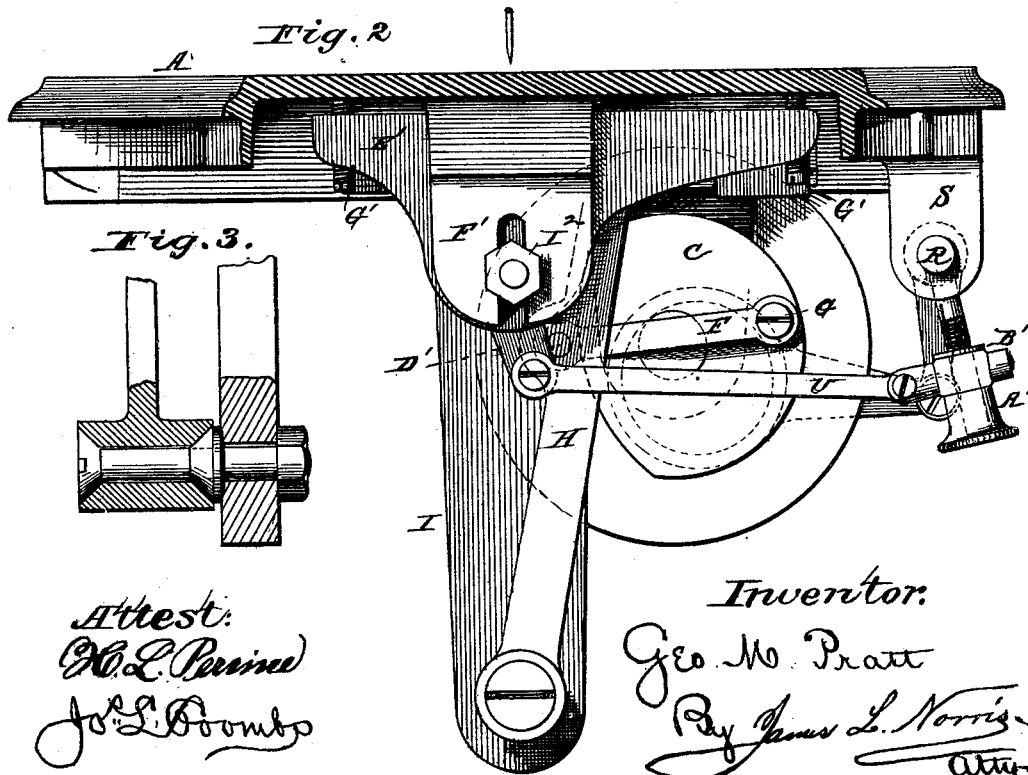
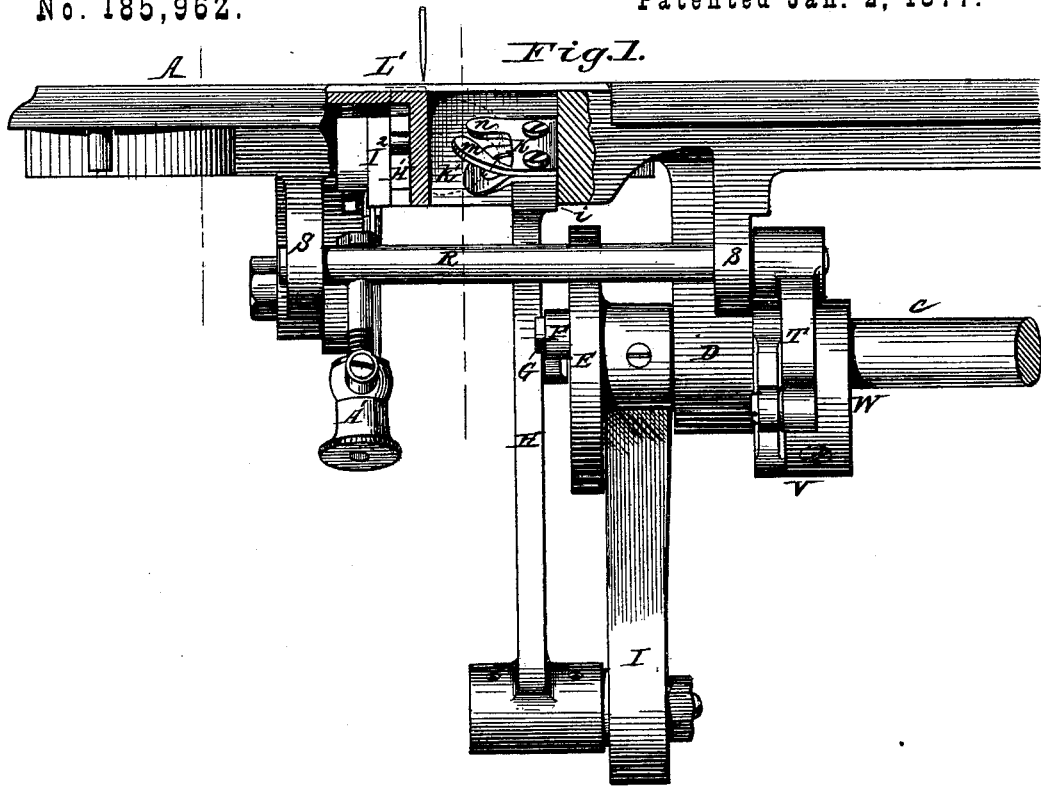


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SEWING-MACHINE.

No. 185,962.

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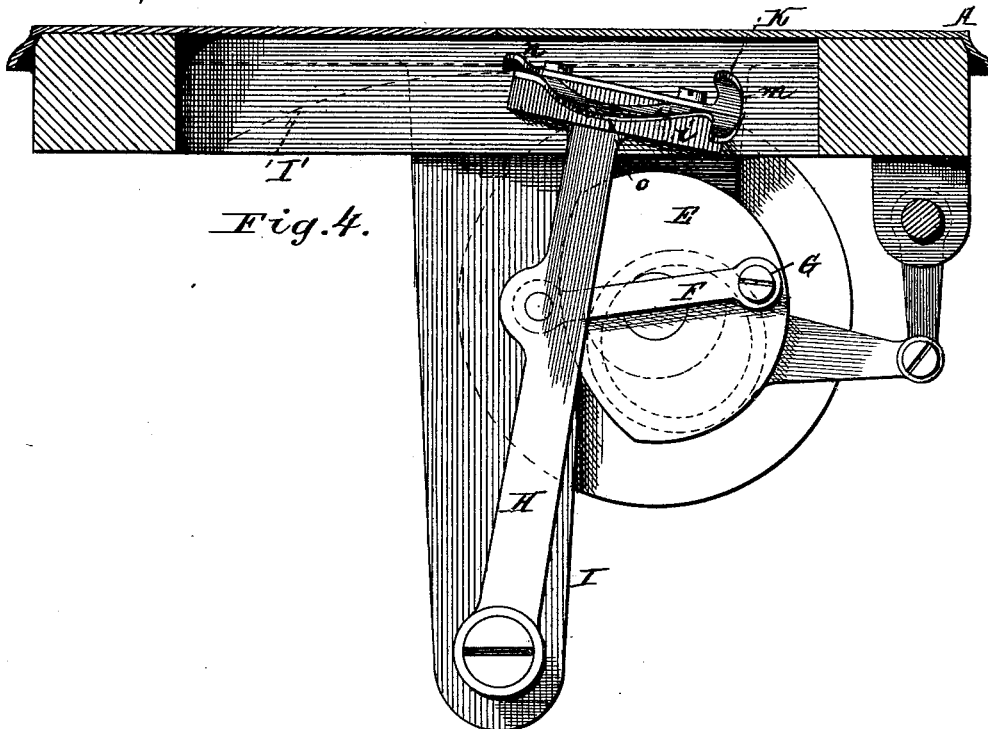


Fig. 4.

Fig. 5.

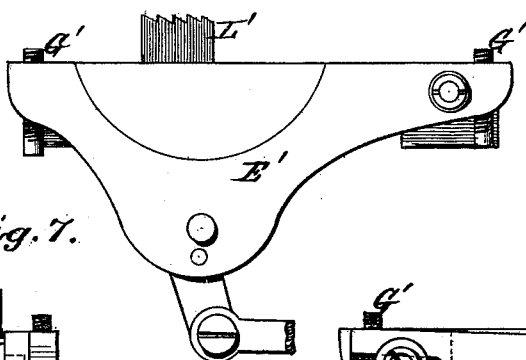


Fig. 7.

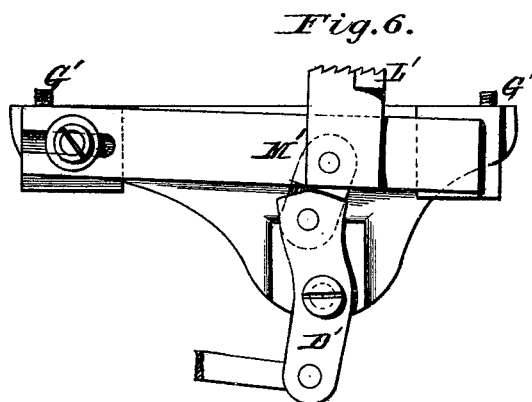
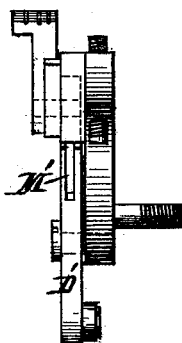


Fig. 6.



Attest
H. L. Beebe
J. L. Coombs

Inventor:
Geo. M. Pratt
 By *James L. Norris*
 Atty.

UNITED STATES PATENT OFFICE.

GEORGE M. PRATT, OF MIDDLETOWN, CONNECTICUT.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **185,962**, dated January 2, 1877; application filed November 11, 1875.

To all whom it may concern :

Be it known that I, GEORGE M. PRATT, of Middletown, in the county of Middlesex and State of Connecticut, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a specification :

Heretofore, so far as I am aware, there has been no positive connection between the feed-bar of a sewing-machine and its operating mechanism; and there has been the necessity of employing a spring for imparting the rising and falling motion, which has been found impracticable, for the reason that the spring soon becomes set, and in consequence of which the feed-surface is not withdrawn from the cloth, on the back motion of the feed, at the proper time.

The object of this invention is to overcome these and other defects; and the present invention consists in connecting the feed-bar to its operating mechanism, whereby a positive motion is imparted to the feed in all of its four movements.

In the drawing, Figure 1 represents a side elevation and a partial sectional view of my invention. Fig. 2 represents a front elevation of the same. Fig. 3 represents a detached sectional view of the lower end of the vibrating arm and hanger to which it is attached. Fig. 4 represents a sectional view taken on the line *x x* of Fig. 1; Fig. 5, a detached view of the adjustable hanger and feed devices; Fig. 6, a detached side view of the feed devices, and Fig. 7 a detached rear view of the feed devices.

The letter A represents the bed-plate of the sewing-machine, the upper works of which may be of any approved construction. C represents the main driving-shaft, journaled in hangers D D below the bed-plate, and having secured to its front end a disk or wheel, E. To said wheel is attached a link, F, by means of a crank-pin, G, the other end of said link being pivoted to a vibrating arm, H, the lower end of which is pivoted to a hanger, I, depending from the bottom of the bed-plate of the machine. The upper end of said arm is formed with a cross-piece, *i*, to the top of which is secured, by rivets, or otherwise, the shuttle-carrier K. The shuttle-carrier is adapt-

ed to move in the arc of a circle in the shuttle-race K', formed for the purpose on the under side of the bed-plate, and holds the shuttle, as it travels, against the front wall of said recess.

The letter R represents a rock-shaft journaled parallel with the driving-shafts, to one side of the same, in hangers S S. Said rock-shaft is provided with a crank, T, which is connected with the eccentric rod, which is secured to, or forms part of, the eccentric strap V, secured around the eccentric W on the driving-shaft of the machine. The other end of said rock-shaft is provided with a vibrating arm having a screw-thread cut on one end, upon which works a threaded sleeve, A', passing through a short bar, B', to which one end of the link U is pivoted. The other end of said link is pivoted to the lower end of a vibrating lever, D', which is secured to a detachable hanger, E', which is adapted to be secured, in any convenient manner, to the stationary hanger F' depending from the bottom of the bed-plate. Said adjustable hanger is provided with adjusting-screws G', by which it may be properly adjusted to the bed-plate, and supports one end of a reciprocating feed-bar, H', which is secured to said detachable hanger by a screw, I², passing through a slot, K', in said bar. Said bar is provided with an upwardly-projecting dentated feed-plate, L', which works through an opening in the bed of the machine, as usual. The feed-bar is secured to the end of the vibrating lever by means of a short link, M'. The said link sits and is pivoted in the upper end of the vibrating lever D', and has a square shoulder on each of its sides, which sits upon the end of the vibrating lever, which is cam-shaped or angular in form, as shown, so as to allow the link and the feed-bar to fall on the backward movement of the same, and to elevate said link and feed-bar on the forward movement, in order to bring the surface of the feed in contact with the fabric.

The operation of my apparatus will be readily understood. Upon rotating the driving-shaft an oscillating motion will be transmitted to the rock-shaft, which operates the feed movement, causing the vibrating lever of the same to oscillate and give the proper movements to the

feed. The throw of said vibrating lever may be regulated, so as to change the length of stitches, by means of the threaded sleeve on the arm of the rock-shaft, which will cause a longer or shorter vibration to be given to said lever, as said sleeve is advanced in one or the other direction on said bar, the sleeve being provided with a milled head for the purpose.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination, with the feed and the operating-lever D', pivoted to the hanger E' of

a sewing-machine, of the link M, connected to the said operating-lever and feed-bar, substantially as described, whereby the four motions are imparted to the feed-bar in a positive manner, as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of the subscribing witnesses.

GEO. M. PRATT.

Witnesses:

WALTER B. HUBBARD,
S. P. HULL.