2 Sheets—Sheet 1.

C. HODGKINS.

Sewing Machine.

No. 10,879. Patented May 9, 1854.

Fig: 1.

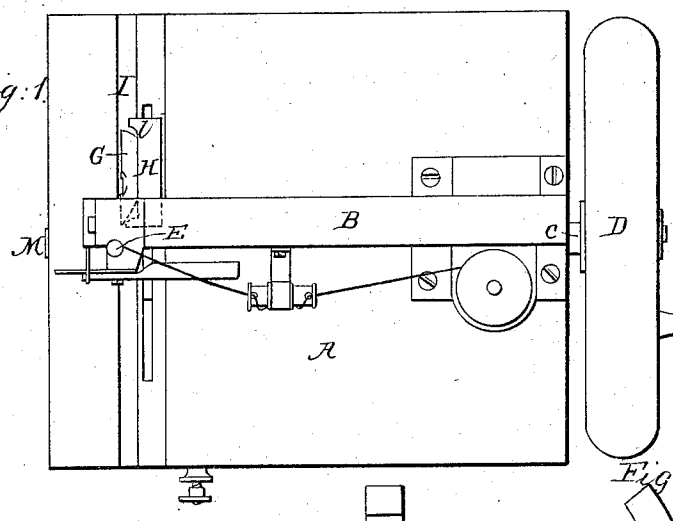


Fig: 8.

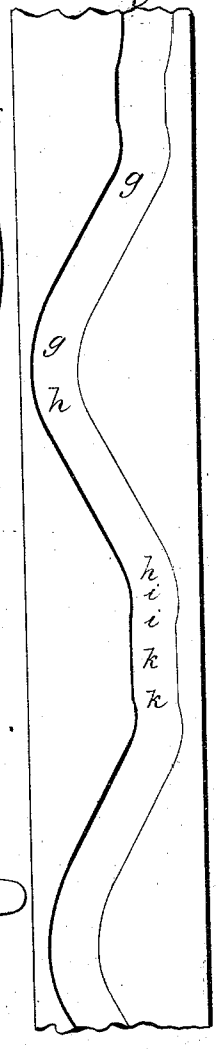


Fig: 6.

Fig: 7.

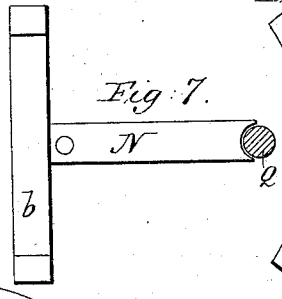
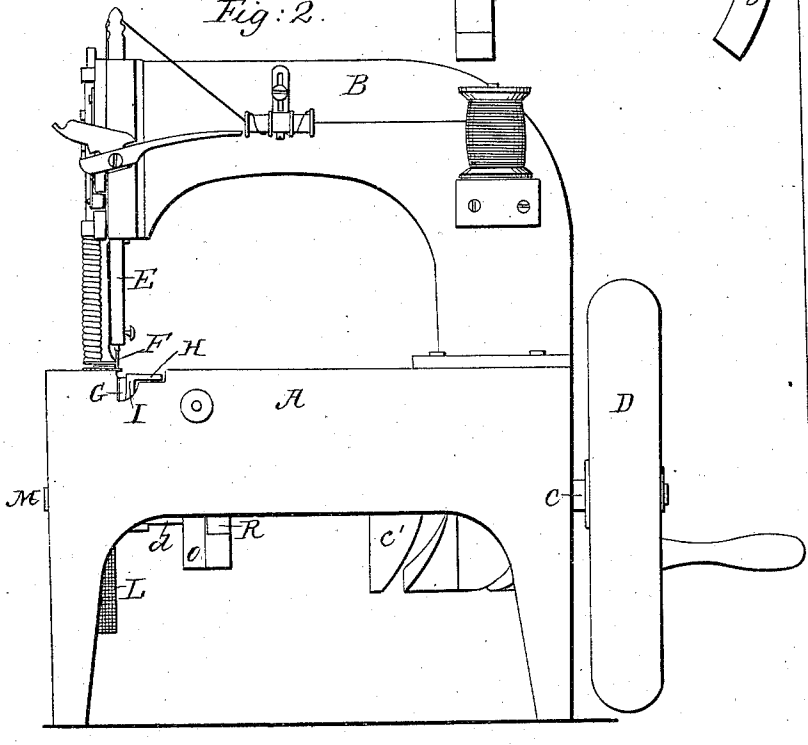


Fig: 2.



N. PETERS. Photo-Lithographer. Washington, D. C.

2 Sheets—Sheet 2.

C. HODGKINS.

Sewing Machine.

No. 10,879. Patented May 9, 1854.

Fig: 4

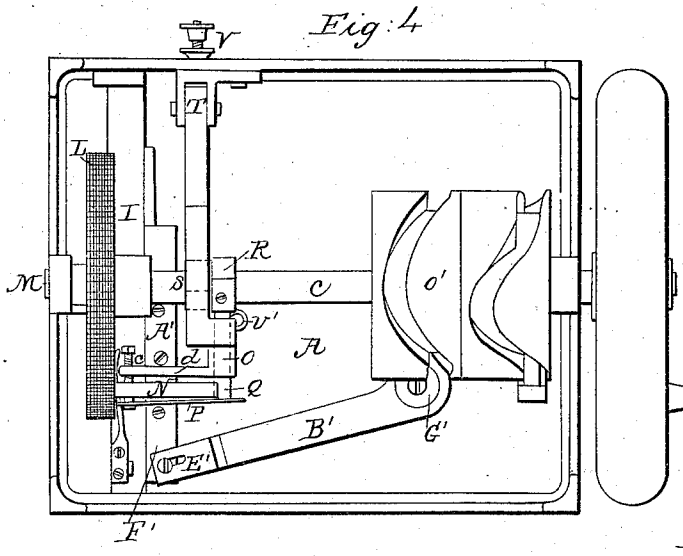


Fig: 5.

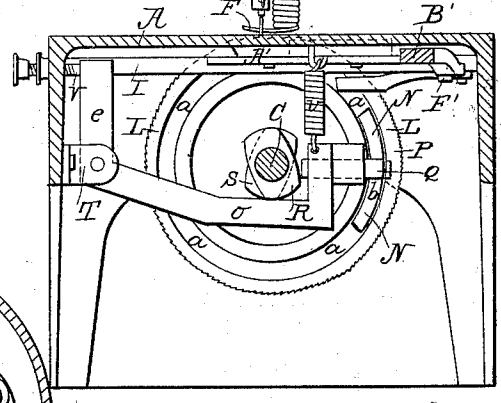
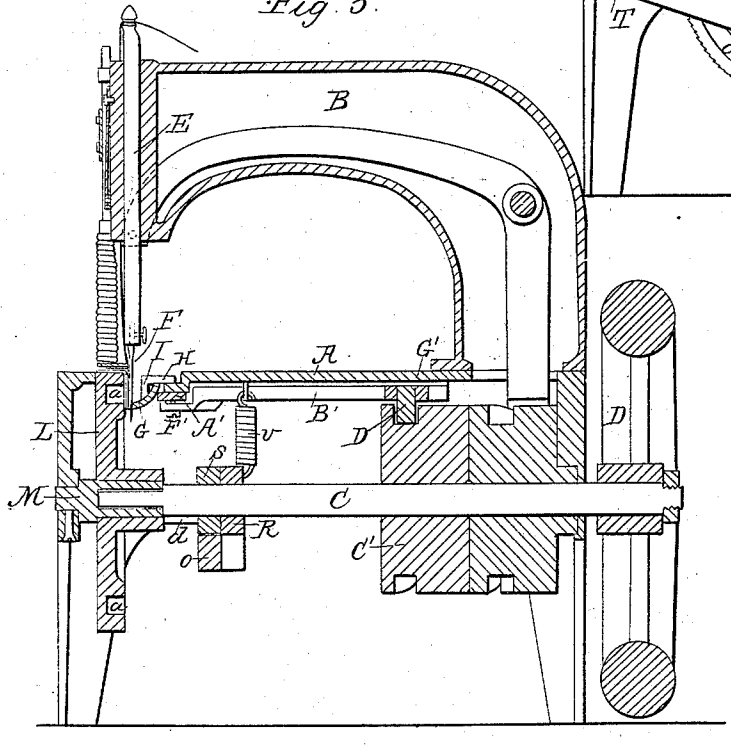


Fig: 3.



N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

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

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **10,879**, dated May 9, 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 Machinery for Sewing Cloth or other Material; 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 top view of my improved sewing-machine. Fig. 2 is a side elevation of it. Fig. 3 is a vertical central and longitudinal section of it. Fig. 4 is an under side view of it. Fig. 5 is a transverse section of the table of it, showing the feeding wheel and apparatus for imparting movement to it.

In the said drawings, A denotes the frame or table of the machine. B is the goose-neck or arm thereof. C is the main driving-shaft, having a fly-wheel, D, placed upon it. E is the needle-carrier. F is the needle; G, the shuttle. H is the shuttle-driver; I, the shuttle-race, my machine being one which performs the operation of sewing by the conjoint action of a needle and the shuttle in a manner well-known and understood, the shuttle having imparted to it an intermittent rectilinear movement.

As the mechanism by which the needle is made to move in vertical directions is not essentially different from such as is generally adopted in similar machines, it needs no particular description.

The cloth, during the operation, is fed along by the intermittent rotatory movement of a feeding-wheel, L, which is placed and made to revolve on a stationary shaft, M, which serves to support one end of the driving-shaft. This feeding-wheel is formed with a serrated or toothed periphery, and with a circular groove or channel, *a*, made in its inner side and concentric with its periphery, as seen in the drawings. Into this groove a T-shaped lever or brake, N, is inserted, an end view of that part of the lever which is inserted in the groove *a* being represented in Fig. 6, while in Fig. 7 a side view of said lever is given. The part *b* of the lever is a portion of an annulus whose transverse section corresponds with that of the groove, it being made to fit the groove, so that it can slide freely in it while the lever stands perpendicularly to the plane of the side of the feeding-wheel. The fitting of the brake part *b* of the lever with respect to the groove should be such that when the lever is turned a little or moved out of a position at right angles to the side of the wheel the brake shall be made to bind or press against the two opposite concentric surfaces of the groove of the wheel. A screw-pin, *c*, extended from an arm, *d*, of a lever, O, is made to enter a hole formed in the brake-lever. One end of a spring, P, is attached to the outer side of the brake-lever at or near the brake, such spring being made to project beyond the inner end of the brake-lever and to rest against one end of a slide, Q, inserted and made to slide freely in the lever O and to be moved outward by a cam R, fixed on the driving-shaft. There is another cam, S, fixed on the driving-shaft, the office of such cam being to depress the lever O, such lever turning on a fulcrum at T and being raised by the contractile power of a spring, U. The extent of upward movement of the lever O is regulated by a stop-screw, V, against which an arm, *e*, from the lever abuts when the lever rises up to its highest position. Under this state of things, during the revolution of the driving-shaft, the brake-lever will be moved by its cam so as to bind or bear against the two opposite concentric sides of the groove *a*, and as soon as such has been accomplished the lever O will be moved downward by its cam, and thereby move the brake-lever and cause it to rotate the feed-wheel the distance required for the production of a stitch of the sewing.

In my improved feeding apparatus the friction-brake is made to act against two surfaces at one and the same time, and in such manner or with such power of hold upon them as to completely prevent it from slipping on them while the feed-wheel is being moved. When a friction-brake or knuckle is made to operate against a single surface or flange upon the feed-wheel, it is very apt to slip on the same, and thus the stitches of the line of sewing would be liable to be made of variable lengths. A little oil or dirt getting between the brake or surface on which it acts is almost sure to cause

the brake to slip on their surfaces. The peculiar manner in which my improved brake is applied to the feed-wheel and made to operate on it renders it practically impossible to slip on the wheel while it is producing a movement of the wheel, and this notwithstanding oil or dirt may by accident get into the groove of the feeding-wheel. The grip or hold of the brake on the feeding-wheel is not produced by the movement of the lever which causes the brake to turn the feeding-wheel, but by a separate mechanism—viz., a cam, slide, and a spring, which, by their co-operation and action, produce the grip or hold of the brake in the groove of the feed-wheel before any motion is given to the lever O by which the brake is moved, so as to move the feed-wheel.

The shuttle-driver H is attached to a slide or carriage, A′, which is moved by means of a bent lever, B′, actuated by a grooved cam, C′, fixed upon the driving-shaft. The form of the groove of this cam is developed in Fig. 8. During the entire revolution of the cam it causes the shuttle driver to be twice moved forward and backward, each half of the cam being constructed so as to produce one backward and one forward movement of the shuttle. Into the groove of the cam a round pin or projection, D′, from the lever B′ is caused to extend, such projection being made of a diameter to correspond with the width of the groove of the cam. That end of the lever B′ which is connected with the shuttle-driver has an elongated slot, E′, formed through it, a pin, F′, being passed through such slot and into the carriage of the shuttle-driver. By means of such slot and pin, the lever is enabled during its movements on its fulcrum G′ to effect a rectilinear reciprocating motion of the carriage of the shuttle-driver. Besides having imparted to it a reciprocating rectilinear movement by means of the parts *g h* of the cam, the shuttle-driver, after it has moved forward so as to throw the shuttle into the loop of the needle, is moved backward a short distance by the part *i* of the cam, and it remains stationary while the part *k* of the cam is moving on the projection of the lever. The object of this back movement of the shuttle-driver is to open a space between the heel of the shuttle and the next adjacent arm *l* of the shuttle-driver, in order to insure the passage of the loop of thread over the heel of the shuttle when the thread is drawn into the cloth by the elevation of the needle.

I am aware that there is nothing new in moving the feeding-wheel by means of a friction-brake, knuckle, or clamp, and a lever combined therewith.

I am also aware that for the purpose of operating a feed-wheel a combination consisting of a shaft with two arms, a screw-regulator, a lever, and clamp has been used. I therefore do not claim such devices; but

I claim—

1. The peculiar manner in which the brake-clamp N is constructed, applied to and made to operate in the groove *a* of the feed-wheel, whereby the bearings of the clamp on the two opposite concentric surfaces of the groove are curved concentric lines or surfaces running parallel or about parallel to the plane of the feed-wheel, instead of perpendicularly to it, such an arrangement of the bearing lines or parts of the clamp rendering its hold on the wheel far more certain than when they are made in length only equal to the depth of the groove and to stand perpendicularly to the plane of the feed-wheel.

2. The mode of operating the brake clamp or lever N, or, in other words, the arrangement and combination of the spring P, the slide Q, cam R, the cam S, the lever O, and the spring U, as set forth, such mechanism causing the clamping of the lever-brake N to the feed-wheel to be wholly done by mechanism acting entirely before and separate from and not controlled by that which produces the movement of the clamp by which corresponding extent of motion is produced in the feed-wheel.

In testimony whereof I have hereunto set my signature this 2d day of January, A. D. 1853.

CHRISTOPHER HODGKINS.

Witnesses:

R. H. EDDY,

F. P. HALE, Jr.