

PEPPER, PLANER & KAYSER.

Sewing Machine.

No. 45,628.

Patented Dec. 27, 1864.

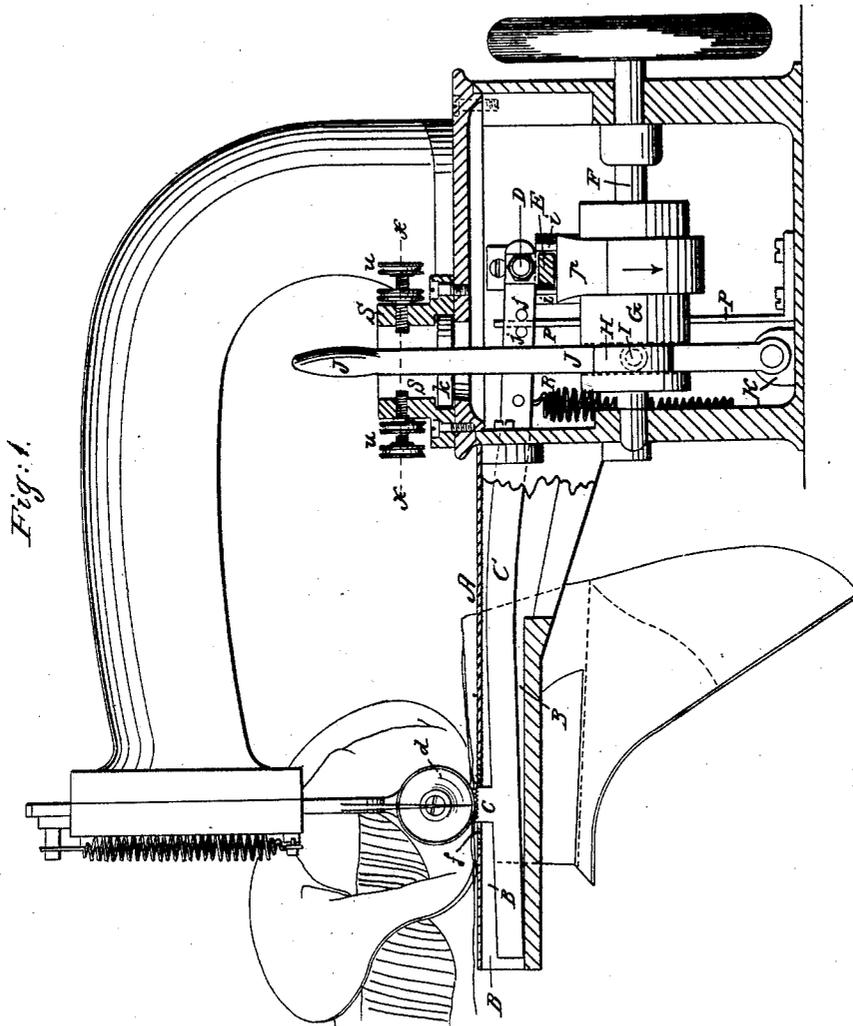


Fig. 1.

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IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 45,628, dated December 27, 1864.

To all whom it may concern:

Beit known that we, T. W. PEPPER, L. PLANER, and J. KAYSER, all of the city, county, and State of New York, have invented certain new and useful Improvements in Sewing-Machines; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a sectional side elevation, portions of the frame removed to exhibit the working parts of our improvements in sewing-machines. Fig. 2 is a rear elevation of the same, sectional. Fig. 3 is a top view of the same, the top plates over the table, with top standard or needle-arm removed. Fig. 4 is a horizontal section of the feed-regulating lever and guide, taken in a plan indicated by the dotted line *x x*, Fig. 1. Fig. 5 is a plan view to indicate the course of feeding and sewing around the rear seam of shoe-uppers or tubular articles.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is more particularly for making longitudinal seams on tubular articles—such as shoe-uppers—and the sewing from outside to the inside, instead of from inside to the outside, of such articles, whereby a great deal of labor and inconvenience to the operator is saved.

The nature of the invention consists, first, in the arrangement of the feeding devices with the sewing-table, pressure-roller, and needle, by means of which the machine is made to feed tubular articles longitudinally while the needle is stitching from the outside to the inside of such articles.

Secondly, it consists in the arrangement and construction of the feeding devices with a lever, by means of which the feed of the machine is changed or reversed and regulated and stopped while the machine is in motion, affording great convenience to the operator.

Finally, it consists in the particular arrangement and construction of parts for producing a feed to sewing-machines.

To enable others skilled in the art to make and use our invention, we will proceed to describe its construction and operation.

We construct the frame of the machine in a proper common form to admit of the working

parts being easily placed, but with a narrow sewing-table, A, attached and extending forward to a distance suitable for tubular work—such as shoe-uppers—to slide over it, as shown in Figs. 1 and 3, exhibiting the outside of the article to the needle, as hereinafter described.

The needle-bar and pressure pad or roller *d* are arranged and operated in the standard or arm of ordinary construction, fixed to the top plate of the frame, and are located, as usual, above the needle-hole *a* in the top of the sewing-table. The latter is provided with the ordinary shuttle-groove, *b*, but running longitudinally parallel with the table. (Shown in Fig. 3.)

B is a secondary groove in the sewing-table, parallel with the shuttle-groove, and passing closely to the needle-hole *a*, as shown in Figs. 1 and 3.

C is the feed-lever, made and fitted to slide in the groove B, resting with one end in the bottom, near the end of said groove B, and having a projection, *c*, with a rough surface opposite to the pressure-roller *d*. The same is arranged to work through a slot, *e*, in the top plate, *f*, of the table A. The other end of the feed-lever C rests on a stud, D, fixed to the end of a secondary lever, E, placed at right angles to the lever C. (Shown in Figs. 1 and 3.)

F is the common driving-shaft, which, when provided with the usual cams, transfers motion to the shuttle and needle-bar.

G is a cam fitted over the shaft F, and provided with a groove to work over a sunk key fixed in the shaft F, in order to allow the cam to slide longitudinally, but not around the shaft F. The end of this cam G is provided with an annular groove, H, in which a friction-roller, I, forming part and being attached to a vertical lever, J, is made to work. The lower end of the lever J is pivoted to the side of small standard K, which latter is screwed to the bottom of the frame of the machine. Thus by moving the upper end of the lever J the cam G is moved or set.

L, Figs. 2 and 3, is a vertical standard, screwed to the side of the frame by screws M M, passing through vertical slots *g g* in the side of the frame. To the upper end of this standard L is hinged a vertical stud, N, upon which the lever E works in a horizontal direction.

The cam G is provided with a projection, *h*,

and two studs, *i i*, on its periphery, to work against the under side, as well as on either side of the lever E, thus raising the lever and moving it sidewise when rotating in the direction shown by arrows, Figs. 1 and 2.

O is an arm bolted to the side of the frame and faced with some soft material—such as leather—to form a rest for the end of the lever E when not in action.

P is a vertical flat spring fixed to the bottom of the frame, the upper end of the same passing close between two steady-pins, *j j*, riveted to lever C.

R is a spiral spring, one end of which is attached to the lower part of the frame, the other end taking hold of the lever C and pulling it in a downward direction.

S is a box-shaped standard or guide screwed to the top plate of the frame and surrounding the upper portion of the lever J. (Shown in Figs. 1 and 4.) In the lower portion of this standard S are two flat springs, K K, placed in horizontal recesses made in the lower portion of this standard S on the opposite sides of the flat part of the lever J.

T T are set-screws, which bring the springs in a desirable contact with the lever J' to cause them to grasp forcibly on the lever and thus keep the same at whatever position it is set to.

In the upper part of the standard S are set-screws U U, the ends of which serve as stops, and also to regulate the throw of the lever J. (Shown in Figs. 1 and 4.)

The spring P is arranged so as to bring the horizontal levers C and E always to a normal position, which is had when the levers are at right angles to each other, and the lever J is so arranged with the studs *i i* on the cam G that when the former is in a central position between the stops or set-screws U U the studs *i i* will pass by the sides of the lever E in rotating with the cam G, and leaving the levers E and C in the position indicated by the spring P; but it is obvious that by changing the position of the lever J against one of the stops or set-screws U U the studs *i i*, when coming in contact with the lever E, in rotating with the cam G, will then force the levers E and C to move in the same direction until the studs *i i* have passed by, at which time the spring P will indicate the motion again and bring the levers E and C back to their normal position. The projection *h* on the cam G acts in harmony with the studs *i i*, and as soon as the lever E is dropped upon the stop O, by the aid of the spring R, the projection *c* on the feed-lever C is drawn below the top of the table A, or withdrawn from acting against the work, and by the following motion of the spring P, taking its normal position, the feed-lever C, with

the projection *c*, is again prepared to be raised against the pressure-roller *d*, taking hold of the work and moving it to the next stitch by the action of the cam G and studs *i i*. Thus it is perfectly clear that the position of the lever J controls as well the amount of feed as a forward or backward direction; also, that by raising or lowering the standard L the vertical motion of the projection *c* and the feed-lever C may be adjusted.

In sewing around the rear seam of tubular work—such as shoe-uppers—as shown in red lines in Figs. 1 and 3, it will be observed that, having the feed arranged longitudinally with the narrow table, longitudinal seams are made presenting the outside of the work to the eye of the operator, and by commencing the seam at one end of the tube and sewing a seam to the other end another seam is readily made parallel with it by simply changing the lever J to feed reversely without stopping the machine, and the operator having perfect control of the same. The course of such seams is shown in Fig. 5 by arrows and dotted lines. The present manner of doing such work is to place the outside of the shoe-upper or tube (shown in blue lines in Figs. 1 and 2) on a common wide-table machine, having the feed arranged transversely with the needle-arm or standard, and to bend one side of the shoe-upper back to allow the pressure-roller and needle-bar to operate upon it, and thus obstructing the operator's view of the work, it generally results in an imperfect and very slow operation.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The arrangement of devices, as above described, for effecting a longitudinal feed-motion, in combination with the narrow sewing-table A, for the purpose herein stated.
2. The arrangement and combination of the compound levers C and E with the springs R and P, and the cam G and studs *i i*, for the purpose of producing a feed for sewing-machines.
3. The employment of the lever J, in combination with the cam G and studs *i i*, and the levers E and C, for regulating and changing or reversing and stopping the feed-motion of sewing-machines.
4. The arrangement of the standard L, with the lever E and cam G, to regulate the vertical throw of the feed-lever C, as herein described.

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