(No Model.)

J. PASFIELD.

TREADLE MECHANISM.

No. 292,573. Patented Jan. 29, 1884.

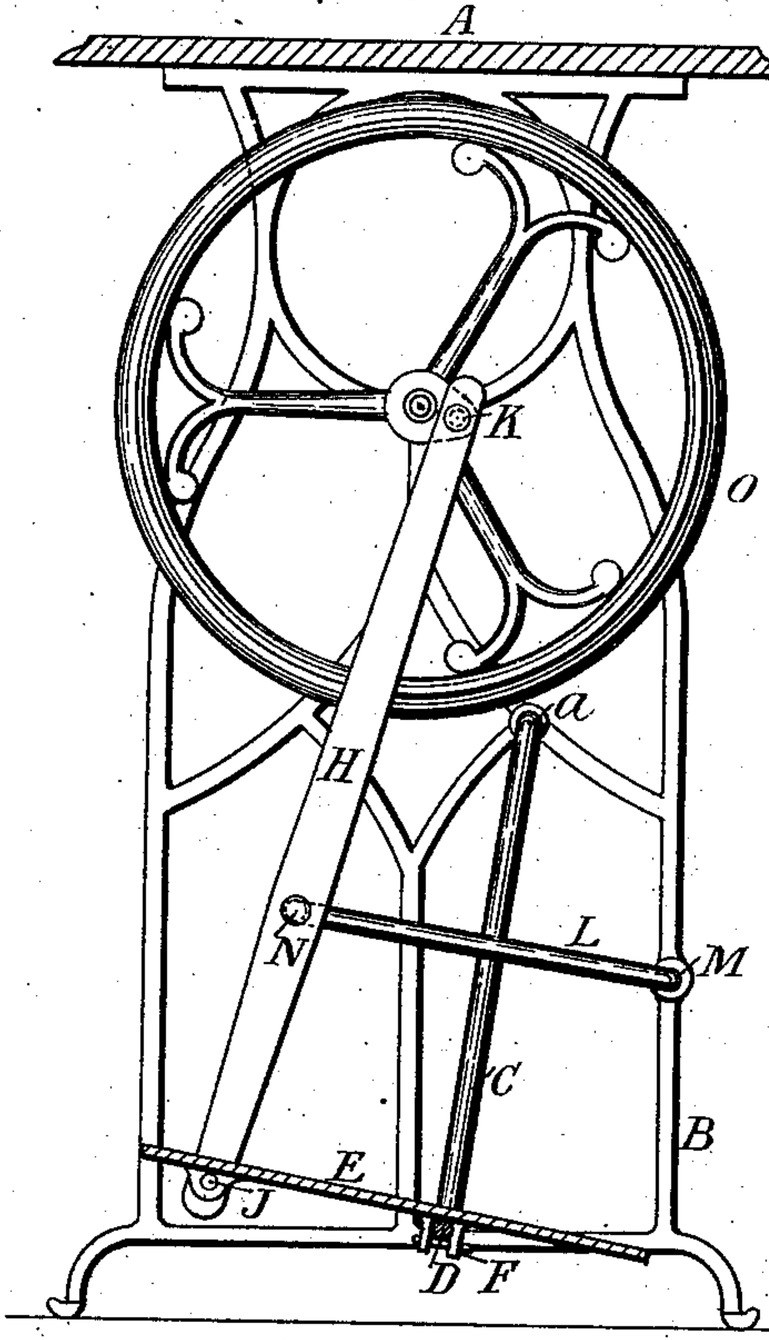

Fig. 2.

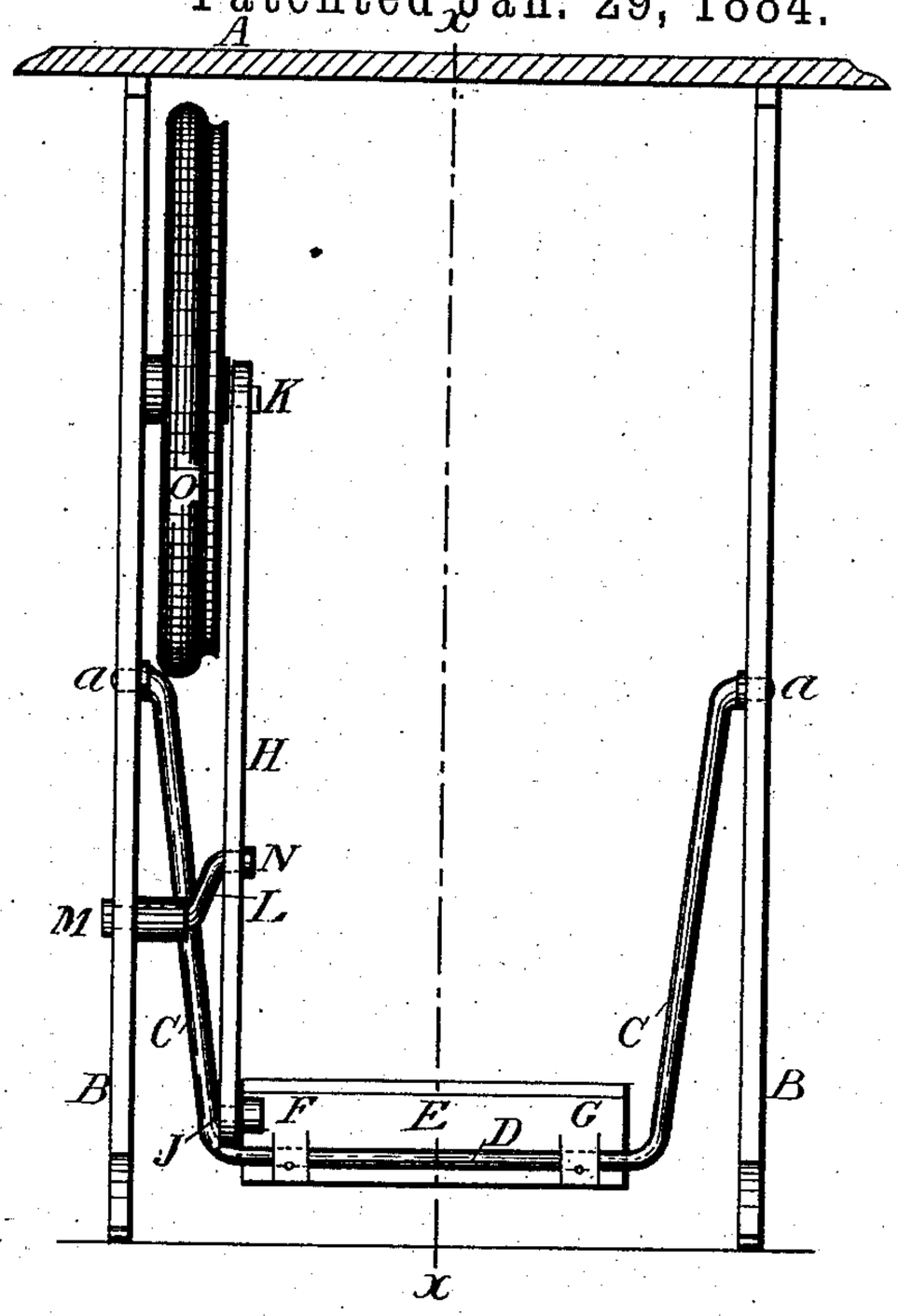

Fig. 1.

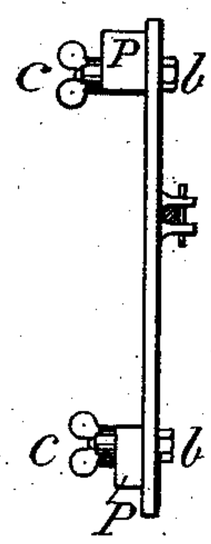

Fig. 4.

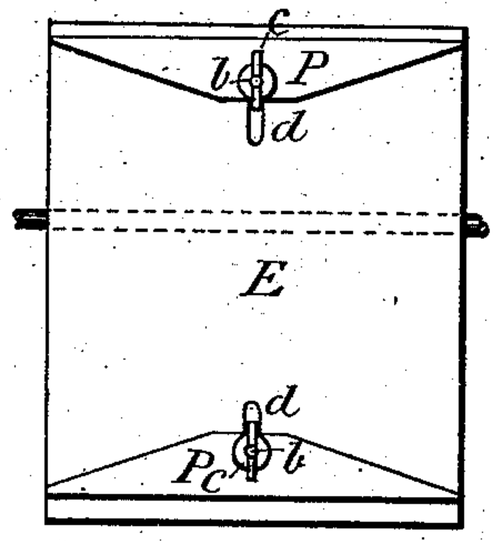

Fig. 3.

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UNITED STATES PATENT OFFICE.

JOHN PASFIELD, OF SEDGLEY, COUNTY OF STAFFORD, ENGLAND.

TREADLE MECHANISM.

SPECIFICATION forming part of Letters Patent No. 292,573, dated January 29, 1884.

Application filed November 15, 1883. (No model.) Patented in England September 7, 1883, No. 4,306.

To all whom it may concern:

Be it known that I, JOHN PASFIELD, a subject of the Queen of Great Britain, residing at Sedgley, in the county of Stafford, England, have invented certain new and useful Improvements in the Treadle Mechanism of Sewing and other Machines, (for which invention I have applied for Letters Patent in England, my application being dated the 7th of September, 1883, and numbered 4,306, but have not yet received the grant of such patent;) and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention refers to the treadle mechanism of sewing-machines and other machines, and it has for its object the construction of a treadle-movement which, while retaining the ordinary heel-and-toe motion of the foot, shall avoid all dead points and render the operation of treadling less constrained and tiring than is the case with the ordinary treadle mechanism. I attain this object according to this invention in the manner illustrated by the accompanying drawings, of which—

Figure 1 is a back view (with the top of the frame in section) of a sewing-machine stand fitted with my improved treadle mechanism, and Fig. 2 is a vertical section taken on line *x x* of Fig. 1. The same letters of reference occurring on both these views indicate corresponding parts. Fig. 3 is a plan of the tread-plate detached, showing means for preventing the foot from slipping thereon, and Fig. 4 is a side elevation of same.

A is the top of the frame, and B B standards carrying such top and also the treadle mechanism.

C C is a swinging bar or frame, pivoted at *a a* to the standards, and having a horizontal part, D, upon which the tread-plate E is pivoted at the points F and G.

H is the connecting-rod, which is connected in the usual manner to a pin, J, at the back end of the tread-plate at its lower end, and at its upper end to the crank-pin K.

L is a guide or radius rod, one end of which is pivoted at M to one of the standards, and the other end is pivoted to the connecting-rod at the point N, as shown.

O is the ordinary driving-wheel, carried in the usual manner.

The swinging frame or bar C C forms, as will be seen, a reeling-center for the tread-plate E, and the guide or radius rod L forms a reeling-center to the connecting-rod H. It will be seen that thus a horizontal reciprocating motion is imparted to the tread-plate from the crank through the medium of the leverage formed by the connecting-rod, this horizontal reciprocating motion of the tread-plate being provided for by the swinging frame C C, which carries the tread-plate.

In treadling by the improved mechanism above described the operator exerts the pressure of the foot to produce (in addition to the ordinary heel-and-toe motion) a horizontal reciprocating motion of the tread-plate, and the pressure which is exerted to produce this motion is imparted to the crank through the medium of the leverage formed by the connecting-rod, and thus in all positions of the crank's revolution pressure is brought to bear upon it in a favorable direction in relation to such revolution.

I will now describe the device illustrated only in Figs. 3 and 4, which is designed to give the foot a firmer hold on the treadle and prevent it from slipping.

P P are two blocks of wood forming toe and heel guards upon the plate. These blocks are fixed upon the plate by means of pins *b b*, having thumb-nuts *c c* thereon, and such pins pass through slotted holes *d d* in the plate, as shown, in order that the position of the blocks may be adjusted as required.

It will be observed that in working the treadle mechanism above described the foot rests continuously firmly upon the tread-plate, as in the ordinary description of treadle mechanism operated by a heel-and-toe motion, as the center or axis of such tread-plate remains in a uniform position vertically or approximately so. It will readily be seen that, where such arrangement is convenient, one end of the tread-plate, or a part fixed thereto, may be pivoted direct to the crank-pin, the connecting-rod and radius-bar being in this case dispensed with. In lieu, also, of the swinging frame C C, the axis of the tread-plate may be carried in bearings capable of a sliding or rolling move-

ment in a horizontal direction. These modifications are rendered possible by the rocking of the tread-plate E, which is coupled directly to the crank upon the supplementary bar D, or other support.

I am aware that it is not new to swing the tread-plate of a treadle mechanism from a point above its level. In some constructions showing this feature the treadle-plate has been arranged to rock on its support in order to accommodate itself to the flexure of the muscles, and in others it has been fixed or non-rocking; but I am not aware of a rocking tread-plate mounted on a swinging frame or having a horizontal motion, and said tread-plate connected directly to the crank by a connecting-rod. This feature I believe to be new with me.

Having now described my said invention, I declare that what I claim as such invention, and desire to secure by Letters Patent, is—

1. A treadle mechanism for sewing and other machines, comprising a pivotally-mounted tread-plate having a horizontal reciprocating movement, and means, substantially as described, for communicating to the crank the movement imparted to the tread-plate by the foot, substantially as set forth.

2. A treadle mechanism comprising a swinging bar or frame, a tread-plate pivotally mounted on said frame, and means, substantially as described, for connecting said tread-plate to the crank, all arranged to operate substantially as set forth.

3. A treadle mechanism comprising the horizontally-reciprocating tread-plate, the rod which connects said plate with the crank, and the radius or guide rod, all constructed and arranged to operate substantially as set forth.

4. A treadle mechanism comprising the swinging frame C C, the tread-plate pivotally mounted thereon, the connecting-rod H, and the guide or radius bar L, all constructed and arranged to operate substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JOHN PASFIELD.

Witnesses:

STEPHEN WATKINS,

ROBERT M. LISTER.