

W. J. TATE.
Sewing-Machine.

No. 113,704.

Patented Apr. 11, 1871.

FIG. 1.

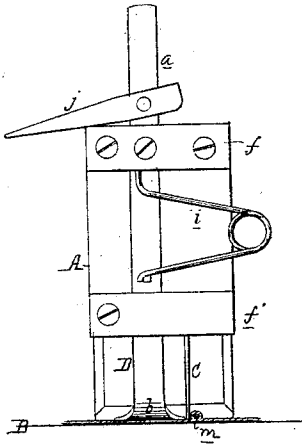


FIG. 2.

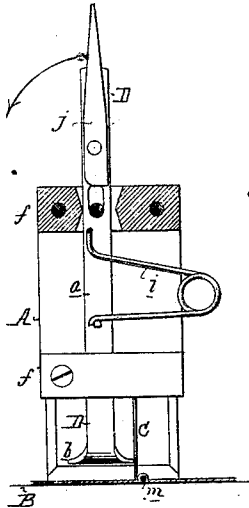


FIG. 3.

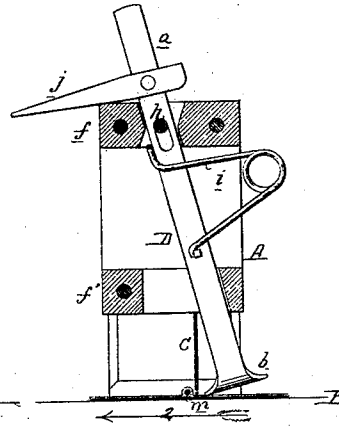


FIG. 4.

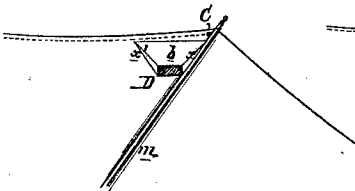


FIG. 5.

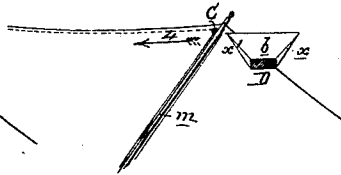
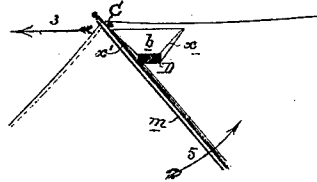


FIG. 6.



WITNESSES { *Geo. B. Harding.*
Harry Smith

W. J. Tate
by his Attor
Howson and Son.

UNITED STATES PATENT OFFICE.

WILLIAM JOHN TATE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
WILLIAM A. DROWN & CO., OF SAME PLACE.

IMPROVEMENT IN SEWING-MACHINES FOR UMBRELLAS AND PARASOLS.

Specification forming part of Letters Patent No. **113,704**, dated April 11, 1871.

I, WILLIAM JOHN TATE, of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented an Improvement in Machines for Sewing Umbrellas and Parasols, of which the following is a specification:

Nature and Object of the Invention.

My invention relates to an improvement in the sewing-machine described in the patent granted to me on the 20th day of July, A. D. 1870, for mechanism for retaining, adjusting, and sewing umbrellas and parasols; and my improvement consists in the substitution of a single presser-foot of peculiar construction and operation for the two presser-feet described in the said patent.

Description of the Accompanying Drawing.

Figure 1 is a front view of part of a sewing-machine with my improvement; Figs. 2 and 3, the same, partly in section, showing the successive movements of the presser-foot; and Figs. 4, 5, and 6, sectional plan views of the presser-foot, illustrating the manner of operating the same when sewing the cover of an umbrella or parasol close up to and over the ribs.

General Description.

In my aforesaid patent of July 20, 1870, two presser-feet, acted on by springs capable of being raised independently and having their inner edges inclined in respect to each other were used, for the purpose of enabling the sewing on the edge of the cover of the umbrella or parasol to be brought close up to and over the ribs without injury to the needle.

The operation was as follows: The umbrella, either guided by hand or by a holder so pivoted as to enable the curved edges of the cover to be fed regularly to the needle by an ordinary feed-motion, was held down upon the work-plate by the presser-feet until the sewing approached a rib. One of the presser-feet was then raised, as it would otherwise be struck by the rib, and the sewing was continued until brought close up to the said rib, and until the side of the latter was in contact with the inclined edge of the presser-foot which still remained down. This latter presser-foot was then also raised, and the whole umbrella was

turned upon the needle as a pivot until the curved edge of the next section of the cover was brought in a proper position in respect to the said needle, the angle of the rib being also changed until it rested against the inclined edge of the first-mentioned presser-foot, which was then lowered. The sewing was then continued, the needle passing over the rib without striking, and the latter passing beneath the raised foot, which was afterward lowered.

My present invention consists of a single presser-foot, constructed and operating as I will now proceed to describe, so as to effect the above results as readily as by the use of two presser-feet.

On reference to the drawing, A represents a portion of the fixed arm of a sewing-machine, of which B is the work-plate, C the needle, and D the presser-foot, the latter consisting of a straight bar, *a*, terminating at its lower end in the foot proper, *b*.

The presser-arm D passes through slotted guides *f* and *f'* formed on or secured to the end or head of the fixed arm A of the machine, and is pivoted to the latter, within the upper guide, by a pin, *h*. The arm is slotted, however, at the pivoting-point, as shown in Figs. 2 and 3, so that it can be raised and lowered as well as turned upon the said pin.

The foot is held down upon the work-plate, as shown in Figs. 1 and 3, by a spring, *i*, arranged in any suitable manner; and it can be raised from the work-plate, as shown in Fig. 2, by a cam or lever, *j*, hung to the arm, and arranged to bear upon the top of the upper guide, *f*, when turned.

When the foot is lowered, by turning the cam-lever *j* in the direction of the arrow, Fig. 2, it will, owing to the pressure of said cam-lever, the action of the spring *i*, and the shape of the slots in the guides, be adjusted, as it is lowered, to the inclined position shown in Fig. 3. The slots in the guides will, however, as the sewing progresses, permit the bar to assume the vertical position shown in Fig. 1, owing to the motion of the feeding device in the direction of the arrow 2.

The foot proper, *b*, has its opposite edges *x* and *x'* inclined in opposite directions, as plainly shown in Figs. 4, 5, and 6. These in-

clined edges serve as guides for the ribs in sewing umbrellas or parasols, and permit the needle to be brought close up to, without striking against and being injured by, the said ribs, as I will now proceed to describe.

Let it be supposed that an umbrella, the curved edges of which are to be sewed, has been adjusted beneath the presser-foot, as shown in Figs. 3 and 6, that the rib *m* of the umbrella rests in an inclined position against the inclined edge *x'* of the foot, and that the needle has penetrated the edge of the cover close up to the rib. The umbrella is held or guided in any suitable manner so as to present its curved edge to the needle, the feed carrying the work in the direction of the arrow 3 in Fig. 6 until a rib is approached, as shown in Fig. 4, the sewing being carried close up to the rib until the latter is brought against the inclined edge *x* of the foot, which prevents any further feeding of the work and the consequent striking of the rib by the needle. The motion of the machine is then stopped and the foot raised, as shown in Figs. 2 and 5, when the needle is also raised and the work moved slightly in the direction of the arrow 4 in Fig. 5, when the needle is again caused to descend on the opposite side of the rib. The umbrella is then turned upon the needle as a pivoting-point in the direction of the arrow 5 in Fig. 6 until brought to the position shown in the latter figure, when the foot is caused to descend at the same time that it is moved laterally, so

that it may cross over the rib, after which the sewing proceeds as before.

Although I prefer that the presser-foot should be pivoted and slotted, as above described, it will be evident that the required lateral movement could be imparted to it by causing it to slide horizontally when raised instead of vibrating.

It will be evident, without further explanation, that by a single presser-foot, operated as above described, and having double inclined edges, the same results can be obtained as by the use of the two presser-feet described in my former patent.

Claims.

1. A presser-foot for sewing-machines arranged to be moved laterally when raised above the work-plate, and having double inclined edges *x* and *x'*, all substantially as specified.

2. The presser-foot having inclined edges *x* and *x'*, and pivoted to a fixed portion of the machine, slotted at the pivoting-point, acted on by a suitable spring, and operated by a cam or lever, *j*, substantially in the manner described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WM. J. TATE.

Witnesses:

WM. A. STEEL,
FRANKLIN B. RICHARDS.