

No. 714,489.

Patented Nov. 25, 1902.

W. G. JOHNSTON.

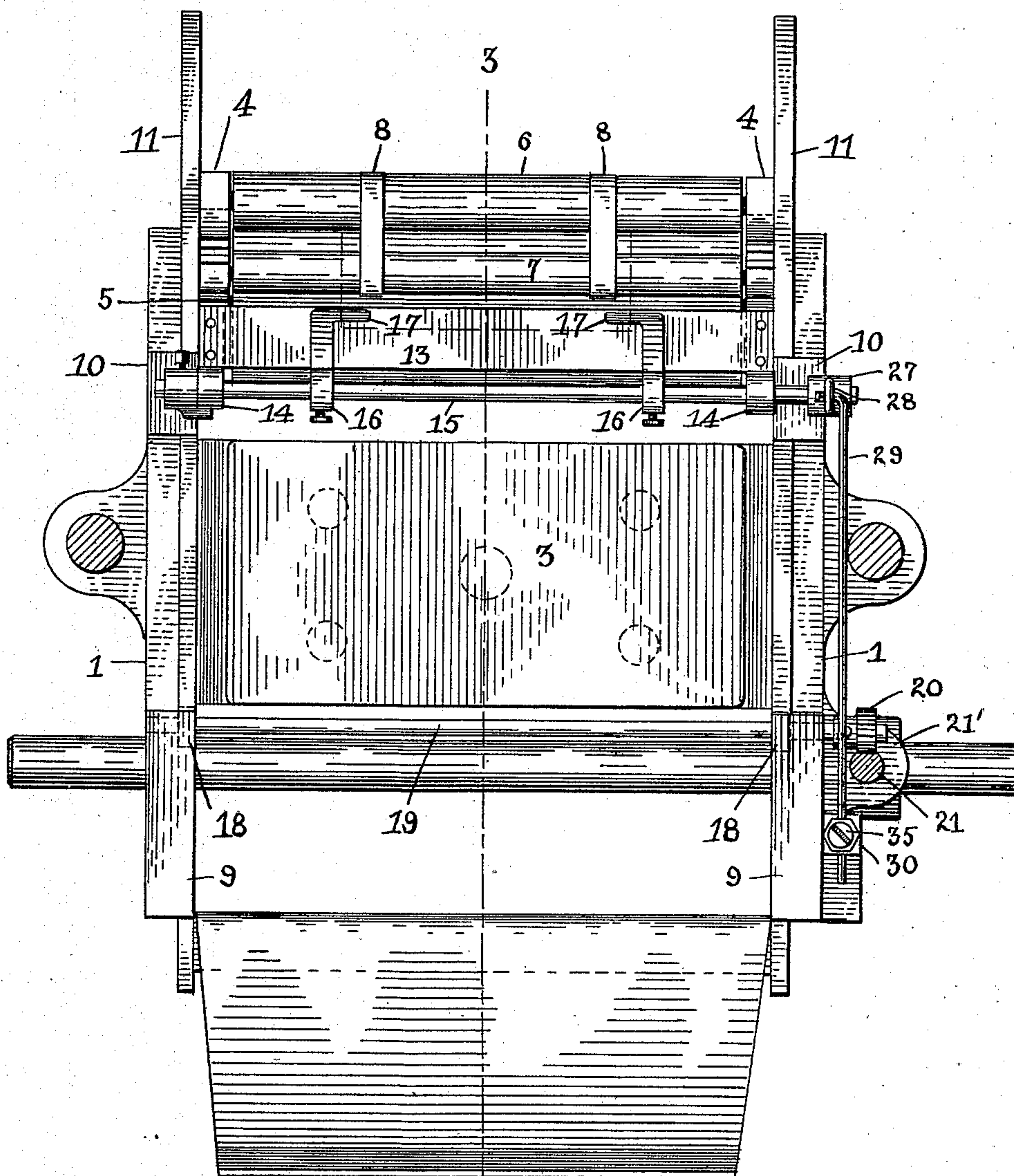
DEVICE FOR DELIVERING PAPER TO PLATENS OF PRINTING PRESSES.

(Application filed Feb. 5, 1902.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.



Witnesses

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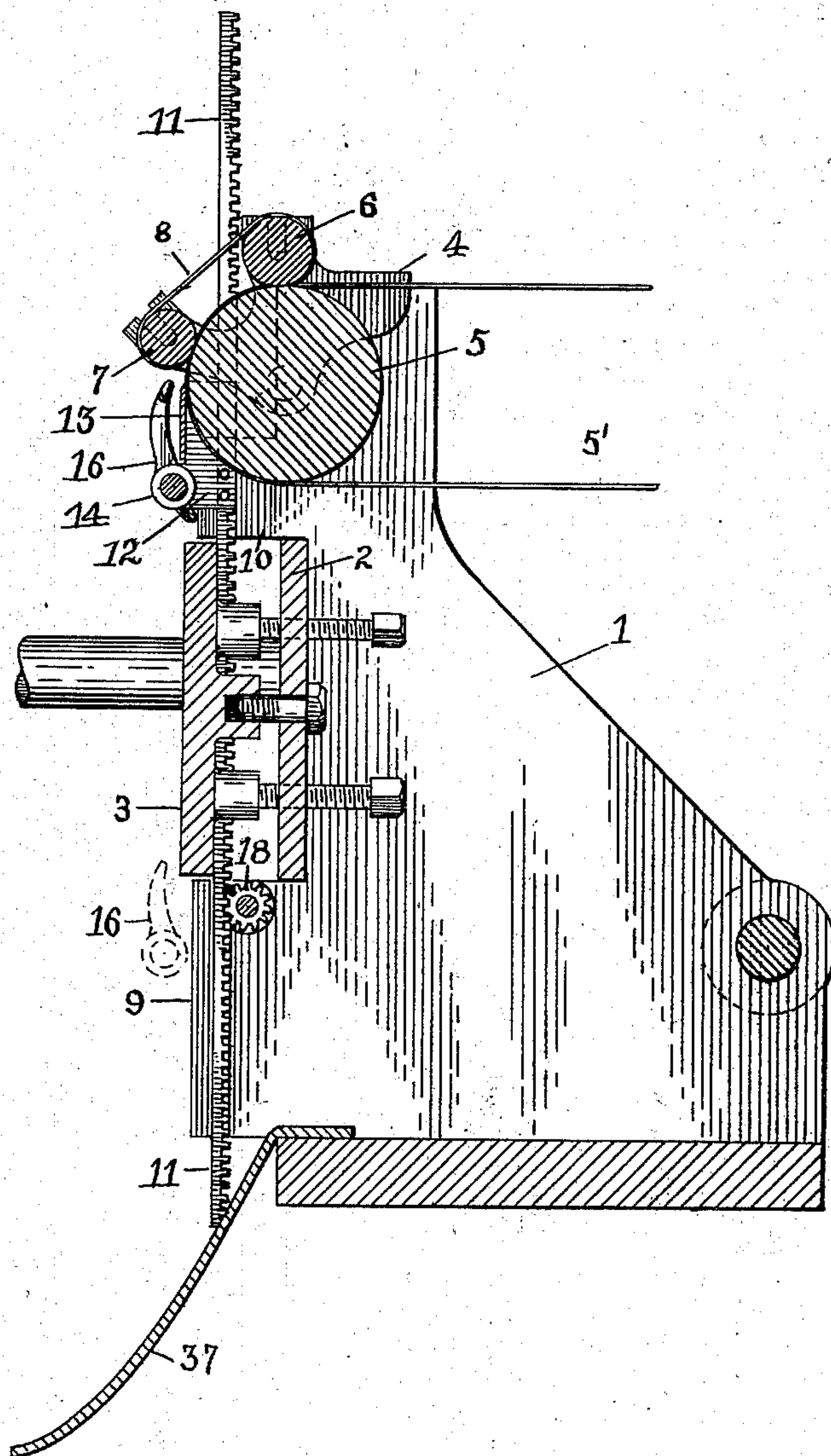
DEVICE FOR DELIVERING PAPER TO PLATENS OF PRINTING PRESSES.

(Application filed Feb. 5, 1902.)

(No Model.)

3 Sheets—Sheet 3.

Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM G. JOHNSTON, OF WOODBURY, NEW JERSEY, ASSIGNOR TO THE
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DEVICE FOR DELIVERING PAPER TO PLATENS OF PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 714,489, dated November 25, 1902.

Application filed February 5, 1902. Serial No. 92,626. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM G. JOHNSTON, a citizen of the United States, and a resident of Woodbury, State of New Jersey, have invented certain new and useful Improvements in Devices for Delivering Paper to the Platens of Printing-Presses, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to certain improvements in devices for delivering paper to the platens of printing-presses; and the principal object of the same is to provide a machine which is simple in construction and reliable and efficient in its operation and which will automatically deliver sheets of paper or envelopes successively to the platen of a printing-press to receive their impressions and thereafter discharge the same.

The invention consists in the construction and arrangement of the various parts, such as will be hereinafter fully set forth, and particularly pointed out in the claims.

In referring to the accompanying drawings, Figure 1 is a front elevation of the machine, the form-holder being removed and connecting parts being shown in section. Fig. 2 is a side elevation showing the form-holder and connections between the delivering device and said form-holder. Fig. 3 is a sectional view taken substantially on the line 3-3 of Fig. 1.

The supporting-frame consists of the two lateral supports 1-1, connected by a transverse plate 2. This plate supports the adjustable platen 3, upon which the paper is held while receiving its impression. At the top of the frame two brackets 4-4 are provided, which are adapted to support the three rolls 5, 6, and 7, of which the larger one, 5, carries the conveying-bands 5'. The two smaller rolls 6 and 7 are supported above the roll 5 and carry the flexible band 8, which, in connection with the rolls, turns the paper from a horizontal to a vertical position, adapting the same to be placed upon the platen. Upon the vertical forward edge of the side plates are the projections 9 and 10. These projections are grooved upon the inner sides to receive the vertical rack-bars 11. To the in-

ner side of said rack-bars 11 are attached the blocks 12, which are connected across the front of the machine by the plate 13. In suitable bearings 14, carried by the blocks 12, a shaft 15 is supported, upon which are fixed the gripping-fingers 16, having at their upper ends the angular projections 17. Located in suitable recesses in the projections 9 are the gears 18, which are mounted upon the shaft 19, which is also supported in said projections. These pinions mesh with the racks 11 and upon being rotated raise or lower said racks. Upon the end of the said shaft 19 is provided the gear 20, which meshes with a horizontal rack-bar 21. This rack-bar is supported by and attached to some part of the reciprocating form-holder 23 at one end, while at the other end it is supported in the vertical ear 21'. The connection between the rack-bar 21 and the platen is made yielding by providing the arm 22 with an opening, through which said bar is adapted to slide, and by having upon said bar a collar 26, between which and the arm 22 is interposed a helical spring 25. In line with the rack-bar 21 and upon the side plate of the frame is provided a fixed hub or stop 24, which is adapted to limit the movement of said rack-bar.

The fingers 16 are caused to contact with the plate 12 and be withdrawn therefrom by the following means: Upon the above-mentioned shaft 15, at one end thereof, is fixed the sleeve 27, from which projects the arm 28. Pivotaly connected to this arm and extending downwardly a rod 29 is provided, which passes through the hollow arm 30, attached to one of the projections 9 of the side plate. This hollow arm carries a plunger or sliding block 33 within the opening 31 of the hollow arm, which bears frictionally against the vertical rod 29 and a spring 34 and an adjusting-screw 35. By turning this screw the pressure upon the rod 29 may be varied and its retarding action thereby increased or diminished. It will be seen that when the blocks 12, plate 13, shaft 15, and fingers 16 are reciprocated by the racks a downward movement will force the fingers in contact with the plate by means of a retardation of the rod 29, and during an upward movement said fingers will be withdrawn from the plate. The bars 36 form suit-

able guides for the form-holder, and a deflecting-plate 37 is provided at the bottom of the machine to deliver the paper to a suitable table or receptacle.

5 The operation of the machine is as follows: As the sheets are delivered over the bands 5' from a suitable starting and selecting mechanism they pass under the rolls 6 and 7 and the bands 8, and are thereby deflected downward until the lower edges pass over the
10 plate 13 and under the projections 17. The fingers, with their projections, are then forced against the plate 13, thereby gripping said sheet by reason of the downward movement
15 of said fingers and plate, and further movement places the sheet in position in front of the platen 3. The fingers then assume the position indicated in dotted lines in Fig. 3. At this point the end of the rack-bar 21,
20 which rotates the shaft 20, has come in contact with the hub 24, thereby limiting the movement of those parts; but by reason of the yielding connection between the rack-bar and the form-holder the latter continues in
25 its movement a sufficient amount to make the impression upon the sheet then being held in front of the platen. The form-holder 23 then begins to recede; but the rack-bar 21 does not move until the spring 25 has forced the arm
30 22 to the limit of its movement upon said bar 21, thus allowing the sheet to be clear of the type before the fingers 16 release the same and before the carrier starts upon its upward movement. It will be seen when said upward
35 movement commences the rod 29 will be frictionally held so as to withdraw the finger from contact with the plate 13. Upon reaching their highest position the fingers are not forced against the plate until the next downward
40 movement is commenced.

Minor changes in detail, self-suggestive to one skilled in the art, may be made without departing from the spirit of my invention; but

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

1. In a device for delivering sheets to printing-presses, in combination, means for transferring the sheets from a suitable source of supply, a gripping device, means for reciprocating said gripping device, means for actuating said gripping device at the ends of the reciprocations, a suitable form-holder, a bar carrying a rack, connecting said form-holder and said means for reciprocating said gripping device, a spring also carried by said bar forming a yielding connection between said
55 bar and form-holder, and a stop for said bar, substantially as described.

2. In a device for delivering sheets to printing-presses, in combination, means for trans
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ferring the sheets from a suitable source of supply, a reciprocating plate, means for reciprocating said plate, oscillating fingers carried by said reciprocating means, a rod connected to said oscillating fingers and a friction device for retarding said rod in its upward and downward movements, to cause said fingers to approach and recede from said reciprocating plate, substantially as described. 65

3. In a device for delivering sheets to printing-presses, in combination, means for transferring the sheets from a suitable source of supply, reciprocating bars, means for reciprocating said bars, blocks carried by said bars, a transverse plate connecting said blocks, oscillating fingers also carried by said blocks, an arm for oscillating said fingers, a rod connected to said arm and a friction device through which said rod slides for causing said fingers to move toward and away from said
80 reciprocating plate at the beginning of its upward and downward movement respectively, substantially as described.

4. In a device for delivering sheets to printing-presses, in combination, means for transferring the sheets from a suitable source of supply, reciprocating rack-bars, means for reciprocating said rack-bars, blocks carried by said racks, a transverse plate connecting said blocks, bearings upon said blocks, a shaft
90 carried by said bearings, oscillating fingers carried by said shaft, an arm carried by said shaft, a vertical rod attached to said arm, a hollow stationary arm through which said rod passes, a spring-pressed block in said hollow
95 arm for retarding the movement of said rod, substantially as described.

5. In a device for delivering sheets to printing-presses, in combination, means for transferring the sheets from a suitable source of supply, a reciprocating form-holder, a horizontal rack-bar yieldingly connected to said form-holder, a stop for said rack-bar, vertically-reciprocating rack-bars, connections between said horizontal and vertical rack-bars,
105 blocks carried by said vertical rack-bars, a transverse plate connecting said blocks, bearings upon said blocks, a shaft carried by said bearings, oscillating fingers carried by said shaft, an arm carried by said shaft, a vertical rod attached to said arm, and a friction device for retarding the movement of said rod, substantially as described. 110

In witness whereof I have hereunto set my hand this 3d day of February, A. D. 1902. 115

WILLIAM G. JOHNSTON.

Witnesses:

ARTHUR E. NITZSCHE,
CHAS. K. BENNETT.