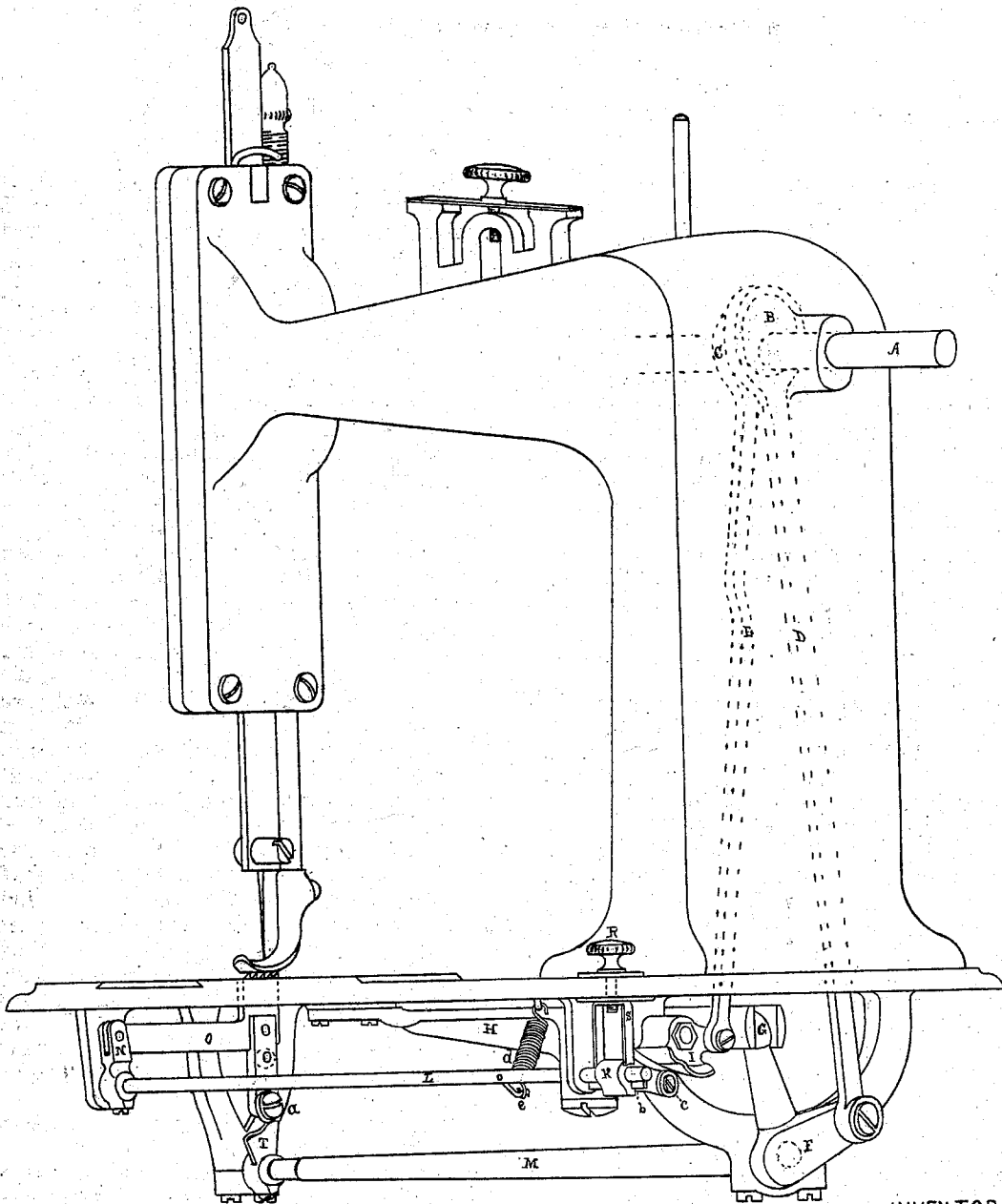


W. C. PICKERSGILL.

Sewing-Machines.

No. 136,616.

Patented March 11, 1873.



WITNESSES.

Wm. H. Hume

E. L. Howland.

INVENTOR.

Wm C Pickersgill
per B F Thomsen
att

UNITED STATES PATENT OFFICE.

WILLIAM C. PICKERSGILL, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO
PROVIDENCE TOOL COMPANY, OF SAME PLACE.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 136,616, dated March 11, 1873.

To all whom it may concern:

Be it known that I, WILLIAM C. PICKERSGILL, of the city and county of Providence, in the State of Rhode Island, have invented certain new and useful Improvements in Sewing-Machines; and I do hereby declare that the following specification, taken in connection with the drawing making a part of the same, is a full, clear, and exact description thereof.

The drawing exhibits an elevation of a sewing-machine with my improvements.

The machine in which I have embodied the several features of my invention, and which is herein described, is believed by me to be an improvement on that class of machines in which the vibratory movement of the shuttle-lever is obtained from a bifurcated bar, which vertically vibrates on a fixed pivot and straddles or embraces between its arms a revolving cam mounted on the operating-shaft.

In the drawing, A represents the operating-shaft. B is an eccentric wheel set thereon. This eccentric gives a vibratory movement to the rocker-shaft M, arranged in suitable bearings underneath the table of the machine, through the means of the link D, the lower end of such link being pivoted to the crank F in said shaft M. At right angles with the crank F, or nearly so, there is an upwardly-projecting arm, G, the end of which is made into the form of a ball and engages with the straddle-fork end of the shuttle-bar H, and imparts the necessary vibratory movement to the latter to work the shuttle. With this arrangement of the connections between the shuttle-lever and the source of motion no extreme nicety of construction is required or difficulties of adjustment exist in order to obtain the proper traverse of the shuttle.

A portion of my present improvement consists in the combination of devices for working the four-motion feed employed in this machine. This portion of my invention consists in the combination and arrangement of the devices for giving the vertically-reciprocating movement of the feed-bar, and the arrangement and combination of devices for giving the horizontal reciprocatory movement to the feed-bar and regulating the length of the stitch.

The rock-shaft M, before referred to, is furnished with a toe, T, the face of which can be readily shaped so, as it vibrates with the shaft to which it is attached, that the necessary up-and-down movement can be given to the feed-lever O, which is pivoted at its rear end, at N, to an arm keyed to the rock-shaft L, presently to be referred to. A friction-roller, *a*, is set in the under face of the lever O, or in a foot-piece, which roller rides on the face of the vibrating toe T. This arrangement accomplishes simplicity of construction and easy adaptation of the parts to each other. I is a constantly vibrating cam-face, made so by means of an eccentric, C, on the shaft A, and the connecting-link E, the block to which such cam-face belongs being pivoted to a down-hanger, S. K is an arm, the hub of which is fitted to slide on the shaft L, and which latter is hung in bearings in down-hangers underneath the surface of the cloth-plate or table and parallel therewith. A spline, *b*, connects such arm with the shaft L, and a roller, *c*, in the arm, is kept in constant contact with the cam-face I by means of a coiled spring, *d*, which is attached at one end to a pin, *e*, projecting from the shaft L, and at the other end to a fixed eye on the under surface of the table. The arm K can be moved to and fro on the shaft L by the operator so that the roller *c* shall bear upon any section of the cam-face I, and a clamp, R, secures the same at any fixed point. Now, the extent of vibration of the shaft L obviously depends upon the position of the roller *c* upon the cam-face I, and consequently the feed-bar O will have a longer or shorter extent of reciprocatory movement, correspondingly.

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

1. The combination of devices for giving to the shuttle-lever a horizontally vibrating movement, and also for giving vertical movement to the feed-bar, the same consisting of the eccentric on the main shaft, its pitman or link D, and the vertically-vibrating bell-crank lever, connected with the shuttle-lever by means of a spheroidal tip embraced within a bifurcation, and operating a toe-cam below and

adjacent to the feed-bar, substantially as described.

2. The combination of the vibrating cam-face I, adjustable presser-arm K, rocker-shaft L, and feed-bar O, substantially as described.

3. The combination, with the feed-bar, of the vibrating toe T, the vibrating cam-face I, both of which are respectively operated by

the eccentrics B and C, and the presser-arm K, made adjustable with relation to the cam-face, substantially as and for the purposes specified.

W. C. PICKERSGILL.

Witnesses:

BENJ. F. THURSTON,

I. KNIGHT.