S. W. WARDWELL, Jr.

Treadle.

No. 163,284. Patented May 11, 1875.

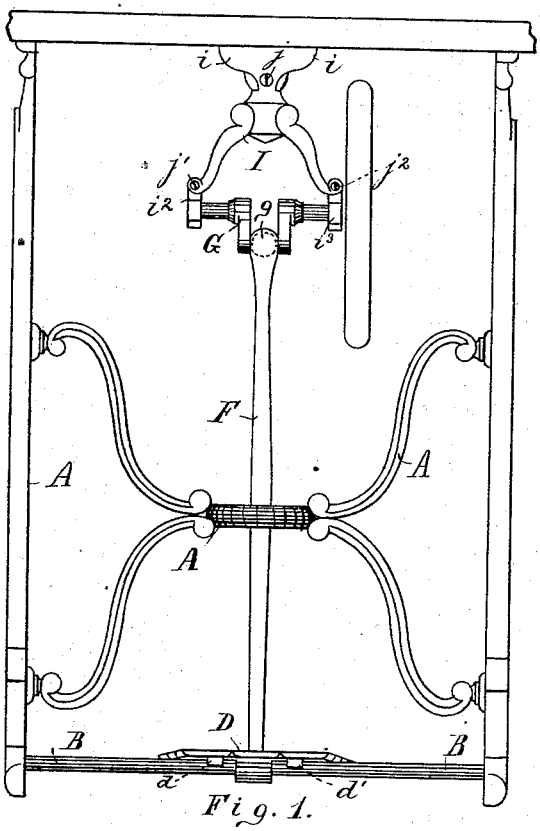
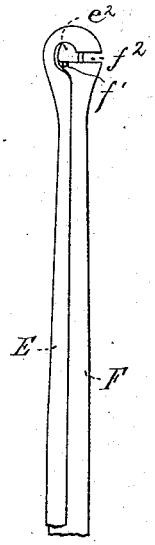
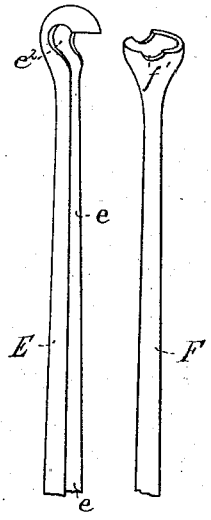


Fig. 1.





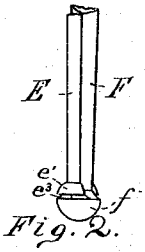


Fig. 2.

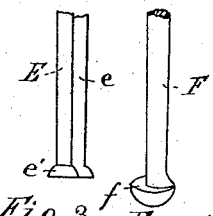


Fig. 3

Fig. 4

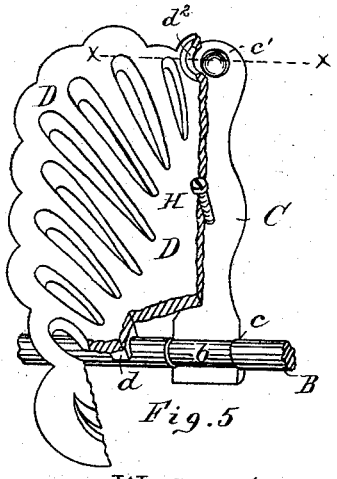


Fig. 5

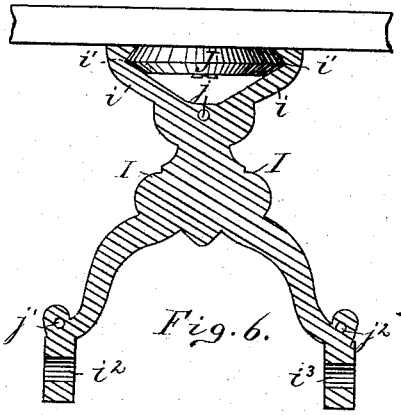


Fig. 6.

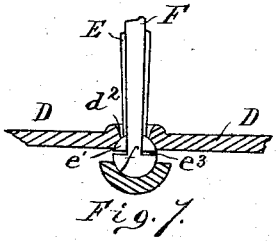


Fig. 7.

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UNITED STATES PATENT OFFICE.

SIMON W. WARDWELL, JR., OF ST. LOUIS, MISSOURI, ASSIGNOR TO HIMSELF AND GEORGE W. SHAW, OF SAME PLACE.

IMPROVEMENT IN TREADLES.

Specification forming part of Letters Patent No. **163,284**, dated May 11, 1875; application filed June 23, 1874.

To all whom it may concern:

Be it known that I, SIMON W. WARDWELL, Jr., of St. Louis, in the county of St. Louis and State of Missouri, have invented an Improved Treadle for Sewing-Machines, of which the following is a specification:

My invention, therefore, relates to an improved combination and construction of the various treadle parts, as will now more fully be described.

Of the drawing, Figure 1 is a front elevation. Fig. 2 is a perspective view of the pitman proper, when the two pitman parts are together as in use. Figs. 3 and 4 are respective perspective views of the two pitman parts when laid apart. Fig. 5 is a perspective view of half of the sandal, its manner of connection to sandal-rod, also part of its slotted feature; also, said view shows the connecting-bar under sandal, and its manner of connection to sandal-rod. Fig. 6 is a vertical section of the hanger, showing the grooves for the crank-shaft journals, and its manner of attachment to the under side of bed-plate of the machine-table. Fig. 7 is a detail section taken on line *x x* of Fig. 5, showing connection of lower ball of pitman, the shape of slot in the sandal, and the cavity bearing in connecting-bar.

A, Fig. 1, are table-standards to support the machine proper. It is usual to journal the sandal to its rod, so that the former cannot be taken from the latter without disengaging said rod from its standards. I connect the sandal to its rod in such wise as to obviate the necessity of the further disconnecting of the rod from its standards. Hence I provide the sandal-rod B with an offset bearing, *b*, (see Figs. 1 and 5,) and firmly secure said rod to its standards A. Instead of the journal of sandal surrounding the sandal-rod, as ordinarily, I connect the sandal to its rod as follows: I provide a connecting-bar, C, having a groove-journal, *c*. (See Figs. 5 and 7.) By its journal *c*, the bar operates on the under side of the bearing *b* of the sandal-rod. (See Fig. 5.) D is the sandal; this I form to have lugs *d d*^{1}. (See Figs. 1 and 5.) The sandal, by its lugs, thus engages the top, and the connecting-bar, by its groove, the under side of sandal-rod, as shown in Figs. 2 and 5. The sandal and connecting-bar are further to connect with and operate the lower end of pitman. This connection I form in a most simple and ready manner; and to gain ease of operation, as well as to obviate the screws and fastenings ordinarily used for this purpose, therefore I further provide the sandal D with a round slot, *d*^{2}, the interior surface of which is beveled, and terminates with an entrance-slot, as indicated in Figs. 5 and 7. The lower bevel part of the slot *d*^{2} conforms to the rounded top of the lower ball end of pitman, and the top bevel part of said slot allows sufficient play for the pitman when connected to sandal.

Instead of the solid pitman ordinarily used for treadles, I form my pitman to consist of two parts, E F, of the peculiar construction shown in Figs. 1, 2, 3, 4, and 7. The pitman part E has a longitudinal groove, *e*, which extends from the plane surface of its convex half-ball bearing *e*^{1}, which is at its lower extremity, to the interior surface of its half-ball cavity *e*^{2}, which is at its upper extremity, (see Figs. 2 and 3;) the cavity *e*^{2} of the pitman E being to engage the top surface of the ball on the crank-shaft, Fig. 1, the convex half-ball bearing *e*^{1} of said pitman part being to engage in the slot *d*^{2} of the sandal D, Fig. 7, and the groove feature *e* of said pitman being to receive, and in which operates, the pitman part F, Figs. 1 and 2 and 7. The pitman part F has its body part made solid. At its lower end it has a convex solid half-ball bearing, *f*, and at its upper end is a concave cavity, *f*^{1}, clearly shown in Fig. 4; the concave cavity *f*^{1} of the pitman part F being to engage and operate the under spherical side of the ball of the crank-shaft, Fig. 1, the convex bearing *f* at its lower end being to engage and be operated by the corresponding cavity *c*$'$ of the connecting-bar C. (See Fig. 7.) The pitman parts E F, when combined, connected, and operating, further present at their upper and lower ends the respective transverse openings *e*^{3} and *f*^{2}, (see Figs. 2 and 7;) the purpose of said openings being to allow for taking up any lost mo-

tion or play resulting from wear or usage. G is the crank-shaft; this has a ball-bearing, *g*, and said shaft by its journals is properly secured in the bearings of the hanger.

The aforesaid parts, arranged as shown in Figs. 1 and 5, are held in operative connection by a single screw, H, Fig. 5, which secures sandal and connecting-bar together. The dispatch, therefore, with which the parts aforesaid can be disconnected or put together, also the saving of the many details of mechanism usually met with in treadles of this class, can thus be readily seen. The screw H further enables me to follow up all play resulting from wear of the parts, or all play in the bearings of parts mentioned.

The operation of the pitman parts will be observed to be such that each peculiarly performs the necessary part rotary motion that is required to revolve the crank-shaft. Thus the pitman part E draws the crank-shaft from highest point to lowest point, and performs this part rotary movement for said crank only. The other pitman part, F, operates to carry the crank-shaft from its lowest point to its highest, and to perform this part rotary motion for said crank only, the combined action of both said pitman parts being, therefore, necessary for the crank-shaft to complete its whole revolution. I is the hanger; this, at its upper part, I form to have a cup-bearing, as shown at *i*, Figs. 1 and 6, and this further at i^1 is V-grooved, so as to fit and be secured to the V-shaped bearing J, which is secured to the under side of the bed-plate of the machine-table, Figs. 1 and 6. By this manner of connecting the hanger I to the supporting block or bearing J, the former can be freely revolved at will of the operator. i^2 i^3 are the journal-bearings of the hanger for the crank-shaft G.

The complete hanger I, I cast in two counterpart parts, the line of division being a longitudinal section. (See Fig. 6.) Half of its journal-bearings i^2 i^3 is, therefore, in one section of the hanger I, and the other half journal-bearings in the other section of the hanger; also, half of the cup-bearing *i*, that forms the upper part of hanger, in one section, the other half in the remaining section, and being thus counterpart to each other, said sections, when united, form the one complete hanger. But (3) three screws, j j^1 j^2, are required to secure the sections of hanger to block J and crank-shaft.

What I claim is—

1. The combination of connecting-bar C, sandal D, screw H, sandal-rod B, pitman parts E F, and crank-shaft G, all said parts being constructed as herein shown and described, as and for the purpose set forth.

2. The combination of the supporting-block J, hanger I, crank-shaft G, pitman parts E F, connecting-bar C, sandal D, and rod B, constructed to operate as herein shown and described, as and for the purpose set forth.

3. The pitman part E, having groove *e*, upper half-ball cavity e^2, and lower half-ball bearing e^1, to operate as and for the purpose set forth.

4. The pitman part F, having solid body, and terminating at its upper end with a cavity, f^1, and its lower end with half-solid bearing *f*, to operate as and for the purpose set forth.

5. The combination of the grooved and solid pitman parts E F with upper and lower ball parts e^2 f^1 e^1 f and transverse openings e^3 f^2, to operate as and for the purpose set forth.

In testimony of said invention I have hereunto set my hand.

SIMON W. WARDWELL, JR.

Witnesses:
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CHAS. F. MEISNER.