

(No Model.)

N. CLARK.
TREADLE MECHANISM.

No. 441,748.

Patented Dec. 2, 1890.

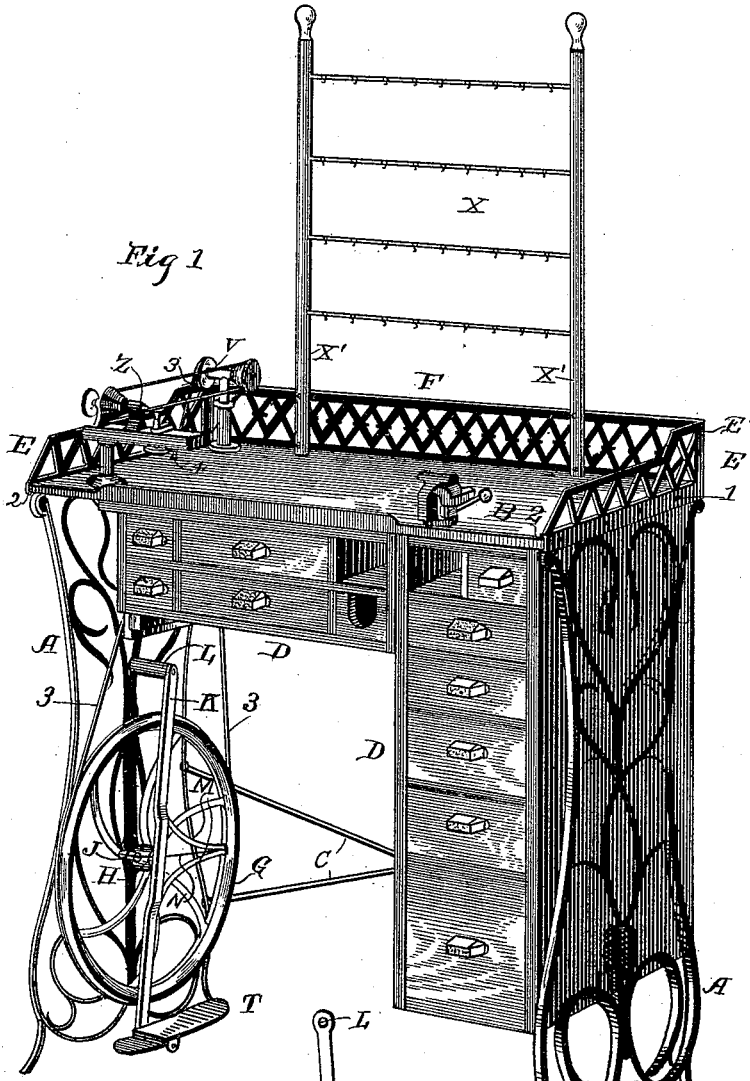


Fig 1



Fig 4

Fig 2

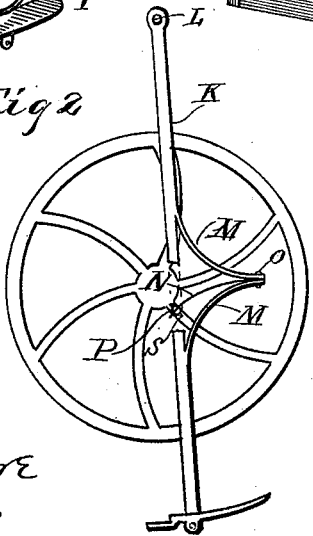
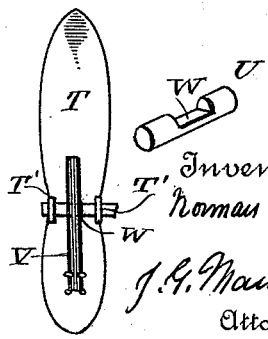


Fig 3



Witnesses
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NORMAN CLARK, OF STERLING, ILLINOIS, ASSIGNOR OF ONE-HALF TO
SOLOMON P. GIDDINGS, OF SAME PLACE.

TREADLE MECHANISM.

SPECIFICATION forming part of Letters Patent No. 441,748, dated December 2, 1890.

Application filed March 18, 1890. Serial No. 344,431. (No model.)

To all whom it may concern:

Be it known that I, NORMAN CLARK, a citizen of the United States, residing at Sterling, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Treadle Mechanism; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention has reference to improvements in treadle mechanism; and the object of my invention is to provide a treadle which shall have the following advantages, to wit: that the treadle shall be simple, noiseless, and easily operated. I attain this object by the construction shown in the drawings, in which—

Figure 1 is a perspective, somewhat oblique, of my invention. Fig. 2 is a detail of a portion of the treadle mechanism. Fig. 3 is a view of the under side of the pedal. Fig. 4 is a detail view of the crank-pin.

A A are the ends of the bench, which are preferably made of some suitable metal, and cast of an open character to interpose the least obstruction to the passage of the light under the bench. The ends A A may embody variant forms and be made ornamental, of the design shown in Fig. 1, or otherwise.

G is the driving band-wheel pivotally seated upon a horizontal stud H, projected inwardly from the inner side of the adjacent end A.

J is a crank-pin formed upon the inner side of one of the spokes of the wheel G. A pedal-lever K is pivotally attached at its upper end to the inner surface of the end A through the medium of a short horizontal stud L, whereby it is adapted to oscillate to and from the operator in a vertical plane.

Curved arms M M, integral with or attached to the lever K, extend from the latter toward the rear of the machine and at their rear extremities form a junction. A flat spring N is interposed between the open ends of the arms M, and by means of a hole formed vertically through that portion of the spring N

which is clamped between the back ends of the braces M and the vertical bolt O the back end of the spring N is held rigidly.

A box-journal P is loosely seated on the crank-pin J, and is provided with a lateral projection R, in which is formed a sufficient gash to admit the outer end of the spring N, and in which said spring is readily fastened by means of a second vertical bolt S.

When the lever K oscillates back and forth, the motion thereof is communicated to the wheel G through the medium of the spring N and crank-pin J, said spring performing the usual function of a pitman in similar situations, but with greater efficiency and without any noise.

One arm M will be sufficient, and that may be projected from different localities on lever K, the sole requisite of such arm being to rigidly sustain spring N at its outer end and not obstruct the oscillation of said spring.

Aside from the advantages just named of the spring N, a very important advantage consists in the fact that said spring assists to throw the crank-pin J past the dead-points in the orbital rotation of the latter by the resilient pressure of said spring upon said crank-pin as the latter approaches its dead-points. The two points in the orbit of the crank-pin J at which the lever K can exert no power thereon are those in line with the outer end of the arms M and the hub or center of the wheel G. The crank-pin J approaches one of these points from above and the other from below, as shown in Fig. 2. Just before the crank-pin J reaches one of said dead-points the spring N, being drawn out of its normal straight condition, as shown in Fig. 2, (in which situation its tendency is to return to its straight or normal position,) has the effect of carrying the crank-pin J toward the dead-point and with its acquired momentum slightly beyond. This action, occurring twice in every revolution of the wheel G, lessens the jar or pulsation of passing said dead-points and renders the operation of the lever K very efficient, smooth, and satisfactory.

The pedal T is seated on the lower end of the pedal-lever K in a unique and advantageous manner, as follows: A short horizon-

tal stud U is projected inward from the lower end of the lever K and passed loosely through depending ears T', formed on the sides of the pedal T and extending a short distance below the latter.

A spring V is attached rigidly to the bottom of the heel or lower portion of the pedal T and has its free end projected into a recess W, formed about centrally in the lower surface of the fixed pin U. In placing the pedal T on the lever K it is sufficient to simply draw the open end of the spring V down far enough to clear the ears T', in which condition the pedal T can be passed upon the stud U. The spring V, being then released, is carried by its own elasticity forcibly into the recess W, and, the lower surface of the stud U in the recess W being horizontal, the pressure of the spring V thereon tends to hold the treadle T in one uniform position—to wit, about horizontal and clear of the floor. By forcing the free end of the spring downward sufficiently to clear the ears T' the pedal T can be removed for the purpose of shipment or otherwise. Thus the spring V performs the double function of serving as a retaining device of the pedal T and also to hold the latter in a substantially horizontal position, and therefore to be readily found by the foot of the operator. The elasticity of the spring V permits it to rock over the edges of the recess W during the oscillation of the lever K, so as to permit the treadle T to adjust itself to the changing positions of the operator's foot.

The watch-rack X is removably attached to the bench by its vertical posts X' being slightly stepped in the upper surface of the top B and short horizontal screws inserted into said posts from the crest to the rear-railing F.

The usual belt 3 is carried upward from the wheel G, through suitable openings 4 in the

top B, to the countershaft V, which latter is belted in the usual way to the lathe Z.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. In a treadle mechanism, the combination of the band-wheel G, provided with crank-pin J, the lever K, provided with projecting arm or arms M, box P, and spring N, substantially as shown, and for the purpose described.

2. The combination of the driving-wheel G, provided with crank-pin J, the pedal-lever K, suitably pivoted at its upper end and provided with rearward extension M, a journal or box P, pivotally seated on pin J, and the spring N, rigidly seated at one end in the end of the extension M and at its other end in the box P, substantially as shown, and for the purpose described.

3. The combination of the pedal-lever K, horizontal stud U, provided with recess W, pedal T, provided with ears T', and spring V, rigidly attached at one end to the lower surface of the pedal T and having its free end projected under the stud U and within the recess W therein, substantially as shown, and for the purpose described.

4. In a treadle mechanism, the combination of the band-wheel G, crank-pin J, seated on the inner side thereof, the pedal-lever K, pivotally suspended at its upper end and provided with projection M, box P, spring N, pedal T, provided with ears T', stud U, provided with recess W, and spring V, substantially as shown, and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

NORMAN CLARK.

Witnesses:

JONATHAN A. MORGAN,
W. A. MURPHY.