

A. H. WAGNER.
SEWING-MACHINE.

No. 177,040.

Patented May 2, 1876.

Fig. 5.

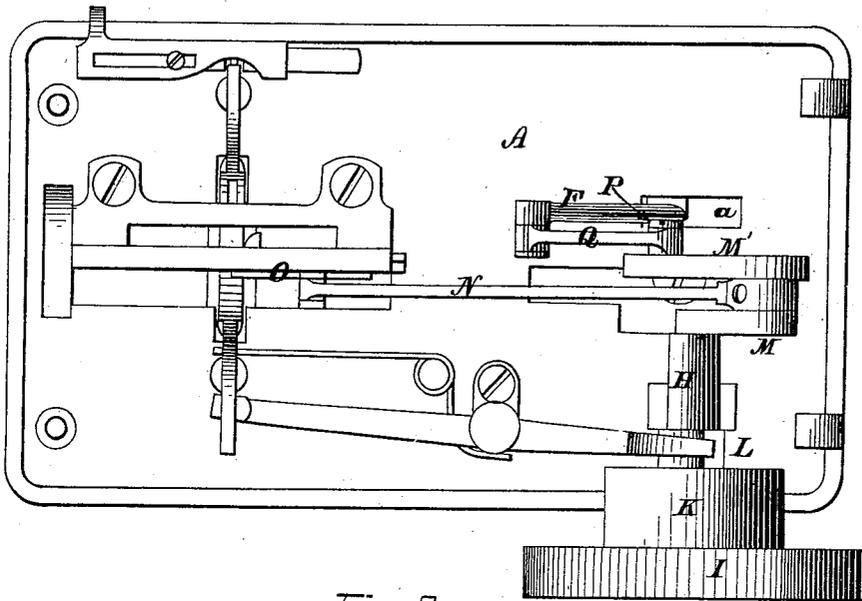
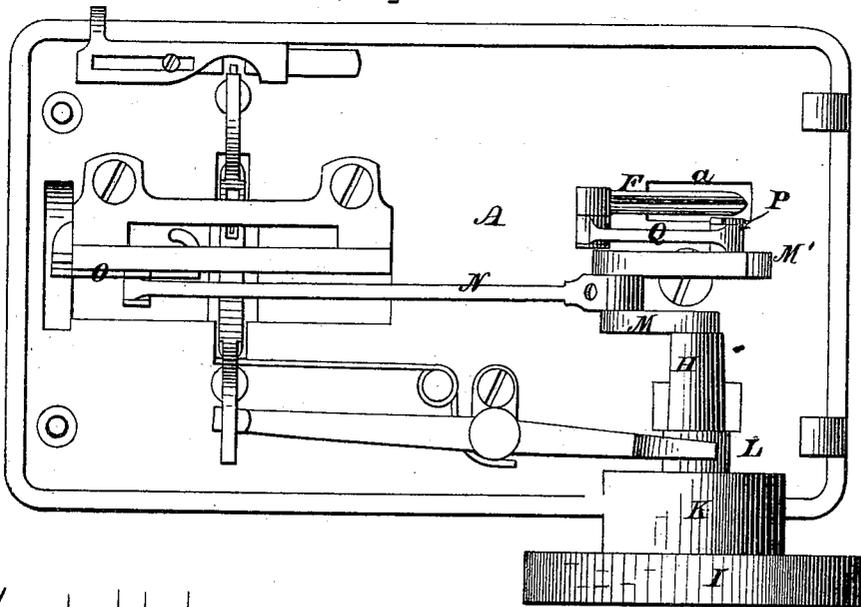


Fig. 6.



WITNESSES-

Jack Hutchinson
John R. Young

INVENTOR.

A. H. Wagner, by
Prindle and Log, his
Attorneys

UNITED STATES PATENT OFFICE.

AUSBERT H. WAGNER, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **177,040**, dated May 2, 1876; application filed October 27, 1875.

To all whom it may concern:

Be it known that I, AUSBERT H. WAGNER, of Chicago, in the county of Cook, and in the State of Illinois, have invented certain new and useful Improvements in Sewing-Machines; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side elevation of a machine containing my improvements. Fig. 2 is a like view of the mechanism employed for operating the vibrating arm. Figs. 3 and 4 are, respectively, vertical and horizontal sections of the forward end of said vibrating arm and the needle-bar at their point of connection; and Figs. 5 and 6 are plan views of the lower side of the machine, the operative parts being arranged as shown in Figs. 1 and 2, respectively.

Letters of like name and kind refer to like parts in each of the figures.

The design of my invention is to increase the efficiency and durability of a sewing-machine; and it consists, principally, in the means employed for connecting together the vibrating arm and needle-bar, substantially as and for the purpose hereinafter specified. It consists, further, in the means employed for transmitting motion from the driving-shaft to the vibrating arm, substantially as and for the purpose hereinafter shown.

In the annexed drawings, A represents the base-plate of my machine, constructed with the usual form, and having attached to or upon its upper side, at its rear end, a fixed arm, B, that extends upward, and thence horizontally forward, and at its front end is provided with a vertical housing for the reception of the needle and pressure bars C and D, respectively. Journalled upon a stud, E, that projects laterally outward from one side of the fixed arm B, near the upper end of its vertical portion, is an arm, F, which has the form shown in Fig. 1, and is placed with its vertical portion extending downward through a slot, *a*, in the base-plate A, which slot has such length as to permit said arm to vibrate the required distance upon its pivotal bearing.

Within the forward end of the vibrating arm F is provided a longitudinal opening, *f*, which, in cross-section, is round, and is placed so near

to the inner side of said arm as to cut away the wall and form at such point a longitudinal slot, *f'*, that affords communication with said opening. Within the opening *f* is fitted a correspondingly-shaped block, G, which slides freely in a longitudinal direction, and at its inner side, at its longitudinal center, is provided with an opening, *g*, that corresponds to and receives a stud, *c*, which extends horizontally outward from the contiguous face of the needle-bar C.

As thus arranged, the vibrating motion of the forward end of the arm F is communicated to the needle-bar C through the sliding block G and stud *c*, said block having an oscillating movement upon said stud, and a longitudinal movement within said arm as the latter moves in the arc of a circle.

This construction affords perfect freedom of motion to both needle-bar and vibrating arm, and the wearing parts possess great durability, and are not liable to get out of order.

Journalled within a suitable bearing, H, that is attached to the lower side of the base-plate A, is a driving-shaft, which, upon one end, is provided with a balance-wheel, I, belt-pulley K, and cam L, for operating the feed-bar, while upon its opposite end is secured a crank, M, that has attached to its pin *m* an arm, M', which is arranged parallel with said crank, and extends inward beyond said shaft, as seen in Fig. 6. From the crank-pin *m* a connecting-bar, N, extends forward to and is connected with the shuttle-carrier O, while from a pin, P, that is secured within and projects from the outer face of the arm M' near its inner end, a second connecting-bar, Q, extends to and is pivoted upon the lower end of the vibrating arm F.

As thus arranged, it will be seen that the pin P is placed eccentrically with relation to the driving-shaft, so that when caused to revolve with the latter said pin will move around a circle, and, through the connecting-bar Q, will impart to the vibrating arm F a reciprocating motion that will correspond in degree to the diameter of the said circle. The pin P is screwed into the arm M', so that by providing a suitable threaded opening, *p*, within said arm at a point directly opposite and at a corresponding distance from the center of motion,

said pin may be transferred from one point to the other, and the relative motions of the needle-bar and shuttle changed, so as to enable the machine to be run in an opposite direction. The arm *M'* is secured to the crank-pin *m* by means of a screw, *m'*, so that said arm can be turned out of line with the crank, and the pin *P* caused to lead or follow the same, the adjustment named enabling the relative motion of the needle and shuttle to be so timed as to produce the best result.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. In combination with the vibrating arm *F*, provided at its forward end with the longitudinal cylindrical opening *f f'*, and with the needle-bar *C*, having the horizontally-projecting stud *e*, the cylindrical block *G*, fitted within said opening *f f'*, and provided with an

opening, *g*, which receives and contains said stud, substantially as and for the purpose specified.

2. In combination with the vibrating arm *F*, and with the driving-shaft, provided with the crank *M* and crank-pin *m*, the arm *M'*, secured upon said crank-pin by means of the screw *m'*, and provided with the threaded openings *p* and *p'*, the pin *P*, fitted to said openings, and the connecting-bar *Q*, pivoted to and extending between said pin *P* and said vibrating arm *F*, substantially as and for the purpose shown.

In testimony that I claim the foregoing I have hereunto set my hand this 11th day of October, 1875.

AUSBERT H. WAGNER.

Witnesses:

ROBERT K. JAMPOLIS,
CHAS. W. WOODMAN.