

C. OWENS & A. LYLE.  
 PLATE FEEDING MECHANISM FOR ADDRESSING MACHINES.  
 APPLICATION FILED OCT. 19, 1907.

947,398.

Patented Jan. 25, 1910.

2 SHEETS—SHEET 1.

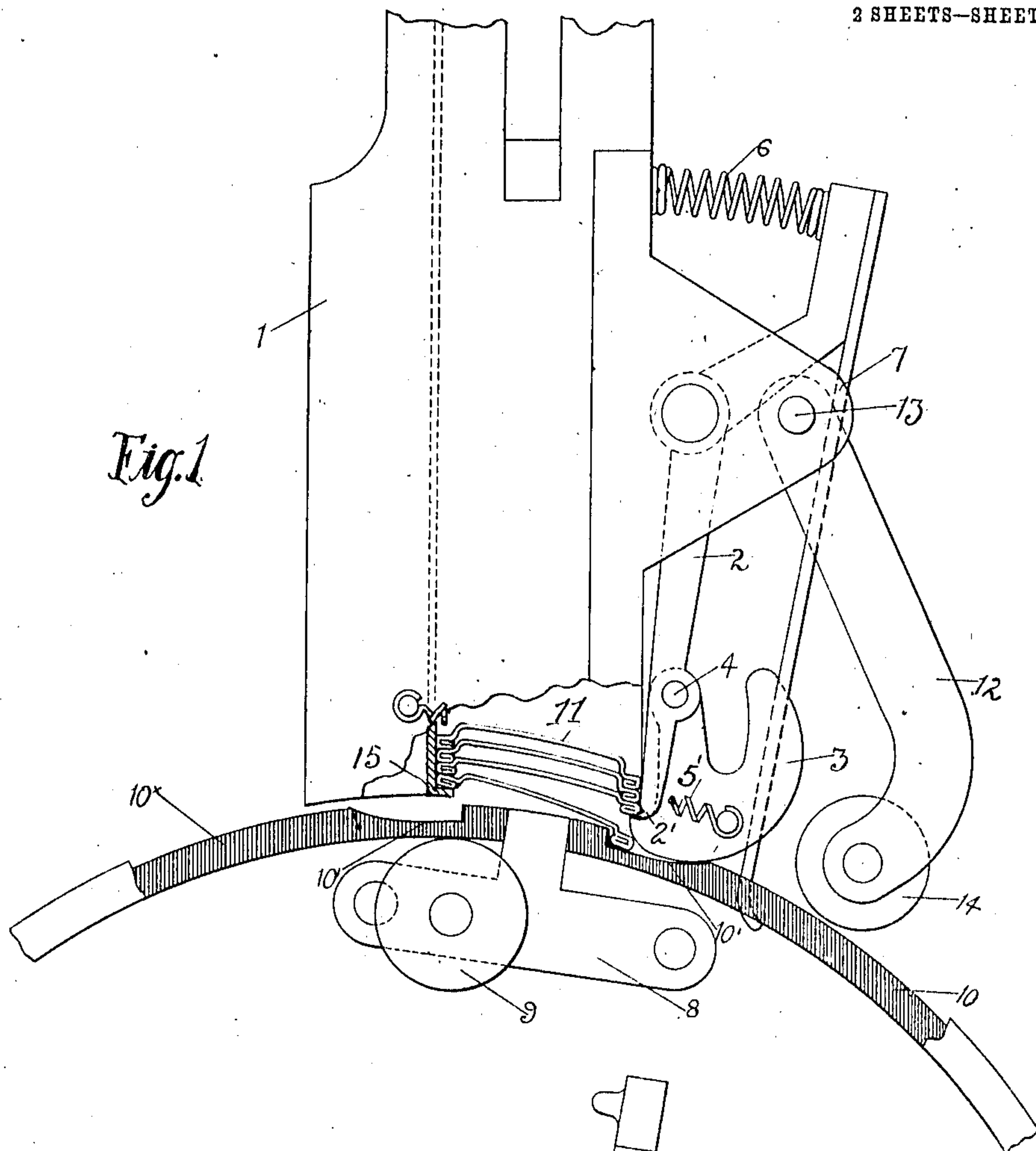


Fig. 1

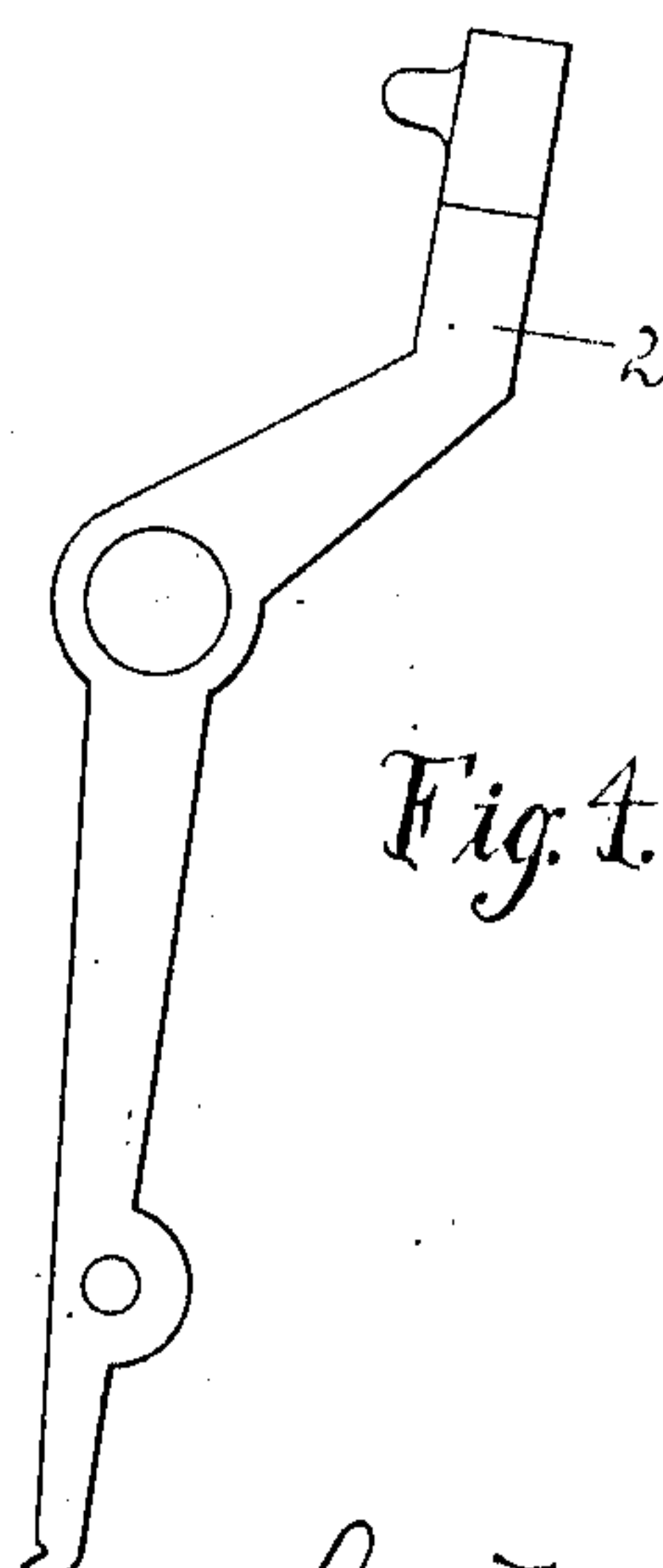


Fig. 4

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 Benton M. Stahl,  
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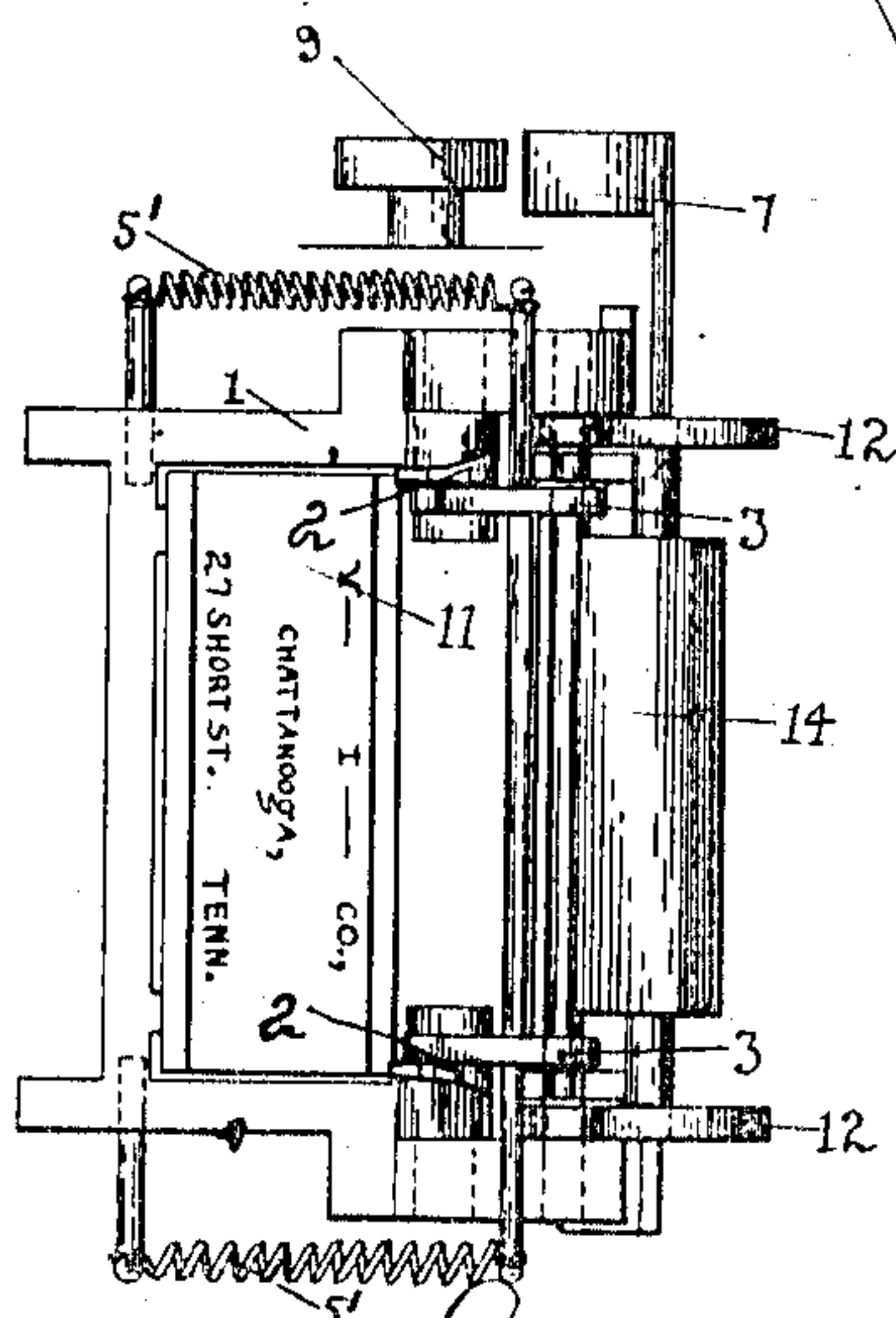
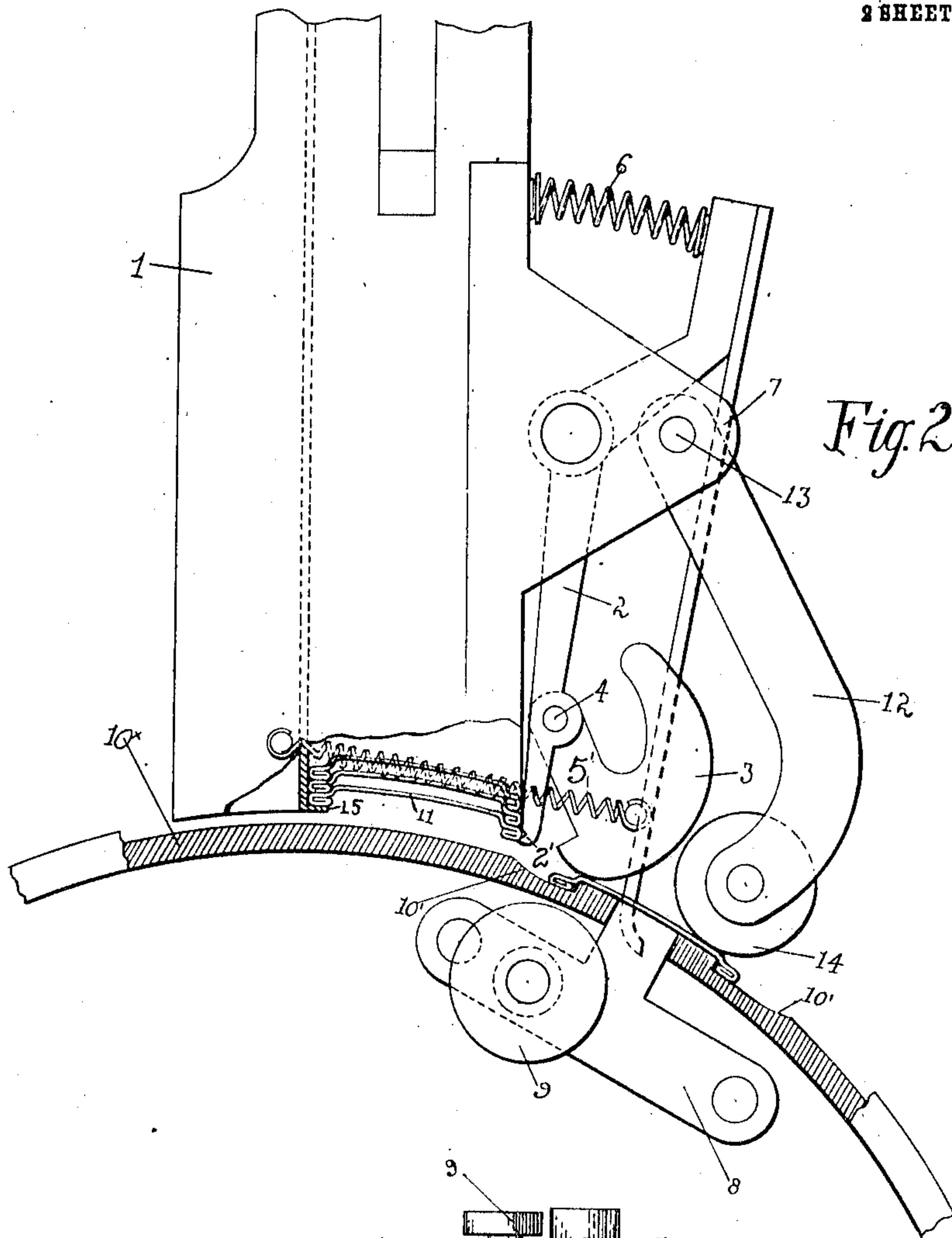
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 by Spear, Middleton, Douglas & Spear  
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# UNITED STATES PATENT OFFICE

CHARLES OWENS AND ALEXANDER LYLE, OF CHATTANOOGA, TENNESSEE, ASSIGNORS  
TO MONTAGUE MAILING MACHINERY CO., A CORPORATION OF TENNESSEE.

PLATE-FEEDING MECHANISM FOR ADDRESSING-MACHINES.

947,398.

Specification of Letters Patent.

Patented Jan. 25, 1910.

Application filed October 19, 1907. Serial No. 398,257.

*To all whom it may concern:*

Be it known that we, CHARLES OWENS and ALEXANDER LYLE, citizens of the United States, residing at Chattanooga, Tennessee, have invented certain new and useful Improvements in Plate-Feeding Mechanism for Addressing-Machines, of which the following is a specification.

The invention relates to addressing machines wherein is used a series of printing plates or stencils which are fed to a carrier or drum to be conveyed thereby to the impression platen to be there imposed on the magazines or other package for applying the address thereto.

The invention consists in the features and combination and arrangement of parts hereinafter described and particularly pointed out in the claims.

In the accompanying drawings: Figure 1 is a side view of the mechanism embodying the invention, this view showing the printing plate or stencil feeding mechanism during the operation of feeding a printing plate from beneath a pile of plates in the hopper to the carrier or drum of the addressing machine. Fig. 2 is a view similar to Fig. 1 with the parts in a different position. Fig. 3 is an end view of the parts shown in Figs. 1 and 2. Fig. 4 is a view of a detail.

In these drawings 1 indicates a hopper arranged over the drum or carrier 10 of the addressing machine in position to supply the printing plates thereto by gravity. To this hopper frame are pivoted arms 2 constituting the plate holding and separating devices, these arms having notches as at 2' at their lower ends to engage the edges of the printing plates.

3 indicates a pressure cam there being preferably two of these one at each end or side of the hopper as shown in Fig. 3. These cams are designed to press down or start the printing plate into connection with the drum or carrier 10 and more definitely speaking, into the recessed portions 10' of said carrier or drum, and they act also to hold the plate within these recessed portions. These cams are pivoted at 4 to the supporting and plate holding arms 2. They are pressed by springs 5' into working position, that is, in a direction toward the hopper. The plate holding and supporting arms 2 are pressed by springs 6 into normal posi-

tion. one of these springs is shown in Fig. 2 but omitted from Fig. 3. Attached to the plate holding and supporting arms 2 are levers or arms 7.

In connection with the drum or carrier, gripper means for the printing plates are employed, these being substantially similar to the gripping mechanism disclosed in Letters Patent of the United States granted to Charles Owens and Alexander Lyle #889,328, June 2, 1908. Upon this gripper device shown generally at 8 is mounted a roll 9. Arms 12 are pivoted at 13 to the hopper frame carrying at their lower ends a roll 14. The pile of printing plates within the hopper is indicated at 11 the rear portion of this pile resting upon a stop 15.

The plate holding arms 2 having the notches in their lower ends are arranged so that these notches are at such a distance from the drum when the raised or beaded portion 10' of the drum is beneath the hopper or the pile of plates therein, that these notches engage the first plate above the bottom plate leaving the advanced edge of the said bottom plate lying loosely on the raised or beaded portion of the drum 10. This raised or beaded portion is the same as that disclosed in the application above referred to, these beads on the drum fitting closely beneath the hopper sustaining the lowermost printing plates of the pile until the recessed portion as 10' 10' comes around beneath the hopper. When the raised or beaded portion of the drum is in action beneath the hopper the cams 3 are held away from the pile of plates by these raised or beaded portions of the drum or carrier which act as a track or camway for the said cams. As the drum advances and the recessed portions 10' 10' come beneath the pile of plates the advanced edge of the bottom plates drops into the forward recess 10', and at the same time in view of the formation of this recess the cams 3 swing downwardly over the top of the edge of the bottom plate as shown in Fig. 1 and between it and the pile of printing plates above, the rest of the pile being sustained by the plate holding and supporting arms 2 at the front pile, the rear edge of the lowermost plate being held up with the rest of the pile by means of the stop or support 15, as shown in Fig. 1. As the drum or carrier continues its rotary motion the cams 3



follow this movement with the plate and drum against the tension of the springs 5' until a point is reached where the cams begin to clear the printing plate when said plate passes beneath the cams under pressure and until the forward edge of the plate is engaged by the roller 14. At this moment the gripper devices are caused to travel across the face of the drum and engage the printing plate. The lowermost plate of the pile having now been placed upon the drum it will be understood that the pile of plates is supported by the stop 15 in the bottom of the hopper 1 and the plate holding and supporting device 2 which with their notches engage the lowermost plate. As soon, however, as the drum advances far enough for the roller 9 to strike the lever 7 the forward edge of the pile of plates is released by the devices 2 and allowed to drop down upon the raised portion or bead 10' of the drum and as soon as the lever 7 is released from the roller 9 by the onward movement of the drum these plate holding or supporting arms fly back into normal position under the action of their springs 6 and they engage the forward edge of the plate next above the bottom plate thus separating the forward edge of the bottom plate from the pile above ready to be fed when the next recessed portion 10' of the drum comes into proper position for this action to take place. It will thus be seen that the plates are released at their forward edge one by one from the pile, that these forward edges drop down into recesses in the drum or carrier, that these forward edges are then pressed upon by pressers or cams 3 so that they will be drawn from beneath the pile and off of the supporting ledge or stop 15 by the combined action of the forwardly rotating drum and the cams or pressers 3 which to a limited extent follow up this forward movement of the drum and further that these cams or pressers by riding over the plate which had just been taken from the pile will seat the same firmly in the recesses of the drum and this action will be aided by the action of the roller 11 until the gripping of the plate is fully accomplished, the parts then being in the position shown in Fig. 2. It will be observed that there is a recess 10' to receive each thickened edge of the printing plate and the portions of the drum between these recesses being raised relative thereto furnish a raised or backing-surface upon which the body of the plate may rest to be supported thereby when this plate is imposed upon the magazine to apply the address thereto. The recesses 10' provide in effect, shoulders or projections adapted to engage or grip the inner edges of the thickened margins of the printing plates so that when the forward edge of a printing plate drops down as shown in

Fig. 1 it is gripped by the shoulder formed by the recess and the continued movement of the drum will cause this shoulder acting on the thickened margin, to draw the printing plate from beneath the pile and off from the supporting ledge 15. This action is, of course, aided by the presser 3. The drum is representative of any suitable feeding element or carrier for the plates.

It will be observed that in the operation of our machine comparatively stiff plates are employed having type surfaces thereon. These plates are not dragged from the bottom of the pile, but are separated at their front edges from the bottom of the pile to drop down so that the type face of the plate which is dropped will be entirely clear of the plate next above it, and not until then is the lowermost plate moved forward by the carrier from the hopper. In this way the plates are not damaged, and their type surfaces are not subjected to undue wear in the feeding action.

We claim as our invention:

1. In combination in an addressing machine in which flanged printing plates are employed, a hopper and a feeding member having a plurality of recesses in its surface for each plate to receive the flanged edges thereof, the part of the carrier between the recesses serving as a backing for the printing plate, substantially as described.

2. In combination in a machine employing stiff printing plates, a hopper and a feed member, said hopper having a ledge at one side and means at the other side to release the stiff plates one by one, the intervening space being clear for the dropping of the plate, said feed member having means thereon to engage the printing plates when its front edge has dropped and by the movement of said feed member to draw the feed plate from the hopper.

3. In combination in an addressing machine, a carrier having a shoulder or recess thereon, a hopper, printing plates having a shoulder or rib on their lower side to be engaged by the shoulder or projection on the carrier, means for separating the printing plates one by one from the pile for delivering the forward edge of said separate plate on to the carrier or drum to be engaged by the shoulder thereof, whereby the said printing plates will be drawn from beneath the pile, substantially as described.

4. In combination in an addressing machine, a rotary drum, a hopper having a ledge or support for the rear portions of the printing plates and having a movable separating arm or arms to engage the front edges of the printing plates, means for operating the said arm or arms to allow the lowermost plate to drop down at its front edge and recesses or shoulders on the drum for



receiving the front edge of the separated plate, substantially as described.

5. In combination a rotary drum having recesses and shoulders to receive the printing plates with the shoulders engaging therewith, a hopper for the printing plates, a separating arm or arms to separate the printing plates one by one from the pile to allow it to drop onto the drum and a presser device to engage the front edge of the printing plate, to press it into engagement with the drum or carrier, said presser device being supported independently of the drum and being movable to follow up the movement of the carrier and a spring for applying tension to said presser device, to draw it back after the drum has carried a printing plate beneath it, substantially as described.

6. In combination, a rotary drum having a pair of recesses for each printing plate to receive the thickened edges of said plate and having a portion between the recesses to furnish a backing for the type bearing portion of the printing plate, and means for delivering the printing plates from the hopper to the said recesses, substantially as described.

7. In combination with a rotary drum of an addressing machine, a hopper for the printing plates, said drum having a shoulder and recess, and means for controlling the feed of the printing plates from the hopper to the rotary drum, said means causing the front edge of the printing plate to drop into the recess of the drum and to be engaged by the shoulder thereof whereby the printing plate is withdrawn from beneath the pile, substantially as described.

8. In combination with a rotary drum, a hopper, a separating arm to engage the front edges of the printing plates, presser cams to press on the printing plates, the said drum being recessed and the said cams being adapted to enter said recesses, and means for operating the separating arm from the movement of the drum, substantially as described.

9. In combination with a drum having recesses to receive the printing plates, a hopper, a separating arm, a presser to enter the recesses, means for operating the separating arm from the movement of the drum and a presser roller to press the printing plate on to the drum, substantially as described.

10. In combination, a drum, a hopper for the printing plates, said drum having recesses to receive the front and rear edges of the printing plates and means for separating the front portions of the printing plates from the pile to allow them to drop down first at their front edges to be engaged by the drum and drawn by the movement

thereof, from beneath the pile, so that their rear edges will then engage the recesses substantially as described.

11. In combination in a feeding apparatus for printing plates, a carrier a hopper for holding the printing plates independent of the carrier and means independent of the carrier for permitting the printing plates to drop down bodily at their front edges to assume an inclined position from edge to edge, said carrier engaging the front lower edge of the printing plate in its dropped down position, said printing plate being withdrawn from beneath the pile by the onward movement of the carrier, the dropping down action of the printing plate taking place before the carrier arrives in position to move the plate substantially as described.

12. In combination, means for holding the printing plates, a carrier upon which the printing plates are delivered, and means for pressing the printing plates on the carrier at the point of delivery thereto to assist in placing said plates, said means being supported independently of the carrier, substantially as described.

13. In combination, means for holding the printing plates, a carrier upon which the printing plates are delivered, and a device for pressing the printing plates upon the carrier at the point of delivery thereto to assist in placing said plates and following up the movement thereof, said device being supported independently of the carrier, substantially as described.

14. In combination with a hopper, printing plates having depressed laterally extending edges, a carrier movable beneath the hopper and having recesses to receive the depressed edges of the printing plates and means for releasing the forward edges of the printing plates from the hopper whereby said edges will be first deposited upon the carrier and in the recess thereof, said plates being drawn from the hopper by the onward movement of the carrier.

15. In combination with a carrier having recesses therein, printing plates having edges extending laterally from the main part of the plate and depressed in relation to the surface thereof and forming a continuation of said main part, said edges being adapted to enter said recesses, substantially as described.

16. In combination, a hopper for the printing plates, which plates consist of sheet material having its side portions extending downwardly and thence outwardly, forming marginal continuations out beyond and depressed in relation to the main part of the plates, and a carrier having a plain surface with recesses therein to receive the said depressed edges.

17. In combination with a hopper, print-

ing plates, each having its two outer edges depressed, and a carrier having recesses for receiving the depressed edges of the printing plates, there being two such recesses for  
5 each printing plate and said recesses extending parallel with and separate from each other, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

CHARLES CWENS.  
ALEXANDER LYLE.

Witnesses:

C. C. PARIS,  
ALBERT LAZARD.