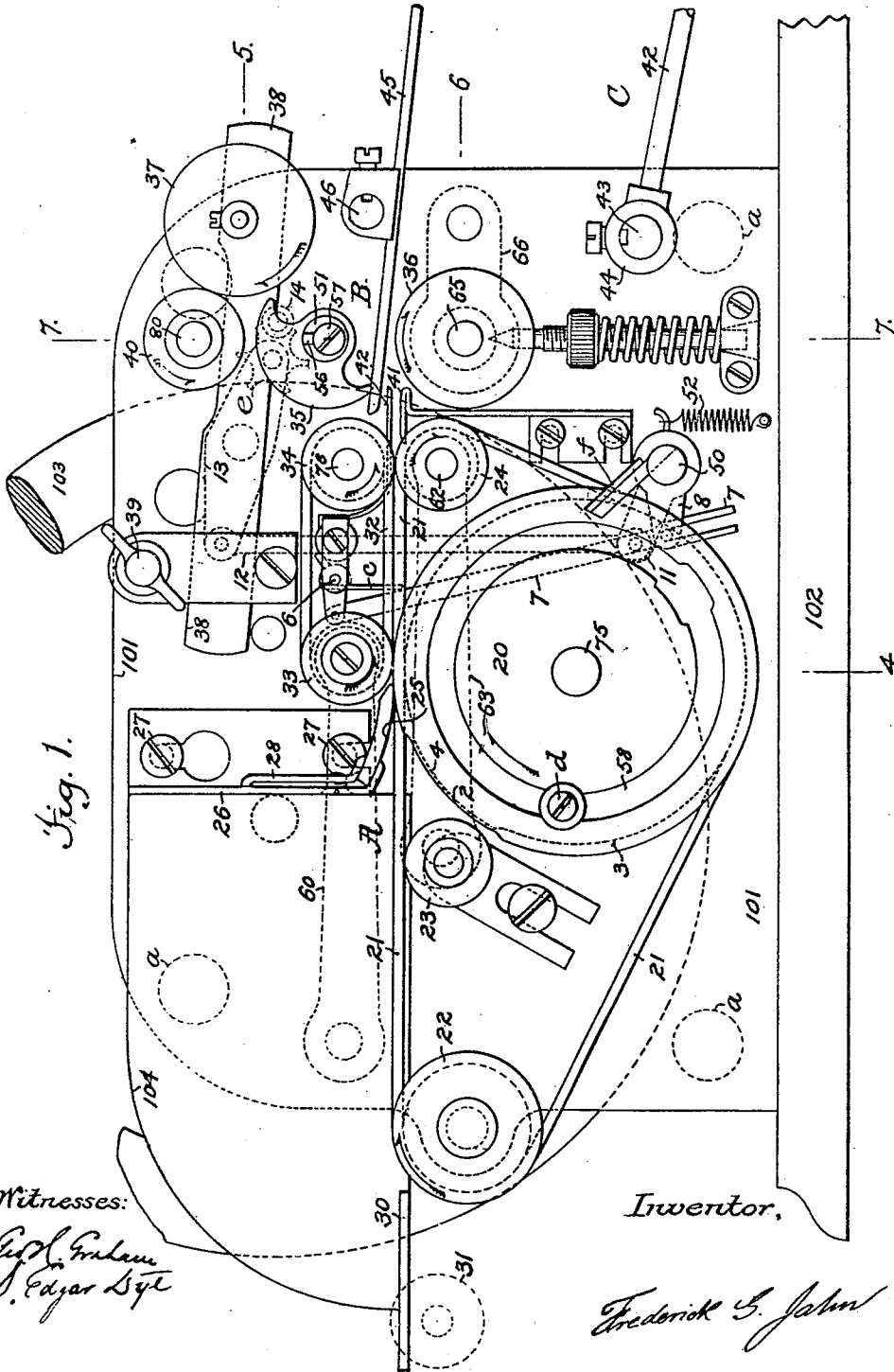


F. G. JAHN.
PRINTING MECHANISM.
APPLICATION FILED APR. 14, 1906.

6 SHEETS—SHEET 1.



Witnesses:
Geo. H. Graham
S. Edgar Lyle

Inventor,

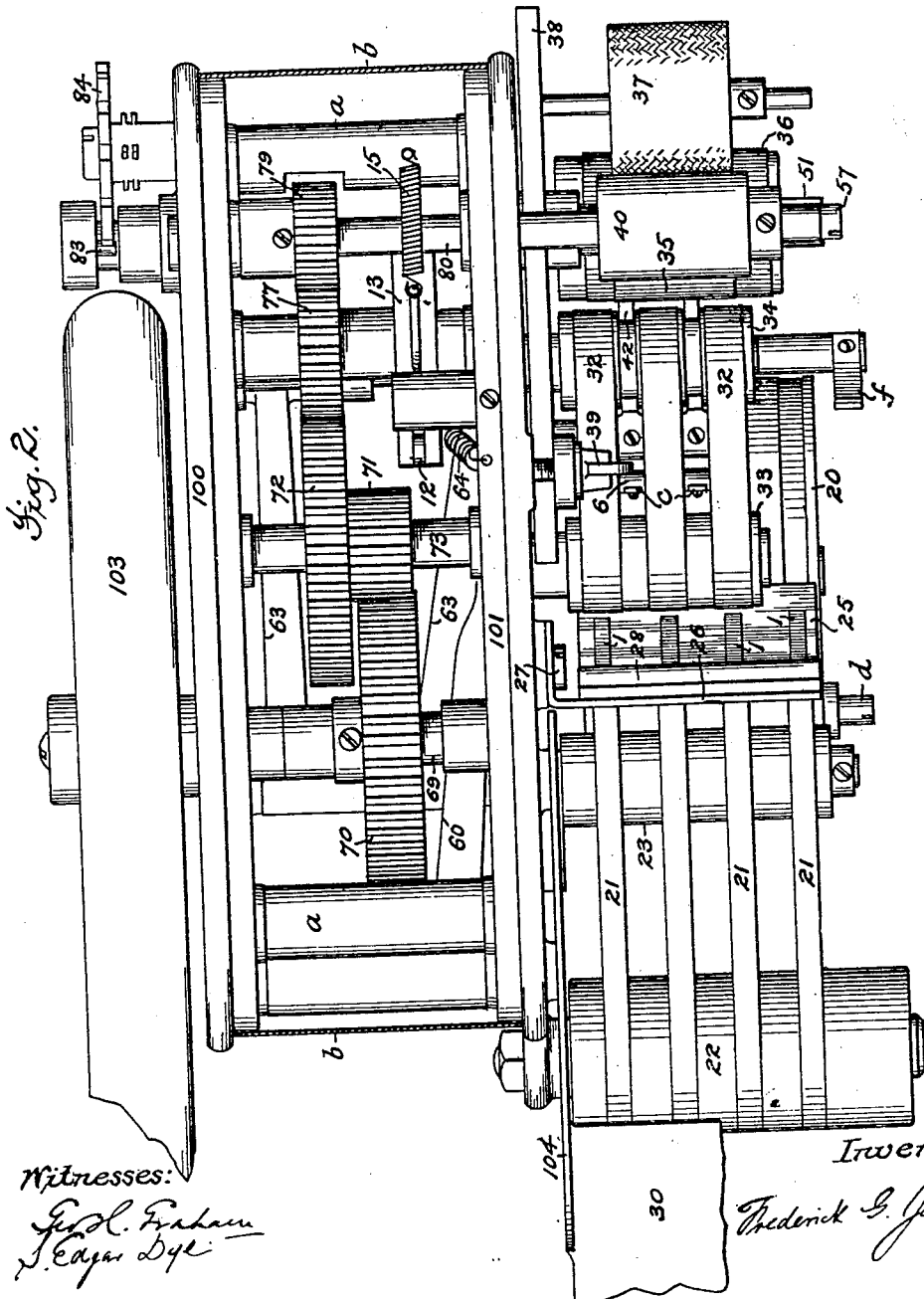
Frederick S. Jahn

No. 861,367.

PATENTED JULY 30, 1907.

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PRINTING MECHANISM.
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6 SHEETS—SHEET 2.

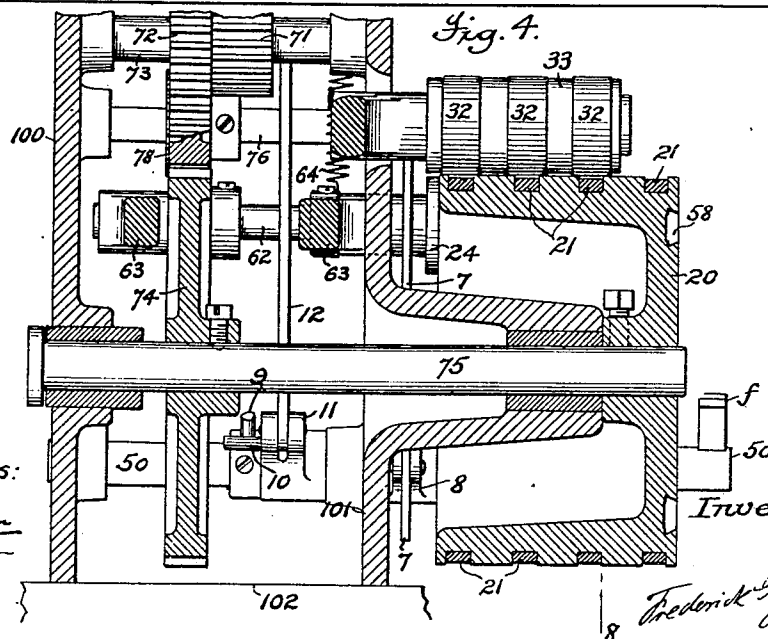
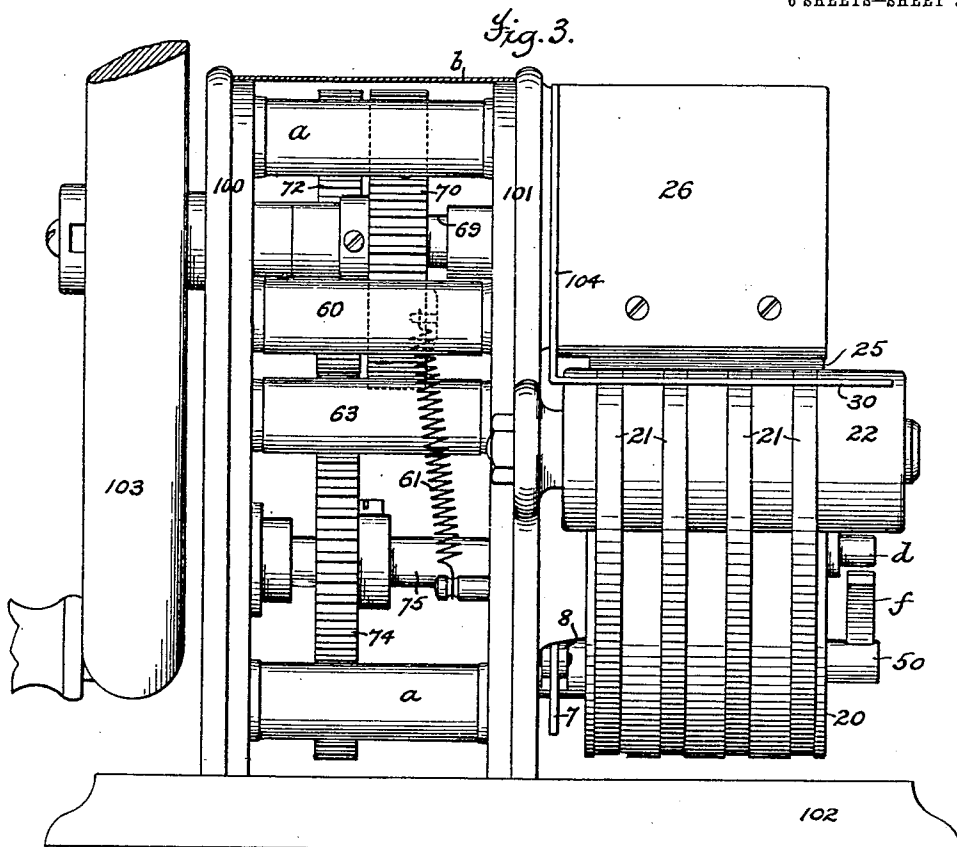


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6 SHEETS—SHEET 3.



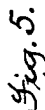
Witnesses:
Geo. H. Graham
S. Edgar Dyer

Inventor,

8 Frederick B. Jabou

PATENTED JULY 30, 1907.

6 SHEETS—SHEET 4.



Josh Graham
 S. Edgar Dyer

Frederick S. Jahn

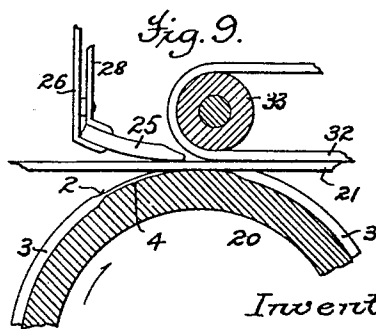
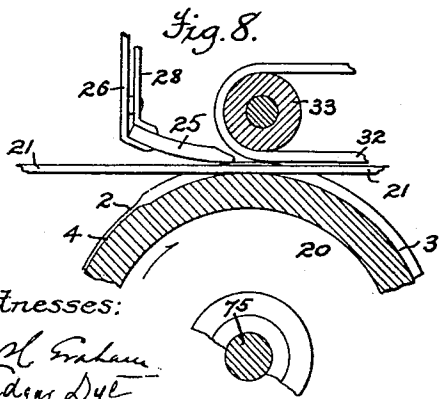
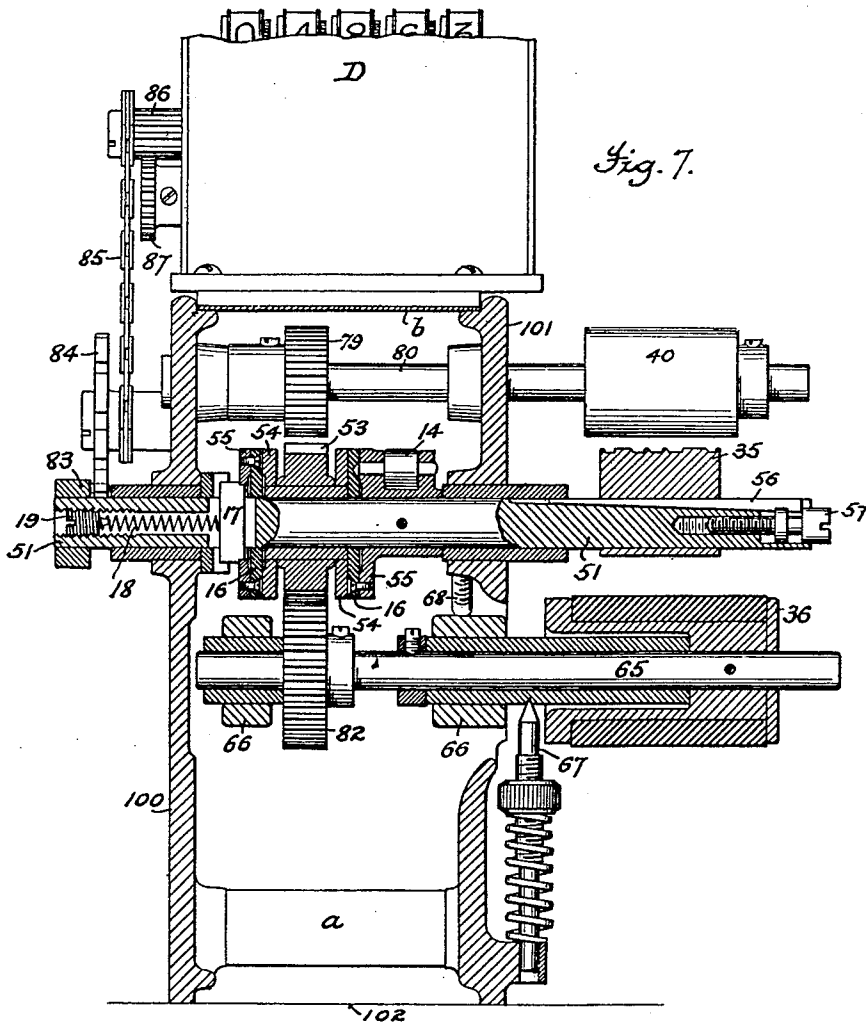
No. 861,367.

PATENTED JULY 30, 1907.

F. G. JAHN.
PRINTING MECHANISM.

APPLICATION FILED APR. 14, 1906.

6 SHEETS—SHEET 5.

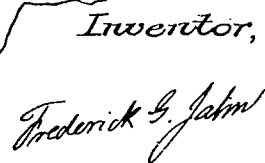


Witnesses:
E. H. Graham
L. Edgar Dye

Inventor,
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PATENTED JULY 30, 1907.

6 SHEETS—SHEET 6.



UNITED STATES PATENT OFFICE.

FREDERICK G. JAHN, OF NEW YORK, N. Y., ASSIGNOR TO THE INTERNATIONAL POSTAL SUPPLY COMPANY OF NEW YORK, OF BROOKLYN, NEW YORK, A CORPORATION OF NEW YORK.

PRINTING MECHANISM.

No. 861,367.

Specification of Letters Patent.

Patented July 30, 1907.

Application filed April 14, 1906. Serial No. 311,645.

To all whom it may concern:

Be it known that I, FREDERICK G. JAHN, a citizen of the United States, residing at the borough of Brooklyn, city and State of New York, have invented certain new and useful Improvements in Printing Mechanism, of which the following is a specification.

The present invention relates generally to that class of machines wherein some instrumentality thereof is operable only by reason of the presence of the article being handled or operated on, for such purpose, for instance as printing, marking, counting or registering such article.

It has for its object, among other things, to provide a simple and efficient feed mechanism by which the accurate feed of individual pieces from a stack, bunch or pile of such pieces is insured; to provide an automatic mechanism having a wider range of application both as to size and texture of the article, sheet or other matter capable of being handled thereby, and, when employed in a printing or marking machine as to the variability in the location of the impression that may be applied to such article than was possible in machines heretofore in use; and furthermore to improve and simplify the construction and operation of such mechanism to the end that unskilled persons may run and operate the same with little or no instruction.

The improvements are embodied in a machine which consists generally of a feed mechanism by which the pieces of material or articles to be handled are separated one by one from a bunch, stack or collection of the same and carried singly forward for subsequent operation, and with which is associated an instrumentality, such as a printing couple or a counting device or both, the active function or operation of which is dependent upon the presence of the piece or article with which it, or they are designed to cooperate.

In the machine illustrated, the article such as a sheet or slip of paper, which is often of flimsy or light texture, instead of bearing the burden, as heretofore, of directly bringing about the active function of the operating instrumentality thereof, is utilized simply to set a function-controlling device in condition so that its subsequent or further movement which results in the operation of said instrumentality, is brought about by the act of the machine itself. In consequence of the article merely serving to set a device in condition for subsequent automatic operation, such operation may actually take place at any time early or later in the machine's motion, so that it is possible where the machine is adapted to print or mark to provide for the printing or marking at any desired predetermined point on the article operated on, and which printing or marking point may be varied within the limits of the length of such article.

As a better understanding of the invention will be had from a detailed description of the improved ma-

chine such description will now be given, reference being had to the accompanying drawings, in which:

Figure 1, is a side elevation. Fig. 2, is a plan view, the gear casing being removed. Fig. 3, is an end elevation, the gear casing being in section. Fig. 4, is a partial vertical transverse section taken on the line 4, of Fig. 1. Figs. 5 and 6 are horizontal sections taken respectively on approximately lines 5 and 6, of Fig. 1, some of the parts being omitted and others broken away. Fig. 7, is a vertical transverse section taken on the line 7, of Fig. 1, the counting device and its connections being added. Figs. 8 and 9 are diagrammatic sections taken on the line 8 of Fig. 4, of a portion of the feed mechanism, showing different positions of the feed controlling cylinder. Fig. 10 is a diagrammatic elevation of the operative parts of the machine, certain of the parts being in their moved positions; and Fig. 11 is a similar view of a portion of said parts showing them in a changed position. Figs. 12 and 13 are detail sectional elevations in changed positions of parts not clearly disclosed elsewhere.

Referring to said drawings: a pair of side frames 100, 101, united by suitable tie-bars *a* and carried by a base 102 afford widely separated bearings for the spindles of the main operating parts of the machine. The space between the side frames is occupied by the transmitting gearing which may be covered by a surrounding casing *b*; while those parts of the machine which actually engage the article, such as a sheet or slip of paper or other material being handled or operated upon, are carried by the overhanging ends of the spindles which project laterally outward from the inner side frame 101 with no outer support therefor that would otherwise restrict the use of the machine to articles of less than a given width.

The operating parts of the machine consist in the main of a feeding mechanism *A*; a printing couple or other suitable instrumentality *B*, and, preferably, a stacker or receptacle *C* for the orderly collection of the articles handled by the machine. And they may also consist of a counting or registering device *D*, either in addition to the printing couple *B* or for use in lieu thereof.

Specifically considered, the improved feeding mechanism *A* is composed of one or more endless carrying bands 21 stretched around distant grooved rollers 22, 24 which thus present a horizontal supporting and carrying surface for the articles to be operated upon. Interposed in the active carrying portions of the endless bands, between the rollers 22, 24, is mounted a grooved feed controlling cylinder 20, the groove or grooves of which are shaped to permit the non-grooved portion of the cylinder to project at times above the surface of the band or bands so that their carrying function is non-effective and at other times to permit the surface of the band or bands to project above the cylinder so that their carrying function is rendered effective, thereby

obtaining an intermittent feeding movement with a continuously rotating instrumentality. As shown in Figs. 1, 8 and 9 the carrying band groove 3 of the cylinder 20, for the major portion of its circumferential extent is deep enough to permit the non-grooved portion of the cylinder to project above the surface of the carrying band, the remaining portion 4, of the groove being made shallow or less deep so that the surface of the carrying band is projected thereby above the cylinder with the result that when the deep portion 3 of the cylinder groove is passing a given point, such as the opposed surface 25, as in Fig. 8, no feeding movement will be imparted and when the shallow portion 4 of said groove is passing said point, as in Fig. 9, an effective feed will take place. The non-grooved portion of the cylinder 20, coincident with the shallow portion 4 of the groove may be cut away or depressed as at 2, to lessen the needed projection of the carrying bands at their effective feeding point. Where the feeding mechanism is required to feed sheets or slips shorter than one half the circumferential length of the feed cylinder 20, two or more such shallow band-projecting portions 4 may be provided so that instead of causing the feed of one sheet or slip at each rotation of the cylinder, two or more such sheets may be fed at each rotation thereof.

A number of narrow carrying bands 21, in lieu of a single wide band, is preferably employed and the feed cylinder 20, is consequently formed with alternate rings and grooves, as shown in Fig. 4; and there is provided an idler roller 23 to sustain the carrying bands in their horizontal position under the weight of the bunch or stack of articles resting on them in position to be fed through the machine.

All of the bands 21 need not pass to and around the roller 24, but one or more, such as the outermost one, may pass around the feed cylinder 20, as shown in Fig. 2.

The horizontal supporting surface of the bands may be extended by a table plate 30, that is supported from the side frame 101, or by an idle roller 31, as indicated by dotted lines in Fig. 1.

With the feeding mechanism there is associated an opposed surface or separator in the form of a flexible wiper 25, with its free forward end resting upon and in some instances bearing with more or less pressure on the feed cylinder and serving to prevent the feed of more than one article at a time and coating with the effective portion of the feed cylinder to permit the feed of single articles at a time, and only at predetermined moments. The wiper 25 is a narrow flexible rubber strip removably clamped between the foot of its holder 26 and a clamping piece 28 carried thereby. The holder is removably and adjustably secured by screws 27 to the side frame 101 and supports the wiper in a fixed position over the feed controlling cylinder 20 so that a wedged shaped entrance or throat is formed for the leading ends of the articles in position to be fed through the machine. The wiper rubber is preferably formed with a canvas backing to prevent its stretching, and to impart increased elasticity thereto may be reinforced by one or more flat steel springs 1, Fig. 2.

There is preferably associated with the carrying bands 21 an upper set of bands 32 that are stretched around grooved rollers 33, 34 and coact with the under set of bands 21 in carrying between them the article forward

through the machine. The two sets of bands form upper and under traveling supports for the sheet or slip holding it closely confined between them and preventing its becoming crumpled or displaced when causing the operation of the controlling or setting device which governs the operation of the succeeding and normally inactive instrumentality of the machine to be presently described.

The mechanism to which the articles are advanced by the feeding mechanism is represented in the present instance by the printing couple B which consists of an intermittently operable printing or marking surface or roller 35 carried by a driven spindle 51, and an impression surface or roller 36, between which the articles handled by the machine pass. The impression roller like the feeding instrumentalities constantly rotate while the printing roller and its spindle rotate according as the controlling device is set to cause or permit its effective movement.

The surface of the printing roller is inked by a felt roller 37, carried by a stud projecting from a bar 38 that is adjustably and removably held in place by a clamp nut 39. To aid in keeping the surface of the inking felt roller smooth and free from ridges it may be in surface contact with a positively driven metal roller which constantly rotates the felt roller and thus relieves the printing roller of that duty.

The space between the bight of the carrying bands and the impression roller is preferably bridged by lower and upper guides 41, 42 to guard and direct the articles properly to the printing couple.

From the printing couple the articles may pass directly into the stacker or receiving receptacle C consisting in the main of one or more longitudinal bottom forming rods 42 projecting from a lateral supporting rod 43 with the outermost rod carried by an eye 44 movable on the supporting rod for varying the width of the receptacle. End and side guards, not shown, may be associated with the bottom rods to aid in properly collecting the delivered articles. The receptacle may be provided with one or more overlying rods 45 adjustably carried by a transverse bar 46 projecting from the side frame to guide the articles from the printing couple into the receptacle and prevent their following around with the printing roller.

The mechanism for bringing about the timely operation of the normally inactive instrumentality of the machine, such as the driven spindle 51 of the printing couple B, or of the counting device D, or both, consists in the main of a controller *e*, which in the present embodiment normally holds the driven spindle against movement and which controller in itself normally occupies a non-operable position; an article-operated device *c*, for setting the controller in operable position and a power actuated device *d*, for moving the controller.

The controller *e*, has an independently movable member *f*, which may be set into operable position by the action of the setting device *c*, as each article is presented thereto, so that the actuating device or stud *d*, will in its rotation engage the movable member *f*, and thus impart the necessary movement to the controller to cause or permit the effective operation of the driven spindle and consequently of the printing couple or counting device or both.

The setting device *c* consists of a finger depending from a rock-spindle 6 across or into the path traversed by the article being handled by the machine and in the present instance lies in the space between contiguous bands of each set of carrying bands 21, 32, to be rocked forwardly during the onward movement of said article. The spindle 6 carries an arm that is connected to one end of a link 7 whose lower slotted end engages a rock arm 8 fast to a rock shaft 50, to the outer end of which is affixed the movable member or finger *f*. On the inner side of the side frame 101, the rock shaft 50 carries a contact or radial pin 9 movable to first meet a shoulder or horizontal pin 10 projecting from a second rock-arm 11 mounted loose on said rock-shaft and thereafter to rock said arm 11. This rock-arm 11, is in turn connected by a link 12 to one end of a lever 13 carrying the controller stop-forming star wheel *e* that normally engages a roll 14 carried rigidly with the driven spindle 51 and thus holds said spindle against rotation.

The article carried by the feed mechanism collides with the setting device finger *c* and rocks it, which, through the link 7 and arm 8 moves the rock-shaft 50 against the slight pull of a spring 52 to bring the radial pin 9 against the pin 10 as indicated by dotted lines, Fig. 12, and at the same time position the finger *f* in the path of movement of the actuating stud *d* as in Fig. 10. The parts will remain in this position so long as the setting finger *c* is held in its rocked position, Figs. 10 and 11, by the continued presence of the article that has caused its movement and until in the course of its movement the actuating stud *d* makes contact with the finger *f* as in Fig. 11, and thereby cause the radial pin 9 to rock the arm 11 and through the link 12 rock the stop carrying lever 13 against the pull of its spring 15 as indicated in Figs. 11 and 13 to release the controlling stop *e* from the roll 14 and allow the driven spindle 51 to rotate. As soon as the stud *d* passes the finger *f* the controlling stop *e* under the pull of its spring 15 returns to its original position in Figs. 1 and 10 ready to meet the stud 14 upon the completion of one turn of the driven spindle 15, and after having caused the article to be marked or counted or both marked and counted. And as soon as the article has passed beyond the setting finger *c* it and the movable finger *f* under the pull of the spring 52 return to the normal position shown in Fig. 1. The slotted end of the link 7 permits the rocking of the shaft 50 and arm 8 when moved by the stud *d* without necessarily moving said link and finger *c*.

The actuating stud *d* is moved in a circular path and in the present embodiment is conveniently carried by the feed controlling cylinder 20, or so as to make turn for turn with said cylinder, so that for each article fed by the feed mechanism a movement of the controlling device will be effected. The time at which the actuating stud may meet and move the movable member *f* of the controlling device, with the result that the marking or printing of the article shall occur early or later in the movement of said article and consequently be marked or printed at any desired point in its length, may be regulated and determined by changing the location of said stud on the cylinder 20. For this purpose said cylinder is formed on its outer end with an undercut groove 58 concentric with its axis and with

the stud fitting said groove and rendered in any proper way adjustable therein. When the feed controlling cylinder 20 is adapted to feed more than one article during each rotation thereof as hereinbefore mentioned, the stud *d* or additional studs will be arranged to actuate the controlling stop *e*, once for each sheet fed.

The means for rotating the driven spindle 51 whenever it has been released in the manner just described consists in providing a constantly rotating or driving part such as a toothed wheel 53, Figs. 5 and 7, that is mounted loose on the spindle 51 and constructed to drive said spindle by a suitable friction device. For this purpose the toothed wheel carries a pair of disks 54, one on each side of the toothed wheel in frictional contact with and between coacting disks 55 fast to the spindle. The frictional bearing faces of the disks 55 may be provided by fiber disks 16 to lessen the wear. One of the disks 55 is formed integral with the head carrying the stop engaging roll 14 and is fixed to the spindle; and to compensate for the wear of the frictional faces as well as to increase or diminish the frictional contact between the disks, the other disks 55 like the toothed wheel and its disks is longitudinally movable on the spindle toward the other or fixed disk 55 and is engaged and held against rotation with respect to the spindle by a slidable key 17 passing diametrically through said spindle and pressed against said movable disk by a suitable spring 18 within one end of said spindle, the tension of which may be regulated by a screw 19. As the toothed wheel 53 constantly rotates in the operation of the machine it results that as soon as the controlling stop *e* is removed from the roll 14 the spindle will immediately partake of the rotation of said toothed wheel by reason of the said frictional connections between the toothed wheel and said spindle.

The printing roller 35 may be of the segmental form shown and is mounted on and secured to the projecting end of the driven spindle 51 in any suitable manner. In the present instance it is secured in place by a wedge shaped spline 56 fitting a longitudinally inclined groove in the spindle and adjusted in place by the flange of a screw 57 threaded into the end of the spindle as in Fig. 7. By this means of securing the printing roller to the spindle the roller may be adjusted longitudinally or turned thereon so as to locate the printing surface in any desired position with respect to the spindle and its stop engaging roll 14.

Certain members of the operating parts are mounted to yield with respect to coacting members to permit the machine to feed and handle articles of different thicknesses. Thus the grooved band-carrying roller 31 is mounted loose on a spindle carried by a rock arm 60, see Fig. 5, that is connected to one end of a suitable spring 61 to yield upwardly with respect to the carrying bands 21 and feed cylinder 20. The under grooved roller 24 around which passes the bands 21, is secured to a driven spindle 62 mounted in a two-armed lever 63, see Figs. 6 and 7, to yield downwardly against the pull of a spring 64 with respect to the upper grooved roller 34 that is mounted on a driven spindle 76 supported in fixed bearings. The impression roller 36, preferably covered with rubber, is secured to a driven spindle 65 that is mounted in a swinging frame 66, Figs. 6 and 7, to yield downwardly against the push of a spring pressed rod 67 with respect to the coacting printing roller 35;

the upper position of the impression roller being limited by its frame meeting the end of an adjusting screw stop 68.

Motion is communicated to the several operating parts, preferably, by means of a hand operated wheel 103 connected to rotate the main spindle 69 which carries the driving toothed wheel 70. This wheel 70 meshes with a pinion 71 mounted with another toothed wheel 72 on a transverse spindle 73. The toothed wheel 72 in turn meshes with a similar toothed wheel 74 fast to the spindle 75 to which the feed controlling cylinder 20 is secured, see Fig. 4. The toothed wheel 72 also meshes with a smaller and intermediate toothed wheel 77 rotating loosely on the spindle supporting the stop carrying lever 13, which wheel 77 meshes with and drives three other toothed wheels, one wheel 78 fast to the spindle 76 carrying the grooved roller 34, the driven toothed wheel 53 mounted on the spindle 51 and a toothed wheel 79 fast to the spindle 80 to which the metal roller 40 is secured. The toothed wheel 78, meshes with a toothed wheel 81 fast to the yieldingly mounted spindle 62 which carries the grooved roller 24; and the toothed wheel 53 meshes with and drives a toothed wheel 82 fast to the impression roller spindle 65.

As a means for operating a suitable counting device D, Fig. 7, the driven spindle 51 has secured to its end a pin-carrying hub 83 arranged at each rotation of the spindle to impart a step movement to a suitably shaped gear 84, which through the sprockets on the hub of said gear, see Fig. 2, communicates its step by step motion through a chain 85 to a driving pinion 86 in mesh with a pinion 87 fast to the actuating spindle of the counter. The construction being such that at each rotation of the driven spindle 51 the units wheel of the counter will have been moved one step and then locked against rotation. Any suitable counting mechanism may obviously be employed, but that partly represented in the drawings is fully set forth and described in a companion application filed by me in the U. S. Patent Office on or about February 28th, 1906, Serial No. 303,336.

The operation of the improved mechanism will have been understood from the foregoing description. It may be added, however, that the articles such as sheets or slips of paper or other material, preferably in quantity, are placed horizontally on the carrying bands 21 in proximity to the wiper holder 26 with their inner longitudinal edges against a suitable guide plate 104 fixed to the outer side of the side frame 101. Motion being imparted to the gearing through the hand wheel 103 all the several parts will move with the exception of the driven spindle 51 and the instrumentalities with which it may be connected, such as the printing roller 35 and counting device D which remain at rest. At the appropriate moment the undermost sheet or slip on the carrying bands 21 which probably with others on the start of motion to the machine have been moved up to the bight of the wiper 25 and feed cylinder 20, will, when the high part 4 of the cylinder grooves and the cutaway portion 2 of said cylinder arrives approximately at the wiper, positively carry the lowermost sheet forward beneath the wiper and thence between the bands 21 and 32 and thus separating it from the collection of sheets resting on the bands 21. The bands 21 and 32 carry the separated sheet forward to the

printing couple B and in doing so causes its leading end to collide with and rock the setting device finger *c* thereby moving the finger *f* into the path of movement of the stud *d*. This stud it should be remarked has been positioned in its groove in the cylinder 20 to cause the release of the driven spindle 51 at the moment when that portion of the sheet that is to receive the mark or impression will arrive in proper position on the impression roller 36 to be marked by the printing roller 35 on the rotation of said spindle 51. This adjustment of the stud may for instance cause the printing roller to mark the leading end of the sheet, its tail end or any intermediate place between its ends, according as it may be previously determined. The finger *f*, having been moved into operable position by the act of the sheet, will then be met by the stud *d* on the rotation of the cylinder 20, and moved so as to rock the controlling stop *e* away from the stop roll 14 thus freeing the driven spindle 51 and allowing it to rotate and thereby cause the sheet to be marked, and if the counting device D be employed, have simultaneously counted the sheet. Instantly the stud *d* leaves the finger *f* the controlling stop *e* will return to its normal position ready to stop the driven spindle 51 upon the completion of a single rotation thereof.

The specific details of the machine thus organized may obviously be changed and modified without departing from the scope of the invention; and other suitable feed mechanism may be employed in lieu of that shown.

What is claimed is:

1. The combination of a rotatable spindle for a printing device, a stop normally holding the spindle against rotation, an arm and connections for removing the stop, an article operated finger and connections for setting the arm in operative position and a moving contact for operating the arm.

2. The combination of a rotatable spindle for a printing device, a stop normally holding the spindle against rotation, coöperating stop-actuating members normally out of operative relation, an article-operated device for setting said members in operative relation, and a driver for one of said members.

3. The combination of a driver, a printing device driven thereby, a stop normally holding the instrumentality against movement, coöperating stop-actuating members normally out of operative relation, an article-operated device for setting said members in operative relation, and a driver for one of said members.

4. The combination of a feeding mechanism, a driver, a printing device driven thereby, a stop normally holding the device against movement, coöperating stop-actuating members one movable with the feeding mechanism and both members normally out of operative relation, and an article-operated device for setting said members in operative relation.

5. The combination of a feeding mechanism, rotatable members of a printing couple, means holding the members out of printing relation, coöperating members for controlling the position of said means and normally out of operative relation, an article-operated device for setting said members in operative relation, and a driver for one of said coöperating members.

6. The combination of the members of a printing couple normally out of active relation, coöperating members controlling the operation of the printing couple and said members normally out of operative relation with each other, means for driving one of said coöperating members and an article-operated device for bringing said coöperative members into operative relation to cause the operation of the printing couple.

7. The combination of a normally inactive printing device, a controller for determining the operation thereof

and normally out of operable position, an article-operated means for setting the controller in operable position, and means for moving said controller.

8. The combination of the cooperating members of a frictional driving device, a printing device moved thereby, a controller for determining the operation of the driving device and normally out of operable position, an article operated means for setting the controller in operable position, and means for moving the controller.

9. The combination of a rotatable printing device normally at rest, a frictional driving device therefor, a controller for determining the operation of the driving device and having a member normally out of operable position, an article operated means for moving said member into operable position, and an automatically moving contact for engaging said member and moving the controller.

10. The combination of the cooperating members of a frictional driving device, a printing device moved thereby, a stop normally preventing the movement of said printing device, an article operated device and connections for setting a portion of the stop into operable position and automatic means for moving the stop.

11. The combination of the cooperating members of a frictional driving device, the rotatable printer of a printing couple and a counting device both normally at rest, a stop for controlling the operation of both the printer and counting device having a member movable into operable position, an article actuated setting device for said movable member and means operating the stop.

12. The combination of the cooperating members of a frictional driving device the driven member of which includes a rotatable spindle, a marking device and a counting device both receiving motion from said spindle, a stop normally preventing rotation of the spindle and normally out of operable position, an article actuated device for setting the stop in operable position and means for moving said stop.

13. The combination of the cooperating members of a frictional driving device the driven member of which includes a rotatable spindle, a marking device and a counting device both receiving motion from said spindle, a stop normally preventing rotation of the spindle and normally out of operable position, an article actuated device for setting the stop in operable position, a feeding mechanism for the articles and means carried by said mechanism for operating the stop.

14. The combination of the cooperating members of a frictional driving device the driven member of which includes a rotatable spindle, a printing roller connected to said spindle, a counting device and intermittently movable gearing connecting the spindle to the counting device, a stop for controlling the operation of the rotatable spindle, and an article actuated device for determining the operation of the stop.

15. The combination of a printing roller normally at rest, a device in the path of the article to be printed and

adapted to be operated thereby, connections between said device and the printing roller, and a traveling contact for operating said connections whereby said printing roller may operate.

16. The combination of a marking roller normally at rest, and an article controlled means for effecting its movement said means including an adjustably positioned and traveling contact for determining the time of movement of the marking roller.

17. The combination of a printing roller, means for restraining its operation, an article operated device for moving said restraining means into position to be operated, and an adjustably mounted and traveling contact for operating the restraining means.

18. The combination of a printing roller, a stop restraining its movement, an arm connected to move said stop, and an adjustably mounted and traveling contact for moving said arm.

19. The combination of a feed mechanism an impression roller, a marking roller coacting therewith, an article actuated device for controlling the cooperation of the two rollers and means carried by the feed mechanism for determining the time of operation of said two rollers.

20. The combination of a feed mechanism, an operable instrumentality actuated by the presence of the article fed by said mechanism, and a contact carried by the feed mechanism to determine the time of operation of said instrumentality.

21. The combination of a feed mechanism, an operable instrumentality actuated by the presence of the article fed by said mechanism, and an adjustably mounted contact carried by the feed mechanism to determine and change the time of operation of said instrumentality.

22. The combination of the cooperating members of a frictional driving device, a printing couple one member of which is connected to a member of the frictional driving device an article controlled means including an adjustable member for determining and changing the time of operation of the printing couple.

23. The combination of a feed mechanism including a feed controlling cylinder, a printing couple, an article operated device for controlling the operation of the printing couple and an adjustable contact carried by the cylinder for determining the time of operation of said printing couple.

24. The combination of a feed mechanism including a feed controlling cylinder, an opposed wiper, a secondary feed band, an article controller printing couple and a receiving receptacle.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses, this 26th day of March, 1906.

FREDERICK G. JAHN.

Witnesses:

GEO. H. GRAHAM,
S. EDGAR DYE.