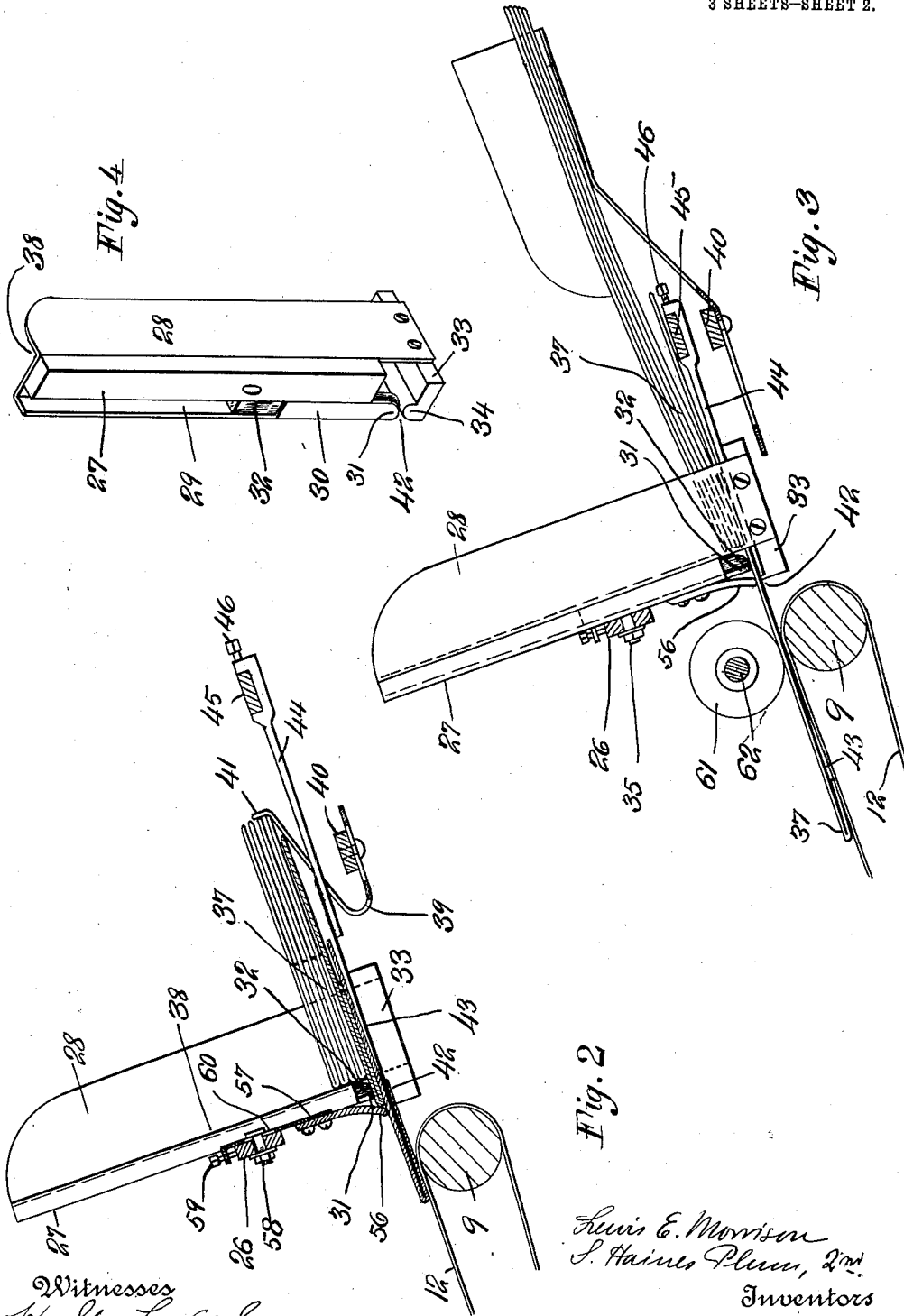
BY *Frank A. Gornigberg*
ATTORNEY

L. E. MORRISON & S. H. PLUM, 2D.
MECHANISM FOR SEPARATING ENVELOPS.
APPLICATION FILED AUG. 10, 1909.

1,101,467.

Patented June 23, 1914.

3 SHEETS-SHEET 2.



Witnesses
H. G. Leard
M. M. Riemann

Louis E. Morrison
S. Haines Plum, 2nd.
Inventors
By their Attorneys
John E. A. Horrigsberg.

APPLICATION FILED AUG. 10, 1909.

Patented June 23, 1914.

Fig. 6

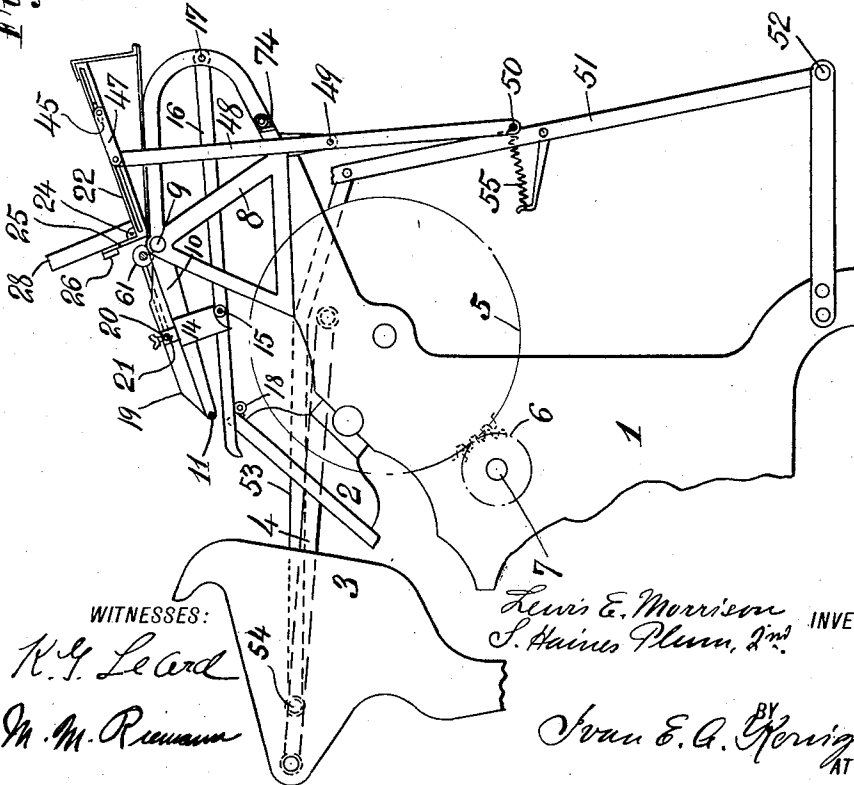


Fig. 5

WITNESSES:

K. G. Leard

J. M. Renshaw

Lewis E. Morrison
S. Haines Plann, 2nd. INVENTORS

Ivan E. G. Hennigberg
BY
ATTORNEY

UNITED STATES PATENT OFFICE.

LEWIS E. MORRISON, OF NEWARK, AND STEPHEN HAINES PLUM, 2d, OF MADISON, NEW JERSEY, ASSIGNORS TO THEMSELVES, AND MATTHIAS PLUM, OF NEWARK, NEW JERSEY.

MECHANISM FOR SEPARATING ENVELOPS.

1,101,467.

Specification of Letters Patent.

Patented June 23, 1914.

Application filed August 10, 1909. Serial No. 512,269.

To all whom it may concern:

Be it known that we, LEWIS E. MORRISON and STEPHEN HAINES PLUM, 2d, citizens of the United States of America, and residents of, respectively, Newark, Essex county, New Jersey, and Madison, Morris county, New Jersey, have invented certain new and useful Improvements in Mechanism for Separating Envelops, of which the following is a specification.

This invention relates to improvements in mechanisms for separating envelopes, bags or the like and comprises such details of construction and arrangement of parts as is hereinafter set forth while reference is had to the accompanying drawings in which—

Figure 1 is a perspective view of a separating mechanism embodying the invention. Fig. 2 is a detail view partly in section showing the operation when a certain size envelopes are being separated. Fig. 3 is a similar view but showing larger size envelopes being operated upon. Fig. 4 is a detail perspective view of one of the pocket members used in supporting the envelopes. Fig. 5 is a side elevation of a platen printing press equipped with the invention. Fig. 6 is a plan view of the separating mechanism. Fig. 7 is a rear view of the parts shown in Fig. 6. Fig. 8 is a perspective view of a frame used to support the larger size envelopes.

Referring to Fig. 5 the numeral 1 denotes the frame of the press which in this instance is shown as being of a well known type usually called a jobber. The movable platen is marked 2, and 3 is the movable form member which latter is oscillated by means of the connecting link 4 pivoted to the gear 5 which is driven by the pinion 6 from the main shaft 7. These parts are common to most presses of this type and their operation is well understood in the art. In front of the platen on either side of the machine is mounted a bracket 8 in which is journaled an upper tape shaft 9 which carries two arms 10 in the free ends of which a lower tape shaft 11 is journaled. Tapes 12 pass over the tape shafts and are driven constantly by the same from right to left by means of a train of gears 13 carried on the one bracket 8 and which in turn is driven from the aforesaid gear 5. Each arm 10 carries a cam 14 which coacts with a roller 15 on the levers

16 pivoted at 17 on the brackets 8. The levers 16 rest on rollers 18 mounted on the platen as shown, one on each side. Above the tapes there is provided center and side guides 19 which are adjustably carried on a guide shaft 20 supported by posts 21. The elements between and including the tape shafts and the arms 10 are hereinafter termed the tape table. This table follows the movements of the platen in such a manner that when the platen is up, the tape table is down as shown in Fig. 1 and when the platen is down the tape table is up and receives the matter to be printed from the separating mechanism. For the more detailed construction and operation of the tape table we refer to the application filed by Lewis E. Morrison on the 17 day of Feb., 1908, Ser. No. 416,203. In front of the tape table and also supported on the brackets 8 is located the separating mechanism which in this instance comprises the following elements. 22, 22 represent slotted side bars which are joined by a front bar 23 and supported in an inclined position as shown. Pivoted at 24 are the two arms 25 which are joined by the slotted bar 26 upon which latter the pocket members for supporting the envelopes are fastened. By swinging the separating means forwardly around the pivots 24 it is possible to swing the tape table upwardly to make the platen ready.

Each pocket member, Fig. 4, comprises an upright bar 27 to which is suitably fastened a bent piece of sheet metal which forms a frontwardly extending wing 28 and a rearwardly opening socket 29 the lower part of which is closed by the portion 30 of the bent piece. The lower end 31 of the portion 30 is rounded as shown. Within the said socket is loosely supported a weight 32 which preferably consists of a piece of wood shaped to fill the socket. The purpose of this weight will be explained later. At its lower end the wing 28 carries a shelf 33 having an upwardly rounded ledge 34 corresponding to the rounded end 31 aforesaid, so that a feed opening 42 is formed through which the envelopes are fed to the tapes. The pocket member is fastened to the slotted bar 26 by bolts 35 and may thus be adjusted along said bar to accommodate various sizes of envelopes. If one pile of envelopes is to be separated then only the two end pocket

members are used. If two piles of envelopes are to be separated then a center pocket member is fastened between the end members as shown in the drawing. The center pocket member embodies the same elements as the end members but for the sake of convenience only one bar 36 is used to support the other elements as shown.

The envelopes are supported in two piles 37, 37 side by side as shown in Fig. 6. The corners of the envelopes are confined within the corners 38 formed by the aforesaid bent member and below the envelopes are supported on the ledges 34 as best seen in Fig. 7. The envelopes are placed on the ledges with the flaps down and pointing to the front. Looking at Fig. 5 the front of the machine is to the right and the rear to the left. The front edges of the envelopes are supported on the bracket 39, Fig. 2. These brackets, one for each pile are provided with slots so that they may be fastened by screws and adjusted on the transverse bar 40 which is fastened to the slotted side bars 22. Each bracket is provided with an upturned lip 41 which prevents displacement of the lower envelopes. The bottom envelop is separated from the pile by means of separating fingers 43 which preferably consist of a thin piece of spring steel screwed fast to the finger strips 44 which in turn are carried by the finger bar 45, on which the fingers are adjustable by means of the screws 46. The finger bar is operated back and forth in the slotted bars 22 by means of links 47 and levers 48. These latter, one on each side, are pivoted at 49 on the brackets 8 and their lower ends are connected by a transverse rod 50. The levers 48 are oscillated on their pivot 49 by the levers 51, one on each side, which are journaled on a shaft 52 and rocked by the link 53 pivoted at 54 on the connecting link 4. As the latter reciprocates the levers 51 are oscillated around the shaft 52 and they in turn by abutting the rod 50 cause the levers 48 to swing around their pivot 49. The stroke to the left, Fig. 5, of the finger bar 45 is limited by the stroke to the right of the levers 51, and the stroke to the right of the finger bar 45 is limited by stops 74 on the bracket 8. Any extra movement of the levers 51 to the left is compensated for by the spring 55 interposed between the levers 51 and the rod 50. On the slotted bar 26 there are further provided rubber fingers 56 carried by brackets 57 which are adjusted along said bar and fastened by bolts 58 and which also are adjustable vertically by the screws 59, the brackets being slotted at 60.

The operation is as follows: As stated the envelopes are supported in piles as shown in Figs. 2, 6 and 7 and as the finger bar reciprocates the fingers 43 enter between the

flap and the envelop and the latter is pushed out from under the pile through the opening 42. As shown in Fig. 2 it sometimes happens that the envelop next to the bottom one by friction with the latter follows it out through said opening and in order to prevent this second envelop from leaving the pile before its time the rubber fingers are provided. It should be noted that the fingers are supported a distance away from the edges of the envelopes. The said figure shows clearly how the fingers 56 are bent slightly outward as the envelop passes underneath, so that the rubber by reason of its resiliency and grippy surface drags over the top of the envelop and prevents the next one from following. To still further increase the usefulness of the rubber fingers the same are preferably extended slightly below the line of the opening 42 as best seen in Fig. 7. The aforesaid weight 32 is raised as the envelop passes out and serves to prevent the front edge of the envelop from striking against the end of the portion 31 and also to some extent prevents buckling of the envelop. The feed from the separating mechanism to the tape table takes place in a straight line to prevent the envelopes from being blown out over and not reaching the tapes in the proper manner and between the center and side guides 19. When large bags or envelopes are being separated or when such matter as candy bags is being handled, Fig. 3, it is practically impossible for the fingers 43 to push the lowermost bag or envelop completely out from under pile owing to the length of the envelopes, and the fingers will have commenced to withdraw from the envelop before the latter is clear off the pile. In this instance friction rollers 61 are provided which are mounted on a shaft 62 carried in levers 63 which are hooked over the aforesaid guide shaft 20, Fig. 1. A spring 64 keeps the rollers in driving contact with the upper tape shaft 9. The envelopes in this case are fed in between the friction rollers and the tape shaft as shown in Fig. 3 and as soon as the envelop is passed to the friction roller the latter grips the envelop so to speak and feeds it out on the tapes independently of the pushing or movement of the separating fingers. By these means any adjusting of the stroke or the length of the fingers is not necessary. The larger envelopes require a different kind of support than the shorter ones and to this end the following means have been provided, see Fig. 8. In this figure the reference numerals 65 represent slotted members which carry a transverse bar 66. Upon the latter is fixed a center guide 67 and side guides 68 are adjustably mounted on the bar by means of bolts and the slots 69. The members are fastened and adjusted

along the aforesaid bar 40 and support the envelopes as shown.

The above is thought to fully describe and illustrate this invention and the operation thereof. It will be noted that the parts are very simple and particularly that any fine adjustment of the feed opening 42 is rendered unnecessary by the use of the rubber fingers. Also that different sizes of envelopes are readily handled by the mechanism which in practice has shown itself to be highly efficient and to separate envelopes practically perfectly. The friction rollers 61 may be left on the machine for use both when short and long envelopes are being handled, but they have been particularly designed for use with the latter kind only.

Various changes may of course be made in the construction and shape of the different parts and to adapt the invention to different types of printing machines but we claim all such changes as properly come within the legitimate and intended scope of the invention and the claims.

What is claimed is:—

1. The combination of a framework having inclined side members, a transverse bar pivoted to the said side members, pocket members detachably secured to the said bar for positioning the envelopes, feed openings formed in the said pocket members, weights supported above the said feed openings, rubber fingers secured to the said bar and extending below the plane of the openings, a feed table, pivoted guide rolls adapted to cooperate with the said table, pusher fingers and means for operating the same to separate the bottom envelop and to push the same through the said feed openings, below and in contact with the said rubber fingers and to the said guide rolls and feed table.

2. The combination of a framework, envelop supporting members pivoted thereon, each of the said members comprising a member bent to form a side wing and a socket, a weight in the said socket, a lip for retaining the weight, a shelf for supporting the envelopes secured to the said wing, a feed opening formed between the said shelf and the said lip, rubber fingers supported to extend below the plane of the said openings,

pusher fingers guided in the said framework and means for operating the said pusher fingers to separate the bottom envelop and to push the same through the said openings and below the said rubber fingers.

3. The combination of an inclined framework comprising a front member and slotted side members, a transverse slotted bar pivoted to the latter, envelop supporting members adjustably secured to the said bar, each of the said supporting members comprising a side guiding member and a socket formed to contain a weight, a weight in the socket, a feed opening formed beneath the said weight, rubber fingers extending below the plane of the said opening, pusher fingers guided in the said slotted side members and means for reciprocating the said pusher fingers to separate the bottom envelop and to push the same through the said openings and below the said rubber fingers and the said weights.

4. The combination of an envelop separating mechanism comprising pivoted members for positioning and supporting a pile of envelopes, fixed members for separately supporting the front edges of the envelopes, rubber fingers mounted on the said pivoted members, feed rolls mounted at the rear of the latter, pusher fingers for feeding the bottom envelop to the said feed rolls and in contact with the said rubber fingers and means for operating the said pusher fingers.

5. An envelop supporting member comprising an upright bar, a member secured thereto and bent to form a side wing, a socket formed between the said bar and the said member, a supporting shelf secured to the said wing and provided with an upwardly extending rounded ridge, a weight supported on the said ridge and within the said socket and a lip for retaining the weight within the socket.

Signed at Newark, N. J., this 28th day of July, 1909.

LEWIS E. MORRISON.
S. HAINES PLUM, 2d.

Witnesses:

C. E. DANIEL,
C. E. DANIEL.