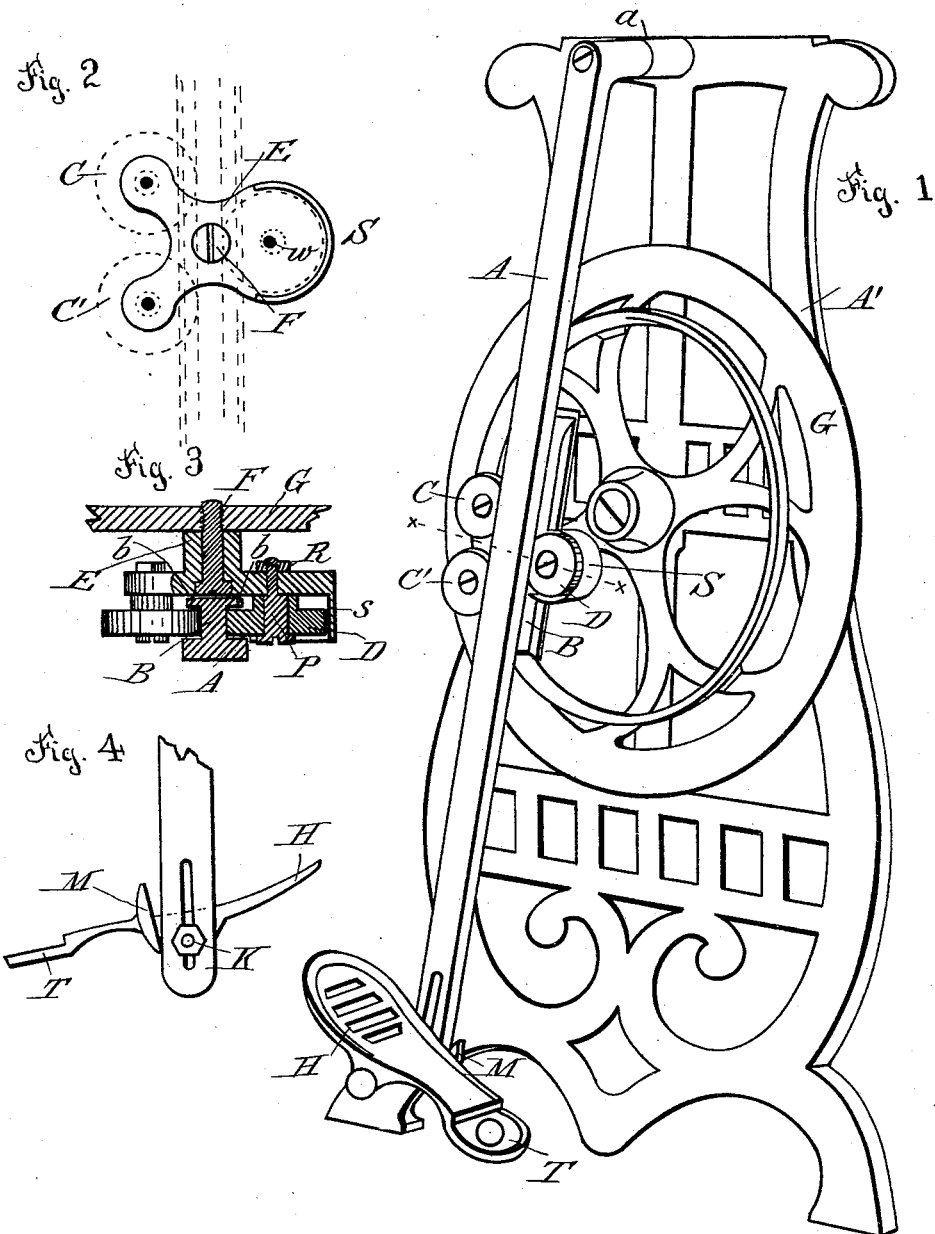


(No Model.)

E. A. COCHRAN.  
PENDULUM BAR TREADLE.

No. 453,963.

Patented June 9, 1891.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

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## PENDULUM-BAR TREADLE.

SPECIFICATION forming part of Letters Patent No. 453,963, dated June 9, 1891.

Application filed January 27, 1891. Serial No. 379,343. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD A. COCHRAN, a citizen of the United States, residing at Pasadena, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Pendulum-Bar Treadles; and I do hereby 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.

This invention relates to an improvement in treadle mechanism for operating sewing-machines or other similar light machinery which is adapted to be actuated by foot-power, and more particularly it relates to that class of foot-power devices which may be termed "pendulum-bar treadles," the object of the invention being to provide a simple, convenient, and efficient construction, whereby the machinery to be worked may be operated with much greater ease and less noise than is possible with the appliances now in common use for a similar purpose; and the invention therefore consists in the construction, arrangement, and combination of the several parts, substantially as will be herein-after described and claimed.

In the annexed drawings, illustrating my invention, Figure 1 is a perspective view of my improved pendulum-bar treadle. Fig. 2 is a detail view of the cross head or support which carries the anti-friction wheels or rollers, together with the shield or hood which covers one of these rollers, the rollers, as well as the rib on the pendulum-bar, being indicated in dotted lines. Fig. 3 is a detail cross-section on the line *xx* of Fig. 1. Fig. 4 is a detail side view of the foot piece or treadle and a portion of the mechanism which connects therewith.

Like letters of reference designate corresponding parts throughout all the different figures of the drawings.

A' denotes an upright part of the frame of a sewing or other machine, to which my present improvements in treadle mechanism are applied for the purpose of operating the same. It will be obvious that my mechanism is adapted for use with any kind of light machinery which can be operated by foot-power,

and therefore the sewing-machine is alluded to by way of example only.

A indicates a pendulum treadle-bar, which is pivoted at its upper end at *a* to the frame-upright A' in such a manner as to enable it to swing freely back and forth, the lower end of the pendulum-bar A being near the bottom end of the upright A' or at any other convenient point for carrying the treadle.

The pendulum-bar A is provided on one side at a point preferably about midway of its length with a rib or flange B, said rib having on its edge two oppositely-located flanges *b b*, (see Fig. 3,) the rib B being thus of a T shape, and providing two grooves, one on each side, which are adapted to receive the peripheries of the anti-friction wheels, to be presently described.

E denotes a cross-head of any suitable and convenient form. This cross-head is journaled or pivoted upon the pin F, (see Fig. 3,) which is secured to the driving-wheel Z at some suitable point between the periphery and the hub thereof. The cross-head or supporting-bar E in the present form of the invention preferably has the form shown in Fig. 2, where it will be seen as made with two arms on one side of its pivot-pin and one arm on the other side, so that it can carry two rollers on one side and one roller on the other side of the intermediate pin:

C and C' designate anti-friction wheels or rollers, which are carried by one end of the cross-head E, and D an anti-friction wheel or roller carried by the other end of said cross-head, and these rollers, as will be readily apparent from an inspection of the drawings, are arranged upon the sides of the pendulum-bar rib B, so as to engage with the said grooves therein whenever the bar is vibrated, two of the rollers C and C' engaging or operating against one side of the rib B and the other roller D engaging the other side of the rib. This feature of two rollers on one side of the rib and one on the other side is one of the leading features of the present construction. Its purpose is to maintain a certain rigidity in the cross-head and keep it from quivering or vibrating as the wheels move up and down the rib B. In other forms of pendulum-bar treadles I have made use

of two rollers only, one on each side of a rib on the pendulum-bar; but in the practical operation of a construction of this sort having but two rollers I have found that the cross-head  
 5 quivered and shook during the rapid motion of the machinery and was not sufficiently rigid and unyielding. I therefore have conceived the idea of placing two anti-friction rollers on one side of the rib and one on the other, and the  
 10 result of this arrangement of rollers has been found in actual practice to be greatly superior to the other, and therefore I deem the idea of importance and set the same forth here to exhibit a more perfect form of the device.  
 15 vice.

The wheel D is provided with means for adjusting it so that any wear which may occur may be readily taken up. P denotes a pin serving as a journal for the wheel D, said  
 20 pin having a shoulder which bears upon the cross-head E in the manner shown in Fig. 3 and being provided with an eccentric screw, which passes through a hole in the cross-head, which hole or perforation is shown at w in  
 25 Fig. 2, the end of the screw on the outside of the cross-head being provided with a burr or nut R. In order to take up wear, all that it is necessary to do is simply to turn the screw or pin P, which is provided with the usual  
 30 screw-slot in the head, as shown in Fig. 3. The journal of the wheel D may therefore be said to be an eccentric screw, which can be readily adjusted at any time for the purpose of taking up the wear, and thus the parts can  
 35 be kept in good working condition at all times.

The cross-head E is provided with a suitably-shaped shield or hood S, which is adapted to partially surround and cover the anti-friction roller D, so as to protect the dress or  
 40 clothes of the operator and keep them from coming in contact with the wheel D. Contact with this wheel while the machine is in rapid motion might oftentimes result in the soiling  
 45 of articles of wearing-apparel, and therefore it is deemed best to obviate this disadvantage and connect a shield to the cross-head in the manner I have just stated, whereby all trouble from this source is effectually avoided. The  
 50 hood is preferably cast integral with the cross-head, as shown in Fig. 3, so that it is all formed together.

The lower end of the bar A is provided with a treadle H. This treadle may be of the ordinary shape, or of any other suitable and  
 55 convenient form. It is preferably arranged for but one foot, as that is ordinarily deemed sufficient to propel the pendulum back and forth for the operation of the machine. The  
 60 treadle H is vertically adjustable upon the pendulum-bar. Said bar is provided with a slot, through which one end of the treadle pivot-pin is passed, and secured by means of a burr or nut K. (Shown in Fig. 4.) Furthermore, this foot-piece or treadle is provided  
 65 with a stop M, (see Figs. 1 and 4,) which stop is located on the treadle at a point back of

the treadle-pivot and between it and the heel of the treadle, and the purpose of the stop is to engage with the pendulum-bar A and keep  
 70 the treadle from tipping too far forward. It will be noted, however, that this stop M projects not only above the treadle, but also below it, so that it is adapted to strike the pendulum-bar at two points, with its upper end  
 75 and with its lower end, and therefore the stop M not only keeps the treadle from tipping too far forward but also from tipping too far backward. The treadle is therefore by means of this stop kept in proper position. I have some-  
 80 times constructed this treadle in other forms of the invention with two stops—one behind and one in front of the pivot-pin; but I have found in practice that the duplication of the stop was needless, and that one stop project-  
 85 ing above and below the treadle and adapted to touch the pendulum-bar at two points is the full equivalent, and does just as good work as two stops located at different points upon the upper side of the treadle. Thus the cost  
 90 of manufacture of the treadle is lessened besides achieving simplicity and neatness of construction and appearance. The heel of the treadle is dropped below the level of the foot-piece. In other words, the rear end of the  
 95 treadle is rabbeted and cut out at T, so as to provide a sunken end so shaped and formed as to accommodate the size of any wheel.

The operation of the pendulum-bar treadle which I have just described will be readily  
 100 apparent from the foregoing description of the construction and arrangement of the several parts without need of any additional detailed description on this particular line.

It will be noted that this invention affords  
 105 certain improvements upon an invention which I have already protected by Letters Patent of the United States, dated February 18, 1890, No. 421,858. In the said Letters Patent the main lines of the invention are  
 110 fully set forth and claimed. In the present case I aim to supplement the construction presented in that patent and to make the invention complete and perfect in all respects, so that the best possible results in operation  
 115 may be achieved and the mechanical excellence of the several combinations of parts may be unsurpassed. I do not deem, however, that I am limited to the precise form and exact outline and arrangement and rela-  
 120 tive size of the various parts, as all these may vary within certain limits, and I therefore reserve the liberty of so changing the minor details of the invention as experience may suggest and the exigencies of individual cases  
 125 demand.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a treadle mechanism for operating  
 130 machinery, the combination, with a driving-wheel, a cross-head pivoted thereto, and a pendulum treadle-bar, of two anti-friction wheels journaled in one end of the said cross-

head, so as to engage with one side of the treadle-bar when the same is vibrated, and one friction-wheel journaled in the other end of the cross-head to engage the other side of the treadle-bar, the said arrangement of two wheels on one side and one on the other side of the treadle-bar being for the purpose of securing a rigidity in the cross-head and obviating any quivering or shaking of the same.

2. The combination of a driving-wheel, a pendulum-bar having a flanged rib, a cross-head pivoted to the driving-wheel, two anti-friction wheels journaled in one end of the cross-head and engaging one side of the pendulum-bar rib, and one anti-friction wheel or roller journaled in the other end of the cross-head and engaging the other side of the rib, one of said rollers being provided with a jour-

nal having an adjustable eccentric screw for taking up the wear.

3. In a treadle mechanism for operating machinery, the combination of the driving-wheel, a pivoted pendulum-bar which carries the treadle, said bar having a rib B with flanges *b b*, the cross-head E, pivoted to the driving-wheel, the wheels C and C', journaled in one end of the cross-head and acting against one side of the rib B, and the wheel D, journaled in the other end of the cross-head and acting against the other side of said rib.

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

EDWARD A. COCHRAN.

Witnesses:

A. R. METCALFE,  
J. C. HABBICK.