

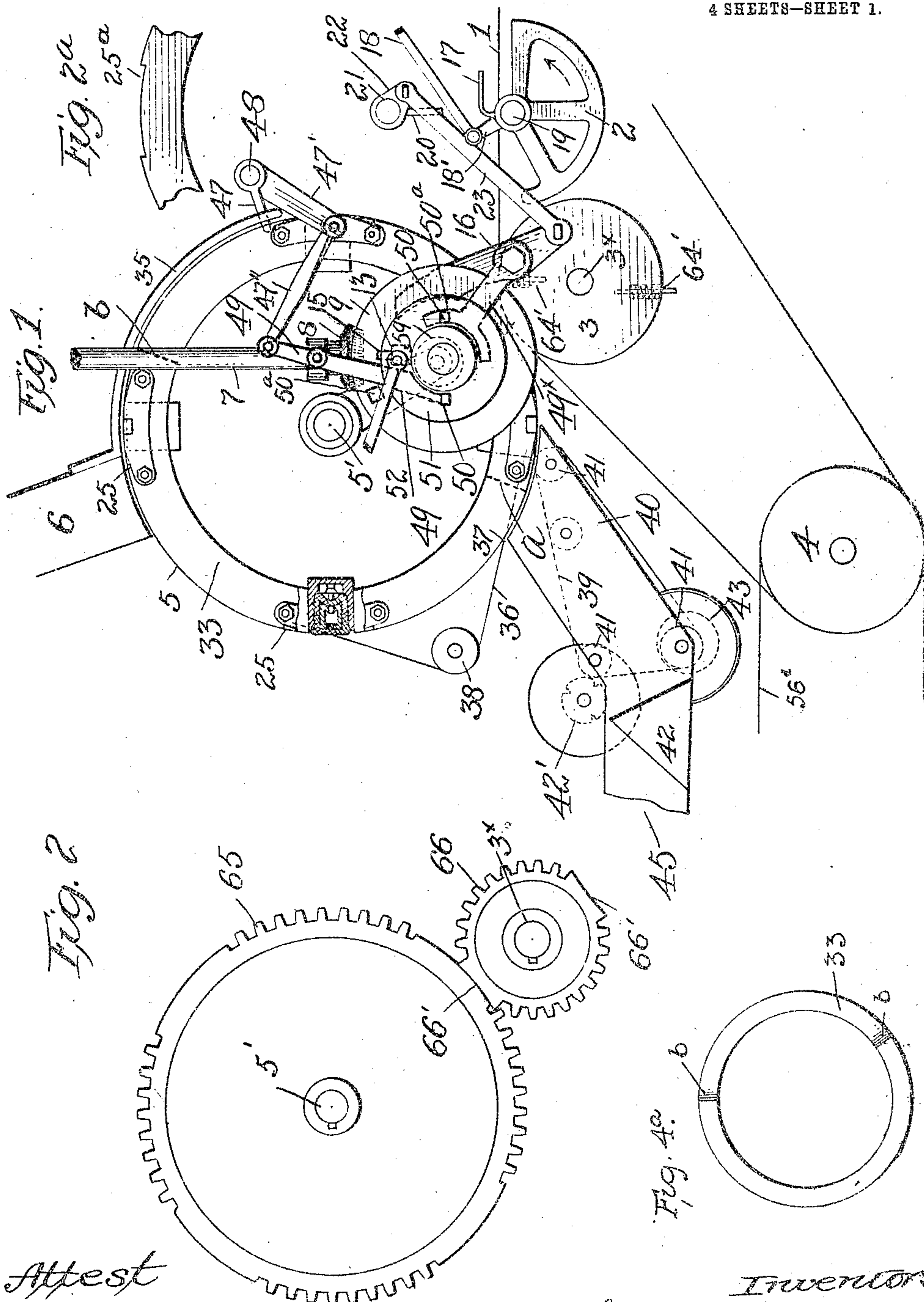
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PATENTED JUNE 2, 1908.

C. OWENS & A. LYLE.
ADDRESSING MACHINE.

APPLICATION FILED JUNE 2, 1908.

4 SHEETS—SHEET 1.



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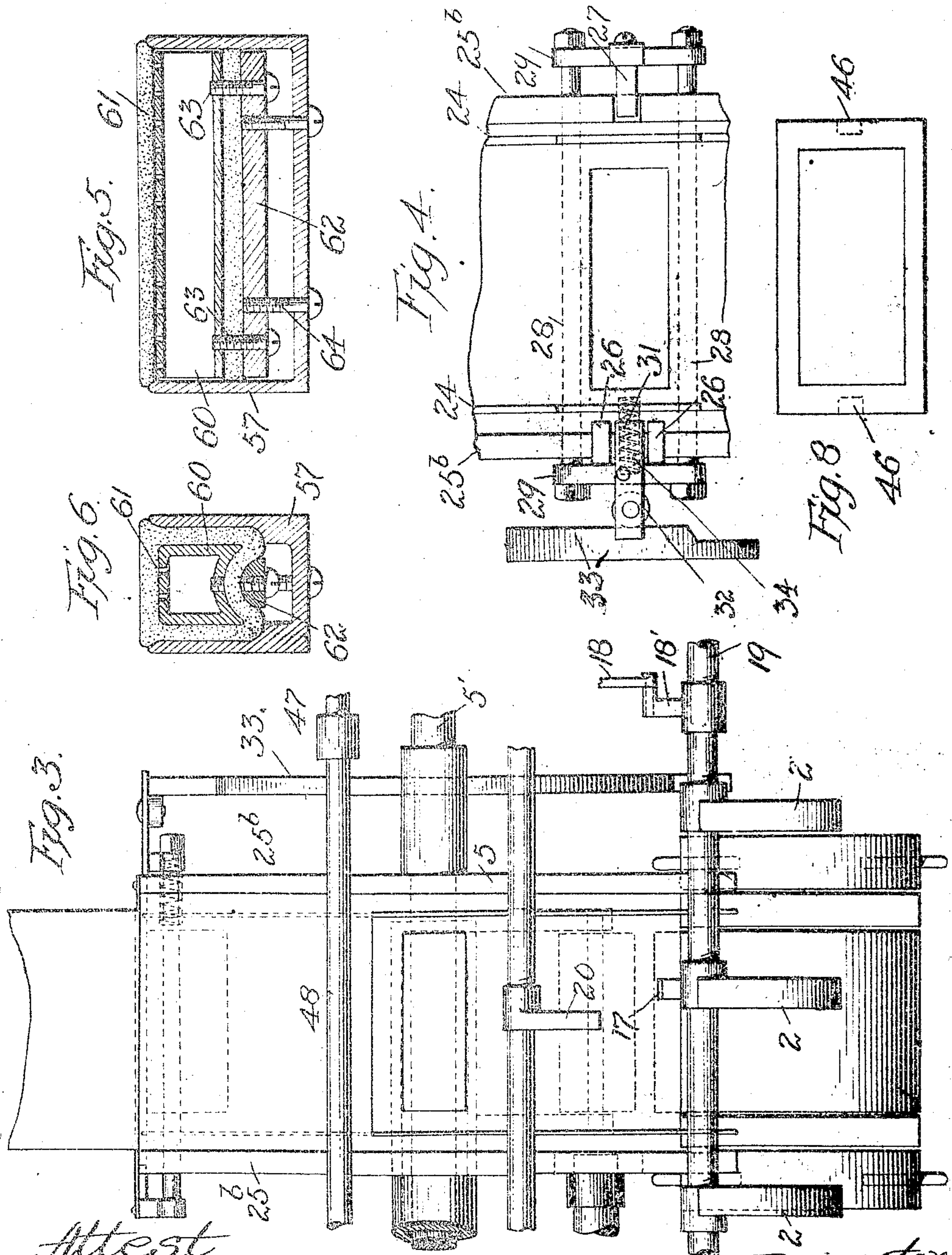
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4 SHEETS—SHEET 2.



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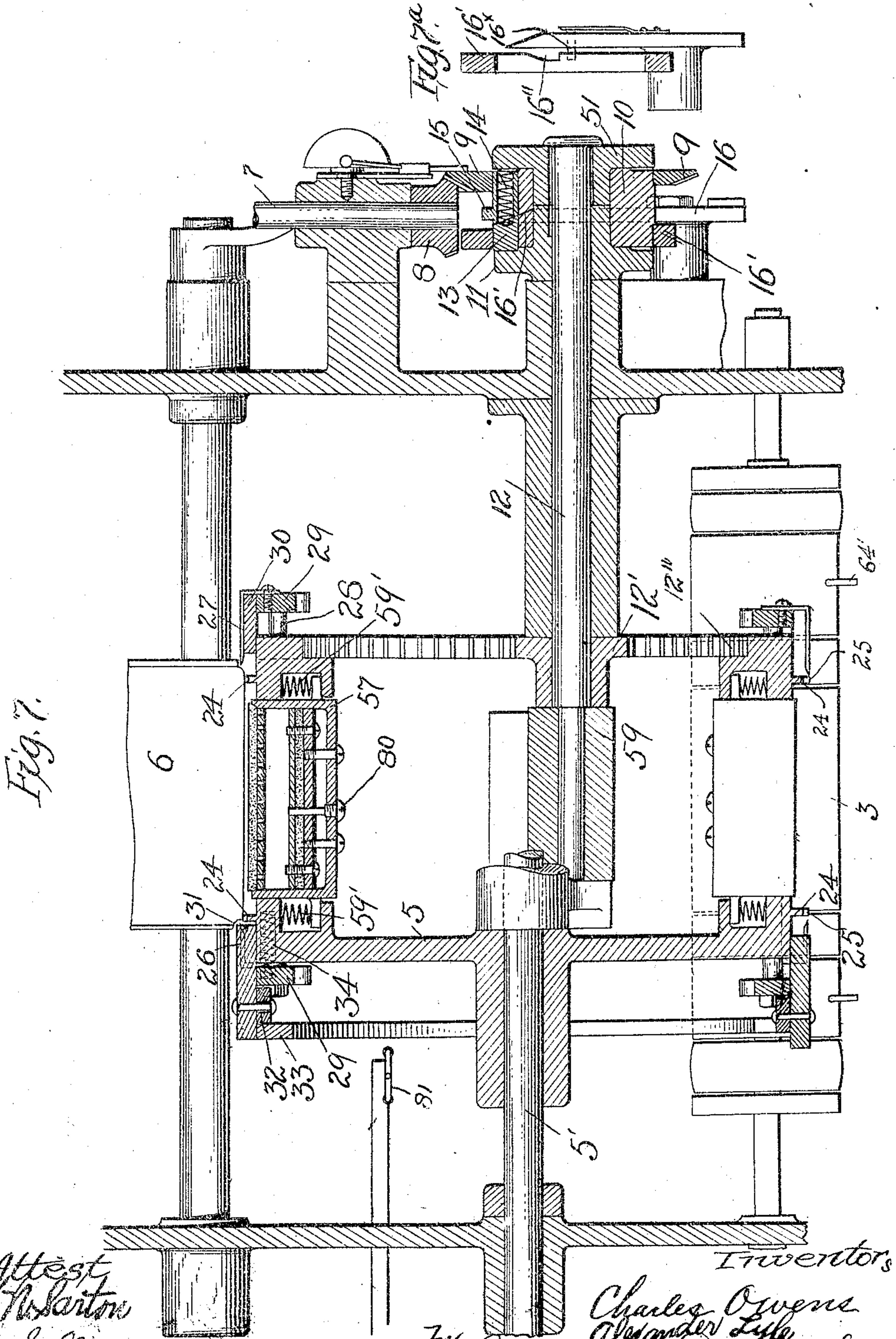
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APPLICATION FILED JUNE 2, 1906.

4 SHEETS—SHEET 3.



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ADDRESSING-MACHINE.

No. 889,328.

Specification of Letters Patent.

Patented June 2, 1908.

Application filed June 2, 1906. Serial No. 319,974.

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 Addressing - Machines, of which the following is a specification.

Our invention relates to addressing machines, such for instance as that disclosed in Letters Patent of the United States dated July 17/06, #826054.

The invention consists in the features, 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 so much of the improved apparatus as will make clear my present invention. Fig. 2 is a detail view of gearing between the stencil drum and the platen. Fig. 2^a is a detail view of a recess for receiving the stencils. Fig. 3 is a front elevation of the stencil drum, the platen and associated parts looking from the right of Fig. 1. Fig. 4 is a plan view of a portion of the stencil carrying drum with the means thereon for holding the stencils. Fig. 4^a is a view on a reduced scale of a cam track for controlling the gripper mechanism for the stencils. Figs. 5 and 6 are detail sectional views of the inking pad. Fig. 7 is a sectional view through the stencil drum on the line of its axis and through the driving mechanism along the axis thereof, the gears 65 and 66 which would appear at the extreme left of said figure have been omitted. Fig. 7^a is a detailed view relating to the clutch mechanism. Fig. 8 is a plan view of one of the stencils. Fig. 9 is a side view of the delivery mechanism. Fig. 10 is an end view of the delivery chute and its operating mechanism. Figs. 11 and 11^a show a modified form of inking mechanism.

The magazines or other articles to be addressed are supplied to the machine by endless belts, one of which is indicated at 1 passing by a reverser 2, over a platen 3 and around a directing drum or pulley 4. The platen 3 is arranged on the shaft 3^x with its periphery close to a drum 5 on a shaft 5' which drum carries the stencils from the hopper around to the platen where they meet in succession the magazines or other articles to be addressed as they arrive at the machine, and ink being supplied to the superimposed parts as hereinafter described, the address being

thus printed upon the magazine or other article. The stencil drum is driven through mechanism similar to that disclosed in the patent referred to comprising the shaft 7 having a bevel gear 8 thereon meshing with a gear 9 on a hub or drum 10 turning loosely on the hub of a clutch disk 11 which is keyed to the drive shaft 12 of the stencil drum. The gear drum 10 is provided with a clutch pin 13 pressed by a spring 14 to engage a notch in the clutch disk 11 and thus connect the gear 9 with the shaft 12 so as to drive the same. The clutch pin has a projection 15 thereon adapted to ride up the inclined end 16' of a clutch lever 16 when said lever stands in a certain position, and thus release the clutch pin from the clutch disk 11 at which time the stencil drum is at rest, and it is in this condition so long as the magazines cease feeding. In other words the normal condition of the drum is at rest and it is set in motion by a magazine being fed thereto. When a magazine reaches the reverser it is caught by the finger or stop 17 of said reverser and held positively while the reverser is being turned by a rod 18 operated in any suitable manner, which rod is connected with the arm 18' on the shaft 19 of the reverser. The reverser consists of a number of segments or disks on the shaft 19 and the finger or stop 17 is arranged centrally of the said shaft.

When the magazine is held by the reverser finger and the reverser given a turning movement in the direction of the arrow the magazine will be forcibly pressed against the trip arm 20 and thus the shaft 21 carrying said arm will be turned and through the arm 22 thereon and the link 23 the clutch lever 16 will be withdrawn to allow the spring pin 13 to engage the clutch disk 11 and thus drive the drum 5 one step, and if the magazines arrive in proper time the movement of the drum will be continuous, whereas if the magazines feed irregularly the movement of the drum will become intermittent or step by step as described in the patent above noted.

It will be seen that the magazines are not simply pressed against the trip arm by the force resulting from their forward feed by the tape but they are held by the finger 17 and forced positively against the trip arm and then are deposited upon the tapes having been turned through an angle of 180°. When the reverser is turned the segmental

portions thereof form obstructions to the forward feed of the oncoming magazine until the reverser resumes normal position again when the next magazine is received by the finger 17 as above described.

When the reverser turns through 180° from the position shown in Fig. 2 and in the direction of the arrow the magazine is thereby laid upon the tapes or feed bands which move the magazine forward to the platen and main drum carrying the stencils. This stencil carrying drum is provided as shown in Fig. 7 with ribs 24 extending around its periphery which ribs fit closely the lower edge of the hopper 6 and sustain the pile of stencils within the hopper. These ribs are recessed at certain points around the periphery of the drum, one of these recesses being shown in Fig. 2^a at 25 and also in Fig. 4. When one of these recesses comes beneath the hopper 6 the lowermost stencil therein drops into the recess and this recess is of just sufficient depth to receive this stencil while holding the others up in place within the hopper. At each of these points 25 of the drum there is an ink pad and the stencils when in position overlies these ink pads and are carried around by the drum in this superimposed position so as to meet the magazine and apply the address thereto as the said stencils and magazines in superimposed relation pass between the platen and the drum 5.

The ribs 24 serve to provide the least possible friction between the pile of stencils in the hopper and the rotary carrier and being located at a slight distance from the ends of the stencil the space between them and the ends of the stencil provides for any unevenness at the corners or ends of the stencil which invariably occurs in card-board stencils and finally as above indicated these ribs in connection with the bottom of the hopper form means for positively feeding the stencils or plates one at a time by having the bottom of the hopper conform exactly to the circumference of these ribs and providing said ribs with recesses at intervals to receive the stencils one at a time from the hopper.

The mechanism for positively gripping and transporting the stencils from the hopper 6 to the platen for the purpose of superimposing them upon the magazines comprises fingers 26, 27, those marked 26 being arranged at or near one edge of the drum while those marked 27 are arranged at the other edge of the drum and approximately axially in line with the ones first mentioned there being two of the grippers 26 for each one of the grippers 27. The fingers or grippers 26 are fixed to the drum in any suitable manner while the fingers or grippers 27 have a sliding movement in a direction longitudinally of the drum or parallel with the axis thereof. Each gripper 27 coöperates with two of the fixed grippers 26 to hold one of the stencils.

The movable grippers are each carried upon a sliding frame, there being one such frame for each movable gripper and this frame consists of the bars 28 supported in the drum to slide longitudinally thereof, said rods being connected at their ends by cross bars 29 to one of which cross bars the movable gripper is attached as shown in Figs. 4 and 7, as is also an abutment 30. The other cross bar carries a block or abutment 31, lying between the two fingers or grippers 26 and this abutment 31 also carries a roller 32 to engage a cam track 33 extending concentric with the axis of the drum. The sliding frame is under pressure of a spring 34 tending constantly to move the frame towards the left in Figs. 4 and 7, but this pressure is resisted by the roller 32 bearing against the cam track, and therefore when the grippers arrive at the stencil hopper 6 the movable gripper 27 of each set will be pressed to the right by the roller running on the cam track and thus the space beneath the hopper will be unobstructed so far as the grippers are concerned and the lowermost stencil will drop freely into the recess 25^a of the ribs 24 and with its ends between the edge flanges or rims 25^b of the drum. In the revolution of the drum the stencil is carried from the hopper and in the first part of its transporting movement it is retained in the recess 25^a by the overlying segment 35. Soon after the stencil is transported by the drum from the hopper the roller 32 runs off the end of the cam or track at the point *b*. This allows the spring 34 to exert its force moving the sliding frame leftward Figs. 4 and 7 with the result that the gripper finger 27 overlies the stencil while the abutment 30 strikes the end of the stencil and pushes it laterally across the face of the drum.

The abutment 31 opposite the abutment 30 just mentioned being connected to the same sliding frame with the abutment 30 recedes as the abutment 30 advances and the edge of the stencil is therefore pushed under the pair of fixed grippers 26 and is held in place by said fixed grippers and the movable grippers while being superimposed upon the magazines and while the impression is being made. The edge of the stencil as a result of the action just referred to abuts against the inner side of the rim or flange 25^b at the left hand edge of the drum, Fig. 4. The stencil as just stated is held in this manner by the grippers until after it passes the impression platen when upon reaching the end of the cam way or track 33 the roller 32 by engaging therewith will push the sliding frame to the right against the action of the spring 34 and thus the abutment 31 will move the stencil from under the gripper fingers 26 and the stencil then coming against the inner face of the flange 25^b at the right of Figs. 4 and 7 is thereby arrested and the finger 27 retracts

from over the stencil allowing the same to discharge from the stencil drum.

In order to facilitate this discharge I provide a pair of cords 36 passing around the drum and these cords are deflected at 37 away from the drum so as to pass over a pulley or drum 38. These cords or bands force the stencils off from the drum at the proper point and they fall upon an endless belt 39 passing around the pulleys or drums 41 in a trough 40. This belt directs the stencil so that its lower or advanced edge will strike the abutment or block 42 which has tapering sides. The stencil falling into the trough 45 adjacent the block 42 will be pressed or struck at about its middle height by an eccentric 43 on the shaft of one of the rollers 41 and this will cause the upper edge of the stencil to be thrown over to the left in Fig. 1 and into contact with the periphery of the roller 42' which will cause the stencil to be packed against the abutment or against the stencils already lying in the trough 45. The roller 42' is of soft rubber. The abutment is a piece of iron of prismatic shape and rests loosely in the bottom of the hopper or trough.

The roll 42' it will be noticed is fluted or grooved and the upper edge of the stencil being engaged by these flutes or grooves is caused by the said roller to be moved into position in the trough or hopper 45 to be acted on by the eccentric and to be packed as above described.

As in the machine disclosed in the patent above referred to, I employ means whereby the magazines may be distributed according to the general locality of the addresses. For this purpose I provide stencils of special form and which are arranged in the hopper at certain points in the series of stencils so that when one of these stencils reaches a certain location it will effect a change in the delivery of the magazines. Such a delivery controlling stencil is shown in Fig. 8. It is provided with notches at its ends as at 46. When a stencil having its ends notched or recessed is fed on to the stencil carrier or drum from the hopper 6 the abutment 30 will pass into the notch or recess when the said abutment moves transversely of the stencil drum and thus the stencil engaging mechanism will be allowed to project as much further through the drum as is equivalent to the depth of the recess and thus the projecting end of the abutment 31 will strike a trip arm 47 secured on the shaft 48 which through an arm 47' link 47'' and trip lever 49 will effect the change in the delivery in a manner somewhat similar to that disclosed in the patent above referred to.

The lever 49 has a beveled or inclined end to engage and control a clutch pin 50 which is adapted to connect the drum 10 with the disk 51 which is loose on the drum shaft 12.

The trip or clutch lever 49 is normally in position to retract this clutch pin and allow the disk to remain at rest but when the clutch lever is withdrawn from the pin because of the presence of the specially recessed stencil at the gripper mechanism the disk will be driven from the drum 10 by the clutch pin and the movement of the disk will be transmitted through a rod 52 and beveled gearing at 53 to a shaft 54 which is connected with a distributing chute 55. This chute is adapted to deliver the magazines either into the bag A or the bag B according as it is inclined in one direction or the other and it is automatically shifted through the connections described when a recessed stencil occurs in the series of stencils and reaches the stencil gripper mechanism so as to control it to operate the trip arm 47.

The magazines are conveyed to the distributing chute or plate by the bands or tapes 55', 56'. The band 56' extends from the pulley 4. The chute or plate is inclined and its upper edge is slightly below the conveyer bands 56 and it is provided with a stop against which one end of the magazine strikes while its other end continues onward until it is about parallel with the conveyer bands when it drops upon the chute or inclined delivery plate and rolls down into the bag intended to receive it. When the distributor is reversed its inclination is changed so as to deliver the article into the other bag.

The ink necessary to make the impression through the opening in the stencils is supplied from the ink pad which comprises besides the contact pad proper a box or casing 57 adapted to have radial movement on the carrier or drum, said radial movement outward taking place when the ink pad in moving with the carrier is passing the platen 3 at which time the impression must be made and for which purpose a roller 59 is arranged on the shaft 12 within the carrier or drum and in fixed relation thereto so that as the pad box is passing the roller it will be forced outwardly thereby to make the impression. It is forced inwardly by the springs 59'.

The ink box contains a fountain or ink reservoir 60 perforated at 61 and surrounded by the felt or other pad material. The bottom of the fountain is curved and is so constructed for the purpose of keeping the pad material in proper position, a block 62 having a rounded bearing surface pressing the felt into the groove or hollow in the ink fountain. Screws 63 hold the block 62 to the ink fountain and screws 64 adjust the position of the ink fountain with the felt or pad material carried thereby.

I provide yielding pins 64' on the platen for the purpose of registering the articles to be addressed so that they will be properly associated with the stencil. The platen is driven from the rotary carrier by a gear 65

on the shaft of the carrier or drum 5 meshing with a gear 66 on the platen shaft 3^x. These gears are shown in Fig. 2 and they are mutilated in the sense that they are not toothed throughout their extent but have locking surfaces at intervals as shown at 66', so that the platen will rotate intermittently and be locked between its rotary movements, the locking means between them being such as to keep the platen in proper registration with the drum.

At 80 I show a screw plug which, when removed will permit the filling of the inking fountain or reservoir. It will be noticed that there is a space below the fountain 60 in the box 57.

The ink pad is adapted to be inked either by filling the fountain 60 and allowing the ink to pass out and saturate the pad through the holes 61 or by filling the space in the box above referred to with wicking and saturating said wicking with ink and thus moistening the pad material in this manner.

The filling of the box or fountain with ink can be accomplished without removal of the box or fountain from the machine.

In order to control the machine by stopping it when a stencil fails to feed onto the carrier or the supply of stencils in the hopper fails, I provide an electrical switch shown diagrammatically at 81 having one end arranged in the path of the abutment 31 when said abutment is projected laterally as a result of the absence of the stencil from the drum. The switch is thus operated and cuts off the current to the motor which drives the machine.

In place of the ink pads we prefer to use soft rubber inking rolls 75 Fig. 11, carried by arms 80 pivoted to the drum at 78 and pressed normally inwardly by springs 79. The rollers receive ink from fountain and distributing rollers 71, 72 and 73 from fountain 70. The roller 73 is rotated through the gear 74 which is driven by the internal gear of the drum and said roller 73 imparts rotary movement to the inking roller when distributing ink thereon. There is one of the soft inking rolls for each stencil gripping mechanism. When the stencil is passing the platen the soft inking roll is forced outwardly by contact with the roll 76 journaled in fixed bearings, so that said soft rubber roll having been inked will spread itself over the surface of the stencil to apply the ink thereto. After passing the roller 76 the ink roller moves inwardly under the action of the spring 79.

In order to secure the proper action of the clutch for controlling the delivery we employ two clutch pins 50, 50^a. The former we have already described.

The clutch pins are adapted to be always out of action when they reach the position 50^a and thus the disk 51 will make but one half revolution at each operation of the lever

49, and in this way the delivery chute will move to one position for one action and to the opposite position for the next action.

The pins are released from the disk 51 at 50^a by a cam 49^x which is rigidly held to any suitable frame part.

We claim:

1. In combination in a machine of the class described, a stencil carrier or drum, a platen, means for feeding the magazines or other articles to the stencil carrier and platen, driving mechanism, means controlling the same and operated by contact with the magazine, and means for positively forcing the magazine into contact with the said means, substantially as described.

2. In combination in a machine of the class described, a stencil carrier, a platen, means for feeding the magazines or other articles thereto, driving mechanism and means for controlling the same by contact with the magazine, and means for gripping the magazine and forcing the same positively against the said controlling means, substantially as described.

3. In combination in a machine of the class described, a stencil carrier, a platen, driving means therefor, controlling means, means for feeding the magazines to the stencil carrier and platen, and a reverser for engaging the magazine and positively forcing the same into contact with the controlling means, substantially as described.

4. In combination in a machine of the class described, means for feeding the magazines or other articles to be addressed, addressing means, driving means therefor, controlling means for the driving mechanism, and a reverser for engaging the magazines as fed by the feeding means and turning the same to positively engage the controlling means, substantially as described.

5. In combination in a machine of the class described, addressing means, driving mechanism, controlling means, a feed band, means for positively engaging a magazine and forcing the same against the controlling means, said engaging means having a portion to arrest further progress of the magazines being fed until its return to normal position, substantially as described.

6. In combination in a machine of the class described, means for printing the address, driving means, controlling means for the driving means, a feed band or bands for the magazines, and a reverser to engage the magazine and positively move the same into engagement with the controlling means, said reverser having a segmental portion to arrest the onward movement of the other magazines, substantially as described.

7. In combination, the addressing means, driving mechanism therefor, controlling means, a reverser having a finger 17 and a segmental portion, said reverser engaging a magazine and forcing the same into positive

contact with the controlling means, substantially as described.

8. In combination with the hopper for the stencils, a drum having the edge flanges and circumferential ribs with recesses therein into which the stencils drop from the hopper, and means for engaging the said stencils to hold them while the address is being printed, substantially as described.

9. In combination with the hopper, the carrier or drum for the stencils, the fixed finger or fingers at one side of the drum, movable finger or fingers at the opposite side of the drum, and an abutment to engage the stencil and move it transversely of the drum to be engaged by the fixed fingers, and means for operating the movable finger and the abutment, substantially as described.

10. In combination in a machine of the class described, a hopper, a stencil carrier or drum, a fixed finger or fingers on the drum, a movable finger opposite the fixed finger or fingers, a sliding support for the said movable finger, an abutment carried by the said sliding support adapted to engage the stencil at or near the movable finger, a second abutment on the said sliding support to engage the opposite edge of the stencil, and means for operating the said sliding support, substantially as described.

11. In combination, the hopper, the stencil carrier having the edge flanges and the circumferential ribs with depressions in the said ribs to receive the stencils, said ribs being located at a slight distance from the edge flanges, and means for holding the stencils to the drum, the ends of the said stencils overlying the space between the ribs and the edge flanges, substantially as described.

12. In combination in a machine of the class described, a hopper, a drum or carrier for the stencils having the edge flanges between which the stencils are received, gripper fingers, one of which is fixed and one movable, an abutment for each end of the stencil and means for movably supporting the said abutment and the movable finger, substantially as described.

13. In combination, the hopper, the stencil drum or carrier having the edge flanges and the circumferential ribs between them and separated therefrom, said ribs having depressions to receive the stencils, a fixed finger at one edge of the stencil carrier or drum, a movable finger or fingers at or near the other edge, movable abutments for engaging the ends of the stencils and for moving them transversely of the drum first in one direction to be engaged by the fixed fingers and then in the other direction, and movable supporting means for the said abutments and the movable finger, substantially as described.

14. In combination, the hopper, the drum or carrier, means for gripping the stencils and for releasing them, the said means having

movement transversely of the periphery of the drum to move the stencil to be gripped and released, and stop means for limiting the movement of the stencil when being released, substantially as described.

15. In combination, the rotary carrier for the stencils, means for gripping the stencils thereto and releasing them therefrom, a band for receiving the stencils, a grooved rubber wheel adjacent the said band to engage the leading edge of the stencil and direct it downwardly, and means for receiving the stencils from the said band, substantially as described.

16. In combination with the stencil carrier, a band to receive the stencils discharged therefrom, and a grooved roller adjacent the band for directing the stencils downwardly, substantially as described.

17. In combination, a drum or carrier for the stencils, a band for receiving the stencils therefrom, a trough having a block therein freely movable, means for engaging the stencils falling into the trough to move them forward, said means contacting with the stencils at or near the middle height thereof, and means for engaging the upper ends of the stencils for moving them against the said block, substantially as described.

18. In combination with the carrier or drum for the stencils, a band to receive the stencils therefrom, a roller at the discharge end of the said band to direct the stencils downwardly, a trough below the said roller, a follower therein, and means for engaging the said stencils at their middle or lower portions for pressing them forward, the said roller engaging the upper part of the stencils as pressed forward, substantially as described.

19. In combination with a stencil carrier, means for controlling the delivery of the addressed article to distribute the same, means on the carrier for engaging the stencils, and stencils arranged to permit a variable amount of movement to the said engaging means to operate the controlling means, substantially as described.

20. In combination with the stencil carrier, means controlling the distribution of the addressed articles, stencils, some of which have intact edges and others having notched edges, and means on the stencil carrier to engage the edges thereof and to have a variable amount of movement according as the said edges are intact or notched whereby to operate the controlling mechanism or miss the same, substantially as described.

21. In combination with a stencil carrier, the gripper fingers thereon, one of which is movable, movable abutments to engage the stencils, one of said stencils having a notched edge whereby the abutments are permitted a greater amount of movement, and controlling means to be operated by one of the said abutments, substantially as described.

22. In combination with an addressing

machine, a delivery band or bands, a stop in the path of one end of the magazine or other article adapted to arrest the same while the other end is carried forward by the band or bands, and a delivery chute to receive the article when turned by the said stop, substantially as described.

23. In combination the hopper, a carrier for receiving the stencils therefrom means on the carrier for gripping the stencil and means on the carrier for moving the stencil into and out of engagement with said gripping means, substantially as described.

24. In combination, the hopper, a drum for receiving the stencils therefrom, the gripper fingers fixed at one end of the drum and the movable gripper fingers arranged at the other end of the drum and movable towards and from the fixed gripper fingers, substantially as described.

25. In combination in a machine of the class described, a delivery band or bands, a shifting chute to receive the magazines therefrom, means for automatically shifting said chute and a stop on said chute for the magazine, substantially as described.

26. In combination, with the stencil drum, gripper means thereon having an excess movement when the stencil is absent from

the said drum and a switch operated by the said gripper means when the latter is moved to its extreme position, substantially as described.

27. In combination, the delivery mechanism comprising a chute, a crank disk for controlling the same, means for driving the crank disk one half revolution for each change in the delivery and connections between the crank disk and the chute, substantially as described.

28. In combination the delivery mechanism comprising a chute, a clutch, connections between the clutch and the delivery chute, the two clutch pins, means for holding them out of action when they reach a certain position and means for controlling the clutch pins to throw them into and out of action, substantially as described.

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

CHARLES OWENS.

ALEXANDER LYLE.

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CHAS. W. FUESS.

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