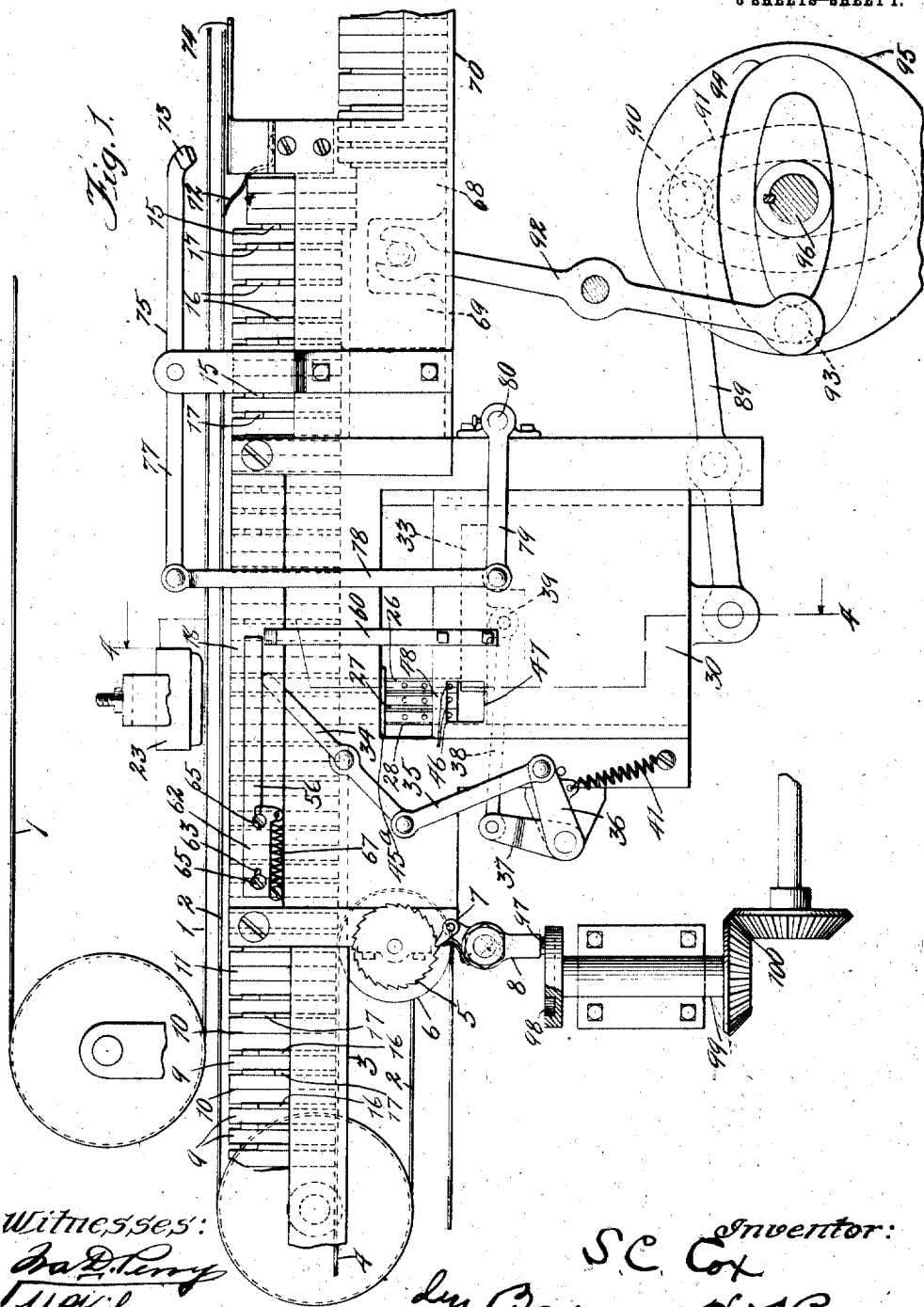


1,000,997.

Patented Aug. 22, 1911.

8 SHEETS—SHEET 1.



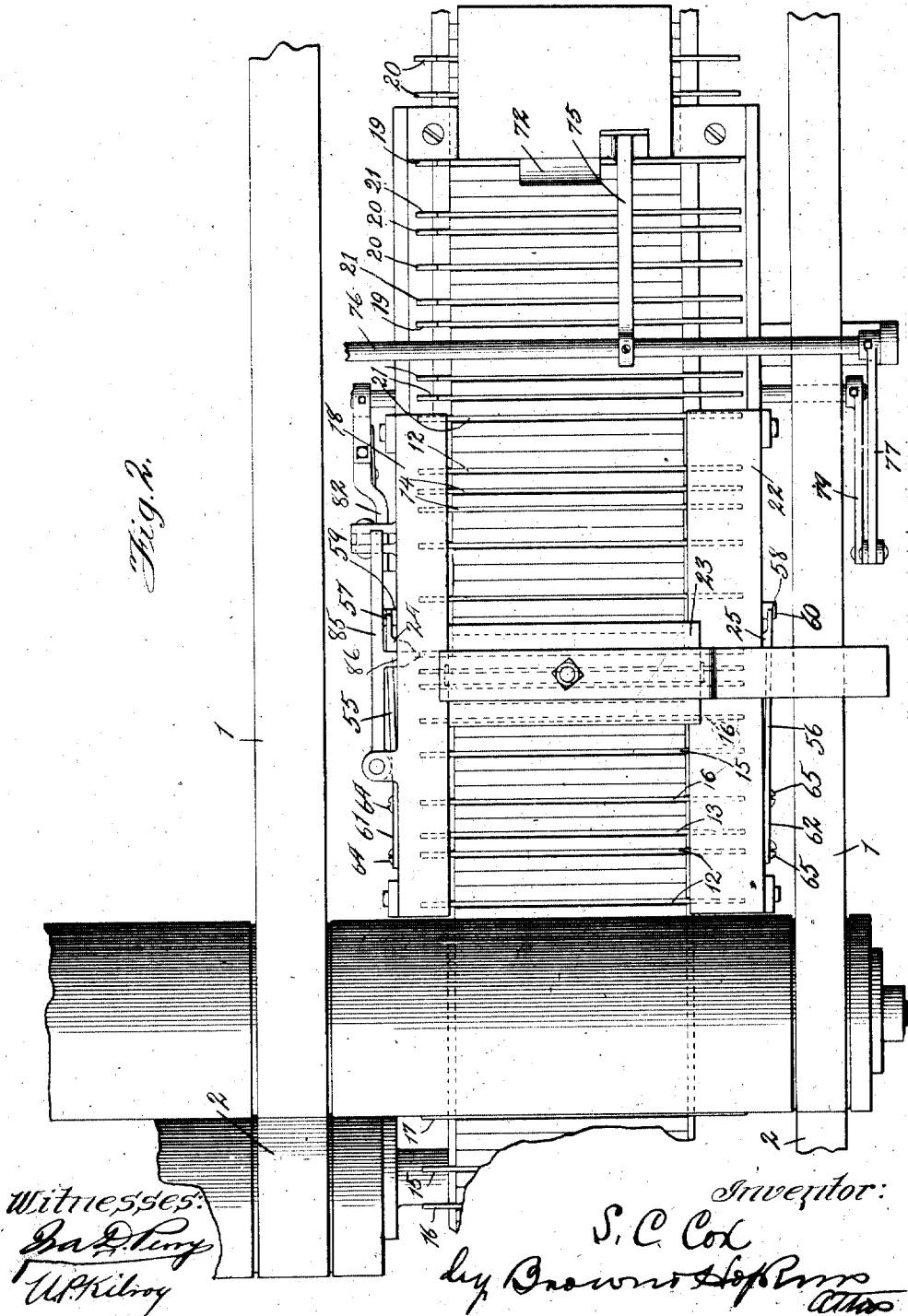
Witnesses:
W. H. Libby

Inventor:
S. C. Cox
By Brunswick & Pomeroy
Attys

1,000,997.

Patented Aug. 22, 1911
 6 SHEETS—SHEET 2.

Fig. 2.



Witnesses:
W. A. King
W. R. Kilroy

Inventor:
S. C. Cox
by Brown & Hopewell
Attos

1,000,997.

Patented Aug. 22, 1911

6 SHEETS-SHEET 3.

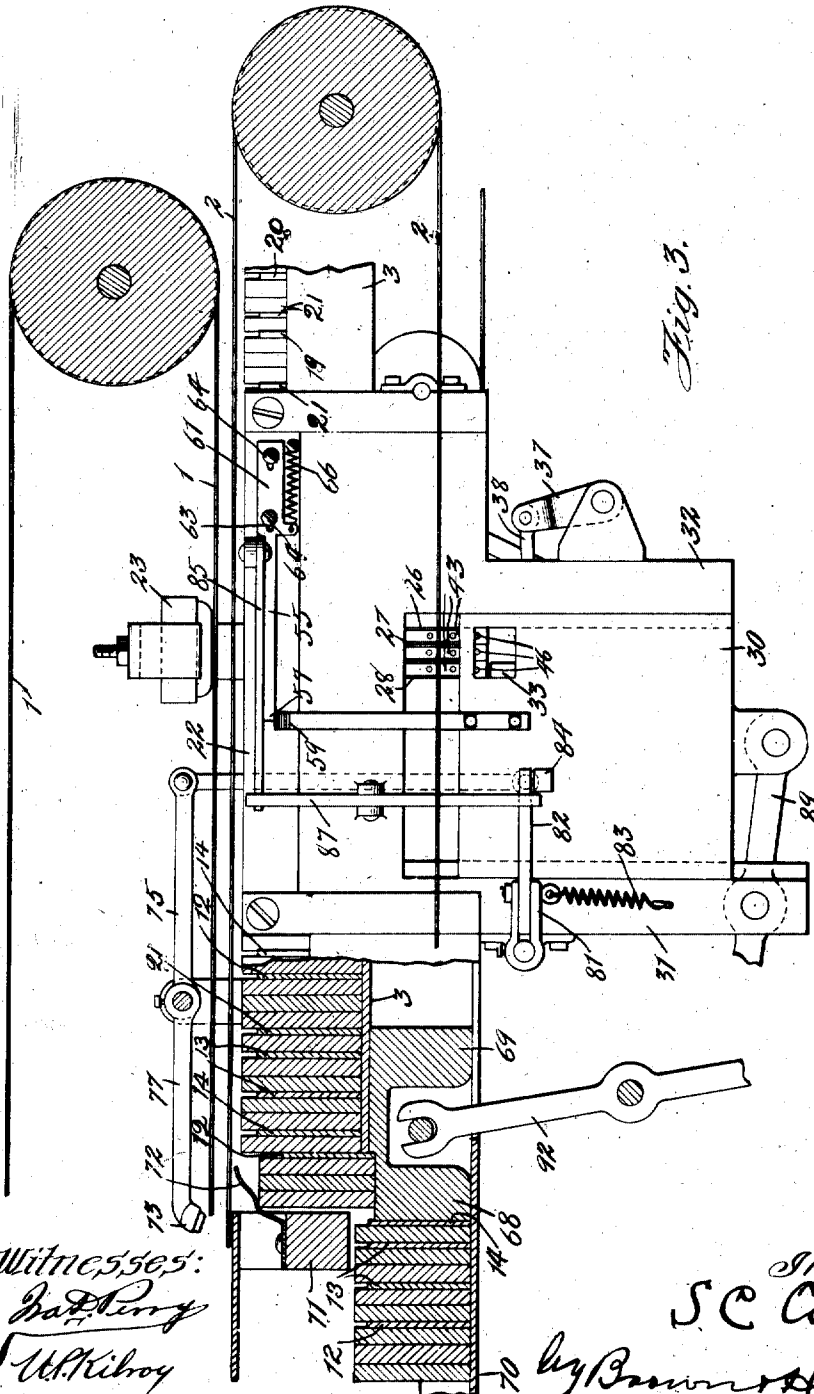


Fig. 3.

Witnesses:
Wm. H. Perry
Wm. H. Kibbey

Inventor:
 S. C. Cox
 by *Brown & Sons*
Attys

1,000,997.

Patented Aug. 22, 1911.

6 SHEETS-SHEET 4.

Fig. 5.

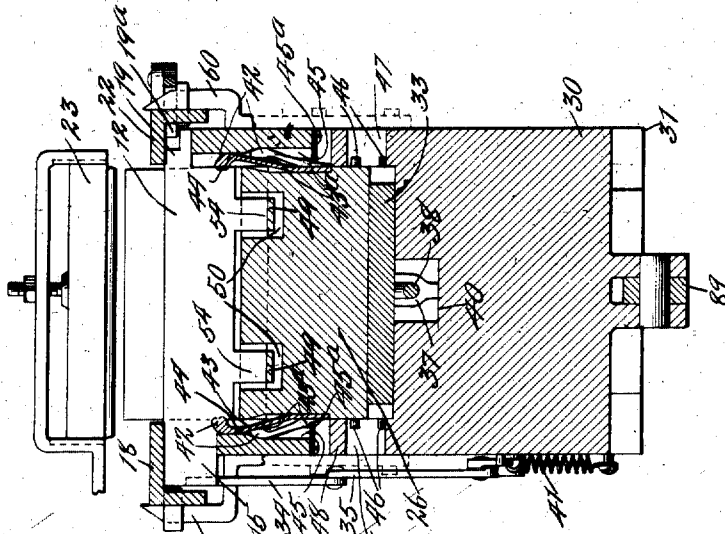
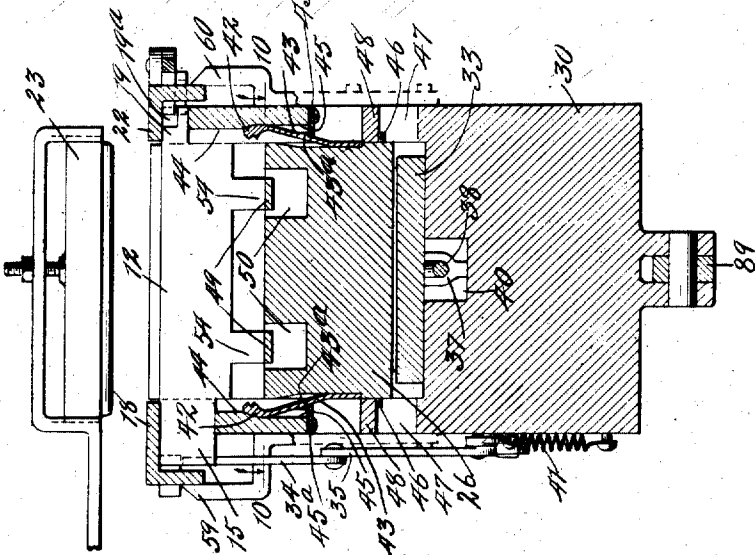


Fig. 4.

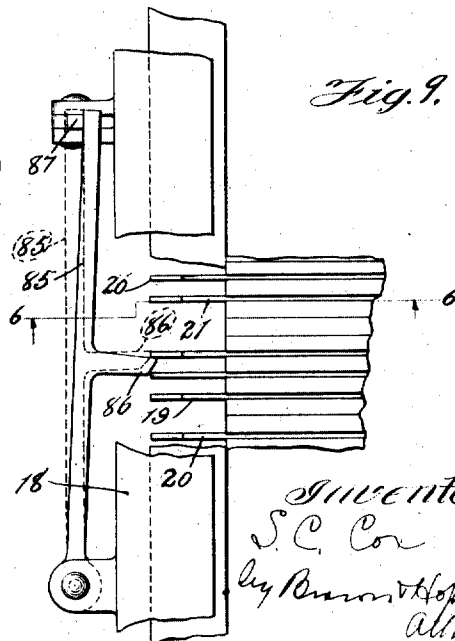


Witnesses:
W. H. Kilroy
W. H. Kilroy

Inventor:
 S. C. Cox
by B. C. Cox
Att'y

1,000,997.

6 SHEETS—SHEET 6.



S. C. COX.
PRINTING MACHINE.
APPLICATION FILED AUG. 19, 1907.

1,000,997.

Patented Aug. 22, 1911.

6 SHEETS—SHEET 6.

Fig. 10.

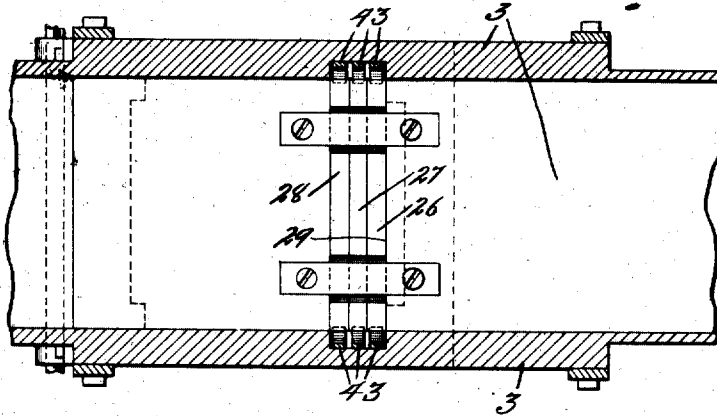


Fig. 12.

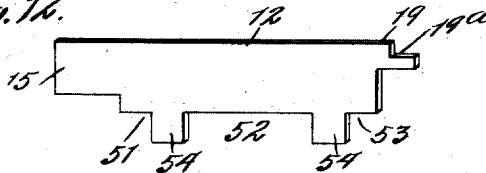


Fig. 13.

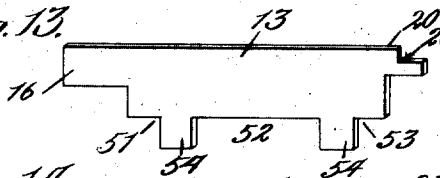


Fig. 14.

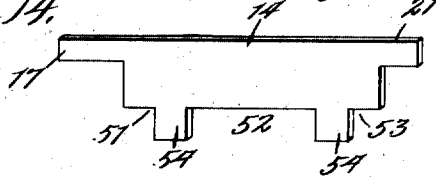
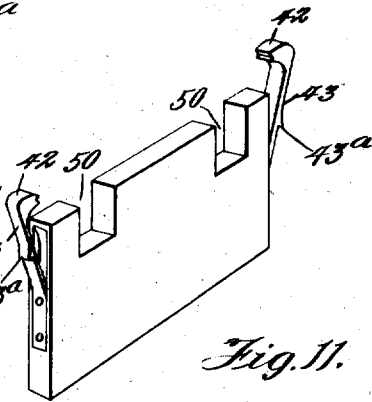


Fig. 11.



Witnesses:

W. P. Kilroy
W. P. Kilroy

Inventor:

S. C. Cox
by Brown & Hoffm
Atty

UNITED STATES PATENT OFFICE.

SANDFORD C. COX, OF BROOKLINE, MASSACHUSETTS, ASSIGNOR TO ~~THE~~ MULTI-MAILER COMPANY, OF AUGUSTA, MAINE, A CORPORATION OF MAINE.

PRINTING-MACHINE.

1,000,997.

Specification of Letters Patent. Patented Aug. 22, 1911.

Application filed August 19, 1907. Serial No. 389,125.

To all whom it may concern:

Be it known that I, SANDFORD C. COX, a citizen of the United States, residing at Brookline, county of Norfolk, and State of Massachusetts, have invented certain new and useful Improvements in Printing-Machines, of which the following is a full, clear, and exact specification.

This invention relates more particularly to means for printing addresses and other matter upon newspapers, envelopes and the like, and it has more especial reference to the means for bringing into printing position successively a plurality of printing pieces such as types or slugs.

The present invention is designed more particularly for thus handling printing pieces in the forms of linotypes or slugs and it has for its primary object to provide an improved and simple form of mechanism capable of selecting one or more of the slugs or printing pieces from the others and bringing the same into printing position.

A further object of the invention is to provide an improved and simple mechanism capable of thus handling slugs or printing pieces of either a single line or a plurality of lines indiscriminately.

With a view to the attainment of these ends and the accomplishment of certain other objects of minor importance, which will hereinafter appear, the invention consists in the features of novelty which will now be described with reference to the accompanying drawings and then more particularly pointed out in the claims.

In the said drawings, Figure 1 is a side elevation of a printing machine embodying this invention illustrated in part diagrammatically. Fig. 2 is a plan view thereof. Fig. 3 is a view similar to Fig. 1, looking at the opposite side of the machine and showing it partially in vertical longitudinal section. Fig. 4 is a vertical transverse section taken on the line 4—4, Fig. 1, showing the plunger in its lowered position. Fig. 5 is a similar view showing the plunger in its elevated position. Fig. 6 is an enlarged transverse section of a part of the galley with the printing pieces therein taken on the line 6—6 of Fig. 9. Fig. 7 is a detail plan view of the trip lever for actuating the club marker hereinafter described. Fig. 8 is a detail sectional view taken on the line

8—8, Fig. 7. Fig. 9 is a plan view of one side of the galley with the printing pieces and their separators therein, showing also the lever for actuating the club marker. Fig. 10 is a detail plan section of the galley with the printing pieces removed showing the plungers hereinafter described. Fig. 11 is a detail perspective view of one of the plungers, and Figs. 12, 13 and 14 are detail perspective views of different forms of separating plates employed for separating the slugs or printing pieces.

The papers, envelopes, or other articles to be printed or addressed are conducted across the machine in the usual or any suitable way, as for example by means of belts or tapes 1, 2, which receive and carry the papers, etc., between them and the slugs or printing pieces to be printed from are arranged preferably below in a horizontal galley or runway 3, along which the slugs are caused to travel as fast as they are required for use by any suitable mechanism, such, for example, as an endless band or belt 4, whose upper fold rests upon the bottom of the galley 3 and which is driven at a proper rate of speed by a ratchet wheel 5 on the shaft of pulley 6, around which the belt 4 travels, the ratchet being rotated as required by a pawl 7 on a lever 8, driven by a suitable connection with some other moving part of the machine, as will be presently described.

In the galley 3 are shown both single and plural line slugs or printing pieces. The single slugs are indicated at 9, the double line slugs at 10 and the three-line slugs at 11. In some instances it is advantageous to secure the units of the plural line slugs together, but this is not essential so far as the purposes of this invention are concerned. Between the slugs, however, are placed separating plates 12, 13, 14, shown in Figs. 12, 13 and 14 respectively, and which may be composed of thin sheet material of any suitable character. The ends of these plates at one end are provided with wings 15, 16, 17, and, as shown in Figs. 12, 13 and 14, these wings are of different width or vertical extent but the upper edges of all of them are in the same plane and rest under a flange 22 overhanging one side of the galley 3. The opposite ends of the plates are provided with wings 19, 20, 21, whose upper edges are also in the same plane and engage under an

overhanging flange 18 arranged along the other side of the galley 3. These two flanges 18, 22 therefore, serve to hold the plates 12, 13, 14, down in place on the bottom of the galley 3 while permitting the slugs located between the plates to be elevated successively above the general plane of the main supply of slugs when required so that the slugs may be successively pressed up into engagement with the paper as the latter passes under a platen 23 supported above the conveying belts 1, 2, ink being supplied to the slugs while in the galley 3 by a hand roller or by any other suitable means before they arrive at the printing position. As the slugs with their separating plates are fed forward along the galley by the belt 4 they eventually arrive in succession directly under this platen 23 and in this position they are arrested and held against further feeding movement while the belt 4 may continue to move under the main supply of slugs, by a pair of catches or dogs 24, 25, arranged to project through the sides of the galley into the lines of movement of the wings at the ends of the plates 12, 13 and 14. They are thus held in the printing position while the slug bearing directly against the plate thus engaged by the dogs is elevated from below. This upward movement of the slug is caused by one or all of the plungers 26, 27, 28, accordingly as the slug is a single line, two line or three line slug. These plungers, an example of one of which is shown in perspective in Fig. 11, are in the form of flat plates extending on edge contiguous to each other in the guide slot 29 formed in the bottom of the galley 3, and each is as wide approximately as a single slug or line. When in their normal or lowered position they rest slightly above the upper surface of lifting head 30 which is arranged in suitable guide ways 31, 32 at the lower side of the machine. Supported on the surface of this lifting head is a selecting block 33 which when in its normal position stands as indicated in Fig. 1, directly under the foremost one of the plungers 26, 27, 28, so that when the lifting head 30 is elevated with the selecting block in the position indicated in the drawings, the foremost plunger 26 will be elevated, and the slug which is then directly over the plunger 26 will be forced upward out of the galley against the paper or other article carried between the tapes 1, 2, and the impression thereby produced. By moving the selecting block 33 the distance of another slug toward the left, as viewed in Fig. 1, it will be seen that the elevating movement of the lifting head 30 will cause the middle plunger 27, as well as the first plunger 26, to be elevated, and as a consequence two of the slugs or a double line slug will be forced into impression position, and so on, by advancing the

selecting block 33 still farther to the left, the third plunger 28 may be likewise elevated in unison with the other two, and thus a three line slug or three separate slugs will be lifted and all three lines imprinted upon the paper. This action of the selecting block 33 is produced automatically by the separating plates 12, 13, 14, the character or shape of whose wings 15, 16, 17, varies according to the distance it is required to advance the selecting block 33.

It will be seen that the plates 12 with the deep, or widest wings 15 are placed in advance of the three line slugs 11, the next widest wings 16 in advance of the two line slugs 10, and the narrowest wings 17 in advance of the single line slugs 9. All of these wings are arranged to engage by their lower edges against the upper end of a pivoted lever 34 whose lower end has suitable connection with the selecting block 33. In the example shown in the drawings this connection consists of a link 35 pivoted to the lower end of lever 34 and to one arm 36 of a bell crank lever whose other arm 37 is connected by a link 38 to a lug 39 on the bottom of block 33, running in a channel 40 in the upper side of the lifting head 30. It will thus be seen that the narrow wing 17, whose only purpose is to hold the plate 14 down in place at one end, will pass over the upper end of the lever 34 without disturbing the position of the selecting block 33 which, as before mentioned, remains normally under the first plunger 26, but the next widest wing 16 will engage the lever 34 and move it far enough to advance the block 33 under plunger 27 as well as plunger 26. The lifting head being elevated at this time, causing the block to impinge against the plungers, the block will remain in the position placed by the lever 34 until the pressure of the lifting head is relieved, when the selecting block will be returned to its normal position by a spring 41 secured to arm 36. So, also, when the widest wing 15 encounters the lever 34, the selecting block 33 will be advanced its maximum distance in position to catch all three of the plungers and will be held in this position as long as such wing 15 is directly over and in engagement with the lever 34. It will remain in this position, of course, as long as the slug which is being elevated by the plungers remains in the printing position, which corresponds to the position of the upper end of lever 34.

The slugs and the plungers 26, 27, 28 may in some instances return automatically to their lowered positions by gravity, but it is preferable to provide means for positively bringing them down to place. To that end each of the plungers 26, 27, 28, is provided at each end with a gripping dog 42. These dogs 42 are carried by springs 43, which

give the dogs a normal tendency to move outwardly or away from the ends of the plungers into engagement with the walls of the side slots 44 formed in the side walls of the galley 3 and which guide slots are beveled at their lower ends as shown at 45, so that when the plungers are lowered the dogs 42 will spring out of engagement with the ends of the slugs, but as the plungers are elevated the inclines or bevels 45 will force the dogs into gripping contact with the ends of the slugs and hold them in engagement until the slugs are again pulled down to the general level of the slug supply. At that time the dogs spring outwardly into the beveled ends of their guide slots and leave the slugs free to pass on beyond the printing position. The plungers themselves are pulled down individually by pins or lugs 46, one at each end of each plunger, arranged in recesses 47 formed in flanges 48 on the lifting head 30, the depth of each recess 47 being sufficient to permit the lifting head 30 to rise to the limit of its upward stroke without bringing the lower edge of the recess 47 into engagement with any of the pins 46, but when the lifting head 30 is in its lowered position, the pins 46 will occupy a position at or near the upper edge of the recess. Consequently when the lifting head 30 comes down, it will pull down with it all of the plungers should any of them be up at that time, but will not interfere with any of the plungers that may be in their lowered position in either ascending or descending. The descent of the plungers is limited by lugs 43^a engaging ledges 45^a. It is, of course, apparent that inasmuch as the plungers pass upwardly through the bottom of the galley 3 and are equal in length to the length of the slugs, the slot 29 through which they ascend must be bridged to prevent the slugs falling therinto. To that end the bottom of the galley is provided across the slot 29 with flush plates 49 constituting a bridge for the slugs to slide over, and in order that the bridge may not interfere with the operation of the plungers, the latter are cut away directly under the bridge pieces, as shown at 50.

The plungers 26, 27, 28 are so positioned with relation to the straight or rear faces of the dogs 24, 25, which determine the printing position of the slug, that the spacing plate 12, 13, or 14, which is always placed in advance of the slug to be printed from, will be in the same plane as or slightly in advance of the plane of the forward face of the foremost plunger 26 so that, as the plunger rises, it will occupy substantially the same plane as the slug positioned above it and will move the slug upwardly past the spacing plate, which is being held by the dogs 24, 25, without interfering with said spacing plate, but in order to insure against

any possibility of collision between the plunger and the spacing plate, each of said spacing plates is cut away at the places marked 51, 52, 53 wherever the plunger projects above the bottom of the galley 3. By thus shaping the spacing plate, it is seen that each plate is formed with feet 54 that correspond in position to the positions of the recesses 50 in the upper edges of the plungers and which feet serve to support the spacing plates in the galley 3 and hold the spacing plates from settling between the slugs, which would, if it occurred, enable the narrow wing 17 to come down into contact with the lever 34 and thereby place the selecting block 33 in a false position.

As the lifting head 30 rises in the act of producing the impression, the holding dogs 24, 25, are released automatically from engagement with the wings at the ends of that one of the spacing plates which is immediately in advance of the slug or line of type being printed from. As better shown in Fig. 2 these dogs 24, 25 are formed on springs 55, 56 respectively, which tend to hold them in engagement with the spacing plate and the dogs are provided with forward projections 57, 58, respectively, which are arranged to be engaged by two wedges 59, 60, respectively secured to the sides of the lifting head 30 in such a position that when the lifting head rises these wedges will be crowded between the sides of the angle bars on which the flanges 18, 22 are formed and the inner faces of the projections 57, 58, thereby pulling the dogs 24, 25 out of engagement with the wings on the spacing plate. As soon as the dogs clear the ends of the wings they are automatically moved a short distance toward the rear and are thereby released from the wedges 59, 60 and their springs 55, 56 cause them to instantly spring into line with the wings on the next one of the spacing plates so as to be in position to catch that plate as it is moved forward by the feed belt 4. As shown in Figs. 1 and 3, the springs 55, 56, are formed with enlargements 61, 62 respectively, having slots 63 whereby the springs may be secured to the sides of the machine by means of screws 64, 65, or other suitable devices, with capability of sliding longitudinally. The dogs are thus moved to the rear when they release the wings on the spacing plate by springs 66, 67 attached to the plates 61, 62 and to the sides of the machine, and these springs yield sufficiently when the wings of the next spacing plate encounter the dogs 24, 25, to permit the entire supply of slugs and plates to move forward until the plate, whose wings are then in engagement with the dogs 24, 25, arrives at a plane immediately in advance of the plane of the forward side of the first plunger 26, this being the printing position for the slug

immediately behind that spacing plate and the ends of the slots 63 being then stopped against the screws 64, 65, for limiting further forward movement of the dogs 24, 25.

5 When the dogs 24, 25 thus release the spacing plate of the slug being printed from, the slug is maintained in the printing position, however, and the frictional contact of the feed belt 4 prevented from advancing the supply of slugs at that time by the grip of the dogs 42 on one or more of the plungers which are being elevated. As soon as the plunger descends far enough to pull the slug down to the general level of the remaining slugs, the slug which has been printed from, however, is released and is free to be advanced by those pushing behind it and it is at this time that the feed belt 4 causes the supply to advance and move the dogs 24, 25, to the limit of their forward motion. At the same time the slug which has just been printed from, and its spacing plate in advance thereof, is pushed farther along beyond the printing position, and after a succession of these intermittent movements it finally arrives at the end of the galley 3 and drops off upon a step 68 formed on a plunger 69, which is arranged to slide in a receiving galley 70 arranged at the end of the galley 3 but in a lower plane. As the slugs are thus advanced to the end of the galley 3 ordinarily they will drop by gravity upon the step 68 and will be held in their upright position by the slugs still remaining in the galley 3 on the side and a guide bar 71 on the other side but to insure their descent positively an inclined plate 72 may be arranged at the end of the galley 3 in position to be engaged by the slugs as they leave the galley 3 and will be thereby depressed to the step 68. The plunger 69 is shown at the limit of its forward stroke in Fig. 3, in which position the step 68 has advanced the slugs in the galley 70 far enough to allow the next three slugs and a spacing plate to descend into the galley 70 when the plunger 69 recedes under the galley 3 until its forward end is flush with or back of the end of the galley 3. When the plunger 69 is thus retracted, the slugs that have been advanced beyond the end of the galley 3 drop at the end of the plunger into the galley 70 and the plunger then immediately moves forward and advances the slugs that have recently fallen as well as the entire line of slugs in the galley 70. If in the meantime the slugs above in the galley 3 are being also advanced, they will drop upon the step 68 as the last slugs in the galley 70 move away. It is, of course, desirable, however, that the movement of the plunger 69 be so timed with relation to the movement of the lifting head 30 that the forward movement of the plunger 69 will occur simultaneously with the forward

movement of the slugs in the galley 3, which immediately follows the descent of the lifting head.

By thus employing spacing plates between the addresses and by providing a lifting plunger, such as the plungers 26, 27, 28, for every line of the address it is immaterial whether the slugs or linotypes belonging to a plural line address be secured together or not. This feature of the invention, therefore, is of considerable importance not only in that it avoids the trouble and expense of riveting or otherwise securing the slugs together but it makes it possible to use individual linotypes and avoids the breaking of the slugs which often results from the riveting operation.

For the sake of avoiding the multiplicity of lines that would result from repeating the town and State after the name of each addressee in every town, newspaper offices have adopted the custom of printing the name of the town and State at either the commencement or ending only of the series of papers or other matter going to subscribers in that town. Following this custom or method with a machine of this character, it is desirable that the first paper or other matter addressed going to each town or the first paper belonging to any club of subscribers shall bear some distinguishing mark so that the clubs or batches may be readily separated after the papers are addressed. This distinguishing mark may be applied automatically by the present machine by means of a marker 73 of any suitable form arranged above a platen 74 adapted to support the paper or other article while the impression of the marker 73 is produced thereon. The marker 73 is mounted on one end of a lever 75 which is secured to a rocker shaft 76 extending across the machine and provided with an arm 77 at one side of the machine. This arm is connected by a link 78 to a rocker arm 79 secured to one end of a rocker shaft 80 which extends across the machine under the galley 70 and is provided at the opposite side with a bifurcated arm 81 in which is pivoted on a vertical axis a laterally movable tongue 82. The marker 73 is held normally aloof from the papers by a spring 83 secured to the arm 81 and when the paper to be marked arrives under the marker 73 the tongue 82 is thrown inwardly into line with the lug 84 on the side of the lifting head 30 and consequently when the lifting head rises the tongue 82 is moved upwardly and the marker 73 impressed against the paper. This automatic action of the tongue 82 is brought about by the particular shaping of the wings 19, 20, 21 at one end of the spacing plates and arranging in their line of movement some suitable device which will be acted upon by all wings of a certain shape, to cause the tongue

82 to move into the line of movement of the lug 84. As better shown in Fig. 9 a lever 85 is pivoted in a horizontal position at the side of the machine and provided with an inwardly projecting finger 86 which is beveled at its inner end and arranged to be struck by the wings 21 of the spacing plates while the other wings 19 and 20 are notched at their upper sides as shown at 19^a and 20^a so as to avoid this finger. When the wing 21 strikes the finger, however, it forces the lever 85 outward and causes it to deflect the upper end of an upright lever 87 pivoted in a bracket 88 on the side of the machine and so arranged that its lower end will engage the tongue 82 and force that into the line of movement of the lug 84. The spacing plate with the active wing 21 upon it is, of course, so positioned with relation to the position of the marker 73 that when the paper or article arrives at the marker 73, the wing 21 will engage the finger 86.

The particular form of mechanism for imparting the described movement to the various elements and devices constituting the machine is of course unimportant. For actuating the lifting head 30 there is shown a pivoted lever 89 provided at one end with a lug 90 engaging in a cam groove 91 and for reciprocating the plunger 69 there is shown a pivoted lever 92 having a lug 93 engaging in another cam groove 94, the two cam grooves being formed in a cam 95 on a suitable driving shaft 96. The lever 8 which operates the pawl 7 has a lug 97 engaging in a groove in a cam 98 mounted on shaft 99 driven by bevel gears 100 from any suitable source of power not necessary to illustrate.

In order that the invention may be understood by those skilled in the art, the details of an exemplification thereof have been thus specifically described, but

What I claim and desire to secure by Letters Patent is—

1. In a machine for the purpose described, the combination of means for holding a supply of printing pieces, means for advancing said printing pieces to a printing position, means for elevating one or more of the printing pieces above the general level of the supply for producing an impression and selecting means for operating the elevating means.

2. In a machine for the purpose described, the combination of means for holding a supply of printing pieces, means for advancing the printing pieces to a printing position, independently movable members arranged to engage a plurality of said printing pieces for moving them away from the said supply, means for throwing one or more of said members into action, and means moving with the printing pieces for actuating the last said means.

3. In a machine for the purpose described,

the combination of means for holding a supply of printing pieces, means for feeding the supply forward, a plurality of independently movable members adapted to engage a corresponding number of said printing pieces for moving them away from the supply, means for throwing one or more of said members into action, and means moving with the printing pieces for actuating the last said means.

4. In a machine for the purpose described, the combination of means for holding a supply of printing pieces, a plurality of independently movable members adapted to engage one or more of said printing pieces for moving the same away from the supply, means for feeding the supply forward to the position of said members, and means for throwing one or more of said members into action according to the number of the printing pieces to be moved away from the supply at one time.

5. In a machine for the purpose described, the combination of means for holding a supply of printing pieces, a plurality of independently movable members for engaging a number of said printing pieces at one time and moving them away from the supply whereby the printing pieces will be rendered available for producing an impression, means for moving the supply forward to the position of said members, and means operatively related to the printing pieces for throwing one or more of said members into action at one time.

6. In a machine for the purpose described, the combination of means for holding a supply of printing pieces, a plurality of independently movable members for moving one or more of the printing pieces away from the supply, means for feeding the supply forward to the position of said members, differently positioned projections moving with the said supply, and means operatively related to said projections for throwing one or more of said members into action.

7. In a machine for the purpose described, the combination of means for holding a supply of printing pieces, lifting means for moving one or more of the printing pieces upwardly from the supply to produce an impression, selecting means for operating the lifting means, and means for feeding the supply forward to the said lifting means.

8. In a machine for the purpose described, the combination of means for holding a supply of printing pieces, lifting means for moving the printing pieces upwardly from the supply to produce an impression, comprising a plurality of independent members for engaging the printing pieces separately, means operatively related to said printing pieces for lifting said members separately or collectively, and means for feeding the supply forward to the lifting means.

9. In a machine for the purpose described, the combination of a plurality of printing pieces, a plurality of lifting plungers for raising one or more of said pieces above the others, means for restoring said pieces to their original level after being raised, and means for advancing the printing pieces to the said plungers.
10. In a machine for the purpose described, the combination of a supply of printing pieces, means for lifting said printing pieces to produce impressions, grips operating in unison with the said lifting means for pulling the printing pieces down after being lifted, and means for feeding the supply forward to the said lifting means.
11. In a machine for the purpose described, the combination of a plurality of printing pieces, plates interposed between said printing pieces and having differently proportioned projections, independent lifting means for lifting one or more of said printing pieces to impression position, and means operatively related to said projections for actuating one or more of said lifting means.
12. In a machine for the purpose described, the combination of a plurality of printing pieces, plates interposed between said printing pieces and having differently proportioned projections, a deflectable member arranged to be engaged by said projections and moved different distances, and independent lifters for a plurality of said printing pieces, operatively related to said deflectable member.
13. In a machine for the purpose described, the combination of a plurality of printing pieces, a deflectable member, a plurality of independent plungers for lifting said printing pieces, a selector operatively connected with said deflectable member for causing one or more of said plungers to be elevated, and spacing plates interposed between said printing pieces and adapted to act on said deflectable member, said plates being differently proportioned whereby they will move said member different distances.
14. In a machine for the purpose described, the combination of a plurality of printing pieces, a plurality of independent plungers for lifting said pieces, a lifting head, a shiftable selector interposed between said head and said plungers and means operatively related to the printing pieces and said selector for moving the selector under more or less of the plungers accordingly as more or less of the printing pieces are to be lifted.
15. In a machine for the purpose described, the combination of a plurality of printing pieces, a plurality of independent plungers for lifting said pieces, a lifting head, a shiftable selector interposed between said head and said plungers, differently proportioned projections moving with the printing pieces and means operatively related to said projections and to said selector for moving the selector different distances under said plungers in accordance with the proportions of said projections.
16. In a machine for the purpose described, the combination of a plurality of printing pieces, spacing plates arranged between said pieces and having differently positioned operative projections, a plurality of independent members for lifting said printing pieces separately or collectively, a selector arranged to render one or more of said lifting members operative, means operatively related to said selecting means and to the operative projections of said spacing plates whereby the said projections will cause the actuation of one or more of said lifting members accordingly as a single printing piece or a plurality of printing pieces are to be lifted at one time, and means for raising those of the lifting members which have been rendered operative by the selecting means.
17. In a machine for the purpose described, the combination of a plurality of printing pieces, spacing plates arranged between said pieces and having projections positioned differently with relation to each other, a plurality of independently movable lifting members arranged to lift one or more of said printing pieces, a selector arranged to be moved into operative relation with one or more of said lifting members, means for moving the selector in the direction of and against said lifting members, and means operatively related to the said projections for moving said selector.
18. In a machine for the purpose described, the combination of a plurality of printing pieces, spacing plates arranged between said pieces and having projections differently positioned with relation to each other, a plurality of independent lifting members for lifting one or more of said pieces, a selector arranged to be moved into operative relation to one or more of said lifting members, a lifting head for said selector, and a lever operatively related to the selector, and having operative relation to the said projections and adapted to be engaged thereby.
19. In a machine for the purpose described, the combination of a race or galley for a plurality of printing pieces, a plurality of spacing plates adapted to be placed between said printing pieces in said race, said race and plates having guiding provisions whereby the plates will be held against movement transversely of the race or galley, and means for pushing one or more of the printing pieces transversely of the race or galley independently of said plates.
20. In a machine for the purpose de-

scribed, the combination of a race or galley for a plurality of printing pieces, a plurality of spacing plates adapted to be placed between said printing pieces, said race or galley and spacing plates having guiding provisions whereby the plates will be guided lengthwise of the galley and held against movement transversely thereof, independently movable members for pushing one or more of the printing pieces in a direction transversely of the galley or race, and means acted upon by the said spacing plates for causing the actuation of one or more of said members.

21. In a machine for the purpose described, the combination of a race or galley for a plurality of printing pieces, a plurality of spacing plates adapted to be arranged between said printing pieces, said plates and race having guiding provisions whereby the plates will be guided longitudinally of the race and held against movement transversely thereof, a plurality of independent plungers for lifting one or more of said printing pieces, said race or galley having a bottom opening through which said plungers operate, a bridge spanning said opening for preventing the printing pieces from descending therinto, said plungers having openings adapted to span said bridge, and means operatively related to said spacing plates for causing the actuation of one or more of said plungers accordingly as a single printing piece or a plurality of printing pieces are to be raised at one time.

22. In a machine for the purpose described, the combination of a race or galley for a plurality of printing pieces, a plurality of spacing plates adapted to be situated between said pieces, said plates and race having guiding provisions for guiding the plates longitudinally of the race and holding them against movement transversely thereof, a plurality of independent plungers for engaging one or more of the printing pieces, said race having an opening through which said plungers operate, a bridge spanning said opening to prevent the pieces from entering the same, projections on the plates opposite said bridge for holding the plates at a distance therefrom, said plungers being cut away opposite the bridge and adapted to span the same, and means operatively related to said plates for rendering one or more of the plungers active.

23. In a machine for the purpose described, the combination of a race or galley for a plurality of printing pieces, a plurality of spacing plates arranged in said galley and adapted to be positioned between the printing pieces, said plates having projections and the race or galley having a guide-way receiving said projections, said projections being differently proportioned, a plurality of independent plungers for en-

gaging one or more of the printing pieces, a selector for rendering one or more of said plungers active, and means operatively related to the selector and arranged to be engaged by said projections for moving said selector into active relation to one or more of said plungers.

24. In a machine for the purpose described, the combination of a plurality of printing pieces, a plurality of plungers arranged to move one or more of the printing pieces away from the remaining printing pieces, means operatively related to the printing pieces for rendering one or more of the plungers active according to the number of printing pieces to be moved at one time, gripping dogs carried by said plungers respectively, means whereby said dogs are forced into engagement with the printing pieces after the plungers have been moved toward the printing pieces, for the purpose of pulling the printing pieces back into their original position, and means for returning the plungers to original position.

25. In a machine for the purpose described, the combination of a plurality of printing pieces, a plurality of independently movable plungers for acting upon a varying number of the printing pieces and moving the same away from the remaining printing pieces, means operatively related to the printing pieces for rendering one or more of the plungers active at one time, means for imparting motion to said plungers having a recess, and projections on the plungers engaging in said recess, said recess having a play over said projections equal to the stroke of the plungers whereby one or more of the plungers when displaced will return to original position.

26. In a machine for the purpose described, the combination of a plurality of printing pieces, means for advancing said printing pieces to printing position, a dog for arresting the printing pieces at said position, means for moving the printing pieces at said position to produce the impression, means for releasing said dog, means for returning said dog in a direction reversely of the direction of feeding movement of the printing pieces, and means for causing the dog to move into position to again arrest the movement of the printing pieces when thus returned.

27. In a machine for the purpose described, the combination of a plurality of printing pieces, means for feeding the printing pieces to printing position, a dog for arresting the printing pieces at the printing position, means for releasing the dog in time to permit the printing pieces to move onward after the impression is produced, means for moving the dog rearwardly when released, means for causing the dog to again move into position for arresting the printing

pieces when thus released, said dog having a limited forward movement with the printing pieces.

28. In a machine for the purpose described, the combination of a plurality of printing pieces, means for feeding the pieces forward to printing position, a dog for arresting the forward movement of the printing pieces at the printing position, means for moving the printing pieces transversely of their line of feeding movement to produce the impression, means moving with the latter said means for releasing said dog, means for causing the dog to again move into position for arresting the feeding movement of the printing pieces when thus released; said dog having a limited forward movement with the printing pieces.

29. In a machine for the purpose described, the combination of a plurality of printing pieces, a plurality of spacing plates arranged between and projecting from said printing pieces, means for feeding said plates and pieces forward to a printing position, a dog arranged to engage said plates at the printing position for arresting their feeding movement, means for releasing said dog from one plate, and means for causing it to engage the next plate to the rear.

30. In a machine for the purpose described, the combination of a galley or race for containing a plurality of printing pieces, spacing plates adapted to be arranged between said printing pieces, said plates and galley or race having guiding provisions whereby the plates may move longitudinally of the race but will be held against transverse movement therein, a receiving galley for the said printing pieces and plates arranged at a lower level than the first said galley and into which receiving galley the plates and pieces are adapted to drop from the end of the first said galley or race, means for feeding the pieces forward to a stop adjacent the end of the receiving galley, a plunger arranged to reciprocate at the end of the first said galley for urging the plates and pieces forward in the second said galley, and means for producing an impression from the printing pieces while in the first said galley.

31. In a machine for the purpose described, the combination of a race or galley for a plurality of printing pieces, a receiving galley arranged at the end of the first of said galley below the level of the same, a stop arranged near the contiguous ends of the two galleys, means for feeding the printing pieces forward against said stop, a plunger arranged to reciprocate toward and from the receiving galley at the end of the first said galley, said plunger having a step upon which the printing pieces drop as they fall from the end of the first galley, and means

for producing an impression from the printing pieces in the first said galley.

32. In a machine for the purpose described, the combination of a galley for a plurality of printing pieces, a receiving galley situated at the end of the first said galley below the level of the same, means arranged at the end of the first said galley over the receiving galley adapted to be engaged by the printing pieces and to force the printing pieces downward into the receiving galley, a plunger for urging the printing pieces forward in the receiving galley, means for feeding the printing pieces forward in the first said galley, and means for producing an impression from the pieces in the first said galley.

33. In a machine for the purpose described, the combination of a galley or race for a supply of printing pieces, a plurality of spacing plates adapted to be interposed between said pieces in said race, said plates being differently proportioned, means for producing an impression upon separate articles from said printing pieces, means adapted to act with relation to some of said articles for distinguishing them from the others, and means operatively related to the said plates whereby the last said means is thrown into operation.

34. In a machine for the purpose described, the combination of a race or galley for a plurality of printing pieces, spacing plates adapted to be positioned between said printing pieces in said galley or race, said spacing plates being differently proportioned and projecting from the edges of said printing pieces, means for producing impressions from said printing pieces upon separate articles, a marking means for distinguishing some of said articles from the others, and means actuatable by the difference in proportions of the said plates for throwing said marking means into action.

35. In a machine for the purpose described, the combination of a race or galley for a plurality of printing pieces, spacing plates adapted to be placed between said pieces in said race and having differently proportioned projecting ends, a movable member arranged in the line of movement of said projecting ends and adapted to be moved by the said ends of a certain proportion, means for producing an impression upon separate articles from said printing pieces when they arrive at a printing position, a marking means for distinguishing some of said articles from the others operatively related to the impression means but normally disconnected therefrom, and means operatively connected with said movable member for connecting said marking means with the impression means.

36. In a machine for the purpose de-

scribed, the combination of means for holding a supply of printing pieces, a plurality of independently movable members for moving one or more of the printing pieces away from the supply, means for feeding the supply forward to the position of said members, and means for automatically moving the said members.

37. In a machine for the purpose described, the combination of means for holding a supply of printing pieces, means for advancing the printing pieces to a printing position, independently movable members arranged to engage a plurality of said printing pieces for moving them away from the said supply, means for throwing one or more of said members into action, and means for automatically actuating the last said means.

38. In a machine for the purpose described, the combination of means for holding a supply of printing pieces, means for advancing said printing pieces to the printing position, separate means for elevating one or more of the printing pieces above the general level of the supply for producing an impression, and means for operating one or more of said lifting means at one time.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 13th day of August A. D. 1907.

SANDFORD C. COX.

Witnesses:

NATHAN HEARD,
JOHN C. EDWARDS.