

C.C. Parsons,
Treadle.

No. 93,740.

Patented Aug. 17, 1869.

FIG. 1.

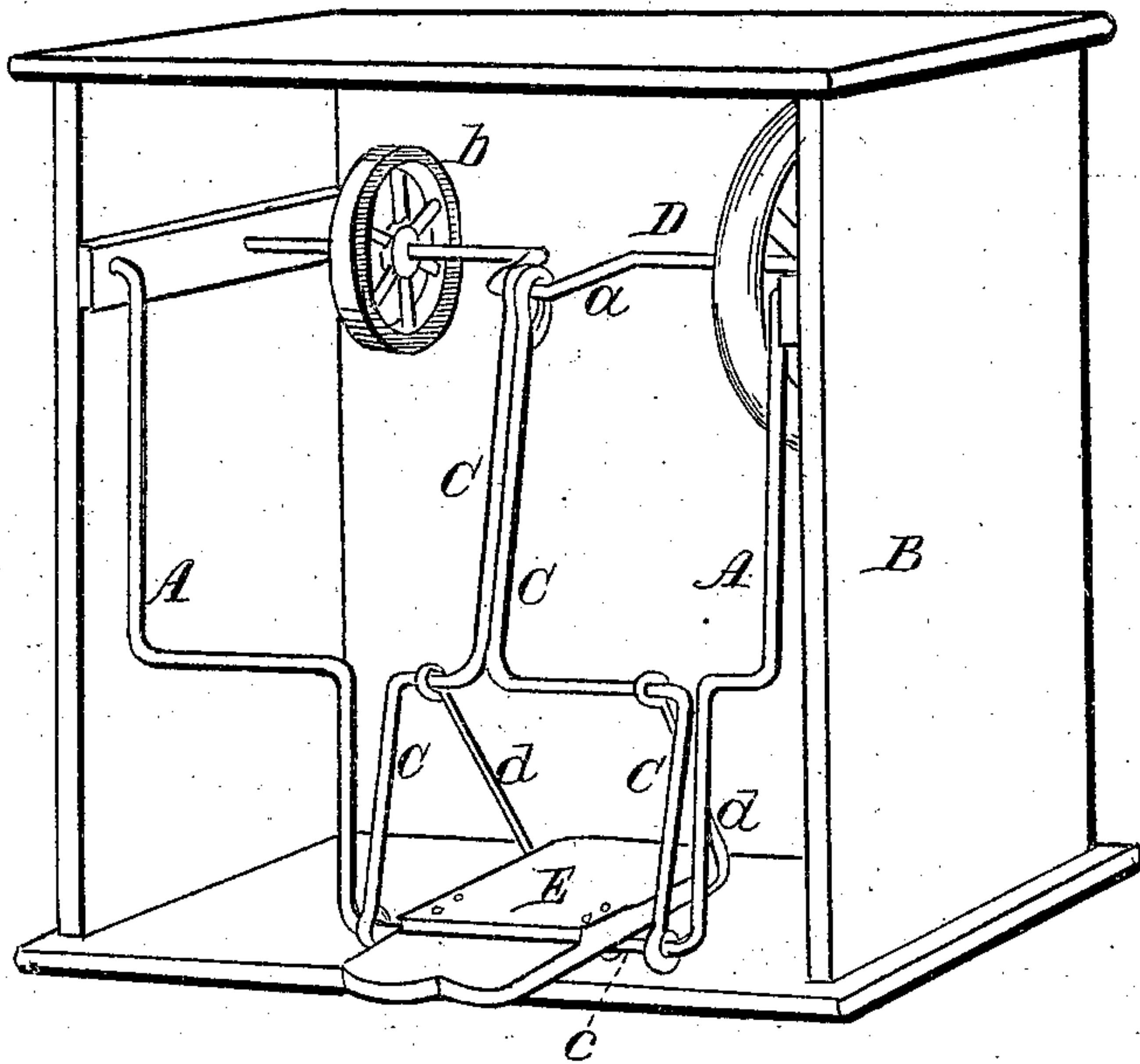
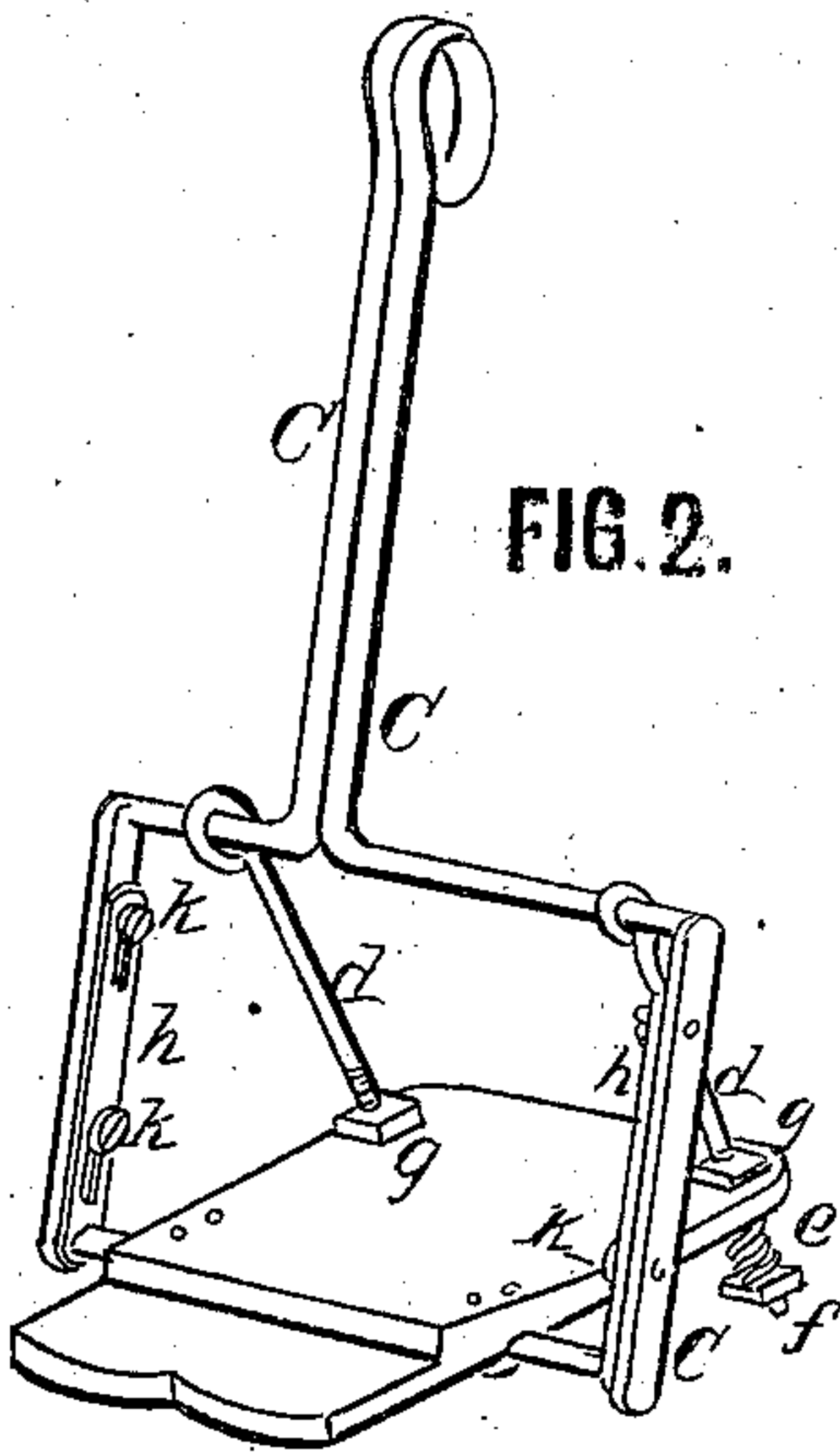


FIG. 2.



C. C. Parsons
by his attorney
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WITNESSES.
W. Bailey
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" "

UNITED STATES PATENT OFFICE.

C. CHAUNCEY PARSONS, OF NEW YORK, N. Y.

IMPROVEMENT IN TREADLES.

Specification forming part of Letters Patent No. 93,740, dated August 17, 1869.

To whom it may concern:

Be it known that I, C. CHAUNCEY PARSONS, of the city, county, and State of New York, have invented certain new and useful Improvements in Treadle-Motion; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a mechanism constructed in accordance with my invention. Fig. 2 represents a modified construction of the pedal or rest for receiving the feet.

My invention relates to certain improvements in treadle-motion for sewing-machines and other machines in which such means are employed to impart motion to the operative mechanism.

Referring to sewing-machines as a type of mechanism of this class, it is well known that the exertion required in order to produce the ordinary vibratory rocking motion of the treadle upon its pivot induces severe strain upon the muscles of the thigh and body, and in process of time impairs seriously the health of the workman. In order to obviate these difficulties, it has been attempted to give to the treadle a pendulous or swinging motion; but while undoubtedly this motion, if the treadle mechanism were properly organized, would be much better than the other, nevertheless, under the arrangements heretofore adopted, it possesses little or no advantage over the rocking treadle, and, in fact, requires quite as much strain and injurious exertion from the workman.

My object is to produce a swinging or pendulous treadle-motion which shall be free from these and other objectionable features; and to this end my invention may be stated to consist—

First, in arranging the axis or center of motion of the swinging treadle so that it shall coincide with the knee-joint of the operator. By this means, when the operator is seated at the machine, the lower portion only of the leg swings back and forth, without calling into play, to any appreciable extent, the muscles of the thigh or body. In other words, the centers of motion of the treadle and of the lower leg are in coincidence, and there need be, therefore, no movement of the leg above the knee.

Second, in adjusting the height of the treadle, whose center of motion is arranged as above specified, so as to conform to the length of limb of the operator.

Third, in combining, with the treadle mechanism, as above described, a foot-rest constructed to receive and hold both feet of the workman.

Fourth, in hanging the foot-rest upon the swinging stirrup or treadle by means of a rod or pivot applied at or near the instep, and one or more supporting-rods, or equivalent devices for the purpose, attached to the front end of the foot-rest, and suspended from the stirrup or treadle, as hereinafter more fully described.

Fifth, in combining, with the front end of the foot-rest and the means for supporting the same, a spring or springs so arranged as to admit of a free ankle-motion.

Sixth, in other features which will appear from the description which follows.

The nature of the invention and the manner in which the same is or may be carried into effect will be readily understood by reference to the drawings hereinbefore specified.

The two swinging arms of the treadle are represented at A, and, as above stated, they are to be mounted in the frame B of the sewing-machine table, or in any other frame in which they are used, so that their axis or center of motion shall coincide with the knee-joint of the person working the treadle.

Upon the lower extremities of the arms are mounted the links C, whose upper ends are mounted on the crank *a* of the driving-shaft D, from which shaft, by means of a belt passing over the pulley *b*, motion is communicated to the sewing or other mechanism to be actuated. The connecting-link may be of any ordinary or suitable construction, and one or more may be employed, as desired. I prefer, however, to use the two links formed and arranged substantially as represented in the drawings, so as to constitute in some sort a stirrup to embrace the foot-rest E. This foot-rest it is best to make of such size as to receive and hold both feet comfortably. As indicated in Fig. 1, it is supported upon a pivot or rod, *c*, extending between the arms A, so as to be capable of a limited rocking movement thereon, and its front end is upheld by rods or

supporting devices *d* extending from the foot-rest to the top of the stirrup portion of the links C. Under this arrangement the foot-rest is free to vibrate to a limited extent, to accommodate itself to the position of the feet during the swinging of the treadle, and its front end rises or falls as the treadle moves forward or recedes, thus meeting all requirements, and preventing the strain upon the ankle which would otherwise be occasioned.

In order to give still further freedom to the ankle, I combine with the front end of the foot-rest one or more springs, for throwing up the front of the treadle with a yielding pressure. The springs, in this instance, are shown at *e* as mounted on the lower ends of the supporting-rods *d*, and beneath the foot-rest, being held in position below the latter by means of holding-nuts *f* on the lower ends of the rods which pass down through the foot-rest.

Check-nuts *g* on that portion of the rod about the foot-rest limit the extent to which said foot-rest can be raised by the springs.

When the feet are on the treadle it will be seen that the springs, while tending to press upward the front end of the foot-rest, will nevertheless allow it to rise or be depressed, and thus to conform to the position of the foot and to give free play to the ankle.

The arrangement of the treadle shown in Fig. 1 does not contemplate the adjustment of the foot-rest; but an arrangement for this purpose is shown in Fig. 2. In this case the rod *c* is not used as a support; but the pivots or other device upon which the foot-rest is held are secured to hanging bars *h*, which are applied to the stirrup portion of the links C, and are capable of being raised or lowered thereon, and then fastened in place by means of set or holding screws *k*, or equivalent devices, which fit in any one of the series of holes *i* formed in the hanging bars.

The front end of the foot-rest may be adjusted in an analogous manner; but it will be found sufficient for the purpose to screw the nuts *f* and *g* up or down upon the rods *d*, so as to bring the front of the foot-rest into proper position with relation to the rear portion of the same.

It will be understood, however, that other means of adjustment, in lieu of those described, may be employed for the purpose, the object being to adjust the height of the foot-rest to conform with the length of limb of the operator.

As above stated, the axis of motion of the treadle coincides with the knee-joint, so that when the operator is properly seated and the feet are placed upon the foot-rest the centers

of motion of the treadle and the legs lie in the same plane, and therefore the lower part of the leg, or that portion below the knee, is alone required to be actively exerted, and has a simple pendulous or swinging motion, while all, or nearly all, movement of the muscles of the thigh and body is avoided, thus escaping the injurious consequences which arise from ordinary treadle-motions.

The use of the broad foot-rest is important, as it gives ample support for both feet, and enables the workman to move the treadle back and forth with great ease.

In sewing and other machines it sometimes occurs that the mechanism to be driven stands in such relation to the treadle mechanism that motion is communicated or transmitted from the latter to the former at right angles, as, for instance, where beveled gears are employed.

It will, of course, be understood that any suitable intermediary for transmitting the motion from the one to the other may be employed, according to the circumstances of the case.

Having now described my invention and the manner in which the same is or may be carried into effect, what I claim, and desire to secure by Letters Patent, is—

1. The arrangement, in a sewing or other machine, of a pendulous or swinging treadle, whether to hold one foot or both feet, substantially in the manner described, so that its axis or center of motion shall coincide as nearly as may be desirable with the knee-joint of the person operating said treadle.

2. The combination, with a swinging treadle whose center of motion is located as specified, of a foot-rest capable of being adjusted to conform with the length of limb of the operator, substantially as described.

3. The combination, with the foot-rest, of the means for supporting the same at or near the instep and for upholding the front end of the same, substantially in the manner and for the purposes described.

4. The employment, with the foot-rest, of one or more springs, substantially in the manner and for the purpose described.

5. The combination, with the swinging treadle-arms and crank-shaft, of the links for connecting said parts, the same being constructed substantially in the manner shown and set forth.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

C. C. PARSONS.

Witnesses:

ALFRED PARAF,
W. CUNNINGHAM.