L. B. HUNT.

Improvement in Knitting-Machines.

No. 131,955. Patented Oct. 8, 1872.

Fig. 1.

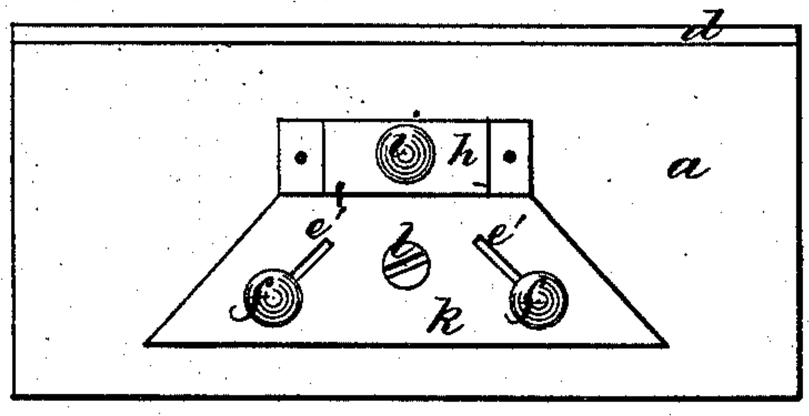


Fig. 2.

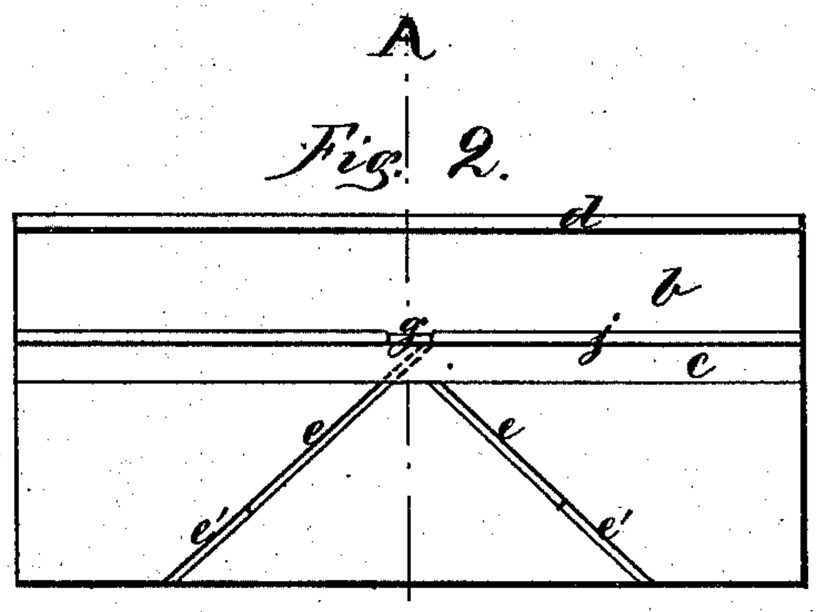
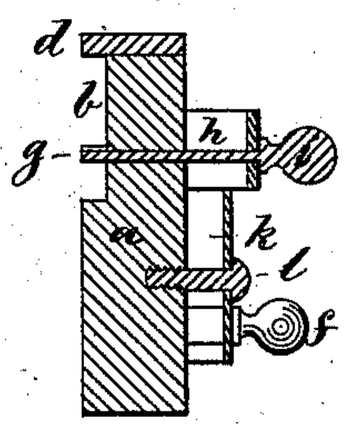


Fig. 3.



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UNITED STATES PATENT OFFICE.

LEANDER B. HUNT, OF HYDE PARK, MASSACHUSETTS.

IMPROVEMENT IN KNITTING-MACHINES.

Specification forming part of Letters Patent No. **131,955**, dated October 8, 1872.

To all whom it may concern:

Be it known that I, LEANDER B. HUNT, of Hyde Park, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Knitting-Machines, of which the following is a specification:

Nature and Objects of the Invention.

My invention consists in a simple and efficient means for raising the needles of knitting-machines from the lower or working groove to the upper or retaining groove, or vice versa, as well as for setting and removing all or part of them.

On the drawing, Figure 1 is an outside view; Fig. 2 is an inside view of a section of a knitting-machine cylinder; Fig. 3 is a cross-section over the line A B on Fig. 2.

Similar letters refer to similar parts wherever they occur on the drawing.

The drawing is made to represent a segment or portion of the working-cylinder of a knitting-machine with my improvement attached thereto.

a is a part of the working-cylinder, where *b* is the upper or retaining groove and *c* is the lower or working groove. *d* is a part of a ring that is made to be removed easily when the needles are to be put in the machine. *e e* are two slides or dampers in the lower part of the cylinder *a*. These slides are made to move up and down in the slots *e' e'*, forming an angle with the groove *c* of about half a right angle. The dampers *e e* project through the body *a*, and have on the outside knobs *f f*, whereby they may be operated from the outside of the machine. A bridge-plate, *k*, held to the cylinder *a* by means of the screw *l*, is made for the purpose of steadying the motion of the dampers *e e* when moved up or down in the slots *e' e'*. Between the grooves *b* and *c* is a flange or division, *j*, which is cut through at one place, *g*, so as to make a connection between the upper and lower grooves for permitting the passage of the needles from one groove to another. At the above-named place where the flange *j* is cut through is a gate, *g*, that moves in a corresponding slot in the body of the cylinder *a*. The gate *g* is at the outside guided in a slot in a bridge-plate, *h*, and is provided with a knob, *i*, whereby the gate can be operated, and, by means of this gate *g*, the communication between the upper and lower grooves may be shut or opened at pleasure.

Having described the construction of my invention, I will now proceed with the operation of the same. First, to "set" the needles—that is, to place all or a number of needles in the working-groove *c*—remove the ring *d* and place all the needles in the now open retaining-groove *b*, replace the ring *d*, open the gate *g*, and move the dampers *e e*, so that they do not obstruct the working-groove *c*. When the cylinder *a* now is revolved around the ordinary stationary needle-cylinder, one needle after the other will drop automatically down into the groove *c* through the passage at *g*. If, on the other hand, the needles are to be moved from the working-groove *c* up to the retaining-groove *b*, push one of the dampers *e e* up so as to close the passage *c*, as shown in dotted lines on Fig. 2, open the gate *g*, and revolve the cylinder *a* as in the previous case, when one needle after the other will move upward on the projecting part of the damper *e*, through the gate *g*, into the upper space *b*.

It is oftentimes needed to revolve the knitting-machine to the right or to the left, and I am therefore obliged to use two dampers, *e e*, one corresponding to the right-hand motion and the other to the left-hand one.

The advantages I gain over common knitting-machines are that I can set all needles at once, automatically, and that I can take in every other, every second, third, fourth, &c., needle during the operation without losing any stitches, with greater speed, and in an easier way than heretofore.

In a previous patent issued to me July 25, 1871, numbered 117,293, I use instead of the narrow partition *j* a wider one with dampers at the top and bottom; but I find this my new device much better, because I do not get the space at *g* cramped with needles, but I am able to drop or raise needle for needle, or

every other one, &c., without any inconvenience, owing to the narrow space the flange *j* occupies.

Having thus described fully the nature, construction, and operation of my invention, I wish to secure by Letters Patent, and claim—

In combination with the inclined slides *e e*, movable in the guides *e' e'*, below the working-groove *c*, the narrow flange *j*, and single gate *g* between the working and retaining grooves, for the purpose of raising and lowering or setting the needles, as herein described.

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Witnesses:

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