F. M. WEAVER.

Caster Treadle Stands for Sewing-Machines.

No. 211,283. Patented Jan. 7, 1879.

Fig. 1.

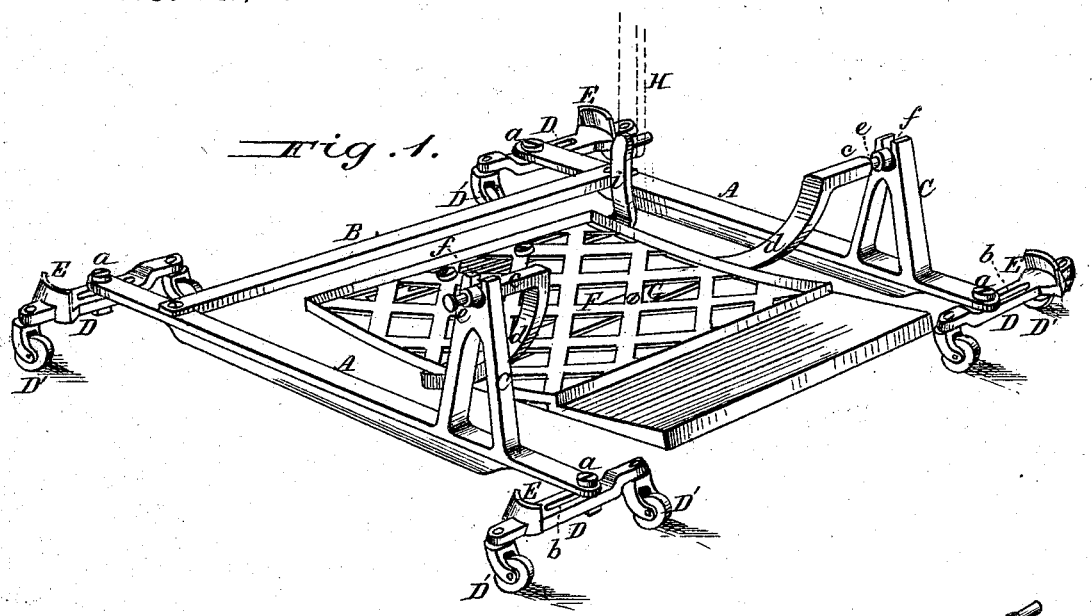


Fig. 2.

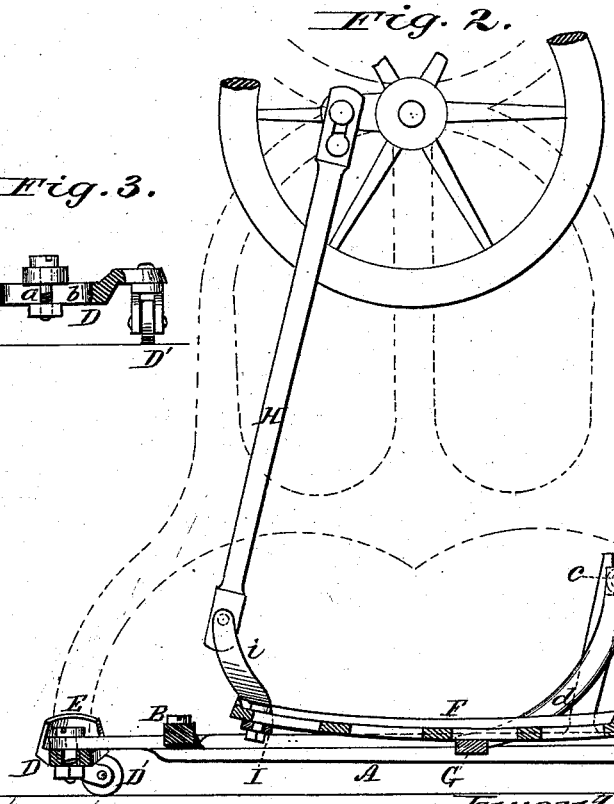


Fig. 3.

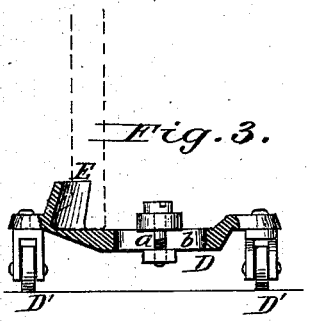
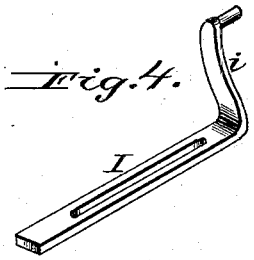


Fig. 4.



Attest:
H. L. Pennie
Floyd Morris

Inventor:
Francis Marion Weaver
By Johnson & Johnson Atty's

UNITED STATES PATENT OFFICE.

FRANCIS M. WEAVER, OF COLUMBUS, OHIO, ASSIGNOR OF ONE-HALF HIS RIGHT TO ANDREW GREENER, OF SAME PLACE.

IMPROVEMENT IN CASTER TREADLE-STANDS FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. **211,283**, dated January 7, 1879; application filed December 3, 1878.

To all whom it may concern:

Be it known that I, FRANCIS MARION WEAVER, of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Caster Treadle-Stands for Sewing-Machines, of which the following is a specification:

My invention is a caster treadle-stand for sewing-machines—that is to say, a caster-stand upon which the machine is mounted, and upon which the treadle is hung, making an independent treadle-stand adapted for use with any standard sewing-machine, and rendering it easily movable.

The treadle is mounted upon a hanging cranked rock-shaft, in a manner to give a central bearing for the foot-plate and allow the operator to have equal control with his heel and toes and a natural swinging motion of his foot—that is, extending the depressed part of the rock-shaft arms from its cranked bearings away from the operator, so as to give a central position of the foot-plate thereon, and an equal leverage for the heel and toes in working the treadle, while at the same time obtain the advantage of having the ankle-joint in line with the cranked bearings, whereby the treadle is always in a balanced position with respect to the foot and the ankle-joint, and the foot in position to apply the power to the treadle to move the same by the heel as easily as by the toe, which advantage cannot be obtained when the depressed part of the swinging rock-shaft is in a vertical line with the ankle-joint and near the heel end of the foot-plate. This feature of my invention renders the treadle applicable to any machine independent of the caster-stand. The treadle is made adjustable laterally upon its cranked bearings to facilitate the adjustment of the pitman to the crank-pin in applying the device to different machines; and, in connection with such adjustment, the pitman attachment with the treadle is made adjustable laterally, so as to readily effect the proper adjustment of the pitman in the event of the adjustment of the treadle upon its bearings not being sufficient to bring the pitman in line with the crank-pin. The caster-bars are likewise made adjustable, to adapt them to receive and support the legs of different machines.

Referring to the drawings, Figure 1 represents, in perspective, a caster treadle-stand for sewing-machines with the treadle-pitman connection; and Fig. 2, a vertical section of the same, showing the curved treadle-support or rock-shaft; Fig. 3, the double caster-bar in section; and Fig. 4, the adjustable pitman-connection.

The treadle and the caster-stand comprise a unity when combined and adapted for use with the standard machine, and to facilitate the changing of the machine in position.

The stand consists of a frame of side bars, A A, suitably connected by a cross-bar, B, or otherwise, and having standard-bearings C C at or near their front ends, upon which is mounted a double cranked shaft of peculiar construction for carrying the treadle in a manner to obtain certain advantages. The frame or stand is supported upon short double caster-bars D, connected to each end of the side bars, and adapted, by means of sockets or suitable seats E, to receive and hold the feet of the machine, which is thereby supported upon the stand.

The caster-bars D are connected to the frame in a manner to admit of their adjustment to suit different machines, and they have a caster, D′, at each end to admit of such adjustment, which is made by a clamp-bolt, *a*, passing through a slot, *b*, in said caster-bar.

The double-cranked rock-shaft is suspended upon the frame-standards C C, and the treadle proper or foot-plate F is secured to said shaft, so as to bring the ankle-joint in line with the journal-bearings of the cranks *c c*, to avoid muscular strain incident to working a treadle having its fulcrum under the feet. This construction, however, is not claimed broadly herein, but only in connection with the extension of the lower portion of such rock-shaft away from the operator, so as to bring it in a position in relation to the foot-plate to equalize the leverage of the heels and toes in working said treadle, and obtain thereby an easily-swinging motion of the foot. As shown, this extension G of the rock-shaft is obtained by

curving the crank-arms *d d* down and toward the rear side of the machine, so as to bring the cross-connection G at or near the middle of the foot-plate and the ankle in line with the journal-bearings, thus giving a backward and forward swing to the treadle, as stated, by the natural action of the feet. To obtain this result the foot-piece must have a fixed attachment upon the cross-connection G and swing with it. This treadle-action, with equal heel-and-toe leverage, is a highly-important matter and advantage in operating sewing-machines, and I do not mean to confine its use with a caster-stand, but to use it in the place of the treadle now in use on sewing-machines.

To adapt the caster treadle-stand for use with different machines, the double-cranked shaft has two or more sets of shouldered bearings, *e* and *f*, to allow the treadle to be adjusted laterally, to bring the pitman H in proper connection with the crank-pin of the machine; and to effect such adjustment accurately and to suit any machine, I provide a laterally-adjustable bar, I, at the toe end of the foot-plate, and connect the pitman to an elevated end, *i*, thereof, so that when the treadle-adjustment is not sufficient the toe-bar is then adjusted.

It will be seen that the extension of the depressed part of the treadle rock-shaft away from the operator serves to balance the foot-plate in relation to the position of the feet and the crank suspension bearings in a manner to divide the leverage equally between the heels and the toes, so as to give an easier movement, and relieve the knees and hip-joints of all stain and unnecessary exertion. In this particular I combine the ankle-joint line of action with an equal heel-and-toe leverage and an easy and uniform movement of the treadle. When the double caster-bars are adjusted to the end frames of the machine they are clamped to the side bars, A A, by the clamp-screws. When the hanging swinging treadle is used without the caster-stand its journal-bearings are mounted in the end frames of the machine in the usual manner.

I claim—

1. The cranked rock-shaft of the swinging treadle, having its depressed part G extended from the journal-bearings in a direction from the operator, in combination with the foot-plate F, secured centrally upon said depressed part to divide the leverage of the heel and toe between treadle-bearings arranged in the line of the ankle-joint.

2. The combination of a hanging and swinging treadle and its connected pitman-rod with a caster-stand, upon which it is mounted for use, substantially as herein set forth.

3. A caster-treadle stand for sewing-machines having standard-bearings C C for a hanging swinging treadle, and adjustable double caster-bars, with socket holds or seats E, to receive the feet of the machine and clamp said treadle-stand thereto.

4. The treadle adapted for lateral adjustment upon the standard-bearings C C by means of the separate shouldered journal-bearings *e* and *f* on the crank ends *c* of the rock-shaft, for the purpose stated.

5. The combination, with a treadle and the pitman-rod, of a laterally-adjustable toe-bar, for the purpose described.

6. The combination, with a hanging swinging treadle adapted for lateral adjustment upon its cranked rock-shaft, of a toe-bar, I, adapted for lateral adjustment in relation to the pitman and the crank-pin, for the purpose described.

7. A caster treadle-stand for sewing-machines, consisting of the connected side bars having standard-bearings, the adjustable double caster-bars with clamping-leg seats, the laterally-adjustable hanging swinging treadle, the foot-plate, secured centrally to the depressed part of the double rock-shaft, and the laterally-adjustable toe-bar connecting with the pitman, for use as described.

In testimony whereof I have hereunto set my hand in the presence of two witnesses.

FRANCIS MARION WEAVER.

Witnesses:
GEO. D. JONES,
ALLEN S. FITCH.