(No Model.)

P. A. DOHIS.

SPRING MOTOR.

No. 382,033. Patented May 1, 1888.

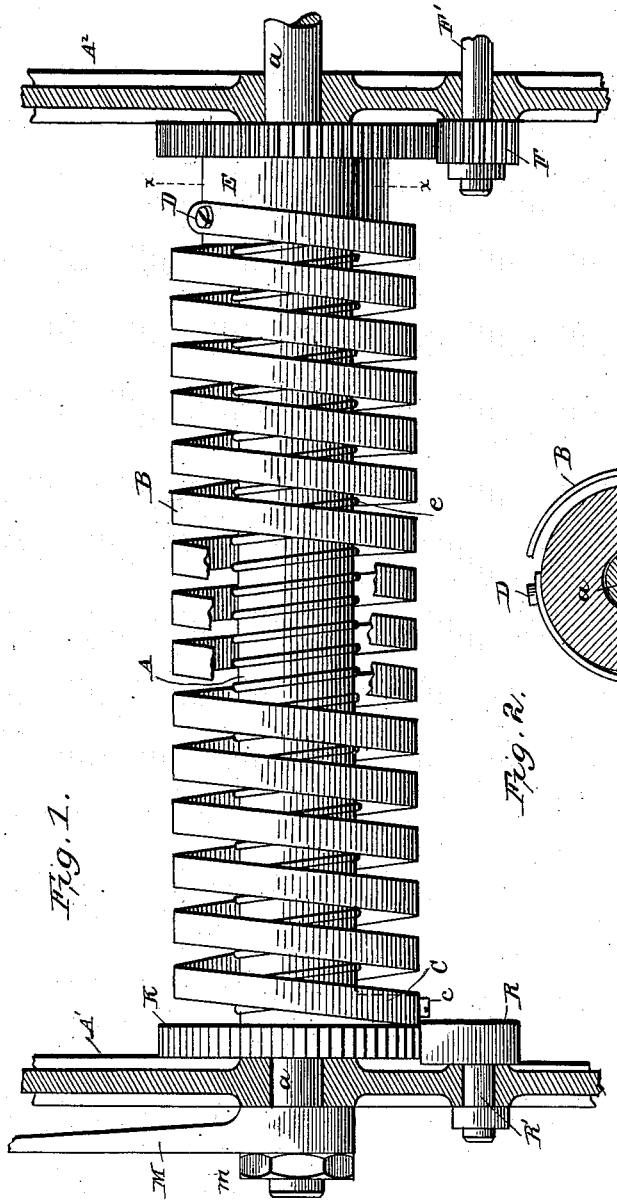

Fig. 1.

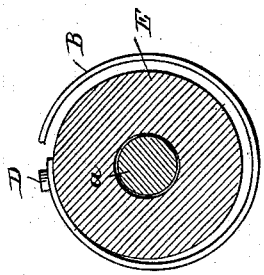

Fig. 2.

WITNESSES,

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PROSPER ACHILLE DOHIS, OF PARIS, FRANCE.

SPRING-MOTOR.

SPECIFICATION forming part of Letters Patent No. 382,033, dated May 1, 1888.

Application filed March 14, 1887. Serial No. 230,925. (No model.)

To all whom it may concern:

Be it known that I, PROSPER ACHILLE DOHIS, a citizen of the French Republic, residing at Paris, Department de la Seine, France, have invented certain new and useful Improvements in Spring-Motors; 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 that class of spring-motors in which a helical spring is wound on a shaft, which is retained by means of a ratchet and a pawl, the expansion of the spring communicating rotary motion, through gearing, to the machinery to be driven as soon as the tension of the spring thus wound is sufficient to overcome the inertia of the said machinery. Such motors have been known heretofore, and are not now broadly claimed.

My present invention consists in the improved construction and combination of parts hereinafter particularly set forth, and defined by the claim.

In the accompanying drawings, Figure 1 represents in side elevation the devices embodying my invention. Fig. 2 represents a detail sectional view on the line *x x*, Fig. 1, of the shaft and sleeve, the spring being shown in said elevation.

A designates the shaft, having journals *a a*, which turn in supports $A' A^2$, preferably forming parts of the framing of a machine. This shaft has near one end an arm, C, to which one end of a helical spring, B, is attached by a screw, *c*. Said spring is wound around said shaft and the other end, D, of said spring is attached to a sleeve, E, which is free to turn on said shaft. This sleeve carries a gear-wheel, H, which engages a smaller wheel or pinion, F, through which power is transmitted as required. The other end of shaft A carries a ratchet-wheel, K, which is engaged and held by a retaining dog or pawl, R, mounted on a pivot-rod, R′, which is bolted to support A′. A handle, M, is held by nut *m* on the journal *a*, which is nearest to ratchet-wheel K, said journal being extended for that purpose through the support A′.

Instead of using a perfectly smooth shaft, I form on its face a series of spiral ribs, *e*. These ribs preferably extend from end to end of the shaft, (excluding the journals,) as a continued spiral having a different inclination from that of the coils of the spring. They prevent these coils from packing closely against the latter. On a smooth surface this is found to result in a considerable loss of power.

The operation is as follows: The handle M being turned to wind up the spring, the pawl R engaging with ratchet K holds the shaft A and spring B in the position to which they are thus rotated. The spring of course tends to unwind at the other end, and when the tension of the spring thus wound becomes great enough to overcome the inertia and friction of the machinery to be driven power is thereby communicated, through sleeve E and wheels H and F, to shaft F′ and any mechanism with which it may be connected.

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

A shaft provided with spiral ribs, in combination with a spring which is wound thereon and attached at one end to said shaft, a handle for rotating said shaft, a ratchet and retaining-pawl for holding the shaft as the spring is wound, a sleeve attached to the other end of said spring and rotating independently of said shaft, and gearing actuated by said sleeve, substantially as set forth.

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

PROSPER ACHILLE DOHIS.

Witnesses:

EDWARD P. MACLEAN,

LOUIS LOCHERT.