W. B. HIGGINS.

Sewing-Machine Treadle.

No. 168,565. Patented Oct. 11, 1875.

Fig. 1

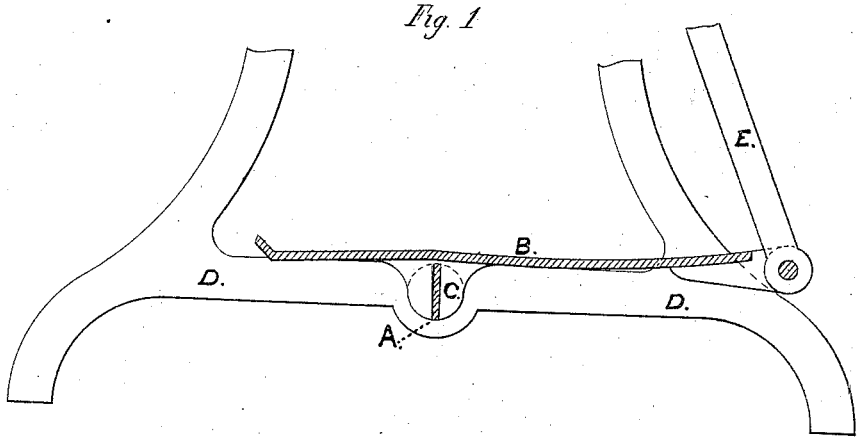
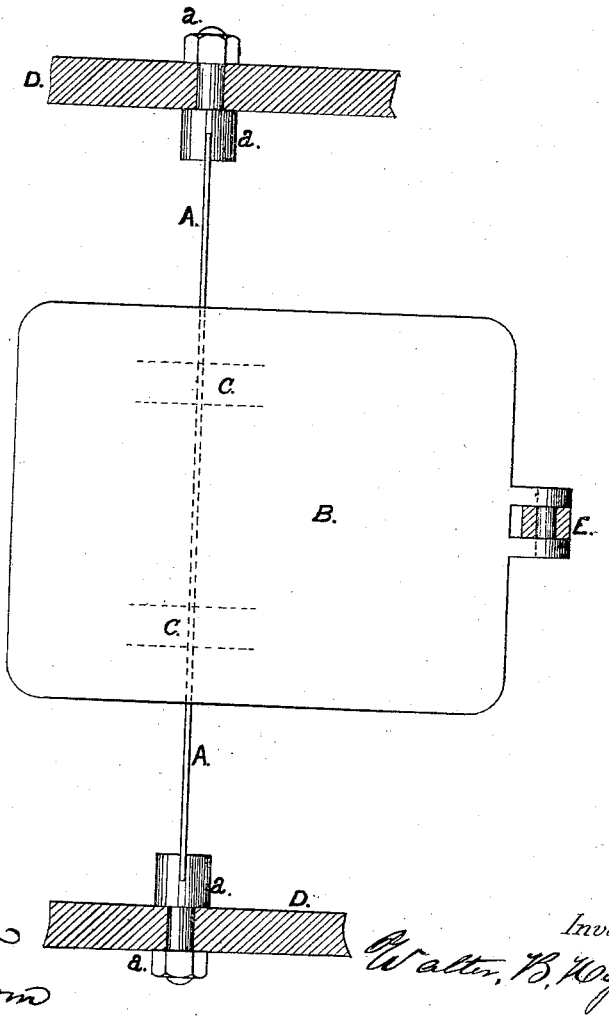


Fig. 2



Witnesses:

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WALTER B. HIGGINS, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN SEWING-MACHINE TREADLES.

Specification forming part of Letters Patent No. **168,565**, dated October 11, 1875; application filed March 13, 1875.

To all whom it may concern:

Be it known that I, WALTER B. HIGGINS, of San Francisco, in the State of California, have invented a certain new and useful Improvement in Sewing-Machine Treadles, of which the following is a specification:

The object of my invention is to render the work of running sewing-machines by foot-power less laborious, and to avoid the use of oil in the lower part of the table, which is attended with more or less injury to the carpet beneath, as well as to the clothing of the lady operator; and these results I effect by removing the rock-shaft or rod joining the lower part of the table-frame together, and upon which the treadle or sandals rock, and substituting for it a thin elastic blade of metal, A. This blade is held at either end by the bolt and nut *a* in the lower ends of the table legs or frame, and it supports the sandals B, which ride upon it, as shown in Figures 1 and 2 of the accompanying drawings, where D D are the lower portions of the frame or legs; B, the sandals, and E the pitman operating the driving-shaft above. The sandals are secured in a fixed manner with reference to the elastic blade A by means of the lugs C C, projecting from the under side, which grasp the blade passing through them, so that the sandals B have no motion upon it except that allowed by virtue of the quality of torsion possessed by the blade due to its elastic nature; and this quality allows the proper rocking motion to be given to the sandals by the feet of the operator for working the pitman E, connected with the crank of the driving-shaft, without producing any friction, and with less labor on the part of the person running the machine.

In the case of the treadles and tables now in use the bar or rod is either held tightly between the sides of the legs, and the sandals work upon it between collars on the rod, or else the rod and sandals are connected together rigidly, and the ends of the rod are held in openings or bearings in the table-legs, so that the rod works as a rocker-shaft as the sandals are moved, and in either arrangement an amount of friction is created which increases the amount of power required, and in order to reduce which the use of oil is made necessary. These constructions thus add to the imperfect working of the machine, as well as to the rapid wearing of the parts, because the oil used to facilitate the running of the driving mechanism also acts to collect and hold particles of grit and dust from the carpet or the clothing and shoes of the operator, so that in a short time these parts in a machine constantly used become so worn and cut by the grinding action of such particles as to render it necessary to replace them with new ones.

All these objections I overcome by employing the elastic blade A in the manner before stated, and as shown in the accompanying drawing, as no frictional surfaces exist, and the use of oil is avoided; and, further, from the nature of its construction, the torsion given to the blade as the sandal is rocked in one direction aids to move it in the contrary direction, as the feet of the operator give pressure to the other part of the sandal, and thus the alternate twist given to the blade A—first in one direction, as the toe of the sandal is depressed, and then in the opposite one, as the pressure is applied to the heel—acts to lighten the labor of the operator by virtue of the forces of reaction that take place.

Another advantage gained by the use and arrangement of the elastic blade is, that by virtue of the quality of flexure it possesses, a slight forward movement of the sandals is permitted, as the feet of the operator press forward upon them, and this play or slightly vibratory movement of the sandals is a great relief to the limbs of the operator in running a machine rapidly or continuously.

The ends of the blade A are held rigidly and at the proper tension by means of the bolts and nuts *a*, which pass through the sides of the table frame or legs near the floor, as shown, and into the heads of these bolts the blade-ends are fastened by welding or otherwise securing them.

It is evident that other means for fixing the sandals properly to the blade A may be substituted for the lugs C C without departing from the nature and essence of my invention, which consists essentially of an elastic metal blade secured in a fixed manner to the lower end of the table frame or legs, and connected rigidly to the treadle or sandals; but I pre-

fer this manner of arranging and uniting them with each other, as the strength of the blade is not weakened by having holes or slots cut in it.

It will be seen, further, that my invention can be applied with advantage to the treadles of any sewing-machine, as well as to those of other machinery operated by foot-power.

Having thus fully described my invention, and the manner of constructing and applying it, what I claim, and desire to secure by Letters Patent, is—

1. In combination, the sandals B, pivoted at their front end to the pitman E, the thin metal blade A, set on edge and secured rigidly to the under side of the sandals, substantially as described and shown.

2. In combination, the sandals B, pivoted at their front end to the pitman E, the thin metal blade A, set on edge and secured rigidly to the under side of the sandals, the said blade A having its ends adjustably secured in the table legs or frame, adapted to have its tension changed at pleasure, substantially as described and shown.

3. The combination, with table legs or frame D, of the thin metal strip A and the bolts and nuts *a*, substantially as described and shown.

WALTER B. HIGGINS.

Witnesses:
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