

(No Model.)

T. W. HUGHES.
SEWING MACHINE MOTOR.

No. 386,782.

Patented July 24, 1888.

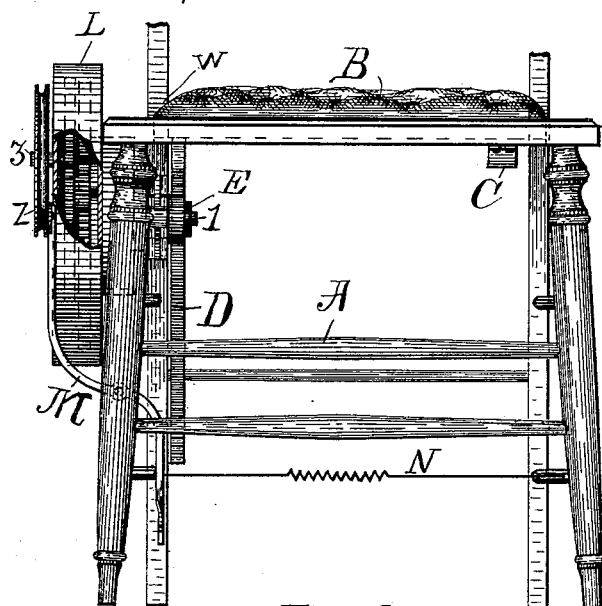


Fig. 2.

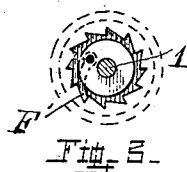


Fig. 3.

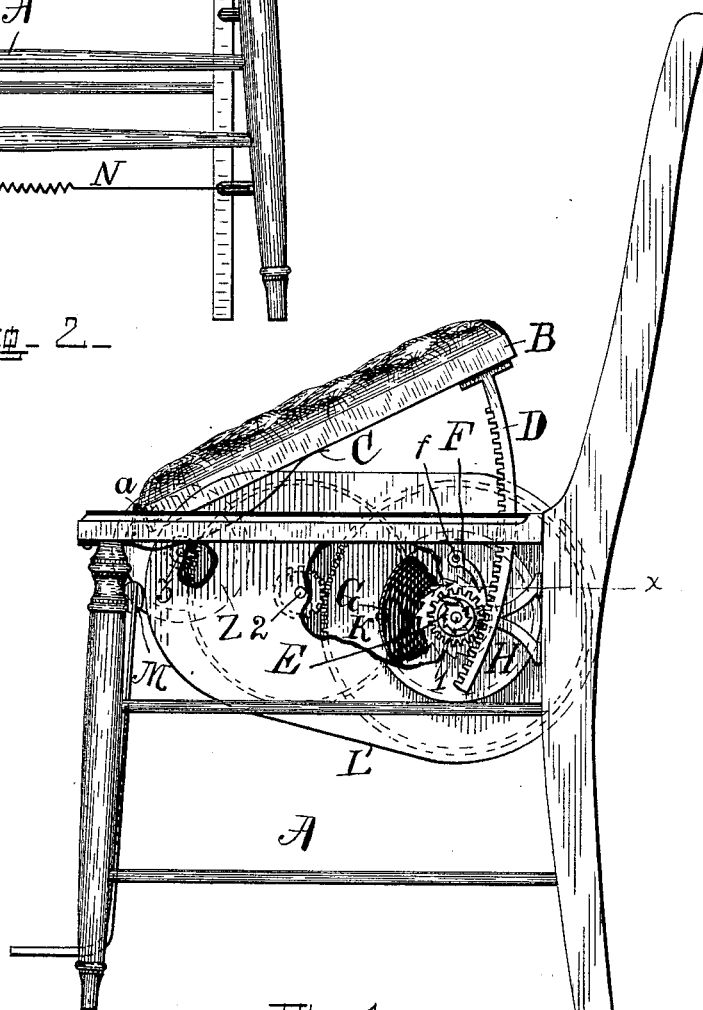


Fig. 1.

Witnesses:
A. P. Wood
Henry A. Kappeler

Inventor:
Thomas W. Hughes.
By his Attorney
Albert A. Wood

UNITED STATES PATENT OFFICE.

THOMAS W. HUGHES, OF ATLANTA, GEORGIA, ASSIGNOR OF ONE-HALF TO
WILTON G. FORTSON, OF SAME PLACE.

SEWING-MACHINE MOTOR.

SPECIFICATION forming part of Letters Patent No. 386,782, dated July 24, 1888.

Application filed September 1, 1887. Serial No. 218,550. (No model.)

To all whom it may concern:

Be it known that I, THOMAS W. HUGHES, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented a new and useful Sewing-Machine Motor; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to that class of motors in which power is stored in a spring and is applicable to motors for many purposes, as well as those for driving sewing-machines, the object being to produce a motor that shall be reasonably low in cost, substantial in construction, and in which the spring can be wound up for the accumulation of power in an easy and effective way.

The invention consists of a spring and a system of gearing and means of putting tension on the spring, as will be hereinafter fully described.

In the accompanying drawings, Figure 1 is a side elevation of a chair with the mechanism attached, the device consisting of a case that is attached to one side of the chair and contains the mechanism, consisting of a system of gearing, by which the speed of the spring-drum is multiplied in being transmitted to the pulley from which the sewing or other machine is driven, a ratchet to resist the backward thrust of the spring and a pinion, both on the main or spring shaft, and a curved rack attached to a hinged seat of a chair, the said hinged seat being in an elevated position. This figure also shows the brake by pressure of the foot upon which the speed of the device may be regulated. Fig. 2 is a front view of the lower part of a chair, showing the same details as are shown in Fig. 1, but with the hinged seat depressed to its lowest position. Fig. 3 is a view of the inside of the pinion on the main shaft, showing its ratchet connected thereto.

In the figures, like reference-marks indicating corresponding parts in the several views, A is a chair, having the hinged seat B, which

is hinged by the hinges *a* to the front of this chair, and is raised by the spring C to the position shown in Fig. 1. Any form of spring may be used; but I consider the form shown as being preferable. To the bottom of one end of the hinged seat is attached the upper end of the curved rack D, which engages with the pinion E on the shaft 1. The pinion E runs loosely on the shaft 1 and drives it through the ratchet in the back side of the pinion, Fig. 3, which permits the pinion to run loosely in one direction. Attached to the pinion E is the pawl F', which engages with a ratchet on the shaft 1 back of the pinion E. When the pinion E is turned by the depression of the seat, the pawl F' engages with the ratchet on the shaft 1 and turns it, thus winding the spring. When the seat is raised, the ratchet F holds the spring and prevents it from unwinding, while the ratchet F' allows the pinion E to have a reverse movement. On the same shaft is the ratchet F, its pivot *f* being attached at any convenient stationary part of the device. On this shaft is also attached the inner end of the helical spring G, the outer end being attached to the drum H on and revolving with the gear K, that runs loosely on its shaft.

The hinged part of the seat of the chair being raised by the spring C to the position shown in Fig. 1, the weight of a person sitting on it will depress it to the position shown in Fig. 2, which will, through the rack D, revolve the pinion E in the direction shown by the arrow *x*, Fig. 1, and wind the spring on the shaft 1. I have shown the rack working on the pinion on the main shaft; but one or more pairs of gears may be interposed to cause the spring to be wound more rapidly, but with less force; or the gearing might be reversed, to make a given weight on the seat wind a greater weight of spring than it would otherwise do, according to circumstances; but I prefer to use a spring that will be of such a length and thickness as can be wound with a single gear and rack.

The repeated depression of the seat will wind up a spring of great length, after which the motor will run for a considerable time; or the person using it may in some cases allow the hinged part of the seat to rise occasionally without stopping the machine, which would

allow the motor to run continuously for any length of time without any stoppage.

5 The power of the spring is exerted on the spur-gearing on the shaft 1, and by it communicated to the pinion on the shaft 2, on which is also a spur-gear which communicates the power to the pinion on shaft 3, on which is the band-wheel Z, from which band-wheel a belt
10 machine. The shafts are supported in bearings in the casing L, which also incloses the gearing and is attached to the frame of the chair.

15 The brake M is pressed by the spring N against the wheel Z and prevents the motor from running when not in use, and by a pressure against the lower end regulates the speed when the device is in use.

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

In a sewing-machine motor, the combination of the hinged seat B, the spring C, the rack D, the pinion E, ratchets F and F', and their pawls, the shaft 1, the helical spring and gearing to transmit the power of said spring, and the casing L, supporting the bearings of said gearing and shaft, substantially as set forth. 25

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

THOMAS W. HUGHES.

Witnesses:

A. P. WOOD,
W. G. FORTSON.