J. KLEIDMANN.

FEEDING MACHINE ATTACHMENT FOR PRINTING PRESSES.

APPLICATION FILED AUG. 12, 1908.

911,133.

Patented Feb. 2, 1909.

2 SHEETS—SHEET 1.

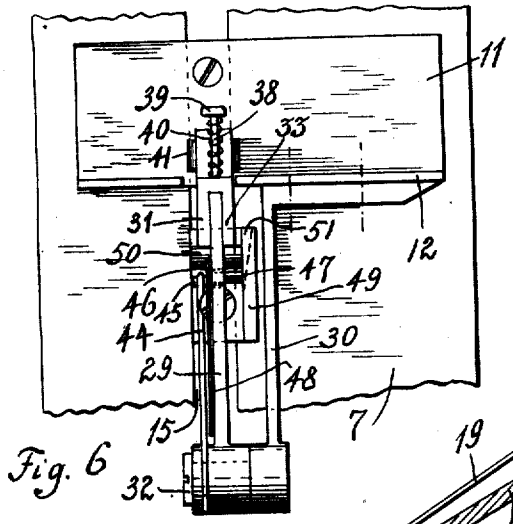


Fig. 6

Fig. 1

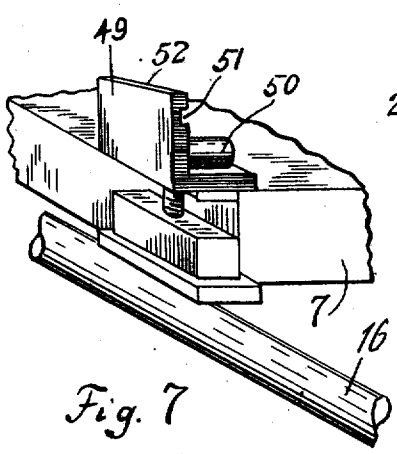


Fig. 7

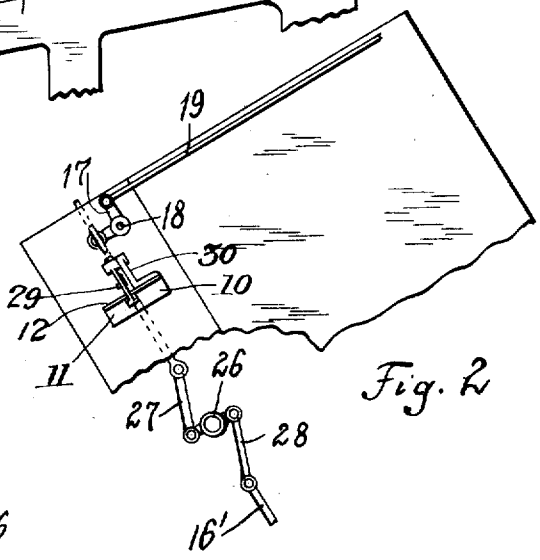


Fig. 2

WITNESSES

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2 SHEETS—SHEET 2.

Fig. 3

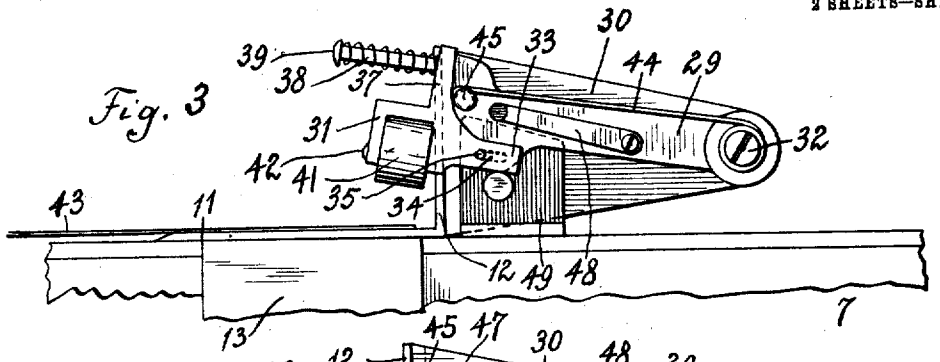


Fig. 4

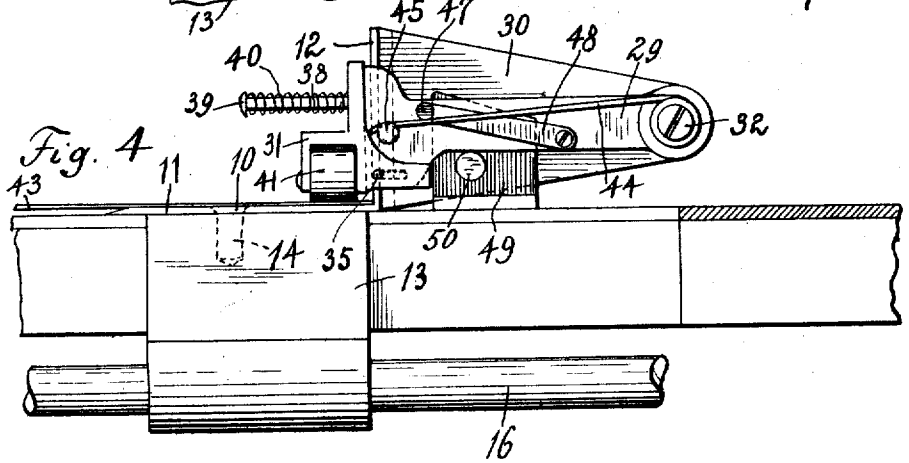
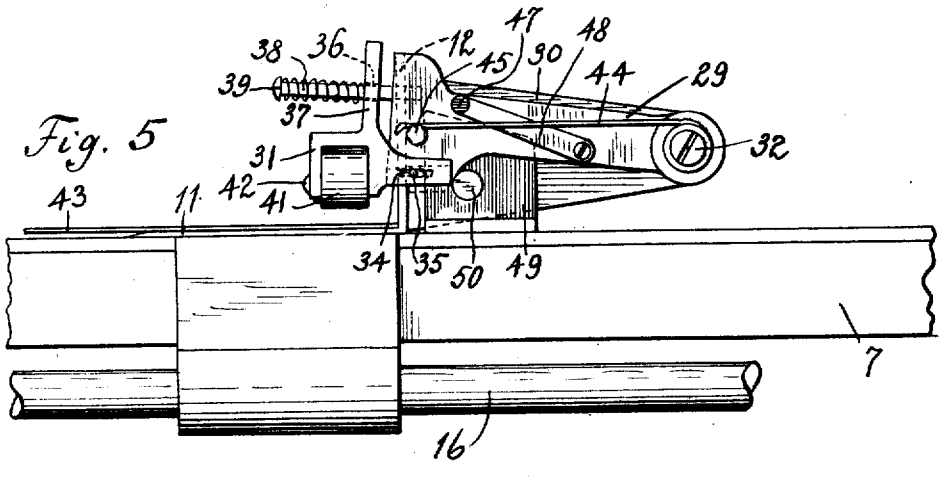


Fig. 5



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UNITED STATES PATENT OFFICE.

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FEEDING-MACHINE ATTACHMENT FOR PRINTING-PRESSES.

No. 911,133. Specification of Letters Patent. Patented Feb. 2, 1909.

Application filed August 12, 1908. Serial No. 448,260.

To all whom it may concern:

Be it known that I, JOSEPH KLEIDMANN, a subject of the Czar of Russia, and resident of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Feeding-Machine Attachments for Printing-Presses, of which the following is a specification.

The present invention relates to improvements in feeding machine attachments for printing presses, and is adapted to be attached to any well known form of feeding machine for printing presses, ruling machines and the like. More particularly, the invention relates to means for registering the sheets of paper as the same are fed on the feeding table to the press cylinder of the printing presses.

The registering devices, heretofore in use, may be divided into two general classes, that is, first, such devices which push the sheet of paper into its proper position, and, second, devices which pull the sheet into its proper place. The first class is objectionable for the reason that the sheet is very often, due to the adhesion of the paper to the feeding board waved or buckled, and, when consequently released from the registering apparatus, springs sidewise, whereby it is brought out of its registering position. Those devices, heretofore in use, which pull the sheet into its registering position, are defective for the reason that when the registering apparatus is about to release the sheet of paper to be fed into the printing press, the movable part of the registering apparatus very often pulls the sheet out of its registering position.

It is now the object of the present invention to obviate the aforesaid defects; and to that end the invention consists in the combination, with a printing press and mechanisms automatically supplying the paper to said press, of a registering device, the sheet gripping part of which is slidably and resiliently supported by the swinging portion of the apparatus, and is caused by suitable means to move in a substantially vertical line when disengaging the sheet, whereby the same is kept in its registering position.

Other objects will be apparent from a reading of the specification and an examination of the drawings, forming part of the present application.

The invention is illustrated in the accompanying drawings, in which

Figure 1 is a side elevation of a paper feeding apparatus, having the attachment, forming the subject matter of the present application, attached thereto, Fig. 2 a top-plan view of about one-half of the attachment, Fig. 3 is a side elevation of the registering device, showing the position of the sheet gripping part, when about to engage the sheet of paper, Fig. 4 is a similar view of the apparatus, showing the registering device in a position, whereby the sheet of paper is engaged and drawn into the registering position, and Fig. 5 is a similar view, the sheet gripping part moving upward, whereby the sheet is disengaged. Fig. 6 is a top view of the registering device, while Fig. 7 is a perspective view of a detail of construction.

It will be observed that in Figs. 1 and 2 of the drawings, only those parts of the feeding machine are shown, which are necessary to understand the operation of the registering apparatus, and as shown in Fig. 2 of the drawings, about one-half of the operating mechanism of the registering device is illustrated, it being understood that the same parts and devices are applied on the other half of the attachment.

In the drawings, 1 designates one of a pair of the side frames of the feeding machine, connected to the side frame 2 of the printing press. The stack of paper is indicated in the drawings at 3 and is supported by a table 4, preferably automatically raised as the sheets are fed from the same.

The sheets are brought by the feeding mechanism 5 unto a forwardly bent lip 6 and thus upon the feed table 7, wherefrom they are fed unto the press cylinder 8, suitably geared with the main shaft 9 of the feeding apparatus, which main shaft governs the motion of the feeding mechanism 5 and of the registering apparatus, hereinafter to be described.

Attention is called to the fact that a registering device for the paper is arranged on each side of the machine, and obviously one of these devices is used when one side of the paper is being printed, while the other is

made use of when printing the reverse side of the sheets. In describing these registering devices, it is thought that only one of the same is to be considered, the other being symmetrically arranged with the first device.

The frame or support of the registering device comprises an angle iron 10, the leg 11 of which rests on the feeding table 7, and the leg 12, arranged at right angles to the leg 11, serves as a guide for the sheets. Obviously the leg 12 is arranged at right angles to the main shaft 9 of the apparatus and thus parallel to the side edges of the sheets, moving on the feed table 7. The frame 10 is secured to a substantially square block 13 by means of screws 14, which square block is adapted to reciprocate in guiding slots 15 of the feed table 7, which guiding slots run parallel with the axis of the press cylinder 8. The frame 10 supports the registering apparatus, hereinafter to be described.

The registering apparatus, as will be seen, moves to and fro the center of the feed table, and for that purpose the square block 13 is adjustably mounted upon a rod 16, arranged parallel to the axis of the press cylinder, and engaged by a bellcrank 17, fulcrumed at 18 to the upper side of the table; the free end of the bellcrank is engaged by a connecting rod 19, which in turn is pivotally connected to the arm 20 of a two-armed lever 21, pivoted to the frame of the machine at 22. The free end of the arm 23 of this lever carries a roller 24, engaging a cam 25, arranged on the main shaft 9 of the feeding apparatus, and controlling the movement of the registering device. To impart the reciprocating motion of the rod 16 to the registering device arranged on the other side of the table, a two-armed lever 26 is mounted on the feed table 7 and connected by means of connecting rods 27 and 28 with the alternating rods 16 and 16', respectively. The registering device comprises furthermore the register arm 29 pivoted to a bracket 30, arranged on the vertical leg 12 of the support or frame 10. The free end of this arm 29 carries slidably arranged thereon a block 31, adapted to slide in the plane of the arm 29 in a direction at right angles to the spindle 32 upon which the arm 29 oscillates. For this purpose the block 31 is bifurcated at 33 and engages the arm 29, which is provided at its lower portion with a slot 34 engaged by a pin 35, arranged on the bifurcated portion of the block 31. To more safely guide the block 31, the latter is provided with a hole 36 in its upper extension 37, and engaged by a spindle 38, secured to the arm 29 and provided with a head 39, between which and the extension 37 of the block 31 is arranged a helical spring 40, normally keeping the block 31 in its inner position upon the arm 29. A roller 41, having preferably a rough covering, such as rubber, is arranged on the block 31 on a spindle 42, whereby the roller may revolve in the direction of the travel of the sheets. This roller 41 may be kept in contact with the sheet 43, resting on the leg 11 of the frame, by means of a spring 44, engaging the arm 29 at 45 and wound around the spindle 32, upon which the arm 29 oscillates. The arm 29 is furthermore provided near to its front end with a hole 46, in which is arranged a pin 47, carried by a spring 48, arranged on the arm 29, whereby the pin is forced to protrude through said opening, but at the same time is adapted to be pressed inwardly by the block 49, arranged on the table 7 of the apparatus. This block 49 is adjustably arranged in the slot 15 of the table and is provided with a stop 50 in the path of the block 31, carried by the arm 29 of the apparatus. The pin 47 protrudes through the hole 46 of the lever 29, and, obviously, in the backward movement the apparatus would be prevented in its movement by the block 49, arranged in the path of the pin, were it not for the tapering groove 51 in this block, in which the pin slides and is pressed against the tension of the spring outwardly, so that it comes to contact with the inner side of the block.

The operation of the registering device is as follows: First the block 13 and thus the moving part of the register is arranged in its proper position upon the rod 16, corresponding to the width of the sheets to be fed; then the block 49 is moved in the slot and secured against movement at a place where it is intended to disengage the sheet of paper, that is where the sheet is in its registering position. When the registering device is in its outermost position, the pin 47 rests upon the inclined upper surface 52 of the block 49, as will be hereinafter described; thereby the roller 41 is kept at a certain distance from the leg 11 of the frame 10. As the registering device now moves toward the center of the table to engage a sheet, the sheet will be brought to lay against the vertical leg 12 of the frame 10 and thus be in a position to be gripped. The registering device having moved forward, the roller is caused to engage the sheet of paper by the spring 44, as soon as the pin is disengaged with the inclined surface 52, or in other words when the pin arrives at the front edge of the block 49. It is obvious that the roller 41 and the leg 11 of the frame 10 form coacting gripping jaws, engaging the sheet. The cam 25 then causes the registering apparatus to move outward from the center of the table and pull thus the sheet in a predetermined registering position. The tapering groove 51 allows the registering apparatus to move backward, by pressing the pin 47 inwardly, so that it contacts with the inner side of the wall of the block 49. As soon as the forked end 33 of block 31 comes in contact with the stop 50, or in other words, into the position in which

the sheet should be released, the roller 41 moves upward by sliding upon the curved surface of the stop 50, whereby the sheet is disengaged and allowed to pass unto the press cylinder of the printing press.

It will be seen that, since the block 31 is slidably arranged on the arm 29, and although the arm 29 moves further outward, the block 31 will be allowed to stop for a time and then move for a predetermined time in a vertical line upwards, or in other words, will move with a speed equal to zero in the direction of travel of the registering device for a predetermined time, by reason of the stop 50, whereby the sheet of paper is properly disengaged in its registering position. The arm 29 swings further upward, whereby the pin 47 engages the tapering surface 52. The cam 25 forces the reciprocating rod 16 then again toward the center of the table to carry the registering device forward in the position to engage the next sheet of paper.

It is obvious that the apparatus can be adapted to operate on paper of different widths by adjusting the movable element and the stationary element of the same on the reciprocating rod 16 and in the slot 15, respectively. It is obvious furthermore that various minor changes may be made in the construction of the device and also in the arrangement of several parts without departing from the spirit and scope of the present invention.

What I claim is:

1. In a feeding machine attachment for printing presses, the combination with a reciprocating rod, of a registering device comprising a frame secured to said rod, a register arm pivoted to said frame, a gripping roller carried by said arm and coacting with said frame so as to form gripping jaws adapted to engage the sheet of paper, and means independent of said register arm and adapted to cause the same to swing on its pivot at a predetermined point in its travel and said gripping roller to move in a vertical line when said arm begins to swing on its pivot.

2. In a feeding machine attachment for printing presses, the combination with a reciprocating rod, of a registering device comprising a frame secured to said rod, a register arm pivoted to said frame, a gripping roller carried by said arm and coacting with said frame so as to form gripping jaws adapted to engage the sheet of paper, and stationary means adapted to cause said register arm to swing on its pivot at a predetermined point in its travel and said gripping roller to move in a vertical line when said arm begins to swing on its pivot.

3. In a feeding machine attachment for printing presses, the combination with a reciprocating rod, of a registering device comprising a frame secured to said rod, a register arm pivoted to said frame, a gripping roller slidably carried thereby and adapted to coact with said frame so as to form gripping jaws to engage the sheet of paper, and means to cause said gripping roller to move with a speed equal to zero in the direction of travel of the registering device for a predetermined time and at a point where the gripping roller is disengaged with the sheet of paper.

4. In a feeding machine attachment for printing presses, the combination with a reciprocating rod, of a registering device comprising a frame secured to said rod, a register arm pivoted to said frame, a gripping roller slidably arranged thereon and adapted to coact with said frame so as to form gripping jaws to engage the sheet of paper, and stationary means to cause said gripping roller to move with a speed equal to zero in the direction of travel of the registering device for a predetermined time and at a point where the gripping roller is disengaged with the sheet of paper.

5. In a feeding machine attachment for printing presses, the combination with a reciprocating rod, of a registering device comprising a frame secured to said rod, a register arm pivoted to said frame, a gripping roller slidably arranged thereon and adapted to coact with said frame so as to form gripping jaws to engage the sheet of paper, means for holding the gripping roller in an elevated position during the forward motion of the registering device, and means to cause said gripping roller to move with a speed equal to zero in the direction of travel of the registering device for a predetermined time and at a point where the gripping roller is disengaged with the sheet of paper.

6. In a feeding machine attachment for printing presses, the combination with a reciprocating rod, of a registering device comprising a frame secured to said rod, a register arm pivoted to said frame, a gripping roller slidably arranged thereon and adapted to coact with said frame so as to form gripping jaws to engage the sheet of paper, means for holding the gripping roller in an elevated position during the forward motion of the registering device, and stationary means to cause said gripping roller to move with a speed equal to zero in the direction of travel of the registering device for a predetermined time and at a point where the gripping roller is disengaged with the sheet of paper.

7. In a feeding machine attachment for printing presses, the combination with a reciprocating rod, of a registering device comprising a frame secured to said rod, a register arm pivoted to said frame, a gripping roller slidably arranged thereon and adapted to coact with said frame so as to form gripping jaws to engage the sheet of paper, an inclined surface, a pin on said register arm and engaging said inclined surface during the forward

movement of the device, whereby the gripping roller is held in its elevated position, and means to cause said gripping roller to move with a speed equal to zero in the direction of travel of the registering device for a predetermined time and at a point where the gripping roller is disengaged with the sheet of paper.

8. In a feeding machine attachment for printing presses, the combination with a reciprocating rod, of a registering device comprising a frame secured to said rod, a register arm pivoted to said frame, a gripping roller slidably arranged thereon and adapted to coact with said frame so as to form gripping jaws to engage the sheet of paper, an inclined surface, a pin on said register arm and engaging said inclined surface during the forward movement of the device, whereby the gripping roller is held in its elevated position, and stationary means to cause said gripping roller to move with a speed equal to zero in the direction of travel of the registering device for a predetermined time and at a point where the gripping roller is disengaged with the sheet of paper.

9. In a feeding machine attachment for printing presses, the combination with a reciprocating rod, of a registering device comprising a frame secured to said rod, a register arm pivoted to said frame, a bracket slidably arranged thereon, a gripping roller carried by said bracket and adapted to coact with said frame so as to form gripping jaws to engage the sheet of paper, and means to cause said bracket and the gripping roller secured thereto to move with a speed equal to zero in the direction of travel of the registering device for a predetermined time and at a point where the gripping roller is disengaged with the sheet of paper.

10. In a feeding machine attachment for printing presses, the combination with a reciprocating rod, of a registering device comprising a frame secured to said rod, a register arm pivoted to said frame, a bracket slidably arranged thereon, a gripping roller carried by said bracket and adapted to coact with said frame so as to form gripping jaws to engage the sheet of paper, and stationary means to cause said bracket and the gripping roller secured thereto to move with a speed equal to zero in the direction of travel of the registering device for a predetermined time and at a point where the gripping roller is disengaged with the sheet of paper.

11. In a feeding machine attachment for printing presses, the combination with a reciprocating rod, of a registering device comprising a frame secured to said rod, a register arm pivoted to said frame, a bracket slidably arranged thereon, a gripping roller carried by said bracket and adapted to coact with said frame so as to form gripping jaws to engage the sheet of paper, and means in the path of the registering device to cause said gripping roller to disengage the paper at a predetermined point and to move at this point for a predetermined time with a speed equal to zero in the direction of travel of the registering device.

12. In a feeding machine attachment for printing presses, the combination with a reciprocating rod, of a registering device comprising a frame secured to said rod, a register arm pivoted to said frame, a gripping roller slidably arranged thereon and adapted to coact with said frame so as to form gripping jaws to engage the sheet of paper, and stationary means in the path of the registering device to cause said gripping roller to disengage the paper at a predetermined point and to move at this point for a predetermined time with a speed equal to zero in the direction of travel of the registering device.

13. In a feeding machine attachment for printing presses, the combination with a reciprocating rod, of a registering device comprising a frame secured to said rod, a register arm pivoted to said frame, a gripping roller slidably arranged thereon and adapted to coact with said frame so as to form gripping jaws to engage the sheet of paper, means for holding the gripping roller in an elevated position during the forward motion of the registering device, and means in the path of the registering device to cause said gripping roller to disengage the paper at a predetermined point and to move at this point for a predetermined time with a speed equal to zero in the direction of travel of the registering device.

14. In a feeding machine attachment for printing presses, the combination with a reciprocating rod, of a registering device comprising a frame secured to said rod, a register arm pivoted to said frame, a gripping roller slidably arranged thereon and adapted to coact with said frame so as to form gripping jaws to engage the sheet of paper, means for holding the gripping roller in an elevated position during the forward motion of the registering device, and stationary means in the path of the registering device to cause said gripping roller to disengage the paper at a predetermined point and to move at this point for a predetermined time with a speed equal to zero in the direction of travel of the registering device.

15. In a feeding machine attachment for printing presses, the combination with a reciprocating rod, of a registering device comprising a frame secured to said rod, a register arm pivoted to said frame, a gripping roller slidably arranged thereon and adapted to coact with said frame so as to form gripping jaws to engage the sheet of paper, an inclined surface, a pin on said register arm and engaging said inclined surface during the for-

ward movement of the device, whereby the gripping roller is held in its elevated position, and means in the path of the registering device to cause said gripping roller to disengage the paper at a predetermined point and to move at this point for a predetermined time with a speed equal to zero in the direction of travel of the registering device.

16. In a feeding machine attachment for printing presses, the combination with a reciprocating rod, of a registering device comprising a frame secured to said rod, a register arm pivoted to said frame, a gripping roller slidably arranged thereon and adapted to coact with said frame so as to form gripping jaws to engage the sheet of paper, an inclined surface, a pin on said register arm and engaging said inclined surface during the forward movement of the device, whereby the gripping roller is held in its elevated position, and stationary means in the path of the registering device to cause said gripping roller to disengage the paper at a predetermined point and to move at this point for a predetermined time with a speed equal to zero in the direction of travel of the registering device

17. In a feeding machine attachment for printing presses, the combination with a reciprocating rod, of a registering device comprising a frame secured to said rod, a register arm pivoted to said frame, a bracket slidably arranged thereon, a gripping roller carried by said bracket and adapted to coact with said frame so as to form gripping jaws to engage the sheet of paper, and means in the path of the registering device to cause said gripping roller to disengage the paper at a predetermined point and to move at this point for a predetermined time with a speed equal to zero in the direction of travel of the registering device.

18. In a feeding machine attachment for printing presses, the combination with a reciprocating rod, of a registering device comprising a frame secured to said rod, a register arm pivoted to said frame, a bracket slidably arranged thereon, a gripping roller carried by said bracket and adapted to coact with said frame so as to form gripping jaws to engage the sheet of paper, and stationary means in the path of the registering device to cause said gripping roller to disengage the paper at a predetermined point and to move at this point for a predetermined time with a speed equal to zero in the direction of travel of the registering device.

Signed at New York, in the county of Kings and State of New York, this 3rd day of July, A. D. 1908.

JOSEPH KLEIDMANN.

Witnesses:

FREDERICK NAPIER,

C. HANAN.