2 Sheets—Sheet 1.

C. HODGKINS.

Sewing Machine.

No. 10,622. Patented March 7, 1854.

Fig. 3.

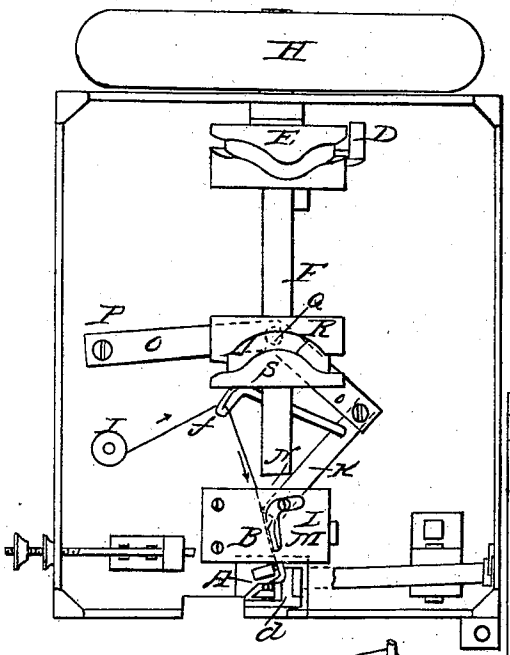


Fig. 2.

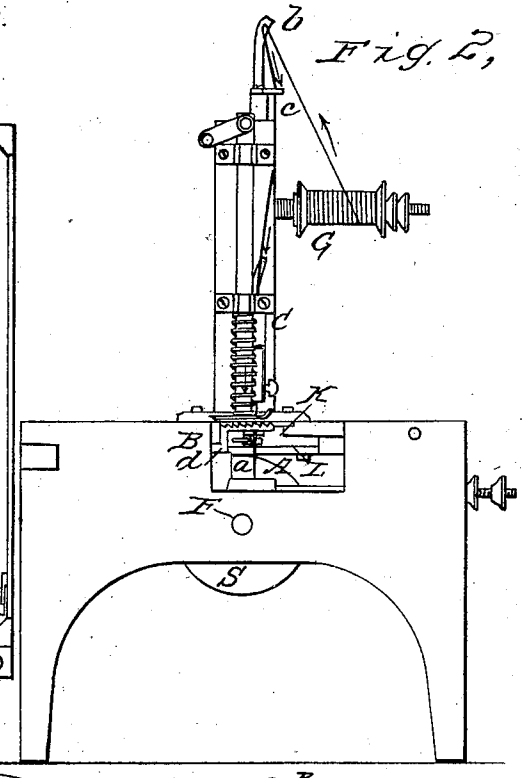


Fig. 1.

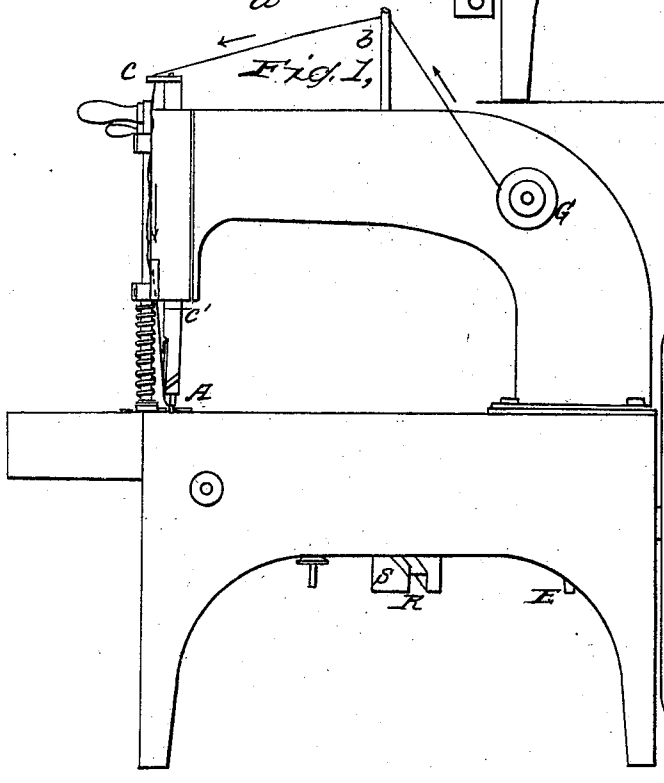


Fig. 4.

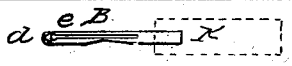


Fig. 5.

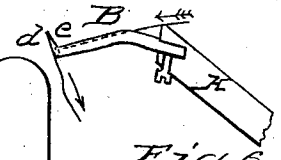
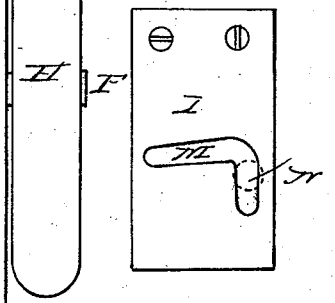


Fig. 6.



2 Sheets—Sheet 2.

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No. 10,622.

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Fig. 7,

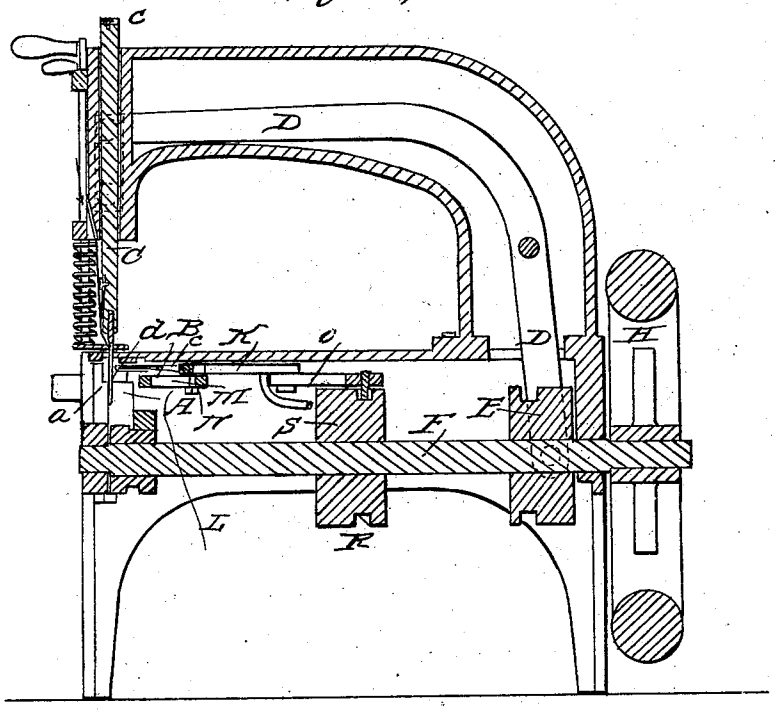


Fig. 5,

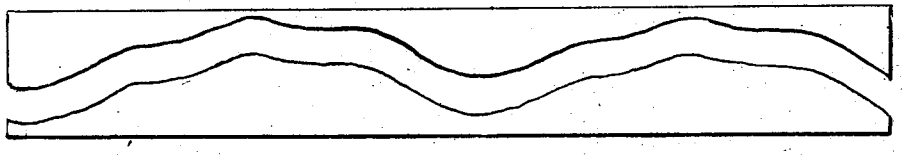
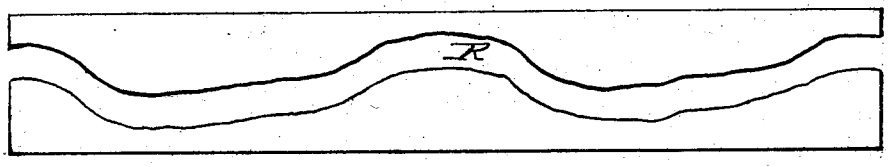


Fig. 8,



UNITED STATES PATENT OFFICE.

CHRISTOPHER HODGKINS, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO NEHEMIAH HUNT.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **10,622**, dated March 7, 1854.

To all whom it may concern:

Be it known that I, CHRISTOPHER HODGKINS, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Sewing-Machines; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, letters, figures, and references thereof.

Of the said drawings, Figure 1 denotes a side elevation of my improved sewing-machine. Fig. 2 is a front end view of it as it appears with the turning part of its stand or table removed. Fig. 3 is an under side view of it. In Fig. 4 are separate views of the lower or horizontal needle.

My invention consists in a peculiar arrangement of the eye of the upper or vertical needle, together with a peculiar mode of forming and operating the lower needle; and my invention has reference to machines which sew by the conjoint operation of two needles, one of which passes through the cloth, while the other works on one side of it.

In the drawings, A denotes the upper or vertical needle, and B the lower or horizontal one, the upper needle being caused to puncture the cloth. The upper needle is attached to a carrier, C, that is worked up and down by means of a bent lever, D, and a cam, E, (see Fig. 5, which denotes the shape of the groove of this cam as developed on a plane surface,) in the usual way, the said cam being fixed on the driving-shaft F. The eye *a* of the needle A is bored through from front to rear of the machine—that is to say, in the direction parallel to the axis of the driving-shaft. The thread from the upper needle is taken from a spool, G, and carried through guides *b c*, (the latter of which is fixed on the top of the needle-carrier,) and thence down on the front side of the needle and through its eye *a* in a direction toward the fly-wheel H. The lower needle is formed with a hook or bent end, as seen at *d*, and it has its eye carried through its shank in or close into the vertex of the angle made by the shank *e* and the part *d*. The said part *d* is bent out horizontally, and perpendicularly, or thereabout, to the shank *e*. The thread from the lower needle is taken from a spool, I, is carried through a guide, *f*, and passes along on the right side of the shank *e* of the needle, which is grooved throughout its length properly to receive it, and thence through the eye of the needle, going from the concave to the convex side of the needle. The said needle is attached to the front end of the bar or needle-carrier K, which rests on the top of a cam-plate, L, that has an angular groove or slot formed in it, as seen at M in Figs. 3 and 6, the latter being a separate view of such cam-plate. A pin or stud, N, having a diameter equal to the width of the groove M, extends from the carrier and into the groove. The rear end of the carrier K is jointed to one end of a bent lever, O, whose other end plays on a fulcrum, P, the whole being arranged as seen in Fig. 3. A stud, Q, from such bent lever O works in the groove R of a cam, S, fixed on the driving-shaft, the said stud Q being shown in Fig. 7, which is a central, vertical, and longitudinal section of the machine. The form of the groove R of the cam S is represented in Fig. 8 on a plane surface.

The feeding apparatus of my machine is not new, and forms no part of my present invention. It will therefore be unnecessary for me to go into any explanation of the same.

The operation of my machine is as follows: The vertical needle passes downward through the cloth, and next rises up a short distance in order to "belly" its loop, which loop or thread stands outward from the rear side of the needle. Next the lower or horizontal needle is moved laterally, so as to cause its hook or part *d* to pass between the bellying-thread and vertical needle and catch the thread upon the shank *e*. Next the horizontal needle is moved forward in a direction not perpendicular with the line of sewing, but at an acute angle therewith, so as to cause the eye of the lower needle to project a little to the left of the upper needle. The upper needle is next raised entirely out of the cloth, and the lower needle drawn back a short distance in the meantime. Next the upper needle descends through the cloth and passes down between the left side of the shank of the lower needle and that part of the thread which extends from the eye of the lower needle to the cloth. Immediately after the point of the vertical needle has descended below the horizontal needle, the horizontal nee-

dle is moved backward until it gets beyond the vertical needle, when it is moved laterally to the left, so as to throw off from it the loop previously taken from the vertical needle and allow the same to be drawn into the cloth during the upward movement of the vertical needle. In this manner the operation of sewing is carried on by this machine.

The advantages of my machine consist, first, in the simplicity of its construction and operation; second, in the gain of a wide space between the lower needle and its thread, for the upper needle to pass through during its descent, the same enabling us to work the upper needle at such a distance from the side of the lower needle as to prevent any possibility of injurious contact of the two and accident therefrom, such as the straight-needle machines are constantly liable to; third, by the lower needle moving in the direction in which the cloth is fed along, we gain an advantageous position for the thread lying between its eye and the cloth, whereby we enable the loop of the upper needle, when it is drawn into the cloth, to be drawn in with diminished tension, comparatively speaking, on the upper thread.

My invention and what I claim consists in—

Constructing the horizontal needle of the angular form, substantially as described, and making it to operate with respect to the vertical needle and its eye, (arranged as set forth,) essentially in the manner as hereinbefore explained.

In testimony whereof I have hereto set my signature this 19th day of April, A. D. 1853.

CHRISTOPHER HODGKINS.

Witnesses:

R. H. EDDY,

F. P. HALE, Jr.