

No. 625,910.

Patented May 30, 1899.

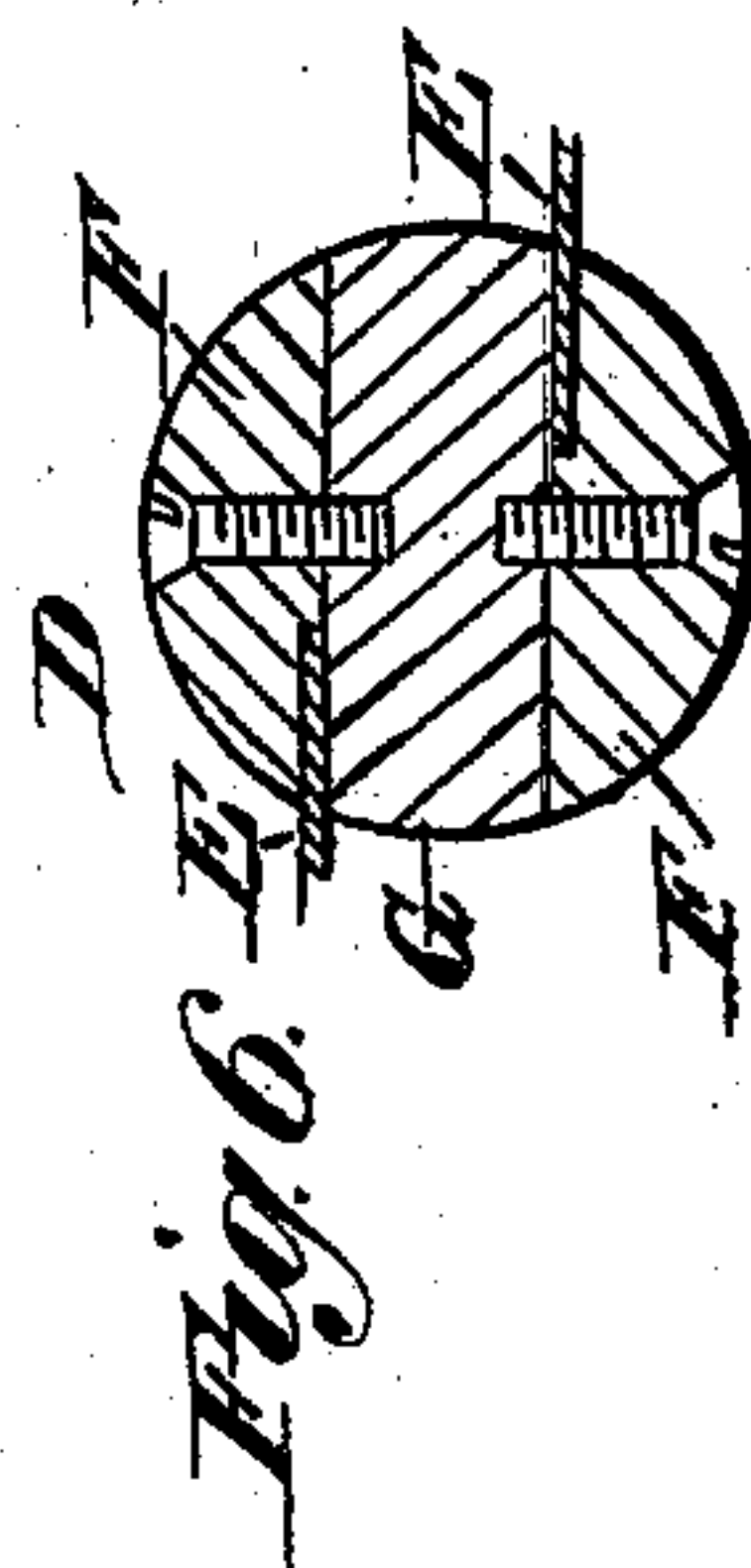
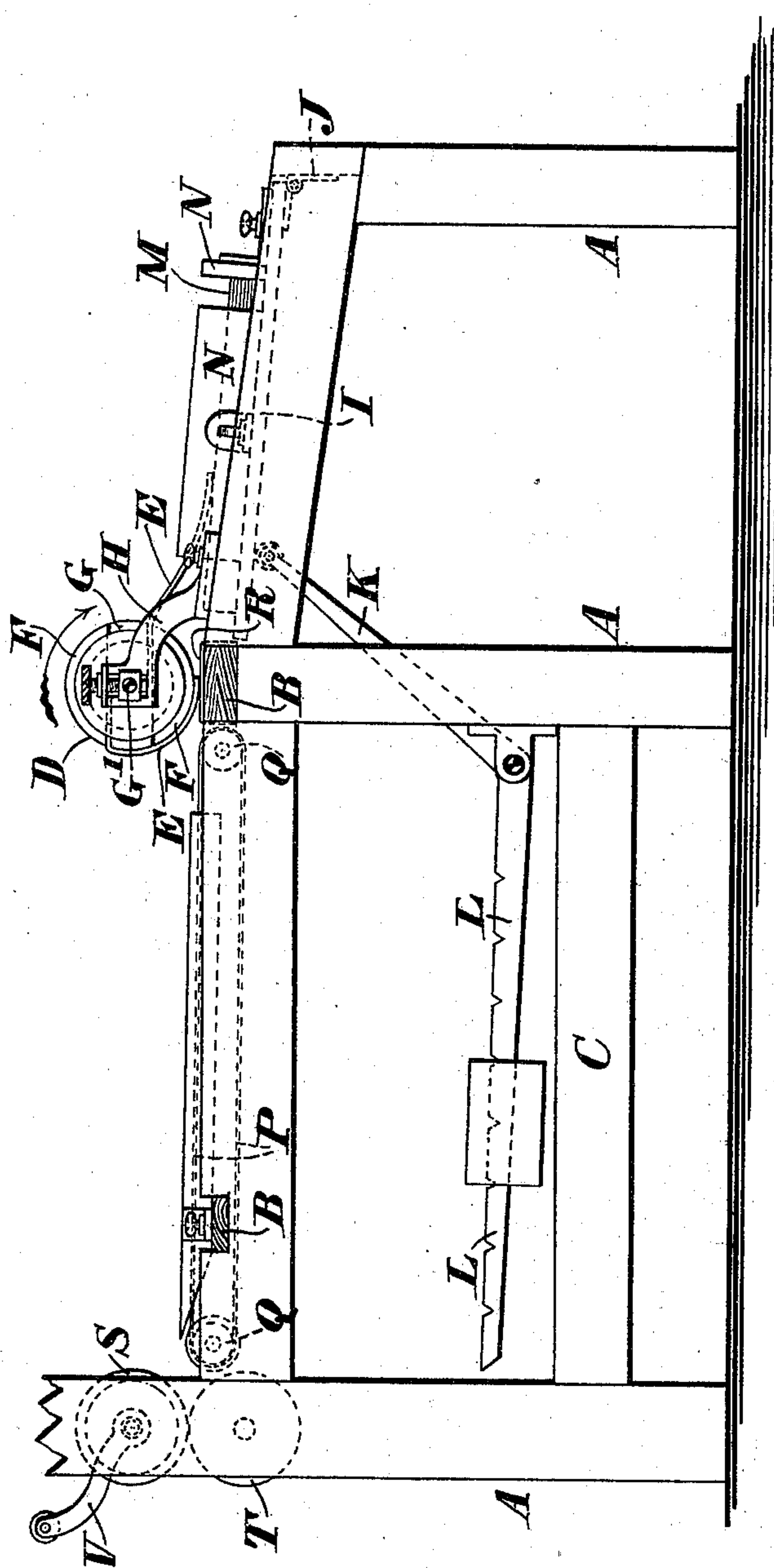
F. W. VICKERY.  
FEEDING DEVICE.

(Application filed Mar. 14, 1898.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.



Witnesses

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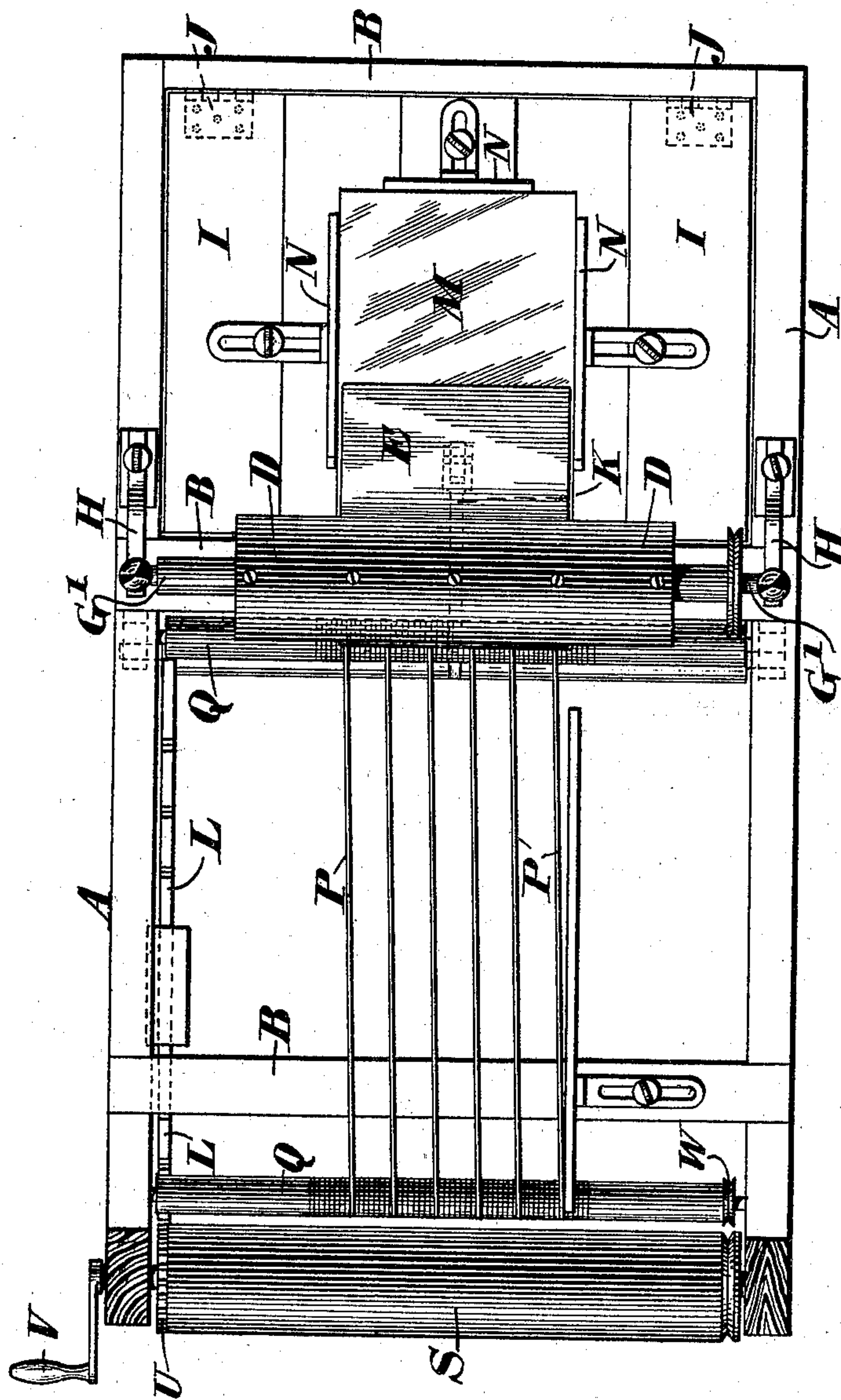
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(Application filed Mar. 14, 1898.)

(No Model.)

3 Sheets—Sheet 2.

Fig. 2.



Witnesses

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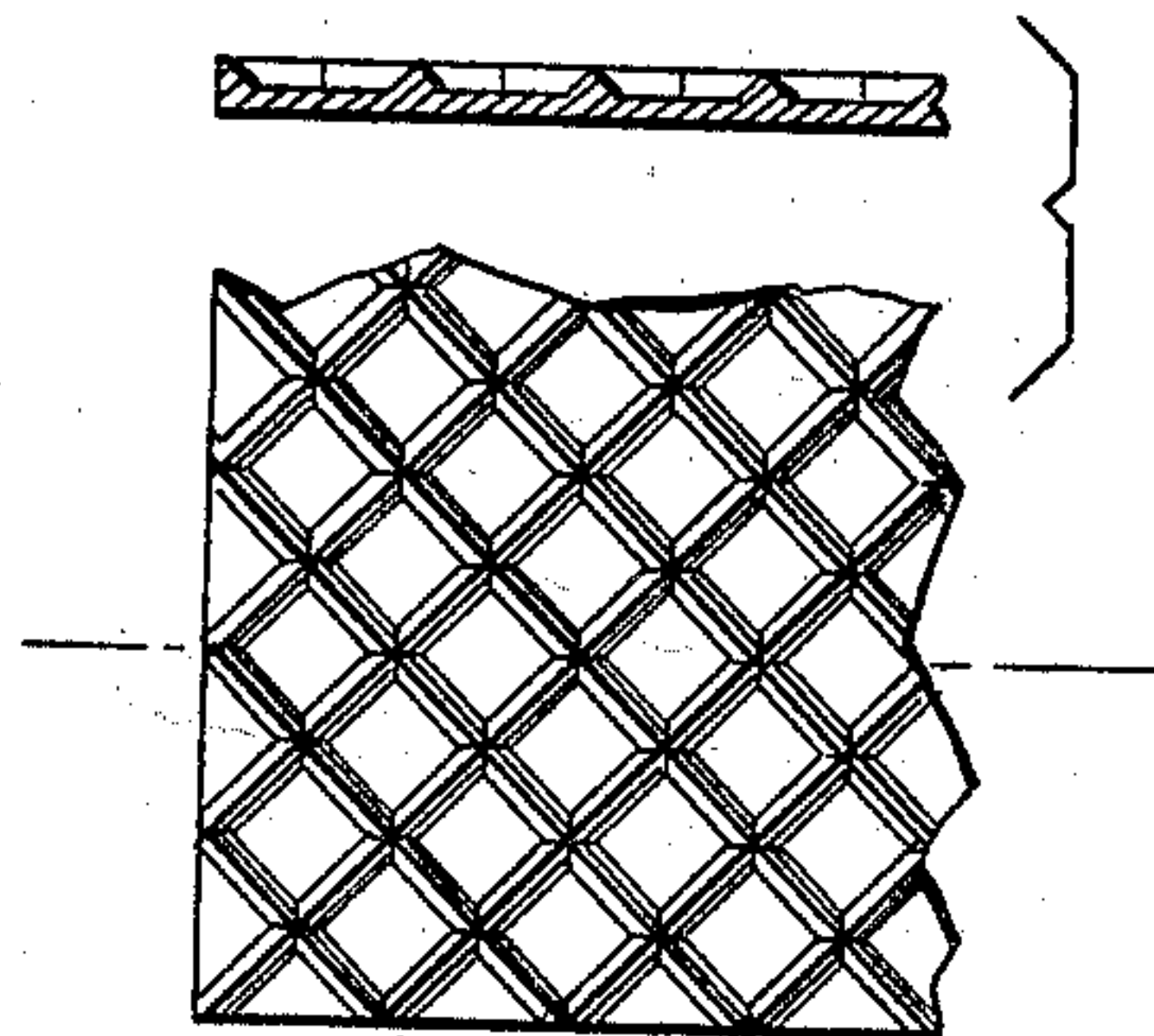
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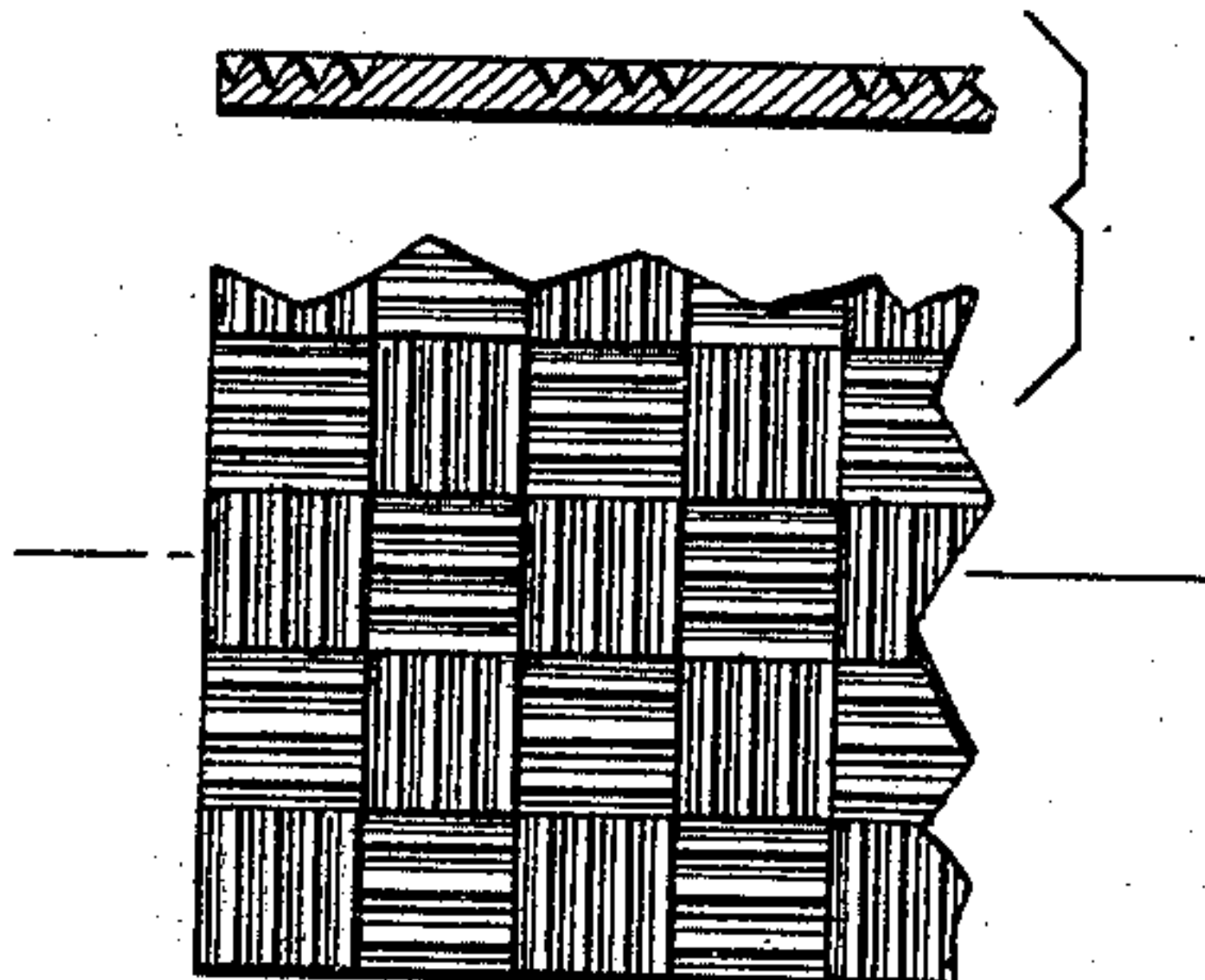
(No Model.)

3 Sheets—Sheet 3.

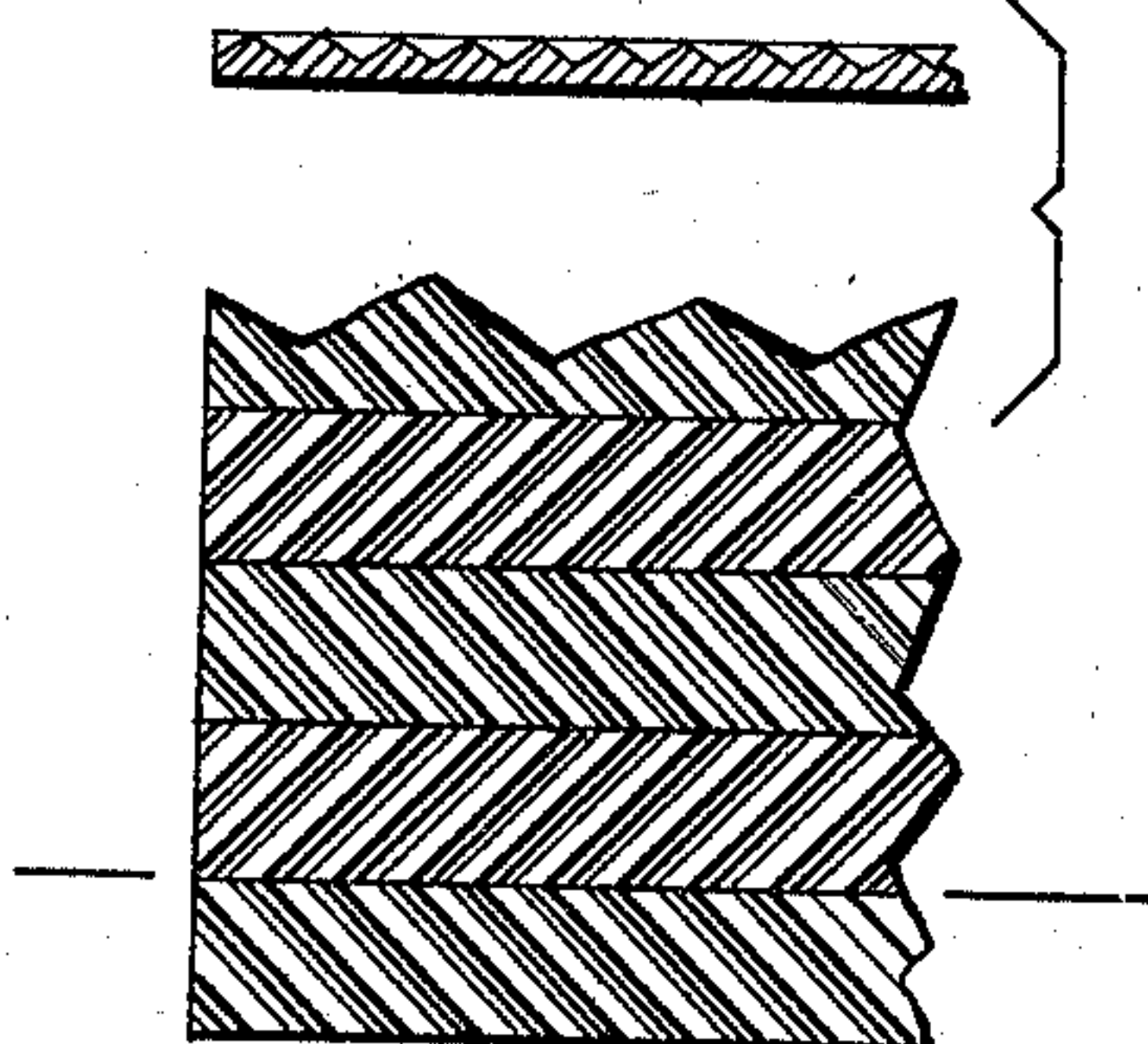
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



Witnesses

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# UNITED STATES PATENT OFFICE.

FREDERICK WILLIAM VICKERY, OF LONDON, ENGLAND.

## FEEDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 625,910, dated May 30, 1899.

Application filed March 14, 1898. Serial No. 673,858. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK WILLIAM VICKERY, a subject of the Queen of Great Britain, residing at 14 Newcastle street, Farringdon street, London, England, have invented certain new and useful improvements in and relating to self-feeding apparatus for ruling, printing, rolling, lithographic, and like machines, of which the following is a specification.

This invention relates to improvements in and relating to self-feeding apparatus for ruling, printing, rolling, lithographic, and like machines.

For the purpose of my said invention a table or board is made adjustable to suit the quantity of paper and to raise as the quantity diminishes to keep the top sheet always at the same height with the feed-board. In connection with such a table or board I employ a cellular or other rough surfaced sheet or sheets of flexible material—say sheet-rubber of any desired width—which by rotation of the carrying-shaft act as flaps to flop down upon the top sheet of a pile and then by a drag motion draw it from the pile onto a series of traveling tapes or cords, or they may be rollers set to travel diagonally and so carry the sheet as delivered by the flop flap or flaps onward to any desired spot for treatment—such as for ruling, for printing, rolling, or other purpose. A guide or gage plate, against which the sheets in succession are caused to impinge when moving diagonally, causes them to assume a parallel or straight position for entering a machine. In practice the cellular or rough surfaced flaps only engage and take away one sheet from the pile at the time, and should from any cause two sheets be dislodged a roughened bar or a rough-coated bar—say of coarse emery-cloth—over which the paper has to travel, will check the onward motion of the under or second sheet and hold it at the commencement of its travel until the next flop flap or flaps move it from the pile and feed it to the tapes or cords.

My invention will be more particularly understood by reference to the annexed drawings, in which—

Figure 1 shows a side elevation. Fig. 2 is a plan of Fig. 1. Figs. 3, 4, and 5 show in

plan and cross-section different forms of flaps. Fig. 6 is a cross-section through the roller.

A is the frame, composed of uprights connected by cross-bars B B and stays or ties C, the width of the frame being in accordance to the width of the machine, be it for ruling, printing, rolling, or other operation, against the end of which my apparatus has to be affixed as an automatic feeder of sheets of paper thereto.

D is a roller in which one end of a sheet or strip or sheets or strips of a flexible material E, having cells in the face, is or are secured by fitting in grooves of slats F F, screwed home to a center piece G, in which the axle G' is fixed to rotate in adjustable bearings H.

I is a table hinged at J to the back frame cross-bar B and having its fore or free end supported by one end of a lever K, the other end L having a weight slidable along it for adjustment to balance the weight of a pile of paper M placed on the table I, the paper being either placed as a pile and approximately squarely level or between gage-boards N N N, which are adjustable for varying sizes of sheets of paper which have to be ruled, rolled, printed, or otherwise operated on, the prescribed register for all the following sheets being exact and unvarying, so that where successive printings of the same sheet—as in color-printing—become necessary the register for each printing can be unfailingly secured. The hinged table, with its paper, is counterbalanced by the weight on the arm L, so that as the paper is removed the weight automatically raises the table a corresponding distance.

P P are endless cords stretched diagonally over rollers Q Q and occupying a position between the drawing-away roller to receive each sheet of paper in succession and by the travel of the cords P P to convey it along to the machine-tapes or to the stop, as before explained.

The cellular surface of the flexible flop-flaps may be of any pattern, and of which Figs. 3, 4, and 5 are only examples. The cellular surface forms the under side of each flap to fall onto the top sheet of paper, the spaces between the ribs or walls of the cells acting in conjunction as suction-chambers by the con-



finement of the air in the cells while in contact with the paper during the drawing-forward action, the release of the air being gradually effected by the uprising motion of the flap as the roller rotates. The hollows or cells in the surface of the flaps are preferably of a somewhat coarse character for the ready release of the air, because if of a fine character the suction is retained for too long a time and the end of the paper will be, as found in practice, often lifted to travel up with the roller to about one-half its rotation, when it will release itself and fall onto the traveling cords P.

R is a rough glass or emery strip on the middle cross-bar B to prevent the lower of two sheets dragged by the roller-flap from passing onward to the cords P.

I have mentioned that the apparatus can be operated by gear or hand-power, and as an example of the latter I show on the drawings, Figs. 1 and 2, a couple of receiving-rollers S T in gear at U and operable by the winch-handle V, the motion being transferred by a band from the upper roller S over the pulley-groove W of the cord-carrying rollers Q, thence to the pulley-groove of the main roller D, to which the flaps E are secured, the speed of travel being determined in relation to that of the machine to be fed with the sheets of paper. It will be understood that as the roller D revolves the flexible sheet or strap rolls up, and when passing the top vertical center it gradually drags itself away and its free end falls over with a flopping action onto the top sheet of paper of the pile.

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

1. In a paper-feeding apparatus, the combination with a roller formed in longitudinal sections, of a flap of rough-surfaced material having one end attached between the sections

of said roller and adapted to wind upon said roller, the said attached end being held in fixed relation to the axis of the roller and its other end free to extend horizontally and fall at a predetermined time during the revolution of the roller upon the top sheet in a pile and withdraw it, substantially as described.

2. A paper-feeding apparatus consisting of a roller and a cellular or other rough surfaced flexible fabric affixed to said roller for successively rolling on and then at a part of the roller's revolution the free end of the fabric to fall with a flop action for large surface contact upon the top sheet of a pile for withdrawing it, endless traveling cords set diagonally the hinged flap-table which by weighted lever always presents the top sheet of the pile as the pile diminishes, about level with the delivery-opening under the roller, substantially as specified.

3. A paper-feeding apparatus consisting of a cellular or other rough surfaced flexible fabric affixed to a roller for successively rolling on and then for its free end at a part of the roller's rotation to drop with flop action upon the top sheet of a pile for withdrawing it and having diagonally-arranged endless traveling cords for conveying said sheet to a machine the hinged flap-table which by lever is gradually raised as the pile diminishes as aforesaid the roughened-surfaced cross-bar directly under the fabric-carrying roller to retard and stop an under sheet from passing on to the endless traveling cords as specified.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FREDERICK WILLIAM VICKERY.

Witnesses:

RICHARD CORE GARDNER,  
PERCY E. MATTOCKS.