

Geo. M. Hopkins

Magnetic Sewing Machine.

Assigned to self and C. H. Shattuck.

No. 121,622.

Patented Dec. 5, 1871.

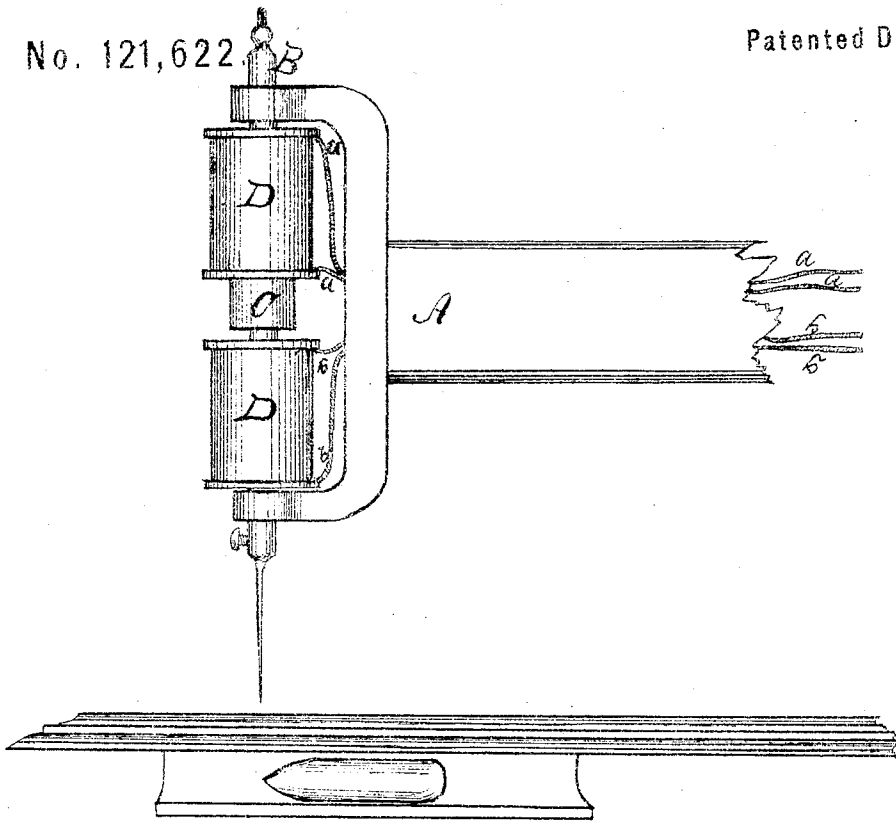


Fig 1.

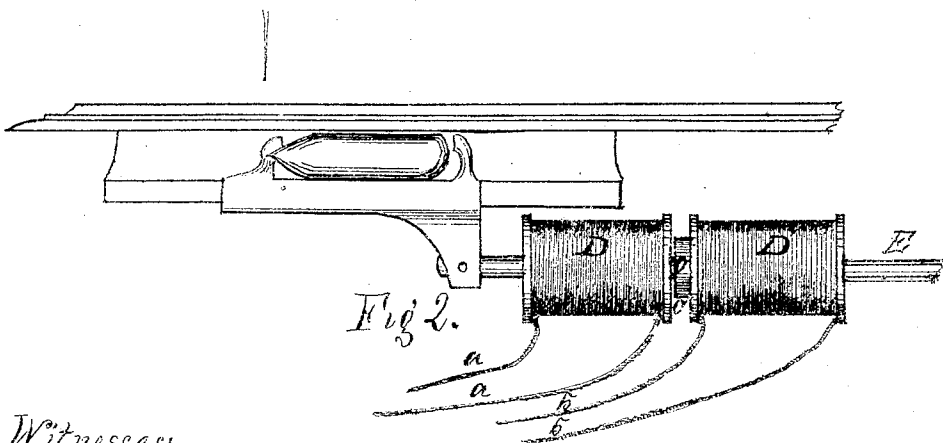


Fig 2.

Witnesses:-

G. S. Allis
J. A. Knapp

Inventor:-

Geo M Hopkins

Geo. M. Hopkins'

Magnetic Sewing Machine.

Assigned to self and G. H. Shattuck.

No. 121,622.

Patented Dec. 5, 1871.

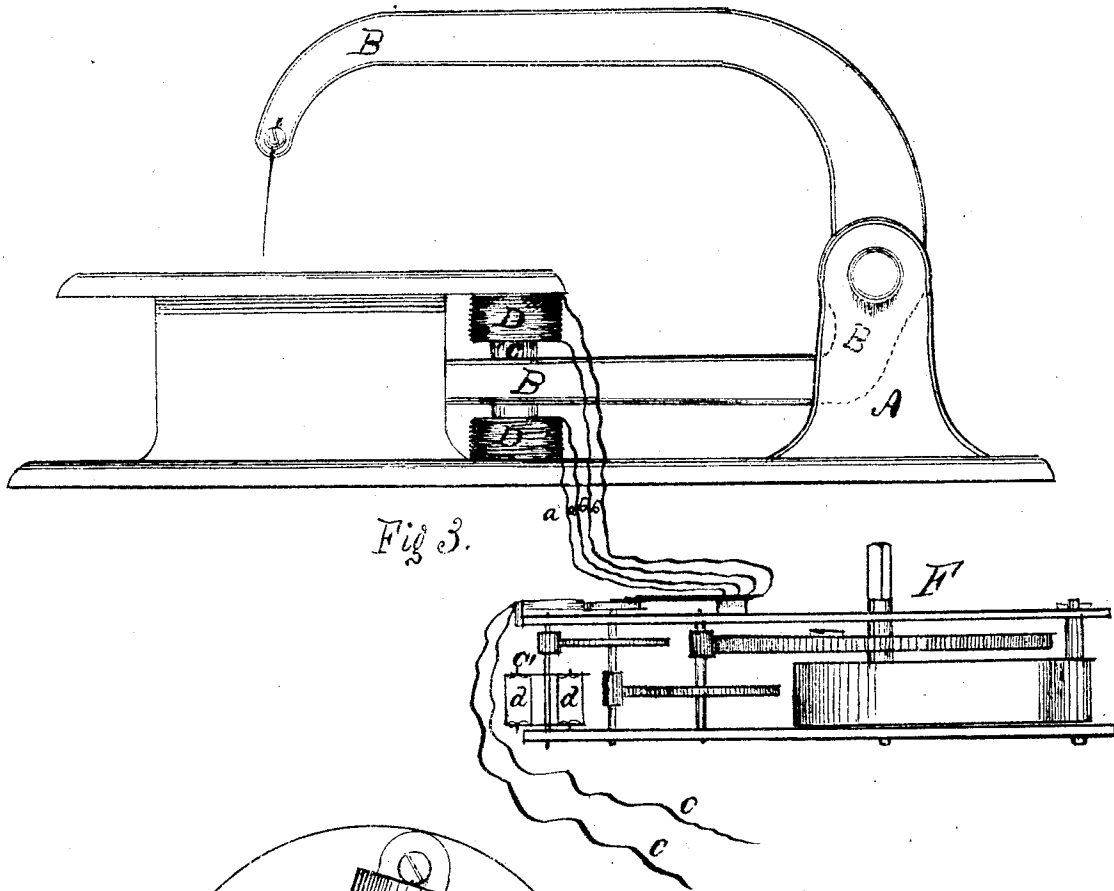


Fig. 3.

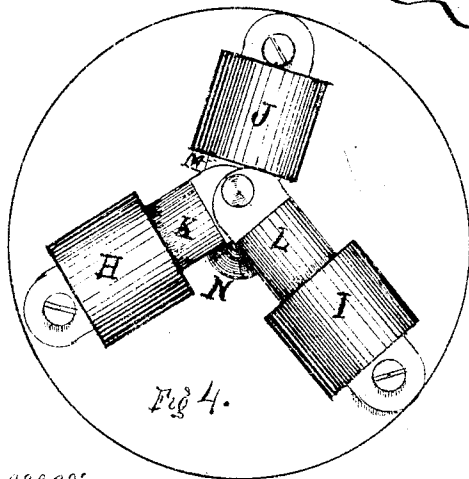


Fig. 4.

Witnesses:

W. H. Allen

Inventor:

Geo. M. Hopkins

UNITED STATES PATENT OFFICE.

GEORGE M. HOPKINS, OF ALBION, ASSIGNOR TO HIMSELF AND GEORGE H. SHATTUCK, OF NEW YORK, N. Y., ASSIGNORS TO HENRY G. THOMPSON, OF MILFORD, CONNECTICUT.

IMPROVEMENT IN ELECTRO-MAGNETIC SEWING-MACHINES.

Specification forming part of Letters Patent No. 121,622, dated December 5, 1871.

To all whom it may concern:

Be it known that I, GEORGE M. HOPKINS, of Albion, in the county of Orleans and State of New York, have invented certain Improvements in Sewing-Machines, of which the following is a specification:

The first part of my invention relates to the combination of one or more helices and armatures with the needle-bar or arm or main shaft of a sewing-machine in such a manner that when a current of electricity is passed through the helices motion will be communicated to the needle-bar or arm or main shaft by the drawing of the armature up or down. The second part of my invention relates to the combination of suitable gearing actuated by a spring or weight to change the electric current at regular intervals, to insure uniform motion to the needle-bar and parts connected with it.

Figure 1 represents the helices as connected with a straight needle-bar. Fig. 2 represents the helices connected with the shuttle-carrier. Fig. 3 is a side elevation of a machine, showing the helices connected with the rocking needle-arm, also the gearing for changing the electric current. Fig. 4 shows the helices connected with a crank on the revolving shaft of the sewing-machine.

In Fig. 1, A is the ordinary support for the needle-bar of a sewing-machine. B is a needle-bar of some non-magnetic material which slides through suitable ways in the support A. C is a soft-iron armature placed on the needle-bar B. D D are helices firmly fixed to the support A in such a position as to allow the armature C to draw into one and the other alternately, as the electric current is changed. *a a* and *b b* are wires leading from the helices to the gearing for breaking the current. In Fig. 2, E is a non-magnetic rod attached to the shuttle-carrier, having the

armature C, which is surrounded by the helices D D which draw the armature back and forth as the electric current is changed from one to the other.

I design to move the shuttle or looper and needle-bar at proper intervals by changing the electric current, so that the stitch can be made without gearing or levers; or the reciprocating motion may be given to any part of the machine by the helices and armatures, and communicated by gearing or levers to any other part.

In Fig. 3 the same letters of reference indicate parts similar to those referred to in Fig. 1.

The wires *a a* and *b b* are electrified by means of any of the known devices for changing electric currents attached to the clock-work F. *c c* are wires connecting the battery.

The speed of the machine is controlled by the fan-wheel C', which may be made to revolve with varying speed by turning the fans *d d*. In Fig. 4, H, I, and J are oscillating helices, so arranged as to draw alternately on their respective armatures K, L, and M, which are connected with the crank N on the main shaft of a sewing-machine.

I claim as my invention—

1. The combination of the helices D D with the needle-bar B of a sewing-machine, substantially as shown and described.

2. The combination of the helices D D with the rod E, or its equivalent, and the shuttle-carrier or looper of a sewing-machine, substantially as and for the purpose hereinbefore set forth.

3. The gearing F, in combination with the above devices, as shown and described.

Signed by me this 17th day of January, 1870.

GEO. M. HOPKINS.

Witnesses:

G. S. ALLIS,
J. A. KNAGGS.

(134)