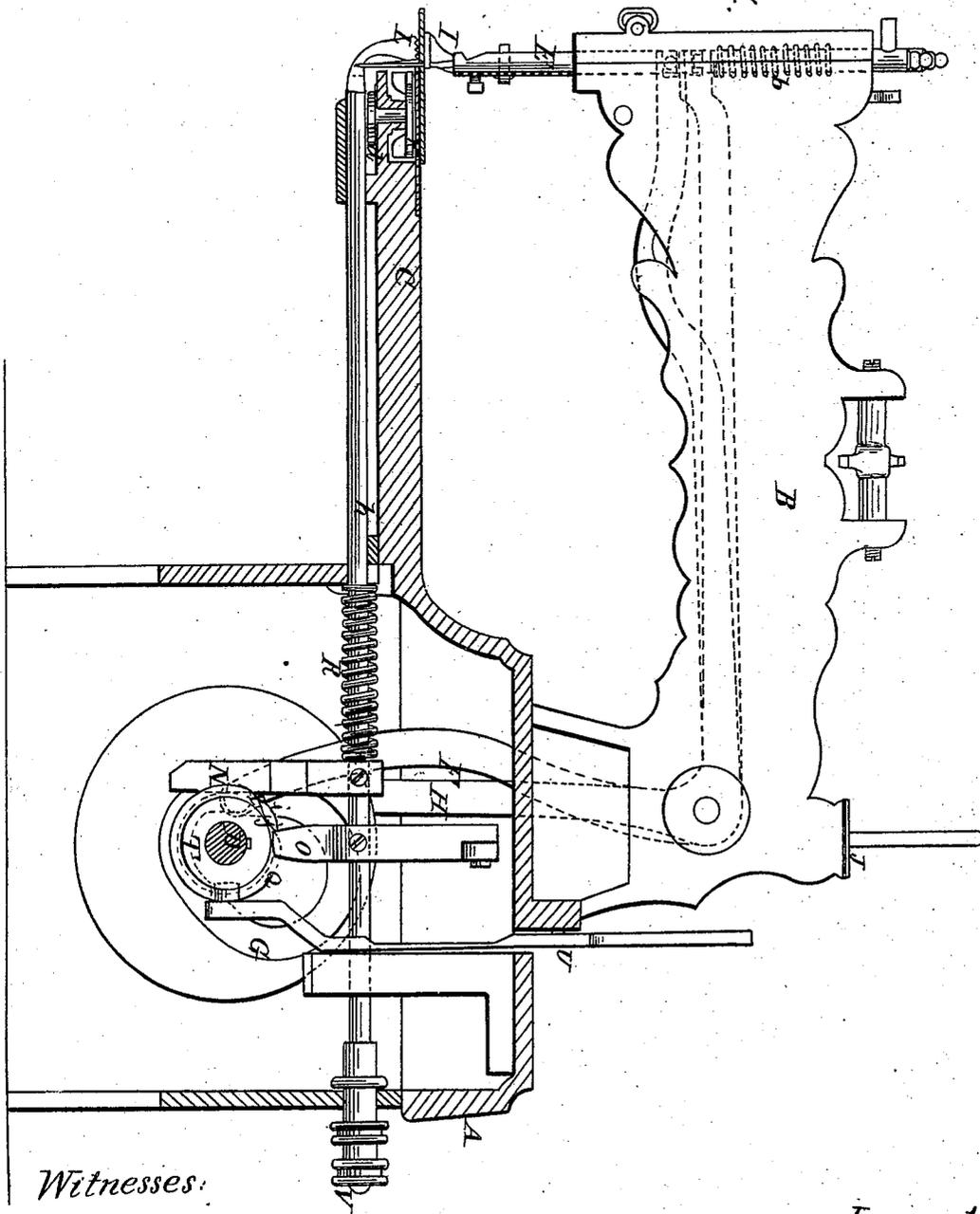


# T. W. Pepper. Sewing Machine.

N<sup>o</sup> 76807

Patented Apr. 14, 1868.

Fig. 1.



Witnesses:

W. Coombs  
A. Bellery

Inventor:

T. W. Pepper

# T. W. Pepper. Sewing-Machine.

N<sup>o</sup> 76807

Patented Apr. 14, 1868.

Fig. 3.

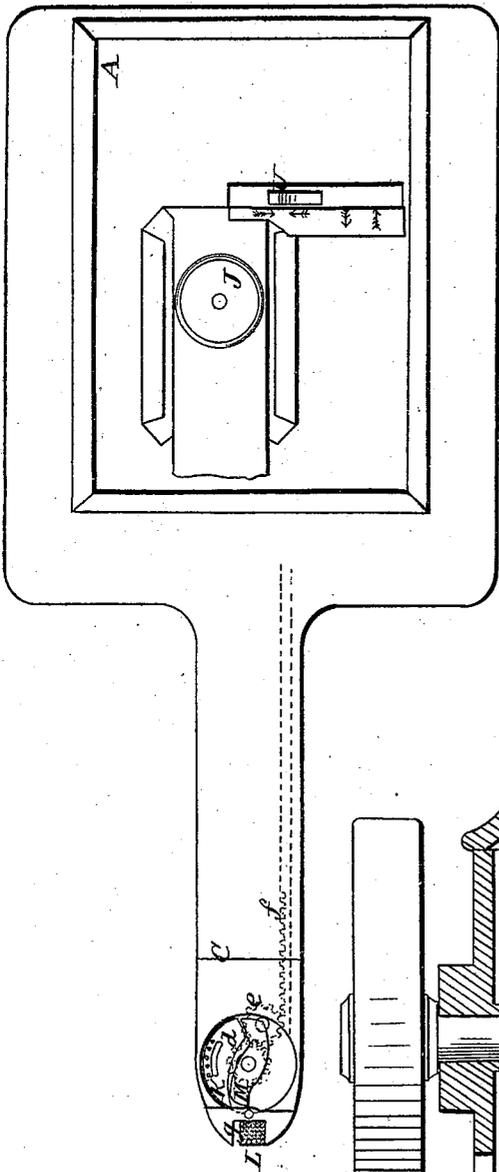
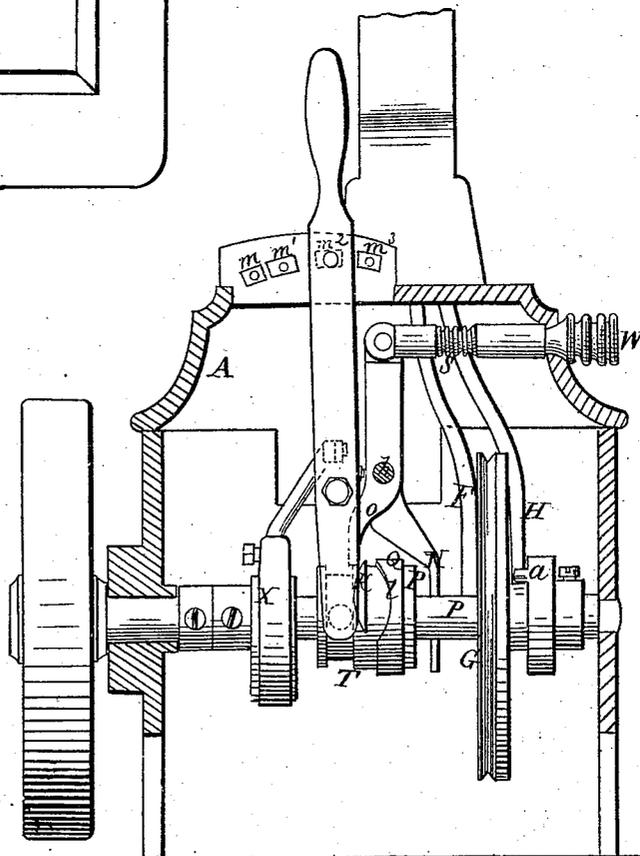


Fig. 2.



Witnesses:

J. W. Corbin  
A. S. Kelley

Inventor:

T. W. Pepper

# United States Patent Office.

T. W. PEPPER, OF NEW YORK, N. Y.

Letters Patent No. 76,807, dated April 14, 1868.

## IMPROVEMENT IN SEWING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, T. W. PEPPER, of the city, county, and State of New York, have invented a new and useful Improvement in Sewing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming a part of this specification, and in which—

Figure 1 represents a partly sectional longitudinal elevation of a sewing-machine, or machine in part, in illustration of my invention.

Figure 2, an irregular transverse sectional elevation of the rear or driving portion of the machine, and Figure 3 a partly sectional plan, or top view, of the bed portion of the machine.

Similar letters of reference indicate corresponding parts.

This my invention has reference more particularly to those descriptions of sewing-machines which employ a narrow sewing-table, such as are used in the manufacture of boots and shoes, also applicable, however, to various tubular and other work.

My invention, in this connection, consists, firstly, in a certain combination of means for effecting such variable action or feed; also, in combination with a feeder, operating substantially as described, of a swinging or curvilinearly-oscillating shuttle; and, furthermore, in connection with a feed arranged at the end of the table, of a double pinion and rack arrangement or combination for operating the shuttle-driver, and whereby the reciprocating or driving-rack may have a full motion given it to oscillate the shuttle curvilinearly without protruding or working beyond the end of the table to interfere with the work on the table, or limit its position thereon relatively to the extreme end or point of the table.

Referring to the accompanying drawing, A represents the frame or box portion of the machine, B its goose-neck, and C the narrow work-supporting table. D is the main or operating-shaft, which is made to revolve by any suitable means, and E the needle-bar, with needle attached, actuated by a bell-cranked arm or lever, F, that gears with a grooved cam or disk, G, fast on the shaft D, while another arm or lever, H, operated by a revolving stud, *a*, in connection with said shaft, serves, in conjunction with a spring, *b*, to give the necessary intermittent reciprocating action to the presser-foot I, to insure its timely hold on and release of the material or article being stitched. J is the bobbin-holder at the rear of the machine, from a spool on which the needle draws its supply of thread, and K is a curvilinearly-reciprocating shuttle, for carrying the locking-thread and passing it through the loop of the needle-thread, as well understood in other sewing-machines, but which shuttle is here arranged in a race for operation close to the front end of the table C, in connection with the needle and a feeder, L, situated at the end of said table, and having a peculiar action or combination of actions as hereinafter described. M is the shuttle-driver, hung on a vertical shaft or axis, *e*, and having a reciprocating curvilinear motion communicated to it by means of pinions *d* and *e* and a rack, *f*, driven by an eccentric, X, on the main shaft D.

The reason for thus operating the shuttle-driver by pinions *d* and *e*, the one in rear of the other, and the rack in gear with the rearmost, is, in an arrangement such as this where the sewing and feeding-devices are situated close up to the forward end of the table C, to give a sufficient length of throw to the shuttle-driver without the protrusion of the rack *f*, in its forward stroke, through the end of the table, which would be the case were the rack in direct gear with the pinion *d*, and would interfere with the work being manipulated close up to the end of the table, and thus the advantages incidental to the arrangement of the feeding and sewing-devices be counteracted or lost.

The feeder L, that may be serrated, and plays in or through a notch or opening, *g*, in the forward end of the table, is hung on, attached to, or forms part of a rod or bar, *h*, running from front to back of the machine, and is free to reciprocate longitudinally, or to partly turn or oscillate in its bearings, according to the direction required to give the feed. This rod *h* carries arms or levers N O, which are operated respectively, the one, N, by either of two cams, P Q, flattened or swelled, say, as seen at *i*, *j*, in fig. 1, to produce, in connection with a spring, R, a longitudinal action of the rod *h* and feeder L, while the other lever, O, is operated by swells or cam formations *k* *l*, to give, in connection with a spring, S, an oscillating motion to the rod *h*, and transverse action

to the feeder. The cams P Q and cam formations  $k l$  are all made in, on, or carried by, and constitute a sliding clutch, T, on the main shaft, with which it turns, so that, by means of a clutch-lever, U, fitting and locking into notches  $m m^1 m^2 m^3$ , either one of the cams, P Q, may be thrown into gear with the lever N, or cam formations  $k l$  into gear with the lever O; and these cams or cam formations are so pitched as to vary their time or times of action relatively to the action of the needle and presser-foot I; that is to say, when the lever U is in lock with the notch  $m$ , then the clutch T throws the cam Q into gear with the lever N, so as to give, say, an intermittently-reciprocating longitudinal forward feed to the feeder L, relatively to the action of the presser-foot I, while, when the lever U is thrown into lock with the notch  $m^1$ , then the longitudinal feed of the feeder L is, by reason of the formation, on the periphery, of the cam P, with which the lever N is in gear, in a reverse or back direction. The same principle of action applies to the lever  $o$  in its gear with either of the cam formations  $k l$ , by sliding the clutch T, and locking the lever U in the notch  $m^2$  or  $m^3$ , the formations  $k$  or  $l$  being so timed or pitched, relatively to the action of the needle and presser-foot I, as to give to the material a transverse feed, the one to the right and the other to the left, as occasion may require. Adjusting-screws, V W, may be used to regulate the extent of feed in either of these directions, by shifting the positions of the levers N O relatively to their operating-cams.

From this description it will be seen that not only may the feed be a forward one, at the extreme end of the table, thus allowing the work to be closer manipulated, say, in the case of a boot or shoe, up to the very toe, but that, without shifting the work, which, for cross-stitching, as in tubular work it is not always practicable to do, the feed of the work relatively to the needle may, by adjustment through the lever U of the clutch T, be made longitudinally, forward, backward, or transversely, to the right or left, across the table C, and this without of necessity stopping the machine, but simply changing the action of the clutch T through its cams or cam formations upon, in point of time relatively, the action of the presser-foot, the levers N or O.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The combination of the sliding clutch T, with its cams or cam formations, levers N O, and rod  $h$ , with its feeder L, for operation in concert with a presser-foot, I, as herein set forth.
2. The combination of the reciprocating shuttle K, with the feeder L, needle, and presser-foot I, at the extreme forward end of the table C, all-constructed and arranged as shown and described.
3. In combination with the shuttle-driver, M, at or near the forward end of the table C, the pinions  $d e$  and rack  $f$ , substantially as and for the purpose herein set forth.

T. W. PEPPER.

Witnesses:

A. LE CLERC,  
J. W. COOMBS.