No. 622,106. Patented Mar. 28, 1899.

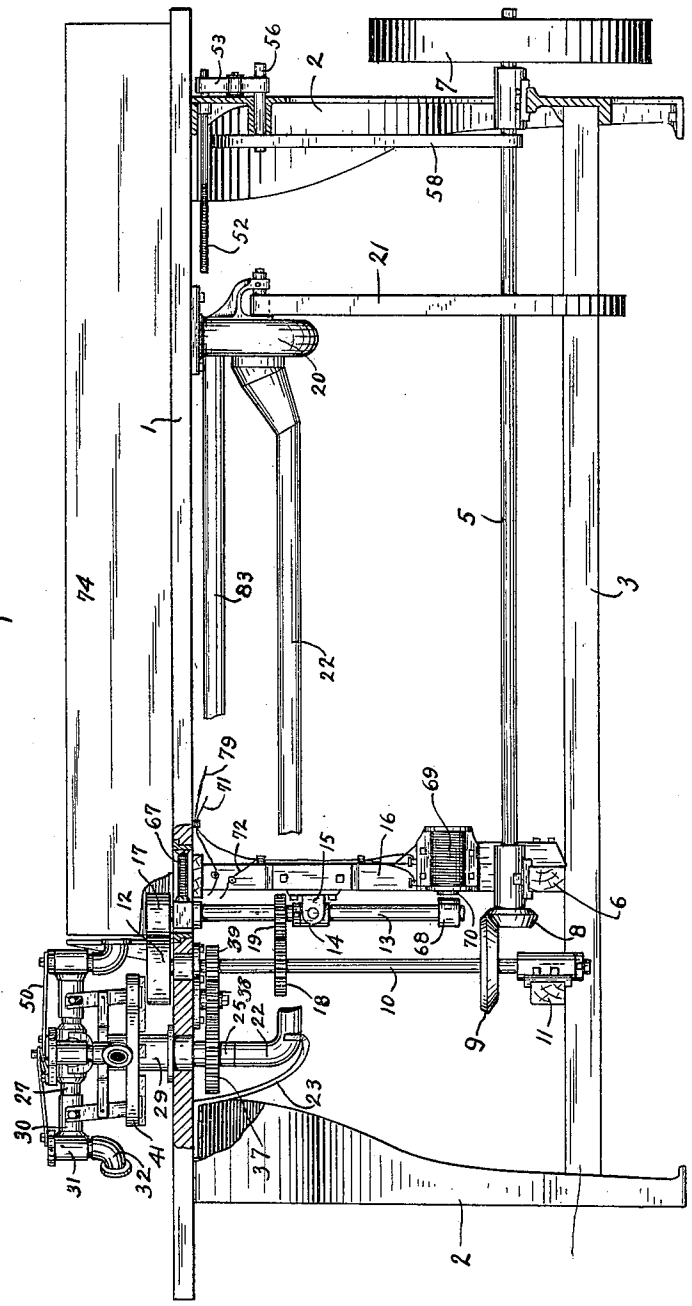
# R. C. BERRY.

## FEEDING DEVICE FOR PRINTING PRESSES.

(Application filed Dec. 13, 1897.)

(No Model.) 6 Sheets—Sheet 1.

Fig. 1.




Witnesses
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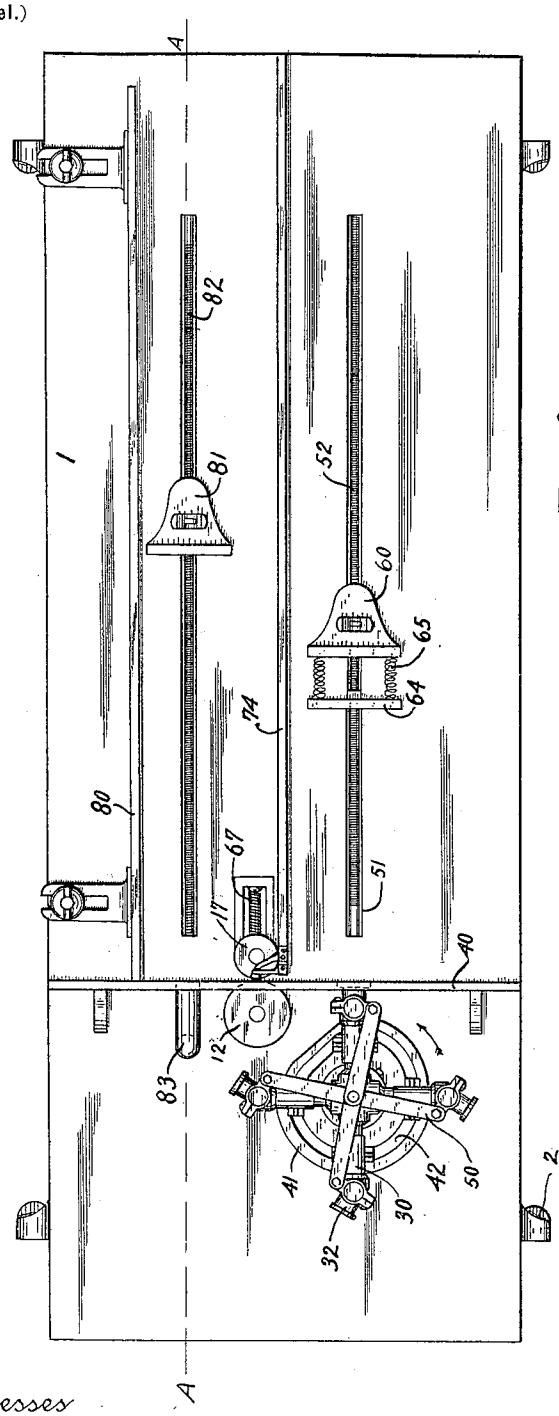



Fig. 2.

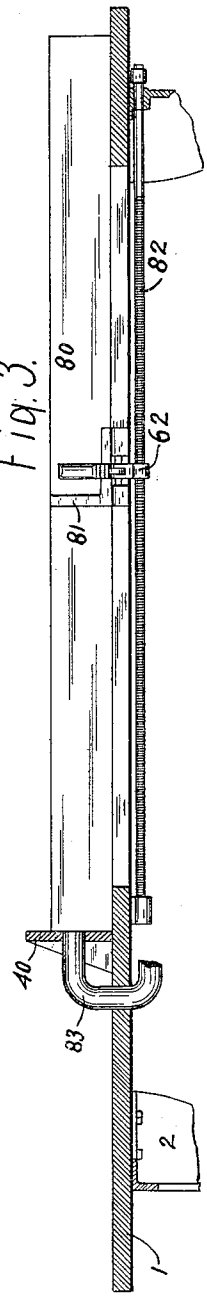



Fig. 3.

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Fig. 4.

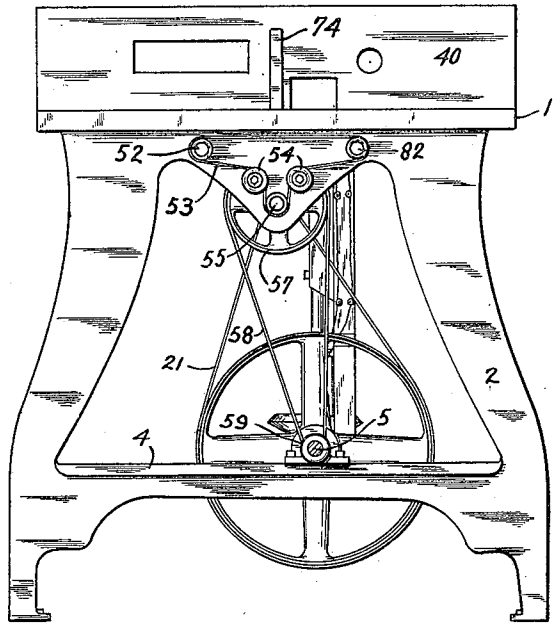



Fig. 5.

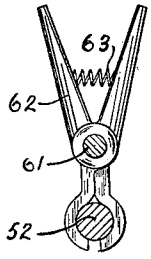



Fig. 6.

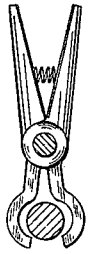


Fig. 7.

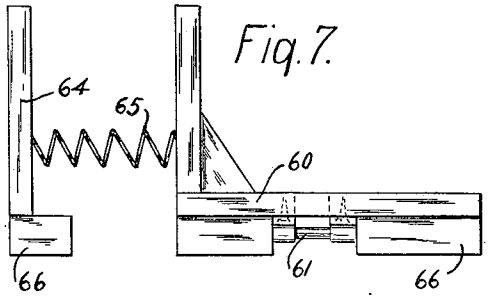
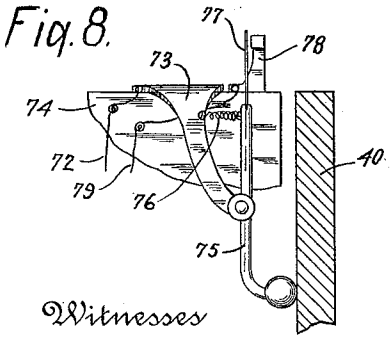



Fig. 8.




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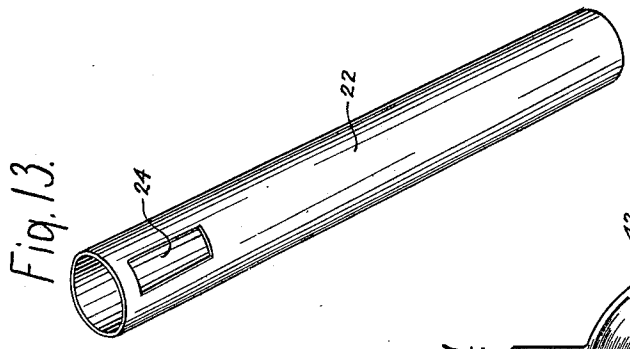



Fig. 13.

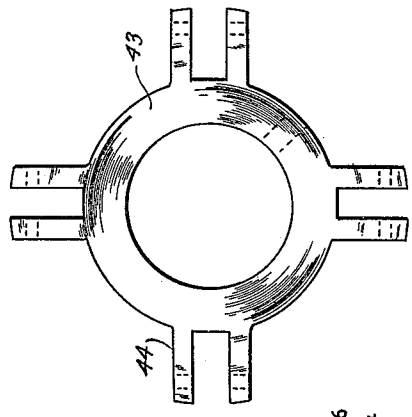



Fig. 14.

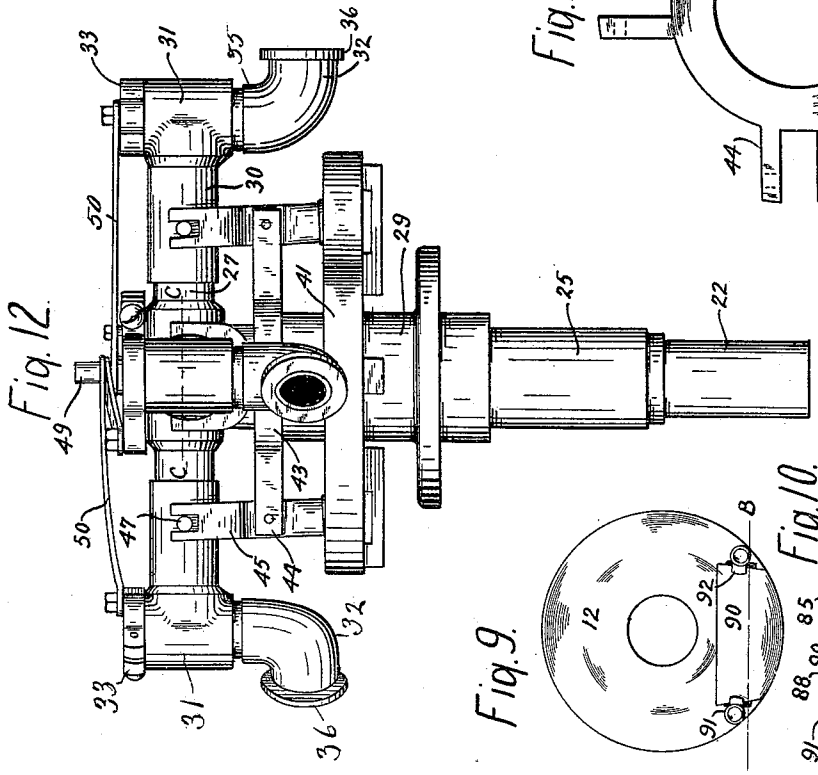



Fig. 12.

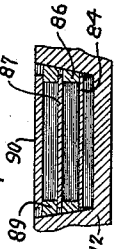



Fig. 11.




Fig. 9.

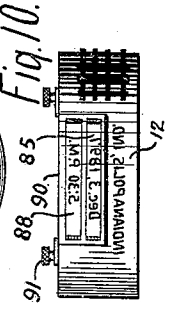



Fig. 10.

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Fig. 15.

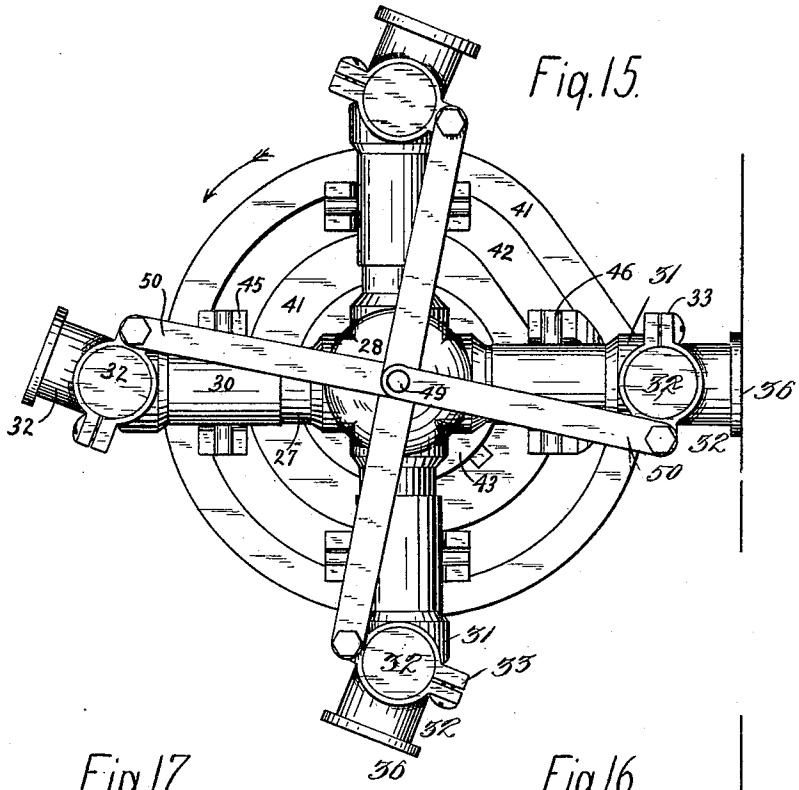



Fig. 18.

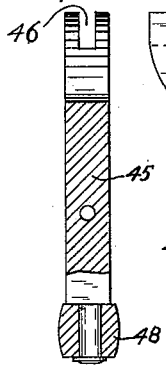



Fig. 17.

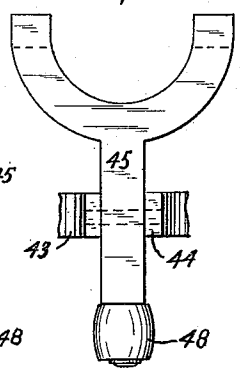
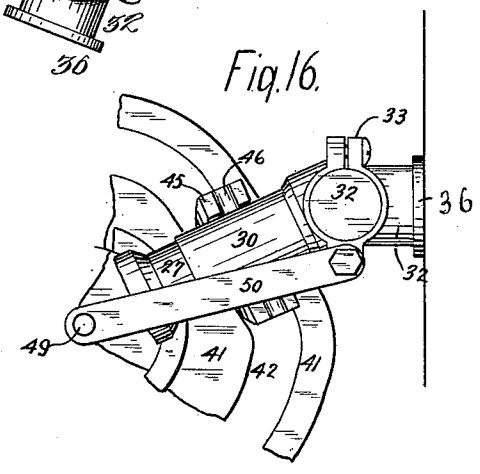



Fig. 16.




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Fig. 19.

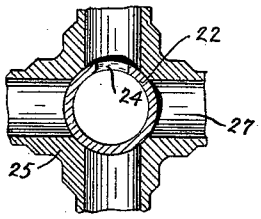



Fig. 20.

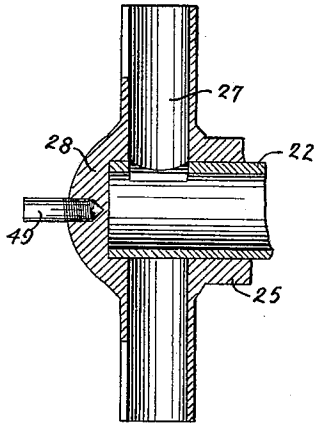
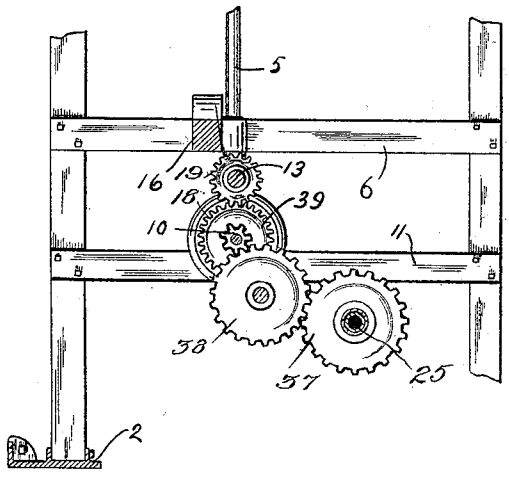



Fig. 23.



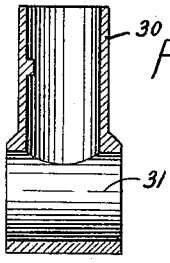
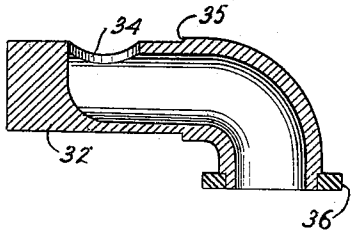




Fig. 21.

Fig. 22.




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# UNITED STATES PATENT OFFICE.

ROBERT C. BERRY, OF INDIANAPOLIS, INDIANA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE PNEUMATIC CANCELLING MACHINE COMPANY, OF SAME PLACE.

## FEEDING DEVICE FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 622,106, dated March 28, 1899.

Application filed December 13, 1897. Serial No. 661,631. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT C. BERRY, of Indianapolis, county of Marion, and State of Indiana, have invented a certain new and useful Feeding Device for Printing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like numerals refer to like parts.

This invention relates to a feeding mechanism for printing, marking, or canceling machines.

A stamping and canceling machine is herein shown in detail, although the same construction or at least a construction employing all the principles of this machine may be used for printing cards and similar things, the only change required being in the part of the machine that does the printing.

The object of this invention is to feed to printing, marking, or canceling machines letters, cards, &c., of similar form and comparatively stiff by a pneumatic device of a particular construction and having a particular operation.

Pneumatic feeding devices, broadly speaking, are not new; but my invention contains several features relating to a pneumatic feed that are new and important, especially the construction hereinafter claimed, whereby the letter or object grasped by the pneumatic feeding-tube is conveyed toward the printing attachment in a position that is always parallel or substantially parallel with a straight feeding-line.

Pneumatic feeding devices have heretofore been employed wherein the feeding-tubes moved the object acted upon in a curved line to which the said feeding-line was tangential. The effect of such arrangement, especially in a machine of the type herein shown, is that the feeding-tube is liable to loose its hold upon the object and especially if feeding a stiff material, which, at least after it approaches the feed-roll of the printing attachment, must move in a straight line.

Another feature of this part of my invention consists in the means employed for admitting and shutting off the air at the proper time. It is such as to render the machine exceedingly accurate and at the same time be positive and simple of construction and operation.

Another feature of my invention is the device, substantially as shown, for mechanically feeding the letters, cards, &c., on the table up to the pneumatic feeding-tubes.

Another feature of this invention consists in the means for stacking or packing the letters, cards, &c., after they have been printed, marked, or canceled.

There are other features by way of improvement in this machine to which I have not called attention; but they, together with the matters I have referred to, will more fully appear from the accompanying drawings and the description and claims following.

In the drawings, Figure 1 is a front elevation of the machine with parts broken away. Fig. 2 is a plan view thereof. Fig. 3 is a section of the top of the machine on the line A A of Fig. 2. Fig. 4 is an elevation of the right-hand end of the machine as it appears in Fig. 1, the drive-wheel being broken away and with the removable top part removed. Fig. 5 is a side elevation of the gripping device for feeding blocks, the rod on which it is mounted and the shaft which it grasps being in section and the device being closed. Fig. 6 is the same with the gripping device open. Fig. 7 is a side elevation of the block that feeds the letters, cards, &c., to the pneumatic feeding-tubes. Fig. 8 is a plan view of the electrical switch that is operated by the letters or cards as they are being printed, marked, or canceled to bring the feed-roll to the type-wheel, other parts of the machine being in section or broken away. Fig. 9 is a plan view of the type-wheel. Fig. 10 is a side elevation thereof. Fig. 11 is a cross-section on the line B B of Fig. 9. Fig. 12 is a front elevation of the pneumatic tubes that grasp the letters, cards, &c., and of the parts that actuate them. Fig. 13 is a detail of the tube that supplies the branch tubes. Fig. 14 is a plan view of the hanger found in the central portion of what is shown in Fig. 12. Fig. 15 is a plan view of the branch pneumatic tubes and the actuating construction, one tube be-

ing in position to engage a letter, card, &c. Fig. 16 is a detail of the engaging tube shown in Fig. 15 in an advanced position just before it releases the letter, card, &c. Fig. 17 is a side elevation of the forked levers to be found in the construction shown in Fig. 12. Fig. 18 is a central vertical section thereof. Fig. 19 is a section on the line C C of Fig. 12. Fig. 20 is a central vertical longitudinal section of two oppositely-extending branch tubes and the main supply-tube as seen in Fig. 12. Fig. 21 is a central longitudinal vertical section of another section of the pneumatic tubes. Fig. 22 is a central longitudinal vertical section of the outer end or section of a pneumatic tube. Fig. 23 is a plan of the gearing beneath the top of the machine, the framework being broken away.

In detail I provide a table 1 with suitable legs 2, the lower ends of the legs being braced by the longitudinal bar 3 and at each end a suitable cross-bar 4. I mount a main driving-shaft 5 in the machine, one end having bearings in the cross-bar 4 of the frame and the inner end on another cross-bar 6. Said shaft is driven from any suitable source of power by means of the driving-wheel 7. At the inner end of the driving-shaft 5 a bevel friction-wheel 8 is secured that engages a corresponding but larger bevel friction-wheel 9, which is secured on the vertical shaft 10. Said shaft 10 has a bearing at its lower end secured to the cross-bar 11 of the framework and at its upper end has a bearing mounted in the table 1. The type-wheel 12 is mounted on the upper end of this shaft. Another vertical shaft 13 extends parallel to the shaft 10, having a loose bearing near its upper end in the top of the table and with a bearing 14 near the middle thereof, which bearing is pivotally mounted in the bracket 15, that is secured to the side of the vertical bar 16, that forms a part of the framework of the machine. On the upper end of this vertical shaft 13 the feed-roller 17 is secured, so that it will register with the type-wheel. Said shaft 13 is driven by the gear 18, secured on the shaft 10, that meshes with the gear 19 on the shaft 13.

Turning now to the pneumatic feeding mechanism, I secure a fan 20 on the under side of the table that is driven by the belt 21 over a pulley on the driving-shaft 5. A tube 22 extends from the exhaust portion of the fan to the working part of the machine and at that end is turned upward and near its bend is supported by the bracket 23. This tube is stationary. The upturned end of the tube 22 is shown in Figs. 12 and 13. Near its upper end an inlet-port 24 is seen in Fig. 13. When thus arranged, this portion of the pipe 22 is so turned that said port will face the block that feeds up the letters, cards, &c. The upturned end of the pipe 22 extends through the hollow shaft 25 almost to the top of the mechanism shown in Fig. 12, so that the port 24 in said pipe 22 will at times register with the tubes 27, as seen in Figs. 19 and 20. There are four of these tubes 27, radiating at right angles to each other, as seen in Figs. 15 and 19, being formed in a body 28. (To be seen chiefly in Figs. 15 and 20.) The upper end of the tube 22 should fit snugly in the vertical opening or seat in said body 28, and yet so said body can readily rotate on said tube. Said body is the upper end of the shaft 25, (to be seen in Fig. 12,) which, as has been stated, rotates upon the stationary tube 12. It also rotates in the journal 29, that is supported by a collar on the top of the table. Said tubes 27 carry on their outer ends sliding or telescoping tubes 30, as seen in Figs. 12 and 15. The body of said tubes 30 is horizontal and fits snugly on the tubes 27; but they have a head 31, through which a vertical opening is made and which constitutes a journal for a third tube 32, which is at its lower end curved from a vertical to a horizontal position. Said tubes 30 and 32 are fully shown in Figs. 21 and 22. The upper end of the tube 32 is closed, as seen in Fig. 22, and is supported by the split collar 33, (to be seen in Fig. 12,) that is clamped on it and holds it in place. Near its upper end is a port (to be seen in Fig. 22) that registers with the tube 30. An integral collar 35 on said tube prevents its upward movement. The lower end of said tube is provided with a rubber washer 36 to contact and engage the letters, cards, &c.

On the lower end of the hollow shaft 25 a gear-wheel 37 is secured that meshes with the intermediate gear 38, which in turn engages a gear 39, that is secured on the shaft 10, which drives the type-wheel. There are four pneumatic tubes 32 in the machine shown that are revolved by the means just described into position to engage letters, cards, &c. It is seen that this part of the mechanism is driven, together with the type-wheel and feed-roll, by the one vertical shaft 10. The gearing from the said wheel 10 for driving or rotating the pneumatic tubes should be such that the said pneumatic tube will present a letter, card, &c., to the printing-wheel at the right time to receive the impression from said wheel at the right place. In other words, in the machine shown the type-wheel, and therefore the shaft 10, should turn four times exactly while the tubular shaft 25 turns once. This will render the movement of these parts synchronous. While the pneumatic tubes rotate, as has been described, it is desirable, for the reason heretofore stated, that the face of said tubes 32 while in contact with the letter, card, &c., should continue and hold the card in a line parallel with the feed-line 40 of the machine until it releases the letter, card, &c. Where the material is stiff, unless this mode of operation is preserved substantially the letter, card, &c., will have to be bent or curved, so that air will leak in between the letter, card, &c., and the mouth of the tube, whereby the letter or card will escape.

To cause the mouth of the tube while it

engages a letter or card to have the movement above described, I employ the following means: I secure a stationary cam-disk 41 to the stationary journal-box 29. I provide in said cam-disk a cam-shaped groove or guideway 42. (To be seen in Fig. 15.) The left-hand half of said guideway is a perfect curve, although that is immaterial. The third quarter of the guideway is carried gradually farther away from the center, as seen in Fig. 15, while the fourth quarter is modified so as to extend in approximately a straight line and much nearer the center than the other portions of said guideway. Above said cam-disk I secure to the hollow shaft 25, so it will rotate therewith, a hanger 43, (to be seen in Figs. 12 and 14,) provided with pairs of ears 44. Between each pair of said ears I pivot a vertically-extending lever 45, forked at its upper end to extend about half-way around the tube 30. Said tube 30 has extending from each side a pin 47, that extends into or through a notch or mouth 46 in the upper end of the fork of the forked lever 45, as is to be seen in Figs. 12 and 15. A friction-roller 48 is mounted on the lower end of said forked lever, and said lever is of such length that the said friction-wheel will extend into and operate in the cam groove or guideway 42. From this description it is clear that when the lower end of said forked lever 45 is moved inward or outward while passing through the irregular portion of said guideway the tube 30 will be telescoped or moved somewhat upon the tube 27. In the upper end of the tubular shaft 25 I secure a pin 49, over which I loosely place the ends of the links 50, as seen in Figs. 12 and 15. There is one of these links 50 provided for each branch pneumatic tube. Said links at their outer ends are pivotally connected with the split collars 33, which are secured or clamped on the upper ends of the outer tubes 32. From this description it is clear that while the lower end of the forked lever 45 is passing through the third quarter of the cam groove or guideway said lower end will be carried farther from the center than before, whereby its upper end will draw or slip the tube 30 toward the center, thus causing the link attached to the collar 33 and the tube 32, to which the said collar is secured, to move or swing from the position shown at the lower end of Fig. 15 and in front of Fig. 12 to the position shown at the right-hand side of Figs. 12 and 15. While the lower end of the forked lever 45 is passing through the regular part of said guideway, the parts are so arranged, as seen in Figs. 12 and 15, that the horizontal portion of the tube 32 will extend at an angle from the line of the tubes 30 and 27; but by the means and operation explained when the mouth of the tube 32 is approaching the pile of letters, cards, &c., on the right-hand side, as the machine is shown in Figs. 12 and 15, the said tube 32 is turned so that its mouth will be in a direct line with the tubes 30 and 27, as shown. By this means the mouth of said tube 32 is parallel with the line of feed 40. This line of feed is indicated in Figs. 15 and 16 by a simple line; but in the machine, as seen in Fig. 2, it is a guide-board against which the letters, cards, &c., are fed up to the pneumatic tube. Hence the mouth of the tube 32 is parallel with the letters or cards at the time it is in position to grasp them. When the mouth of the tube is in the position just described, the port 24 in the stationary pneumatic tube 22, leading from the fans, registers with the passage-way through the tubes 27, 30, and 32, and therefore enables the draft created by the fan to act on the letters, cards, &c. This draft should be sufficiently strong and powerful as to be positive in its operation. After the letters or cards have been grasped by the suction through the pneumatic tube 32 the rotation thereof continues. From that time it is desired to move said letters in a line parallel with the line of feed to avoid the letters or cards being bent or curved when they engage with the feed-roll or type-wheel, as has been explained. Therefore the guideway 42 is formed, as shown in the fourth quarter of it, so that while the lower end of the forked lever begins to pass through such fourth quarter it is moved inward and its top outward, thus moving the tube 32 outward somewhat, and therefore the link 50 gradually turns the collar 33 and tube 32, to which it is secured. This gradual turning continues as long as the lower end of said forked rod is moved farther inward by the guideway. In this manner the said pneumatic tube that is holding the letter or card moves the tube from the position shown at the right hand in Fig. 15 to the position shown in Fig. 16, always keeping the mouth of the tube parallel with the line of feed. When the said part has reached the position shown in Fig. 16, the feed-roll and type-wheel have received the letter or card, and at the same time the pneumatic branch tubes have been rotated so far that the opening in the tubes 37, 30, and 32 ceases to register with the port 24 in the stationary pneumatic tube, so that the exhaust is cut off and the letter, card, &c., that are being fed up to the said tubes. It is observed that the split collar 33 can be loosened and adjusted on the upper end of the tube 32, so as to regulate and govern the position of the said tube 32 in the various parts of its operation. It is clear that only one letter or card would be grasped by the pneumatic tube at one time, as the exhaust would not act through a card or letter. To enable the mouth of the tube 32 to reach the letter and act freely, it extends through the slot in the feeding-board 40.

Turning now to the means for feeding the letters, cards, &c., up to the pneumatic tubes that have been described, I call attention to a long slot 51 in the table, as seen in Fig. 2. Beneath said slot there is seen a threaded shaft 52. It is to be seen also in Fig. 1, although partly broken away there. The outer

end of said shaft is to be seen in Fig. 4. As there shown, it is driven by the belt 53, that runs over the idlers 54, that in turn are driven by the pulley 55 on the spindle 56, as seen in Fig. 1. Said spindle is driven by the pulley 57, belt 58, and pulley 59, that is on the main driving-shaft 5. Riding on the table over said slot 51 is a feed-block 60. (To be seen in Figs. 2 and 7.) It has a horizontal portion and at its forward end an upright portion suitably braced. The horizontal portion is centrally apertured, as shown in dotted lines in Fig. 7, and cut out to receive the pin 61, on which is mounted the gripping device 62. (To be seen in Figs. 5 and 6.) The gripping end of said device is internally threaded to grasp and mesh with the threaded shaft 52. From this it is clear that as said shaft is rotated through the gripping device the feed-block will be moved. The said shaft 52 should be threaded, so as to move the block that has just been described forward toward the pneumatic tubes. A coil-spring 63 is provided between the pivoted arms of the gripping device to hold the gripping device secure on the said shaft 52. It is seen that it can be readily released from said shaft, so as to remove it backward or otherwise placed or adjusted in case the letters, cards, &c., have been fed out. The threads of the shaft 52 are omitted at the end in order to stop the forward movement of the feed-block. In order to render said feed-block sensitive and adapted to the varying thicknesses of the letters, cards, &c., I provide a spring-pushed face 64, that is held and pushed by the pair of springs 65. The block 60 and the face 64 have guide-strips 66 on the under side of such width as to freely move through the slot 51.

To prevent the feed-roll and type-wheel from engaging each other while there is anything between them wherein the type-wheel would be injured, I provide the following device: As seen in Figs. 1 and 2, a spring 67 tends to withdraw the feed-roll from the type-wheel, and unless it is counteracted will continue to hold them apart. It is therefore desirable to counteract the action of said spring while the letters, cards, &c., are passing between the feed-roll and type-wheel in order that they may perform their function. To that end I employ the electrical device to be seen in Figs. 1 and 8. In Fig. 1 a contact piece or armature 68 is secured on the lower end of the vertical shaft 13, on whose upper end the said feed-roll is secured. As has been explained, said shaft 13 is centrally pivoted, so that it rocks. When the upper end is turned to the right by the spring 67, thus separating the roll from the type-wheel, the lower end is moved to the left. I employ a magnet 69, whose core 70 is so placed as to attract the armature 68 and move the lower end of the vertical shaft 13 to the right whenever the electrical circuit is closed. In such case it is clear that the feed-roll will be in working contact with the type-wheel, or rather with the letter or card that is between them. A wire 71 extends from the magnet to a suitable battery. A wire 72 extends from the magnet to the bracket 73, secured on the middle partition 74 of the table, as is to be seen in Fig. 2. A lever 75 is centrally pivoted in the end of said bracket, as is to be seen in Fig. 8. One end of said lever has a ball or similar arrangement on it that is held normally in contact with the feeding-board 40 by means of the spring 76, which tends to pull the other end of said lever 75 to the left, as seen in Fig. 8. On the end of said lever 75 I secure a contact-piece 77 adjacent to the stationary contact-arm 78, secured to the table 1. From said contact-arm 78 the wire 79 runs to the ground or terminal of an electric battery or other source of electric power. The contact-point between the ball on the lever 75 and the feeding-board 40 is directly over the contact-point of the roll and type-wheel, so that when the letter or card is between said feed-roll and type-wheel it separates the lever 75 from the feed-board 40, and such movement of the lever 75 causes a contact between the parts 77 and 78, thus closing the circuit, which causes the magnet 69 to attract and move the lower end of the vertical shaft to the right, thus moving the feed-roll 17 to the left against the letter or card that is between it and the type-wheel. It is obvious that the quick action of the electricity will bring about the result here desired as soon as the letter or card begins to pass between the feed-roll and type-wheel. As the letters, cards, &c., are printed, marked, or canceled they move rearward along the feed-board 40 until their ends engage the adjustable guide-board 80. At the beginning of the operation the sliding block 81 (to be seen in Fig. 2) is moved up to the left as far as possible. The letter or card, therefore, is inclosed when it passes from the printing-wheel between the partitions 40 and 80 and the block 81. A blast is then applied to said letter or card to blow it against the face of the block 81 and hold it there until the next letter or card comes out, and it is blown against the former so that they are in succession blown into a row against the block 81 with their ends abutting against the partition 80. It is therefore necessary that the said block 81 recede from its first position as rapidly as the letters, cards, &c., are printed, stamped, or canceled. Said block 81 is formed substantially like the feeding-block 60 and is held and moved by the gripping device extending through the slot similar to and parallel with the slot 51. Likewise the gripping device engages a threaded shaft 82, that is parallel with the threaded shaft 52, but the threads run in the opposite direction. Said shaft 82 is driven by the belt 53, as is seen in Fig. 4. Said block 81 therefore travels to the right as rapidly as the feed-block 60 travels to the left. The blast to pack said letters, cards, &c., after being printed, marked, or canceled comes from the fan 20

through the blast-pipe 83, that runs along under the table, as is seen in Fig. 1, and is extended through the feed-board 40 and faces the block 81. Said blast does not operate to blow the letter or card off the table, because the other letters and cards just behind the one upon which the blast acts prevent it.

The printing-wheel is formed substantially as shown in Figs. 9, 10, and 11. A recess is made, as indicated in Fig. 11, somewhat tapering, as there shown. First a plate or partition is placed in said recess. Upon it the type-block 85 is placed. At each end of said type-block the tapering wedges 86 are inserted. Upon said type-block another partition 87 is placed, followed by the type 88 and the wedges at each end, and upon the whole a plate 90 is placed and securely held down by the screws 91, provided with lips that overlap the ends of the plate 90. By this means the parts may be pressed and held in place.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A printing, marking or canceling machine including a table on which the letters, &c., may be fed up in a pack on their edges, a sectional tube horizontally rotatable upon the table into and out of position to grasp the letters singly as they are fed up to it, and means for so holding the suction end of said tube that it will move in substantially a straight line while it grasps the letter.

2. A feeding device for printing, marking or canceling machines including a rotary head, a pneumatic tube carried thereon that consists of telescoping sections, a lever mounted on the rotary head to engage at one end one of said sections, and a guideway in which the other end of the lever extends, the guideway being so formed as to operate said lever and thereby change the length of the pneumatic tube as desired.

3. A feeding device for printing, marking or canceling machines including a rotary head, a pneumatic tube carried thereon that rotates like an arm about a center into and out of position to grasp the objects being treated, said tube being in telescoping sections a lever mounted on the rotary head so as to rotate with the tube and at one end engage one section thereof, and a stationary guideway in which the other end of said lever moves, such guideway being so formed as to operate said lever, thereby change the length of the pneumatic tube in each operation.

4. A feeding device for printing, canceling or marking machines including a series of pneumatic tubes that rotate about a common center and consists of telescoping sections, a hanger mounted so as to rotate with said tubes, levers mounted in said hanger, one for each tube and at one end engaging one section thereof, and a stationary guideway in which the other end of the levers move, such guideways being so formed as to operate said levers and thereby change the length of said tubes successively.

5. A feeding device for printing, marking or canceling machines including a stationary exhaust-tube with a port therein, a hollow shaft surrounding said exhaust-tube with a registering port in it, a tube extending from a port in said hollow shaft, such tube being in telescoping sections, a hanger secured to said hollow shaft, a lever pivoted in said hanger with one end engaging a telescoping section of the pneumatic tube, a stationary guideway secured below said hanger and into which the other end of said lever extends, said guideway being so formed as to operate said lever, and means for rotating the hollow shaft and thereby the pneumatic tube and hanger.

6. A feeding device for printing, marking or canceling machines including a pneumatic tube in sections, the end sections rotatably mounted in the head of an adjacent section at right angles thereto and with a port registering with the passage-way through the other sections, and means for so turning the end section that the mouth of the tube will be parallel with the feed-line of the machine while conveying a letter, card, &c.

7. A feeding device for printing, marking or canceling machines including a pneumatic tube comprising the sections 27, 30 and 32, formed and combined substantially as shown, and means for so turning the section 32 that its mouth will be parallel with the feed-line of the machine while it is conveying a letter, card, &c.

8. A feeding device for printing, marking or canceling machines including a movable sectional pneumatic tube, two of said sections telescoping and the outer section rotatably mounted in the adjacent section at right angles thereto, a hanger that moves with the pneumatic tube, a lever mounted in said hanger with its upper end engaging a telescoping section of said tube, a guideway into which the other end of said lever extends, such guideway being so formed as to operate said lever and thereby change the length of the pneumatic tube, and a link extending from the axis of movement of said tube and pivotally secured at its other end to the outer tube-section away from its center whereby when the telescoping portion of the tube is moved the said link will hold one side of said outer tube-section and cause it to be turned, substantially as shown.

9. A feeding device for printing, marking and canceling machines including a stationary pneumatic tube provided with a suitable port, a hollow shaft loosely mounted thereon with a series of registering ports, a series of pneumatic tubes extending from said ports, said tubes consisting of one stationary section, one telescoping section having a head on its outer end and an outer section that extends through said head at right angles to the telescoping section and is formed at its outer end with a mouth to grasp the letters, cards, &c., and having on its other end a

suitable collar to hold it in place, a hanger secured to said hollow shaft, levers pivotally mounted in said hanger with one end engaging the telescoping sections of the tube, a stationary cam-disk containing a guideway therein through which the other end of said levers moves, said guideway being so formed as to operate said lever at times and thereby change the length of the pneumatic tubes, means for rotating the hollow shaft, a pin centrally located at the center of rotation of the said tubes, and links extending from said pin and at their outer ends pivotally secured to the collars on the outer sections of the tubes, whereby when the tubes are rotated about the center and a telescoping section moves in or out its adjacent outer section will turn somewhat.

10. A printing, marking or canceling machine including a type-wheel, an oscillating shaft, a feed-roll mounted on one end thereof adjacent to the type-wheel, a spring that tends to withdraw the feed-roll from the type-wheel, a magnet so placed adjacent to the other end of said shaft that it will tend to move said feed-roll toward said type-wheel, a guide-board to guide letters, cards, &c., between the feed-roll and type-wheel, a suitable electric circuit for said magnet, and a switch consisting of a suitable arm, a spring-controlled switch-lever, one end of which is adapted to engage a contact-arm and close the circuit and the other end to engage the guide-board substantially over the contact-point between the feed-roll and type-wheel, the switch being so arranged that when said lever contacts with the guide-board the circuit will be opened and when a letter, card, &c., passes between them the circuit will be broken.

11. A feeding device for printing, marking or canceling machines, including a suitable table on one side of which the letters, cards, &c., are fed up, a pneumatic-tube device on one side of the printing attachment for feeding the letters, cards, &c., laterally to it, a fan, a tube extending from the pneumatic-tube attachment to the exhaust portion of the fan, and a blast-tube extending from the discharge portion of the fan to the other side of the printing attachment for removing the letters, cards, &c., after being printed, and packing the same.

12. A feeding device for printing, marking or canceling machines, including a table, a pair of slots in said table, one on the feeding side and the other on the receiving side thereof, a shaft under and parallel with each slot, the shafts being oppositely threaded, a feeding-block operating in each slot, a connection between said blocks and the threaded shafts, and means for driving said threaded shafts in unison.

In witness whereof I have hereunto set my hand this 7th day of December, 1897.

ROBERT C. BERRY.

Witnesses:

R. D. HAWKINS,

ZULA GREEN.