

1,026,416.

W. W. TUCK.
ADDRESSING MACHINE.
APPLICATION FILED DEC. 2, 1909.

Patented May 14, 1912.
6 SHEETS—SHEET 1.

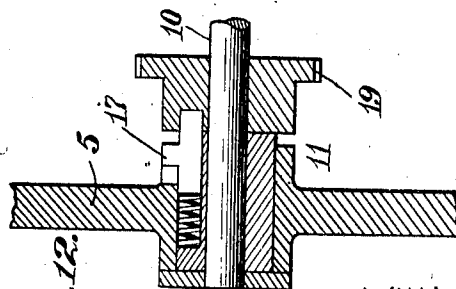
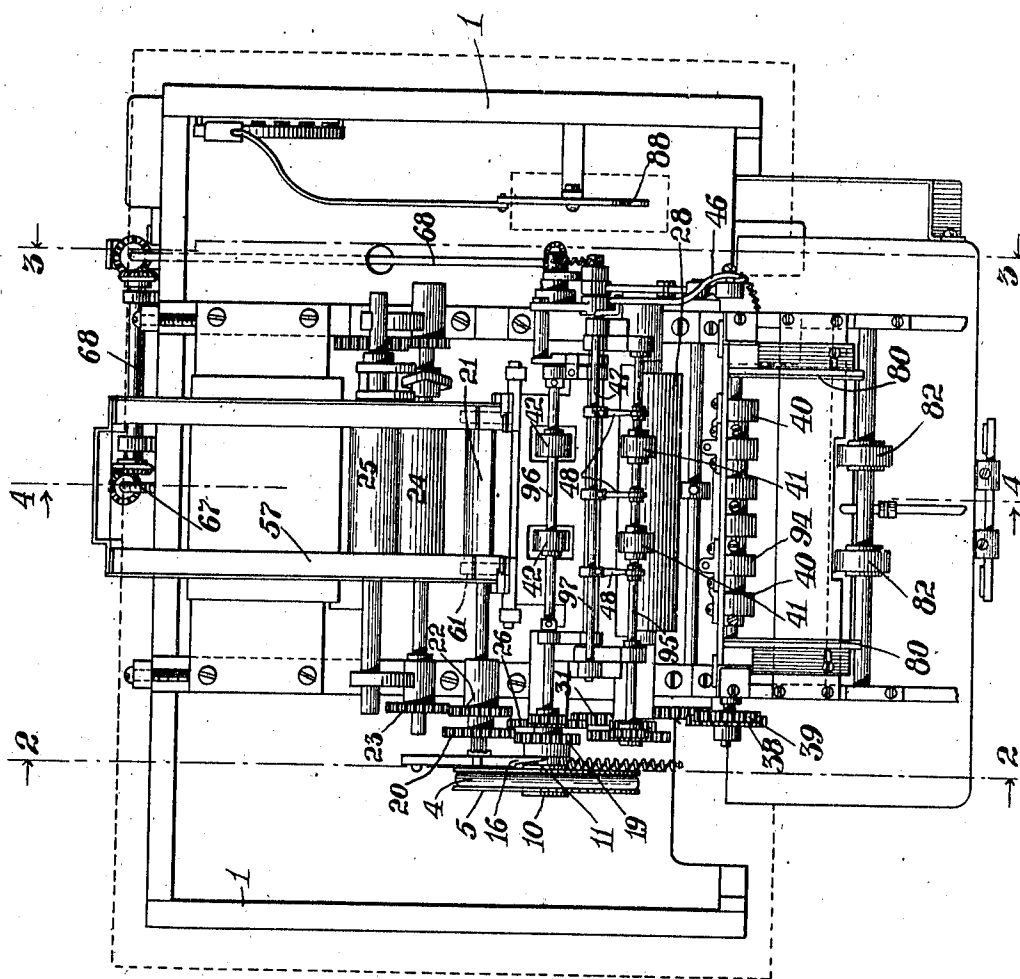


Fig. 1.

Fig. 12.

Attest:
W. W. Tuck
W. W. Tuck

by

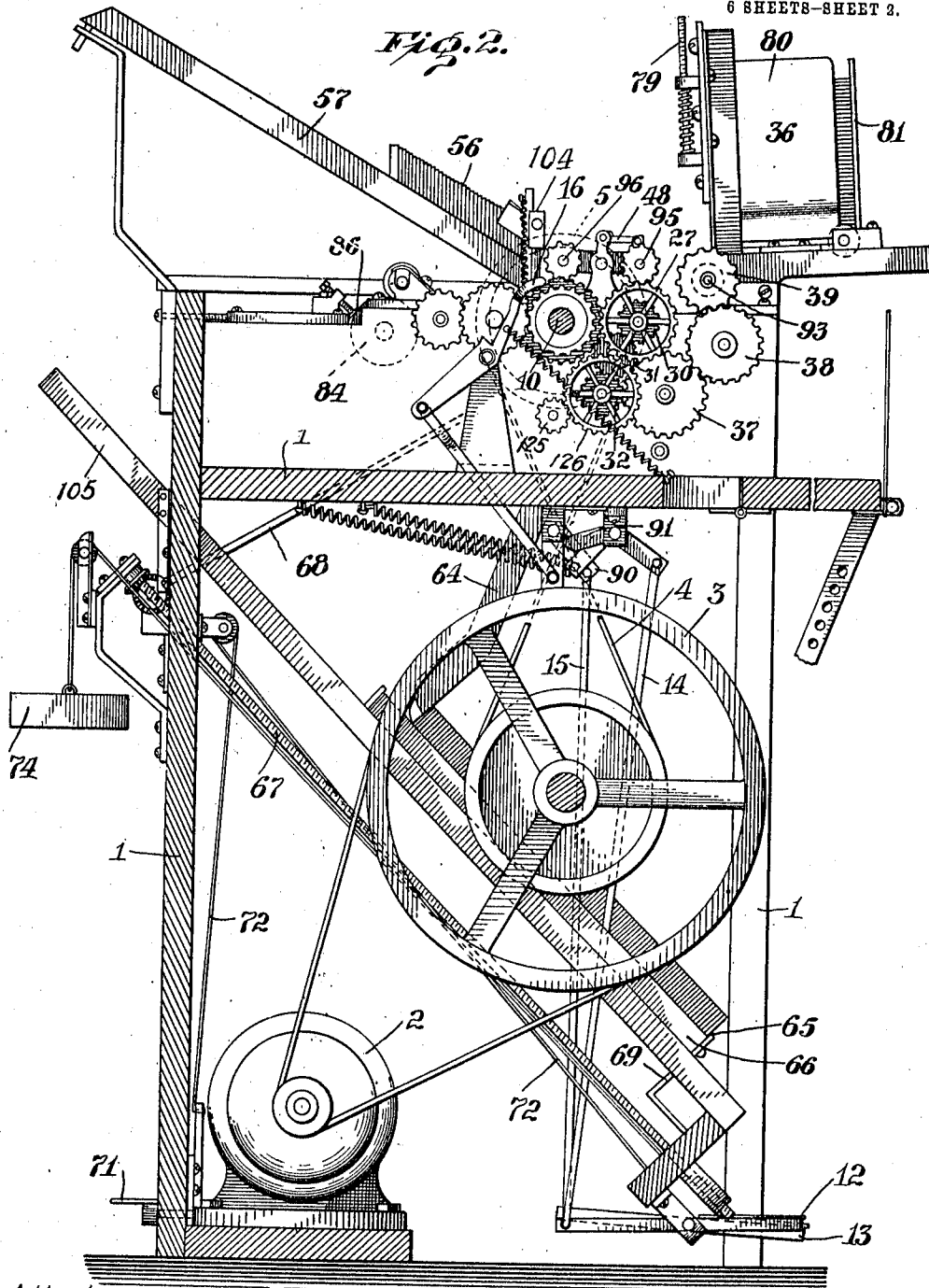
Inventor:
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W. W. Tuck
Attys

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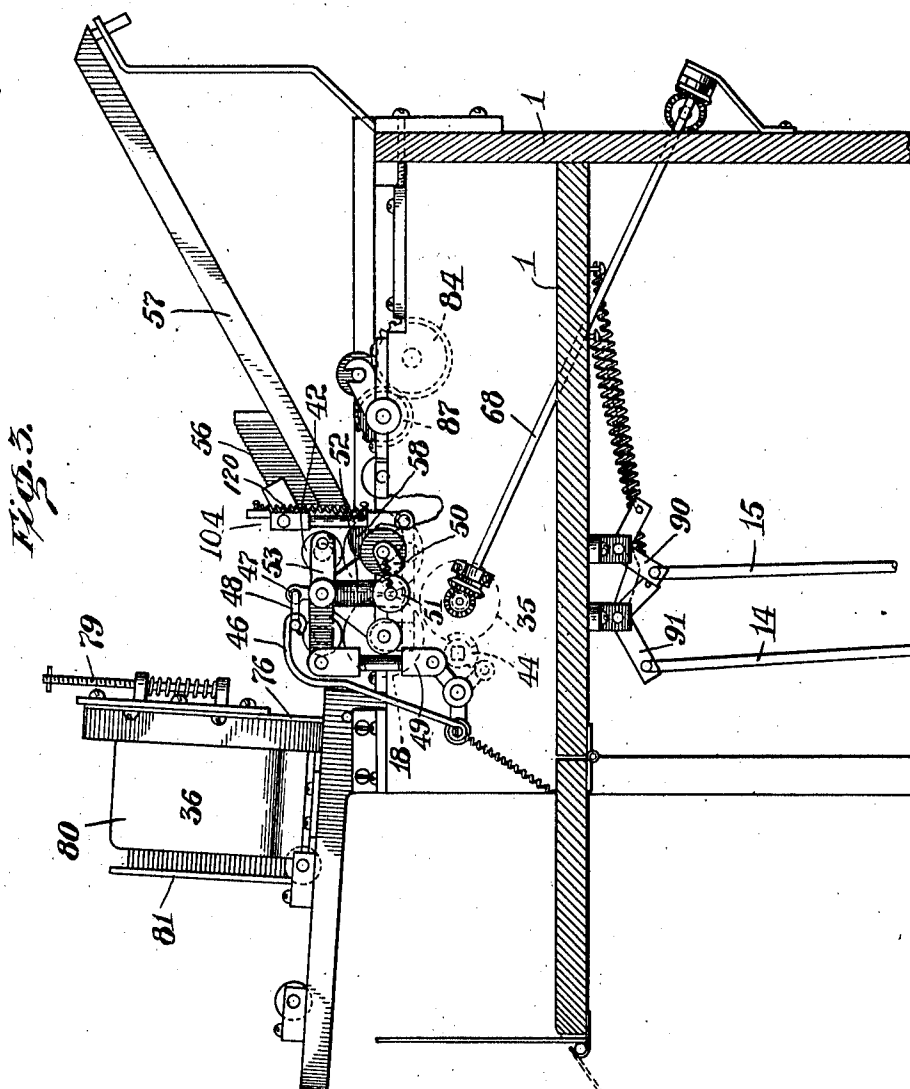
Inventor:
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Attest:
C. S. Ashley
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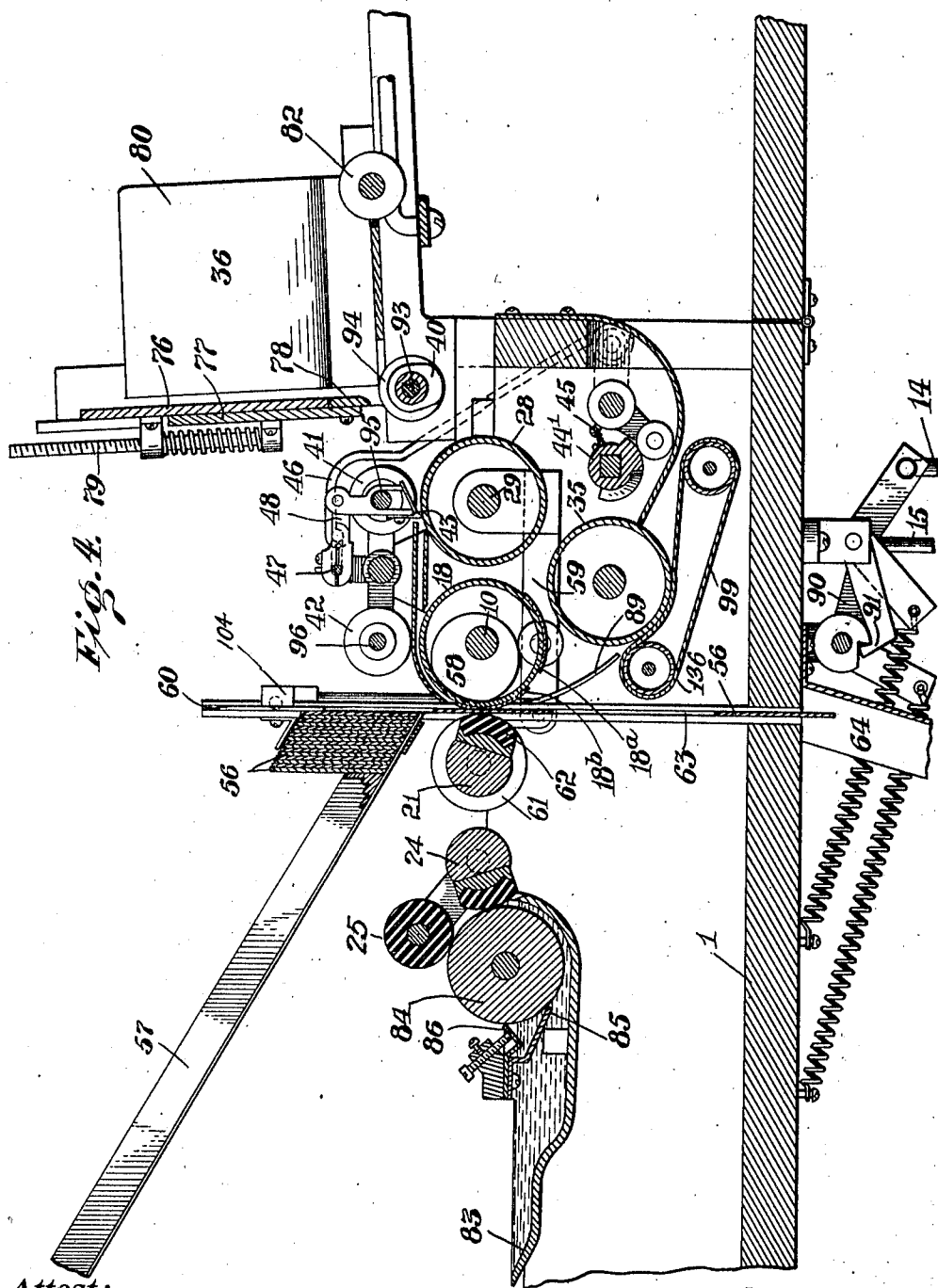
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6 SHEETS-SHEET 4.



Attest:
C. L. Ashley
C. O. Mixter

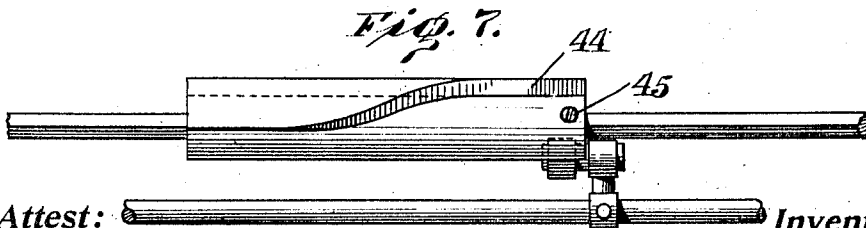
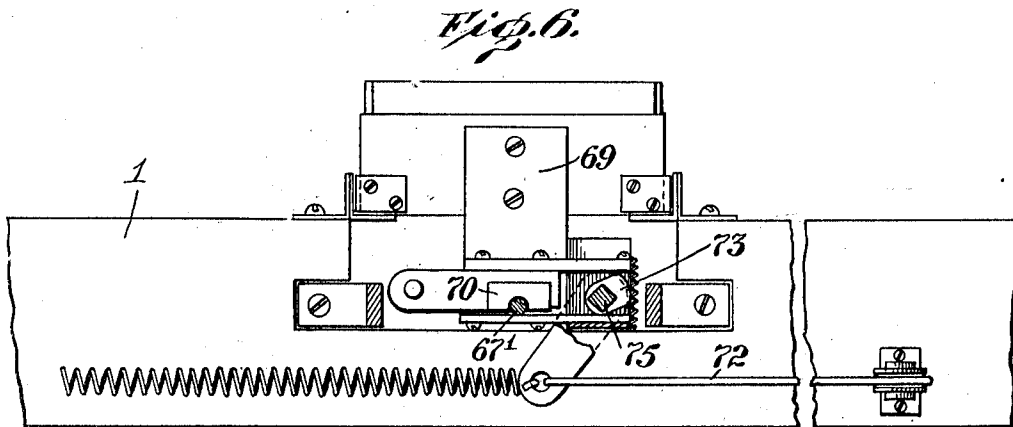
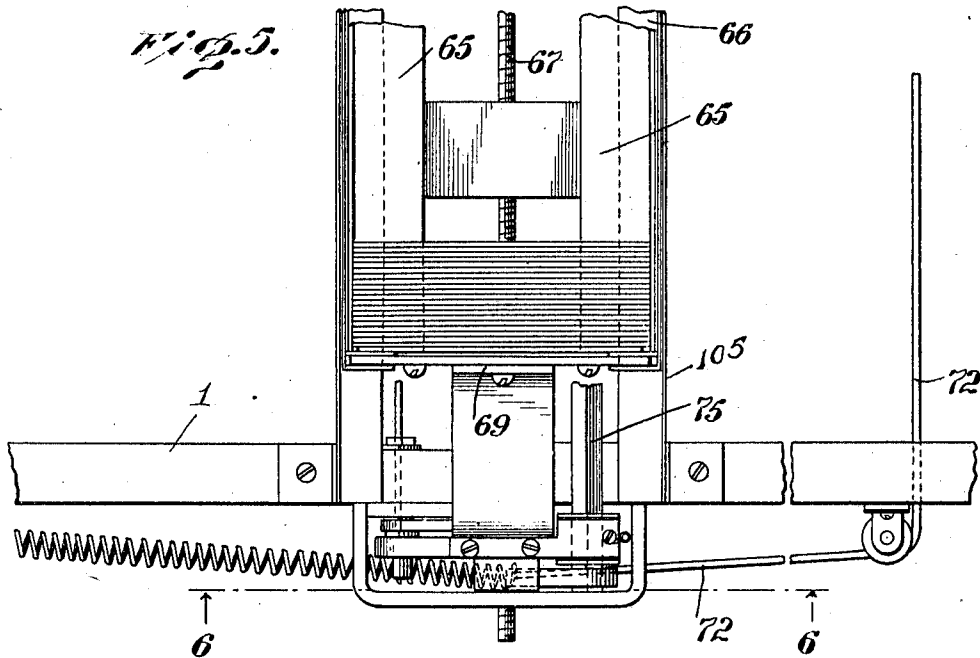
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6 SHEETS—SHEET 5.



Attest:
C. L. Ashley
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6 SHEETS-SHEET 6.

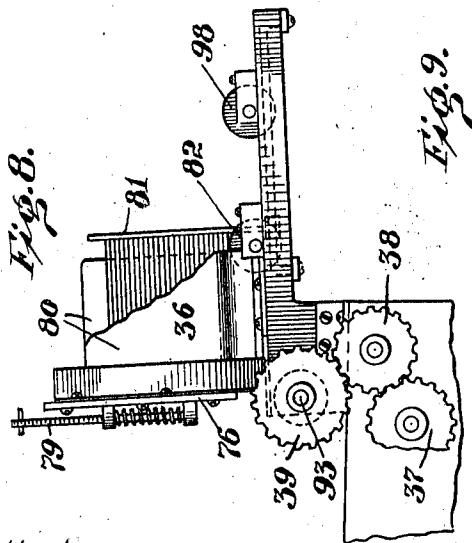
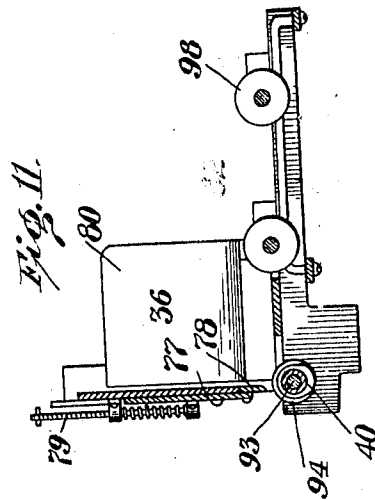
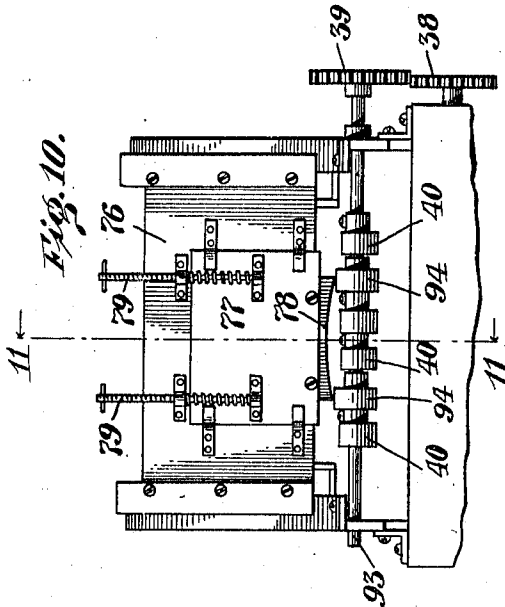
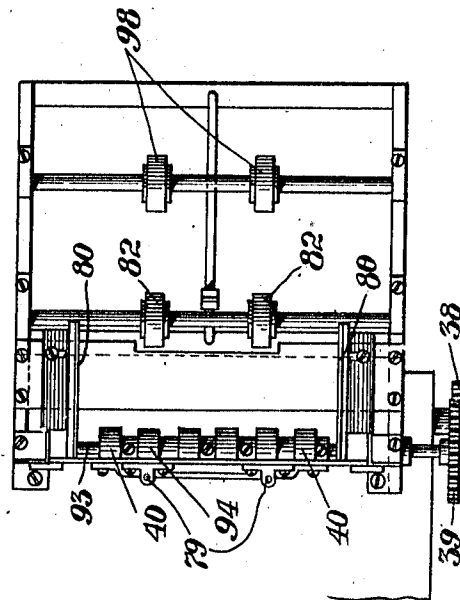


Fig. 9.



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Comptroller

Inventor:
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by *Betts Shepley Bentley* Attys.

UNITED STATES PATENT OFFICE.

WILLIAM W. TUCK, OF RICHMOND HILL, NEW YORK, ASSIGNOR TO VELOX MANUFACTURING COMPANY, A CORPORATION OF NEW YORK.

ADDRESSING-MACHINE.

1,026,416.

Specification of Letters Patent.

Patented May 14, 1912.

Application filed December 2, 1909. Serial No. 530,932.

To all whom it may concern:

Be it known that I, WILLIAM W. TUCK, a citizen of the United States, residing at 33 South Oak street, Richmond Hill, Long Island, New York, have invented certain new and useful Improvements in Addressing-Machines, of which the following is a full and complete specification.

My invention relates to addressing machines such as are used in newspaper and other offices where a large number of wrappers, cards, blanks or matter of any kind are to be addressed, printed or billed, and it more particularly relates to machines of this kind adapted to be used in connection with stencils or plates having the desired characters punched in or raised on their surface.

The objects of my invention are to increase the speed at which the blanks may be addressed or printed, and to provide a simple and reliable machine; to incorporate in such a machine a reliable automatic feed for the blanks to be addressed, as well as for the stencils; to provide reliable inking devices; means for conveying the stencils and blanks in correct relation to one another to the printing rolls; and for re-assembling the stencils and carrying away the blanks after the latter have been addressed; and to provide a rotating cylinder adapted to cooperate with a rotating ink roll in the place of reciprocating devices heretofore used.

My machine embodies other features of improvement, which contribute to the utility and improved operation of the machine, which will be later pointed out.

Referring to the drawings accompanying and forming a part of this specification, Figure 1 is a top or plan view of a complete machine embodying my invention; Fig. 2 is a side sectional view taken on the line 2-2 of Fig. 1; Fig. 3 is a sectional view taken on the line 3-3 of Fig. 1; Fig. 4 is a transverse sectional view showing the feeding device for blanks, the feeding and printing cylinders, the inking rolls and the stencil magazine or holder, and is taken on the line 4-4 of Fig. 1; Figs. 5 and 6 are detail views showing mechanism for elevating the stencil holder, which is placed beneath the machine and receives the stencils after they have been used; Fig. 6 being a sectional view on the line 6-6 of Fig. 5; Fig. 7 is a detail view showing an adjustable cam used

to intermittently bring into operation the feeding rolls; Figs. 8, 9, 10 and 11 are detail views of the mechanism for feeding blanks to the printing cylinders; Fig. 11 being a sectional view on the line 11-11 of Fig. 10. Fig. 12 is a detail sectional view of the clutch used to throw the machine into and out of operation.

Throughout the several views the same reference numerals are used to designate the same parts.

The number 1 designates the housing or frame-work in and on which the machine is assembled; 2 is an electric motor which drives a combined pulley and fly-wheel 3, which, in turn, by means of a belt 4, drives the wheel or pulley 5, which is in line with the main driving shaft 10 and to which it may be connected by the clutch 11; the clutch 11 may be thrown into and out of operation by means of the pedals 12 and 13, which operate through the rods 14 and 15 to raise and lower the wedge 16, which throws into and out of engagement the locking pin 17 (see Fig. 12); when the pedal 13 is lowered, the rod 15, operating through bell crank 90, raises the wedge and allows the locking pin 17 to engage, so that wheel 5 will drive shaft 10; the wedge, when elevated, is held in position by latch 91 controlled by pedal 12 through rod 14. The printing cylinder 18 is carried on the main shaft 10, which carries a gear 19, which meshes with and drives the gear 20 so that the latter will rotate the ink roll or pad 21; the gear 22, mounted on the same shaft with the gear 20, drives the gear 23, which rotates the ink rolls 24 and 25. The feed cylinder 28 is driven from the main shaft 10 through gears 26, 30 and 31. The gear 31 drives gear 32 which is on the same shaft as gear 126 which drives gear 125 which in turn rotates the pulley 136 driving the belt 99 used in connection with the cylinder 35 to remove the blanks after they have been addressed.

The automatic feeding mechanism 36 is operated through gear wheels 31, 37, 38 and 39. The latter is mounted on the shaft 93, which carries the cam-shaped wipers 40, which, at each revolution, draw one blank from the bottom of the stack arranged above and feed it to the feed cylinder 28, as hereinafter more fully described. Loose rollers 94 are arranged on the shaft 93 between the

cam-shaped wipers and serve to support the blanks over the wipers. The feed cylinder 28 is constantly in operation, but as it has a smooth surface the blanks will rest on its surface without being fed forward until the feed rolls 41, mounted on shaft 95, are lowered so as to press the blank against the feed cylinder. The feed rolls 41, the feed rolls 42, mounted on shaft 96, and the stops 43, on shaft 97, are all driven, as shown, from the main shaft 10, and timed to act in unison with the stencil feed 104, and the arrangement is such that whenever a stencil cylinder, it will meet and register in the same relative position with a blank; in order to accomplish this, the stops 43 are raised and lowered by means of the cam 44, which is adjustable by set screws 45; the cam operates through the arm 46 and shaft 47 and rocker arms 48 to raise and lower the stops at any predetermined times. The adjustable cam also operates through arm 49 to lower the rolls 41 at the same moment that the stops are raised.

When the machine is in operation, the blanks are fed forward by the wipers 40 and caught and held in position by the stops 43 until the cam 44 raises these stops. At the same time that this takes place the cam, acting through connecting arm 49, lowers the feed rolls 41 and the blank is fed rapidly forward until it rests under the feed rolls 42, where it remains in position ready to meet the oncoming stencil and to be fed forward by the feed rolls 42 when they are lowered. The feed rolls 42 are brought into action intermittently by means of cam 50 (see Fig. 3), operating on roller 51 carried by arm 52, which raises and lowers arm 53, on which are mounted, through shaft 96, the rolls 42. The cam 50 is so timed that it will lower the rolls 42 so that the latter will feed a blank forward to meet and register with an oncoming stencil.

The printing cylinder 18 bears on its surface two raised plates 18^a and 18^b. The former is the feeding plate and is timed to cooperate with the rolls 42, and the other, 18^b, is the printing plate and is arranged to cooperate with the ink pad 62. It is the surface on which the printing is done.

The ink pad 62 is geared to make the same number of revolutions as the printing cylinder, but as it has a shorter radius, it moves at a slower speed and gives a wiping action across the face of the stencil as the latter moves in contact with cylinder 18. It will be noted that feed cylinder 28 and its corresponding feed rolls 41 are geared to run at a higher speed than the printing cylinder, and this is desirable, because while this cylinder only operates intermittently it is necessary to have the blanks follow each other in close succession through the machine.

The stencils 56 are arranged in a magazine or holder 57, disposed at an angle so that the stencils will feed by gravity toward the lower end. The stencil feeding mechanism is operated from cam 58, mounted on the main shaft 10. This cam gives, through arm 59 and connecting rod 104, a reciprocating motion to plunger 60 the latter being normally held in a raised position by spring 120. Each time this plunger is raised to its full height a stencil is pushed forward by gravity into its path, and when the plunger is lowered, the stencil is pushed or falls down until it rests on smooth rings 61 carried on the ink roll or pad 21. These rings, of which there are two in number, one at each end of the roll, are practically frictionless, and the stencil slides on their surface until the ink pad proper 62 revolves around and comes into contact with the stencil, at which time the stencil is frictionally engaged by the ink pad and drawn in between the ink pad and the printing cylinder, comes into contact with the blank, the address is printed through the stencil on to the blank, and the stencil descends through the guideway 63 into chute 64, from which it is delivered into the holder 65. The holder 65 is mounted on an elevator 66 carried in the guideway 105, and this elevator is adapted to be gradually lowered by means of the rotating screw threaded rod 67, which is rotated by the shaft 68 connected to the main driving shaft 10. The elevator 66 at its lower end rests on the stop 69, which carries a split nut 70, having threads adapted to engage with the shaft 67. The split nut 70 may be drawn out of engagement with shaft 67 by means of the pedal 71 acting through belt 72 and cam 73. When the pedal is pushed down the cam will lift the split nut out of engagement with the shaft and the elevator will be pulled up to its highest position by the weight 74. The empty holder is inserted in the elevator when the latter is in its raised position, so that the first stencil will fall against the bottom of the elevator. As fast as the stencils are deposited in the elevator, the same is lowered by the rod 67 until the holder is full of stencils, when it is elevated by means of the pedal 71 and a new holder substituted in its place. It is to be understood that the cam 73 above referred to is mounted on the shaft 75, which extends the full length of the elevator travel.

The automatic feed hereinbefore referred to, comprises a front wall 76, in which is mounted the gate 77, having its lower edge curved and high at the center and adjustable vertically by means of adjusting screws 79. The feeding mechanism also comprises sidewalls 80 and a rear guide 81. The walls 80 and rear guide 81 are adjustable to accommodate blanks of different sizes, and I

may provide extra rolls 98 (see Figs. 8-11) for extra long blanks. The blanks, which may be either envelopes, wrappers, postal cards, or similar articles, are stacked in a superimposed position between the walls 80, a guide 81 and the front wall 76, with the lowermost member resting on the rolls 82, and on the loose rolls 94, mounted on shaft 95 carrying the cam-shaped wipers 40. The cam-shaped wipers 40, which are timed to operate in conjunction with the other mechanism of the machine, are so located that at each revolution they will engage the lowermost blank and carry it by the lower edge of the gate 77 and deliver it against the stops 43, where it remains until these stops are raised and it is gripped between the feed rolls 41 and the feed cylinder 28 and fed into the machine, as hereinbefore described.

The ink for use in the machine is carried in a basin 83, in which revolves the ink roll 84, drawn by a chain of gears from the shaft 10. Two scraping knives 85 and 86, one arranged in the lower part of the ink basin and the other above the surface of the ink, serve as cleaning devices and prevent clots or too large quantities of ink being carried forward by the roll 84. The lower knife 85 prevents the carrying forward of the clots, and the upper knife regulates the quantity. The ink is transferred from the roll 84 to the roll 24 and from the roll or pad 24 to the roll or pad 62, which is the pad or roll referred to above as applying the ink through the stencil to the blank.

The operation of my improved machine is as follows: The operator first fills the stencil magazine with stencils and the blank feed with blanks. The electric motor is started and the speed regulated by the rheostatic switch 88, placed within convenient reach of the operator seated in front of the machine. The pedal 13 is depressed, throwing the clutch into engagement with the main driving shaft 10, from which power is transmitted by the gearings shown to the automatic feed for blanks, the stencil feed, the feed and printing rolls and cylinders, the elevator for receiving used stencils, and the endless belt for carrying away the printed wrappers, etc. The blanks are fed one by one between the printing cylinder and ink roll, where they meet and register with stencils also fed one at a time. The wrappers, etc., after being addressed, are guided by the guide 89 onto the endless belt 99, which conveys them to the point of delivery. The only work required of the operator is to renew the stencils and blanks and to provide empty holders for the used stencils. The spiral cam 44 should be adjusted when the machine is used with blanks of varying length. This cam, as above described, controls the length of time the feed rolls 41 are in operative position, and by varying the

time the machine can be made to accommodate blanks of different length.

While I have described this machine as an addressing machine, it is obvious that it can be used for other purposes than addressing, and can be employed for printing bills and forms of all kinds.

Wherever in the foregoing specification I have used the term "blanks" to designate the objects to be addressed or printed, I have meant to include wrappers, cards, bills and forms of all kinds.

While I have illustrated and described an automatic feed for use in connection with my machine, it may be dispensed with in some instances and the blanks may be fed one at a time into the machine by hand, or a continuous roll of paper may be fed through the machine and cut into wrappers after the addresses have been printed.

While I have illustrated and described only one form or embodiment of my invention, I am aware that modifications other than those referred to above, can be made therein by those skilled in the art, without departing from the spirit and scope of my invention, and I desire to secure protection for all such modifications as come within the spirit and scope of my claims.

What I claim is:

1. In a machine of the kind described, a rotatable printing cylinder; a rotatable ink roll bearing an ink pad, means for delivering stencils in succession to a point immediately above the line of contact of said roll and cylinder, and means for detaining them in such position until the pad has rotated into operative position with said cylinder, substantially as described.

2. In a machine of the kind described, a rotatable printing cylinder, a rotatable ink roll bearing an ink pad, means for delivering stencils in succession to a point immediately above the line of contact of said roll and cylinder and a smooth ring on said roll for detaining them in such position until the pad has rotated into operative position with said cylinder, substantially as described.

3. In a machine of the kind described, a rotatable ink roll bearing on a portion of its circumference an ink pad adapted to feed and ink a series of stencils and on the other portion of its circumference a smooth surface adapted to support the stencils until the ink pad has rotated into operative position, substantially as described.

4. In a machine of the kind described a printing cylinder, an ink roll adapted to cooperate therewith, stencil holders above and below the roll, means for removing the stencils one at a time from the upper holder and for passing them between the printing cylinder and ink roll and depositing them in the lower holder and a feed cylinder and

two feed rolls adapted to operate intermittently and alternately one in contact with the printing cylinder and the other in contact with the feed cylinder for the purpose of feeding blanks to the ink roll and printing cylinder, substantially as described.

5 5. In a machine of the kind described, a printing cylinder, an ink roll adapted to cooperate therewith, stencil holders above and below the roll, means for removing the stencils one at a time from the upper holder, for passing them between the printing cylinder and ink roll and depositing them in the lower holder and means for lowering the lower holder at the same rate as the stencils accumulate therein, and a feed cylinder and two feed rolls adapted to operate intermittently and alternately one in contact with the printing cylinder and the other in contact with the feed cylinder for the purpose of feeding blanks to the ink roll and printing cylinder, substantially as described.

6. In a machine of the kind described, the combination of an ink roll and a printing

cylinder having a raised surface thereon, both adapted to rotate continuously, with a feed roll adapted to cooperate with said raised surface, and a feed cylinder and a roll timed to cooperate therewith intermittently and for predetermined lengths of time so as to deliver blanks the required distance on to the raised surface of the printing cylinder, substantially as described.

7. In a machine of the kind described, an ink roll and a printing cylinder both adapted to rotate continuously, in combination with a feed cylinder geared to run at a higher speed than the ink roll and printing cylinder and adapted to intermittently feed blanks on to the surface of the printing cylinder, and means for passing the blanks between the ink roll and the printing cylinder, substantially as described.

Dated, November 27, 1909.

WILLIAM W. TUCK.

Witnesses:

WALTER S. JONES,

JOHN W. PETERS.