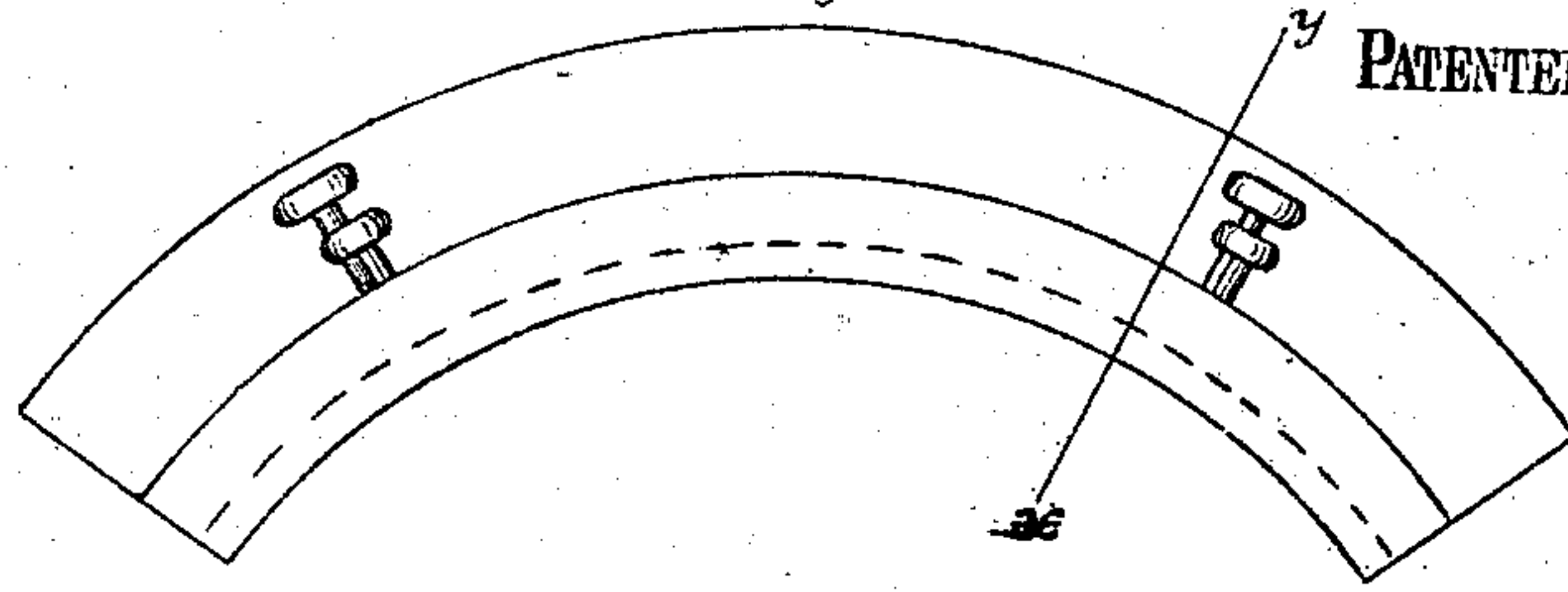


Leander B. Hunt's
Improved Knitting Machine.

117293

Fig. 1.



PATENTED JUL 25 1871

Fig. 2.

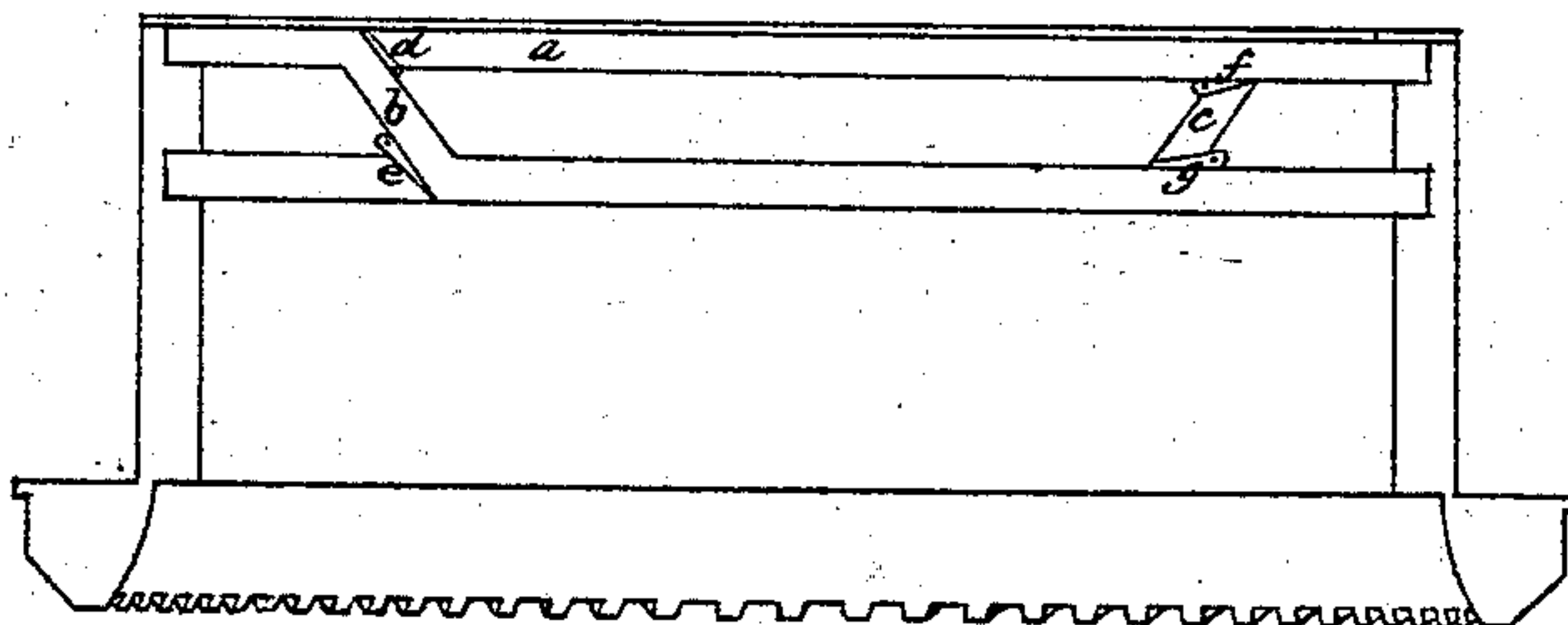


Fig. 3.

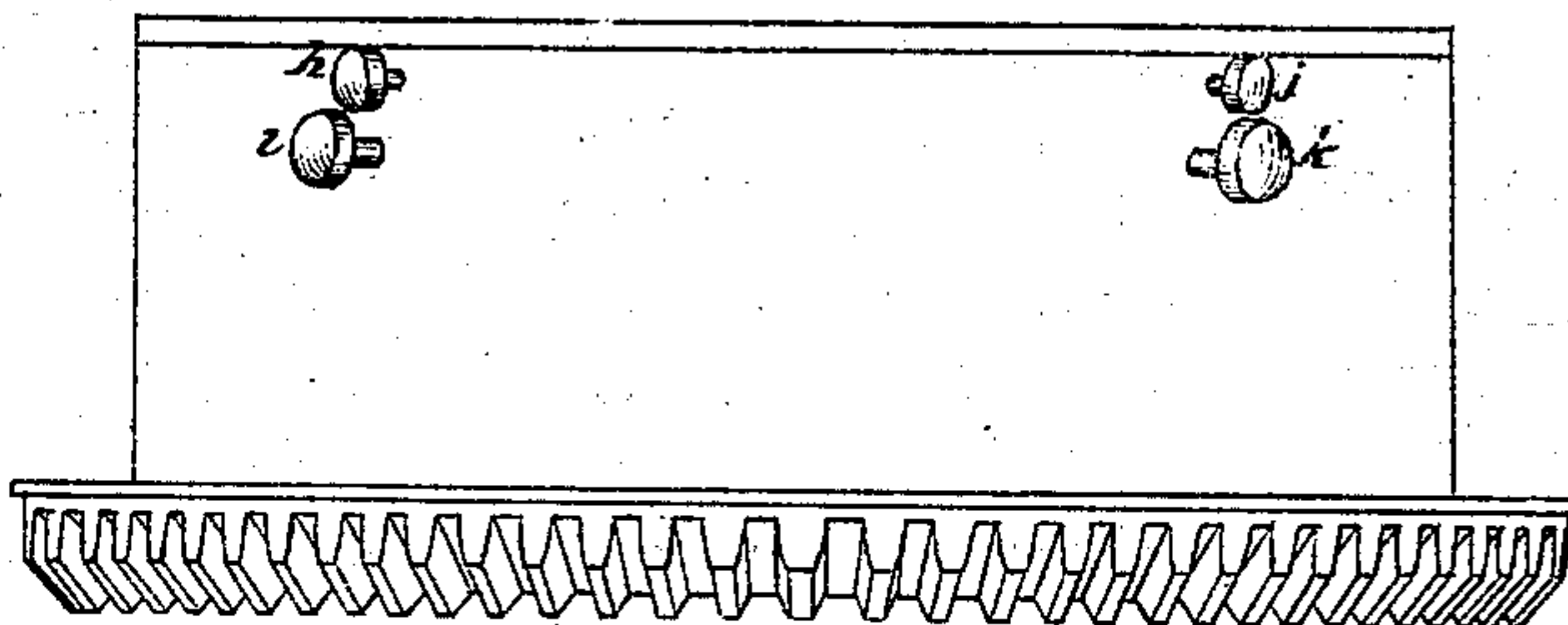
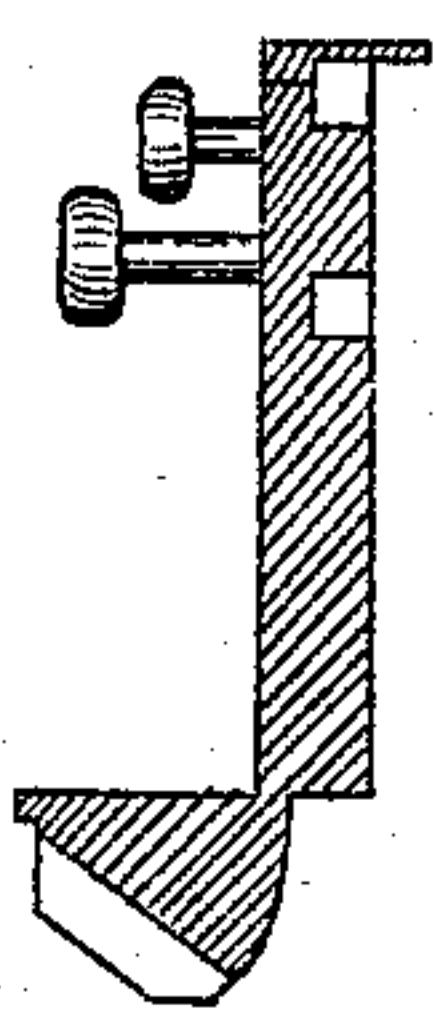


Fig. 4.



Witnesses,
Chas. W. Whitman
H. A. Daniels

Inventor,
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By his attorney
J. C. Robbins

UNITED STATES PATENT OFFICE.

LEANDER B. HUNT, OF HYDE PARK, MASSACHUSETTS, ASSIGNOR TO HIMSELF
AND ROSWELL W. TURNER, OF SAME PLACE.

IMPROVEMENT IN KNITTING-MACHINES.

Specification forming part of Letters Patent No. 117,293, dated July 25, 1871.

To all whom it may concern:

Be it known that I, LEANDER B. HUNT, of Hyde Park, in the county of Norfolk and Commonwealth of Massachusetts, have invented a new and useful Improvement on Knitting-Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to annexed drawing making a part of this specification, in which—

Figure 1 is a ground plan; Fig. 2, an inside view; Fig. 3, an outside view; and Fig. 4, a section on the line *xy* on Fig. 1.

The nature of my invention consists in a new means of setting, throwing down into operating position, and raising out of said position the needles used in knitting-machines of the circular form, like or similar to Bickford's knitting-machine, for the purpose of knitting any article entire without dropping any stitch.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

I construct my knitting-machine in any of the known circular forms with the ordinary working groove or grooves in the cylinder or barrel; then I make another groove, *a*, of similar depth and breadth at the upper part of the interior surface of the cylinder, as shown in Figs. 2 and 4. I make the upper edge of the cylinder, called the "ring," to be removable, and to project within the inner surface of the cylinder; then I make in the inner surface of the cylinder two diagonal grooves, marked *b* and *c*, at any desired distance from each other, and in any part of the circumference, to connect the two grooves before mentioned, and to be of similar depth and breadth. The entrances of these diagonal grooves are opened and closed at will by the latches *d e f g*, Fig. 2, which are controlled by the thumb-pieces *h i j k*, Fig. 3, on the outer surface of the cylinder.

Then, to operate the machine as improved, I remove the ring at the top of the cylinder as usual, and set all the needles in the upper groove;

then replace the ring; then open either of the upper latches and turn the machine toward the opening thus made, and the needles will be thrown down into the lower or working groove. When, in the course of the knitting, it becomes necessary to throw up or take one or more of the needles out of the working groove, as, for instance, in the knitting of the heel of a stocking, I throw down one of the lower latches—the one or the other as the machine is turned to the right or left; then by turning the machine the requisite number of needles will be thrown up into the upper groove and remain there, retaining the stitches and ready to be returned with the m at the proper time into the working groove; then the upper latch is closed, and a slight reverse movement is imparted to the machine; then the lower latch is closed, and the knitting goes on with the needles which are left in the lower groove. When it is desired to return the needles, with the work attached thereto, which were left in the upper groove to the working groove, as is the case after knitting the gore or heel of the stocking, and when the foot is to be knit, it is done by an operation the reverse of that before described for turning the needles out of place, and they come back into the working groove with the work attached and no stitch dropped, and the knitting is then resumed.

I claim as my invention—

The combination of an additional groove, *a*, with the main groove or grooves of a knitting-machine by means of oblique grooves and switches for the purpose of setting and throwing down the needles into operating positions, and of raising them out of said positions without dropping the stitches, substantially as herein set forth.

In testimony that the foregoing is a full and clear description of my improvement in knitting-machines I hereunto subscribe my name.

LEANDER B. HUNT.

Witnesses:

E. B. PAGE,

G. L. SHEPARD.