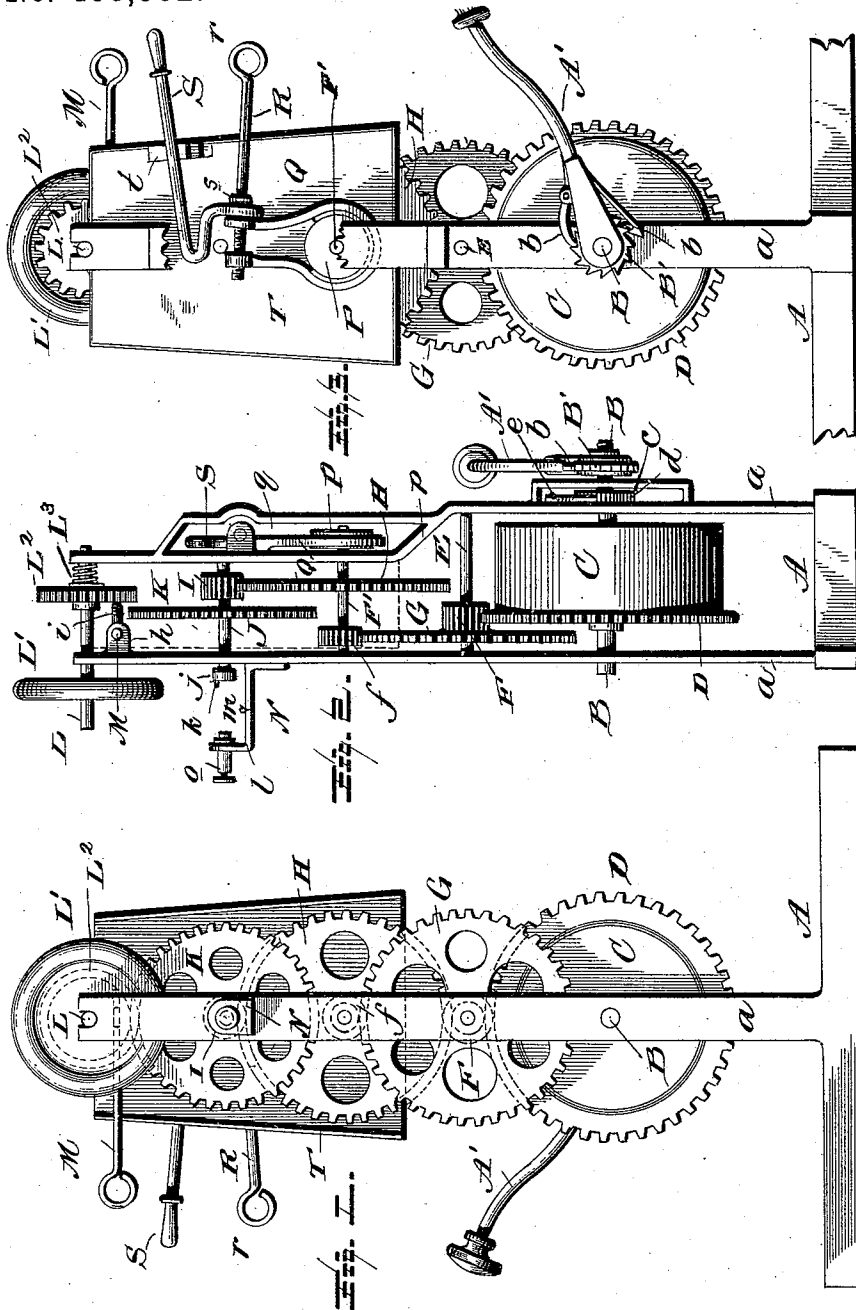


(No Model.)

C. A. MOORE.
SPRING MOTOR.

No. 468,982.

Patented Feb. 16, 1892.



Witnesses

L. C. Hill
E. H. Bond

Inventor
Columbus A. Moore.
per *Chas. H. Fowler*
Attorney

UNITED STATES PATENT OFFICE.

COLUMBUS ALONZO MOORE, OF BELTON, MISSOURI.

SPRING-MOTOR.

SPECIFICATION forming part of Letters Patent No. 468,982, dated February 16, 1892.

Application filed September 11, 1891. Serial No. 405,422. (No model.)

To all whom it may concern:

Be it known that I, COLUMBUS ALONZO MOORE, a citizen of the United States, residing at Belton, in the county of Cass and State of Missouri, have invented certain new and useful Improvements in Spring-Motors; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

This invention relates to certain new and useful improvements in spring-motors; and it has for its objects among others to provide a simple, cheap, durable, and efficient motor designed, primarily, for running sewing-machines, but capable of other uses, as will be apparent as the description proceeds. There is provision for winding the bobbin. There is provision for regulating the tension or power. There is an improved device for throwing the motor into or out of gear with the machine-operating shaft.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claim.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a side elevation of my improved motor. Fig. 2 is an edge view thereof. Fig. 3 is a view from the side opposite to Fig. 1, with a portion broken away.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates a suitable base or support from which rise the uprights or standards *a*, and in or upon these uprights are supported all of the operating parts of the device.

B is a shaft supported in these uprights near their lower ends, as shown, and on this shaft is the spring-drum C, which at one edge carries a large gear-wheel D. This spring-drum is designed to be wound up by the lever A', which is sleeved loosely upon the extended end of the shaft B and is provided with the oppositely-arranged spring-pawls *b*, which engage the ratchet-wheel B', fast on said ex-

tended end of the shaft B, as seen best in Fig. 3. Within a casing or recess *c* upon one side of the frame is a ratchet-wheel *d*, fast upon the shaft B, and with which is engaged a pawl *e*, which serves as a supplemental means for holding the spring as it is wound up.

E is a shaft parallel with the shaft B, and on this shaft is fast a small gear-wheel F, which meshes with the gear D on the drum, as seen in Fig. 2, and on this shaft E is also fast a large gear G, which meshes with a small gear *f* on the shaft F', parallel with the shaft E, and on this shaft F' is a large gear-wheel H, which meshes with the small gear I on the shaft J, on which shaft is a large gear-wheel K, all as seen clearly in Fig. 2. It will be readily seen how motion will be imparted to the shaft J from the spring-drum through the train of gearing above described and that very rapid revolution of the said shaft will be obtained from very slow revolution of the drum.

L is a shaft at the upper ends of the uprights and designed to be connected with the part to be driven. It is provided with a fly-wheel L' and with a gear-wheel L², which is so held upon the shaft as to be capable of longitudinal movement thereon and yet revolve therewith. It is normally held in contact with the gear-wheel K, so as to mesh therewith, by the spring L³ upon the shaft, as seen in Fig. 2, so that when the wheels L² and K are in mesh the part to be operated will be driven. In order to move the gear-wheel L² lengthwise of its shaft and throw the same out of engagement with the gear-wheel K, I provide a rod or lever M, which is held to the lug *h* on one of the uprights in such a manner as to be rocked therein, and this rod or lever carries a lug *i*, which, when the rod or lever is turned in its bearing to bring the lug horizontally, as seen in Fig. 2, forces the gear-wheel L² lengthwise of its shaft against the spring, as will be understood from Fig. 2.

The shaft J is extended at one end, as seen in Fig. 2, and carries a collar *j*, which is provided with a pin or finger *k*, as seen in Fig. 2. Secured to the upright upon this side of the machine at a point just below this shaft is a folding bracket N hinged, as at *m*, and provided with an upturned end *l*, in which is held an adjustable spindle or pin *o*, as seen

in Fig. 2, which provision is made for the purpose of winding bobbins when desired. At the opposite side of the frame there is provided an offset *p* and a vertical chamber or recess *q*, within which is arranged the brake and tension-regulating device. This is shown in Figs. 2 and 3, and consists of the pulley or wheel *P* on the extended end of the shaft *F'*, and around which the brake-band *Q* is placed, as seen in Fig. 3, the brake-band being substantially in the shape of a **U**, with its ends screw-threaded, and through these threaded ends the screw-rod *R* is adjustable, the free end of the rod being extended, as seen in Fig. 3, and provided with a suitable eye or other provision *r*, as shown in Fig. 3. *S* is the brake-lever having its inner end substantially in the form of a **V**, as seen in Fig. 3, with its inner end held on the rod *R* and confined between the end of the brake rod or band and a collar *s* on the screw-rod, as seen in Fig. 3. A lug or other provision *t* is provided upon the upright and under which the brake-lever is designed to be engaged, as will be understood from Fig. 3, when it is pressed down to stop the device. Screwing up on the screw-rod increases the tension of the brake and the pressure of the brake-band on the pulley or wheel. A shield *T* is provided for the upper portion of the device, as seen in Figs. 1 and 3. It is secured to the upright in any suitable manner.

The operation of the device will be readily understood from the foregoing description when taken in connection with the annexed drawings, and a further detailed description thereof is not deemed necessary.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages. What I claim as new is—

The spring-motor described, comprising the frame, the spring-drum carried by a shaft mounted in said frame, the lever *A'* on the shaft of the drum and carrying oppositely-arranged spring-pawls, a ratchet-wheel on said shaft engaged by the pawls, the supplemental ratchet-wheel *d* on said shaft, the pawl *e*, the shaft to be operated, a train of gearing between said shaft and the drum, the pulley on the shaft of a part of said train, the brake-band encircling the said pulley, the screw-rod on which the ends of the brake-band are held, and the brake-lever with its inner end held on said screw-rod, all substantially as shown and described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

COLUMBUS ALONZO MOORE.

Witnesses:

JOE C. FIELDS,
N. L. ROSS.