

H. L. RECKARD.
 PRINTING MACHINE.
 APPLICATION FILED OCT. 5, 1909.

974,917.

Patented Nov. 8, 1910.

2 SHEETS-SHEET 1.

Fig. 1.

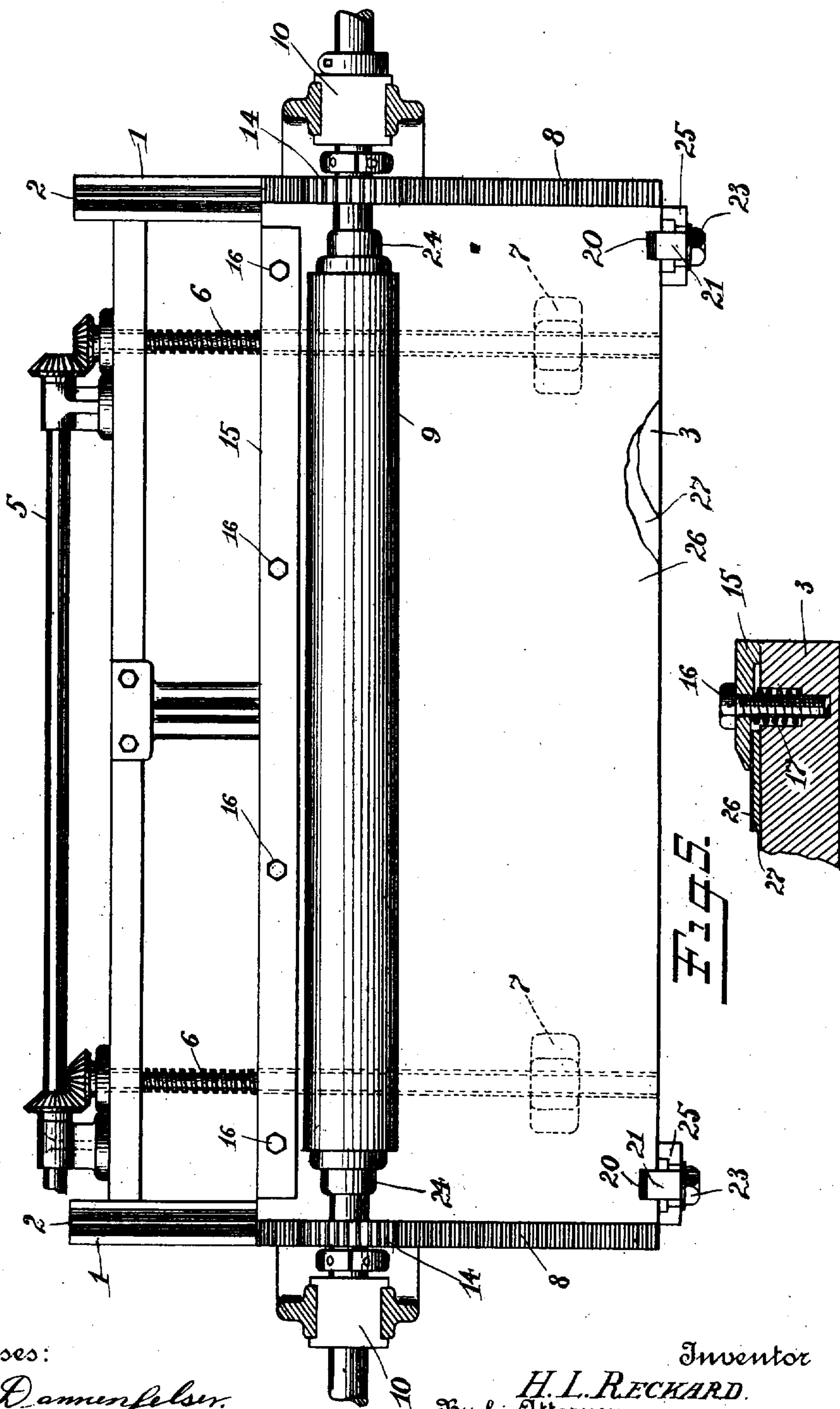


Fig. 5.

Witnesses:
 Fred M. Dammefelser.
 Chas. A. Pearce

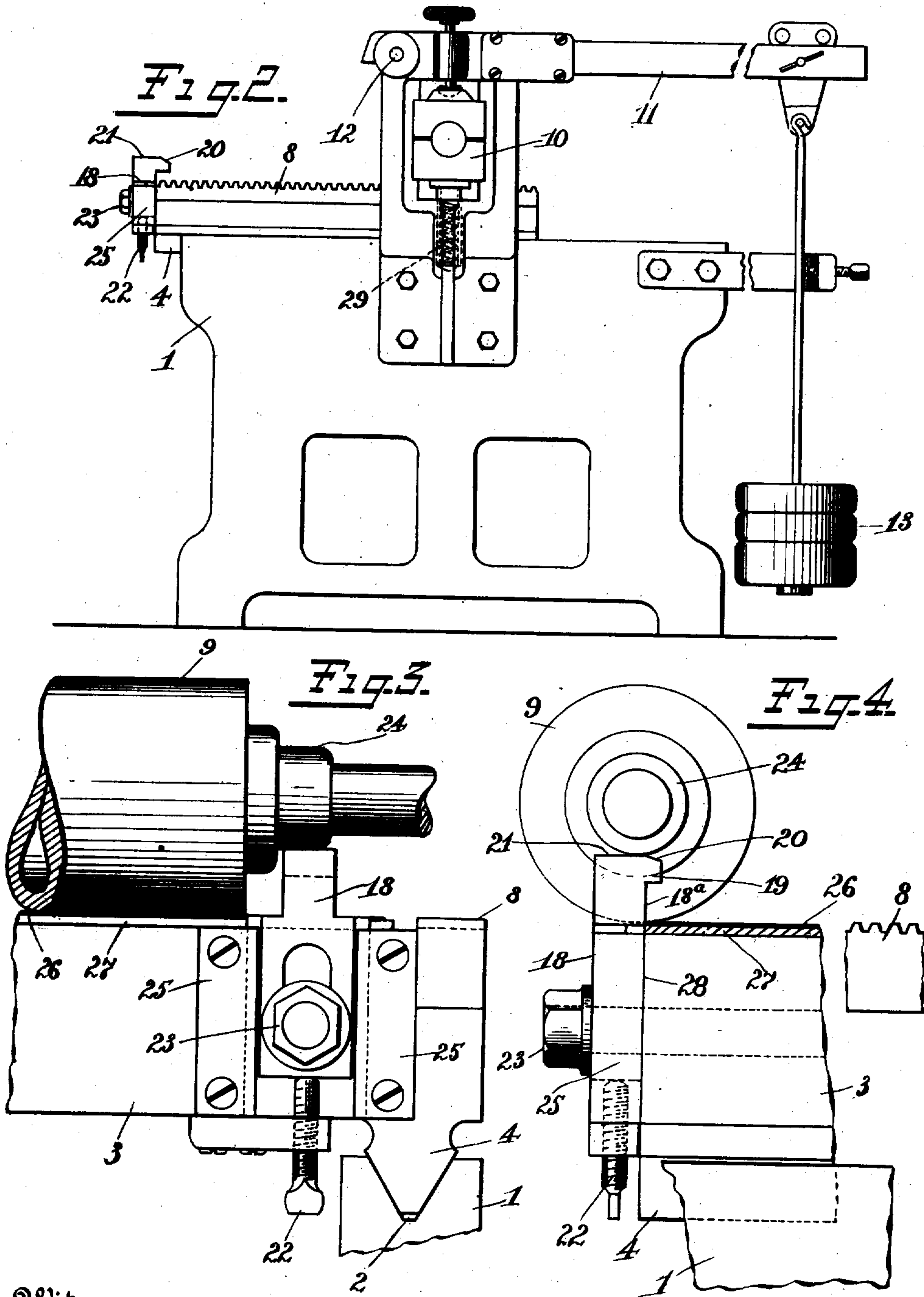
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 By his Attorneys
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UNITED STATES PATENT OFFICE.

HENRY L. RECKARD, OF HARTFORD, CONNECTICUT.

PRINTING-MACHINE.

974,917.

Specification of Letters Patent.

Patented Nov. 8, 1910.

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To all whom it may concern:

Be it known that I, HENRY L. RECKARD, a citizen of the United States, residing at Hartford, county of Hartford, State of Connecticut, have invented certain new and useful Improvements in Printing-Machines, of which the following is a full, clear, and exact description.

My invention relates to improvements in printing machines, and has for its object to produce a machine for printing accurately upon rollers, and more particularly for printing designs upon rollers to be thereafter engraved and used themselves as printing surfaces.

Another object of my invention is to provide means to insure the accurate placing of an inked sheet upon the table of the machine.

A further object is to provide means for supporting the weight of the roller as soon as it has made one complete revolution over an inked sheet placed on the bed of the machine.

Another object of my invention is to provide a new and improved means for clamping the sheet to the bed of the machine.

The following is a description of an embodiment of my invention, reference being had to the accompanying drawings, in which,

Figure 1 shows a plan view of the machine embodying my invention with the pressure devices removed; Fig. 2 is an end view of the machine; Figs. 3 and 4 are end and side views of a portion of a table; and, Fig. 5 is a sectional view of the clamping means and table.

Referring more particularly to the drawings, 1—1 are side frames of the machine having V-shaped grooves 2—2 at their upper ends.

3 is a table or printing bed having runners 4—4 sliding in the grooves 2—2.

5 is a shaft connected by bevel gearing to screw-shafts 6—6, which engage screw-threaded projections 7—7 on the table, causing it to move in one direction or the other, according as the shaft 5 is rotated. The table 3 has side racks 8 secured thereto.

9 is a roller supported in movable bearings 10. Upon each of these bearings rests a lever 11 pivoted to the frame at 12 and on the outer end of which are supported movable weights 13, thereby applying pressure to the roller and causing it to exert a pressure upon the table. Upon the shaft of the

roller are gears 14 which engage the racks 8, causing the roller to revolve as the table is moved, and maintaining its axis parallel to the straight edge 28 at the end of the table.

At one edge of the table is a clamp consisting of a clamping bar 15 secured thereto by screws 16. Beneath the bar are springs 17 through which the screws pass. As the screws are loosened, the springs 17 lift the bar 15 and hold it supported so that the sheet to be clamped may be easily placed therein or withdrawn, as desired. At the end of the table are two supports 18—18. These supports have heads 19 which extend slightly over the surface of the table 3. These heads are each provided with a beveled portion 20 projecting over the bed or table 3 and a roller-supporting surface 21, which is parallel to the surface of the table and begins at a plane vertical to the table and coinciding with the edge 28. These supports are adjustable by means of the screws 22 and secured by set nuts 23, and when properly adjusted have their flat surfaces 21 exactly on a line with the lower edge of the trunnions 24 of the roller 9 as it rests upon the printing sheet and constitute supports for the rollers at the end of the travel of the table. The supports slide in guides 25. The supports 18—18 also constitute stops for the purpose hereafter explained. The beveled surfaces 20 are not supporting surfaces but serve to prevent injury to the trunnions and the supports 18 in case of improper adjustment of the supports.

In the operation of the machine, an inked sheet, usually a very thin engraved zinc sheet 26 (Fig. 4) is placed upon the table, a yielding surface, such as cardboard 27, being placed beneath the sheet so as to afford a cushion. The design on this zinc sheet extends to one edge thereof, which is cut off so as to be straight. The sheet is placed upon the table so as to have its other edge extend underneath the clamp 15 and have its edge at which the design terminates brought in close contact with the vertical surfaces 18^a of the stops 18. It is thus made to register exactly with the edge 28 of the table which is parallel to the axis of the roller 9. The backing 27 is made to register with the edge of the table in the same way. The clamp 15 is then adjusted so as to secure the sheet and backing in position and pressure applied to the trunnions of the roller 9 so as to cause it to contact with the

sheet, it being otherwise raised therefrom by the springs 29. The shaft 5 is then actuated so as to cause the table to move under the roller. When the roller reaches the end of the design, the parts being so proportioned usually that it will pass to the end from the beginning of the design in one revolution, the trunnions 24 engage the beginning of the supporting surfaces 21 of the support 18. At the instant, therefore, the roller leaves the sheet upon the table, it is supported by the supports 18 beneath its trunnions. The result is that the roller exerts a uniform pressure upon the sheet during its whole progress thereover, and that when the end of the design is reached the roller is prevented from moving downward so as to make any part of its periphery engage the sheet or the table, and thus prevent any blurring or smudging of the design as printed upon the roller. The inclined surfaces 20 engage the trunnions in case the supports are a trifle high and gradually lift them to the level of the surfaces 21. The adjustment, however, should be such that the surfaces 20 are not brought into play. They must not engage the roller to lift it before it reaches the end of the design to be printed on the roller. By this machine the sheet can be accurately placed upon the table and the ink from the sheet transferred to the roller without danger of injuring any part of the design as printed upon the roller.

The machine is simple and accurate and obviates very serious difficulties in accomplishing results desired.

What I claim is:

1. In a printing machine, the combination of a printing bed, a roller thereon, said printing bed having an exposed straight edge parallel to the axis of said roller, and supports having supporting surfaces for said roller extending beyond said bed and beginning at a plane passing through said edge and vertical to the surface of the bed at said edge, said bed being adapted to receive a printing plate having an exposed edge registering with said exposed straight edge and means for clamping the opposite edge of said printing plate to said bed.

2. In a printing machine, the combination of a printing bed, a roller thereon, said printing bed having a straight edge parallel to the axis of said roller and vertically adjustable supports having supporting surfaces for said roller parallel to said bed and beginning at a plane passing through said edge and vertical with the surface of said bed.

3. In a printing machine, the combination of a printing bed, a roller thereon having trunnions, said printing bed having an exposed straight edge parallel to the axis of said roller, and supports having supporting surfaces adapted to engage said trunnions,

said supporting surfaces extending beyond said bed and beginning at a plane passing through said edge and vertical to the surface of said bed at said edge, said bed being adapted to receive a printing plate having an exposed edge registering with said exposed straight edge and means for clamping the opposite edge of said printing plate to said bed.

4. In a printing machine, the combination of a printing bed having a printing surface thereon, a roller engaging said printing surface, said bed having a straight edge at its finishing end and adjustable supports having supporting surfaces for said roller beginning at said straight edge and extending beyond said bed and vertical stop surfaces in line with said straight edge.

5. In a printing machine, the combination of a printing bed having a plane surface and an exposed straight edge, a printing sheet on said surface having an exposed edge registering with said exposed edge of said bed, a roller having its axis parallel to said edges and adapted to contact with said printing sheet on said surface, a clamping bar having a portion extending over both said plane surface and said printing sheet at the edge opposite the exposed edge of said sheet and adapted to clamp said sheet between said plane surface and the portion of the bar extending over said plane surface and securing devices for said bar.

6. In a printing machine, the combination of a printing bed, a roller thereon, said printing bed having an exposed straight edge parallel to the axis of said roller, and stops having the stop-faces in line with said edge, said stops being spaced so as to permit the passage of the roller between them, said bed being adapted to receive a printing sheet engaging said stops and having an exposed edge registering with said exposed straight edge, and means for clamping the opposite edge of said printing sheet to said bed.

7. In a printing machine, the combination of a printing bed having a plane surface, a printing sheet on said surface, a roller adapted to contact with said printing sheet on said surface, a clamping bar having a portion extending over portions of both said printing sheet and said plane surface and adapted to clamp said sheet between said plane surface and the portion extending over said plane surface, securing devices passing through said bar, and springs located beneath said bar and surrounding said securing devices so as to tend to raise said bar when said securing devices are loosened.

8. In a printing machine, the combination of a printing bed having a plane surface, a printing sheet on said surface, a roller adapted to contact with said printing sheet on said surface, a clamping bar having a portion extending over portions of both said

printing sheet and said plane surface and adapted to clamp said sheet between said plane surface and the portion extending over said plane surface, screws passing 5 through said bar and into said bed, and springs surrounding said screws beneath said bar and extending into said bed so as to tend to raise said bar when said screws are loosened.

10 9. In a printing machine, the combination of a printing bed adapted to hold a printing sheet, a roller bearing upon said printing bed, means for applying pressure to said

roller, supports at one edge of said printing bed having projections extending over the 15 edge of said bed, and a clamping bar parallel to said edge of said printing bed and the faces of said supports adjacent thereto, said bar having means for securing it to said bed, and springs tending to raise said bar 20 when said securing means are loosened.

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Witnesses:

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