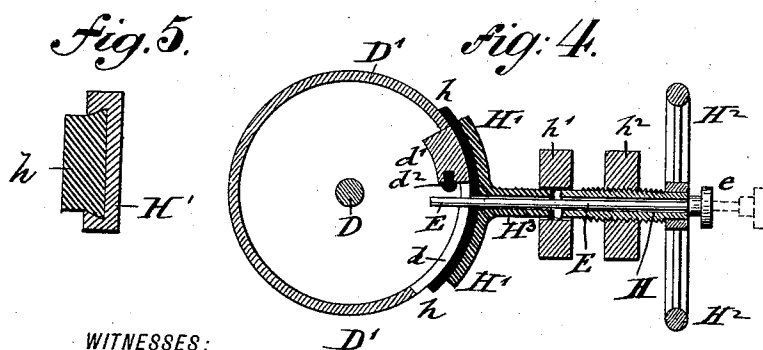
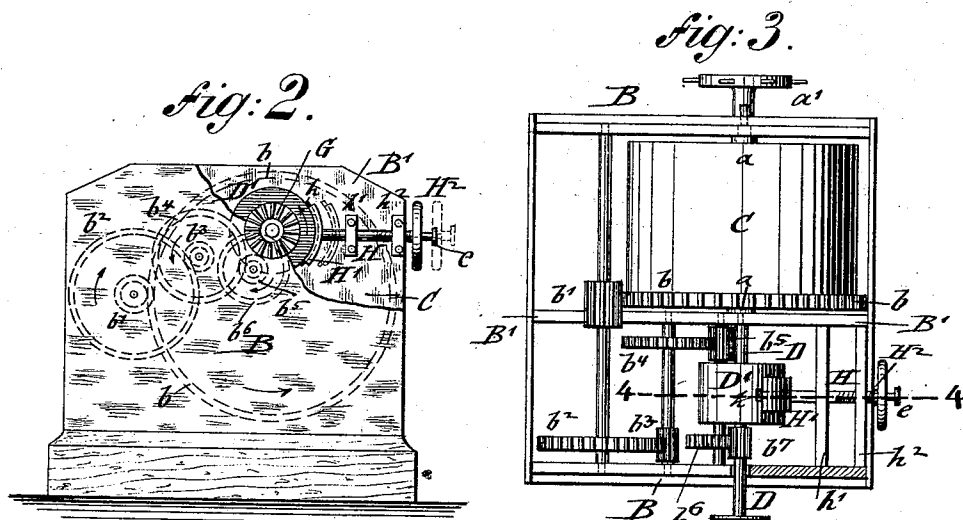
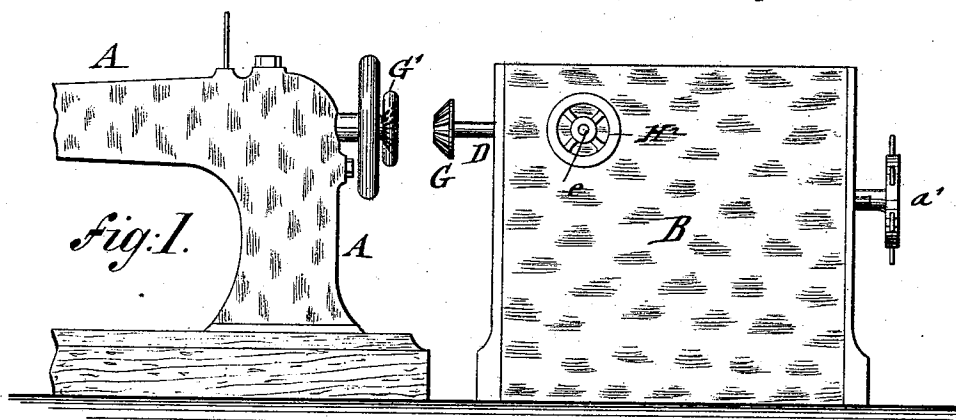


(No Model.)

B. REICHELT.
MOTOR FOR SEWING MACHINES.

No. 472,818.

Patented Apr. 12, 1892.



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UNITED STATES PATENT OFFICE.

BRUNO REICHELT, OF SOUTH BEND, INDIANA.

MOTOR FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 472,818, dated April 12, 1892.

Application filed May 28, 1891. Serial No. 394,348. (No model.)

To all whom it may concern:

Be it known that I, BRUNO REICHELT, a citizen of the United States, residing at South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Motors for Sewing-Machines, of which the following is a specification.

This invention relates to an improved spring-motor for sewing-machines or other light machines by which said machines can be operated without the use of the foot by simply winding up the driving-spring of the motor and by which they can be started or stopped with great facility and its speed regulated as required; and the invention consists of a spring-motor for sewing and other machines, which comprises a spring-barrel supported in a casing located sidewise of said machine, a rotary shaft driven by a motion-transmitting train of gear-wheels, said shaft being provided with a male clutch member that engages with a female clutch member on the upper driving-shaft of the machine to be driven, and a stop device which acts on a drum on the transmitting-shaft, so as to start or stop the motor. A brake device is operated in connection with the drum, so as to regulate the speed of the motor, as will be fully described hereinafter, and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side elevation of a portion of a sewing-machine and of my improved spring-motor arranged sidewise of the same. Fig. 2 is an end elevation of the spring-motor with a part of the casing broken away so as to show the transmitting-shaft and the speed-regulating brake device. Fig. 3 is a plan of the spring-motor, partly in section; and Fig. 4 is a vertical transverse section, drawn on a larger scale, of the stop device and the brake device, taken on line 4 4, Fig. 3. Fig. 5 represents a transverse section of the brake-shoe with its packing.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents a sewing-machine, and B the casing of my improved spring-motor, which is arranged sidewise of the sewing-machine and supported on an extension of the table of the same.

The casing B is divided by a partition B' into two parts, in one of which is arranged a

spring-barrel C, which contains a driving-spring of suitable strength, said spring-barrel being provided with the usual key *a'* for winding up the arbor *a* and check device. The spring-barrel C transmits power by a gear-wheel *b* to an intermediate train of gear-wheels *b'*, *b''*, *b'''*, *b''''*, *b'''''*, and *b''''''* (shown in dotted lines in Fig. 2 and in full lines in Fig. 3) to a shaft D, which is supported in bearings of the partition and side wall of the casing B, said shaft being provided at its outer end with a toothed and beveled clutch member G, that is adapted to mesh with a correspondingly-beveled and toothed clutch member G' on the adjacent end of the upper driving-shaft of the sewing-machine A, as shown clearly in Fig. 1.

By moving up the motor to the sewing-machine so that the clutch member G meshes with the clutch member G' the power of the spring-motor is directly transmitted to the driving-shaft of the sewing-machine and the same operated thereby.

In place of moving the motor up to the sewing-machine the motor may be made stationary, and the clutch member G' may be made to slide in the hollow shaft of the sewing-machine, it being splined thereto for this purpose. The transmitting mechanisms so far described—namely, the spring-barrel and the train of gear-wheels and the clutch device by which the motion is transmitted to the shaft of the sewing-machine—are well known and form no part of my invention.

The novel features of my invention consist in a stop device by which the motor is started and stopped and in a brake device by which the speed of the same is regulated, which devices are arranged in connection with a drum D', which is rigidly keyed to the shaft D and which is provided with a slot *d*, and at one end of the slot with an inwardly-projecting block *d'*, having an elastic buffer *d''* of rubber or other suitable material, as shown clearly in Fig. 4. A stop-pin E, provided with a button *e* at its outer end, is guided in the tubular spindle H of the brake device and serves to direct the motor on being pushed inward so as to be placed into the path of the buffer *d''*. As soon as the stop-pin E passes through the slot *d* the buffer *d''* abuts against the pin and produces thereby the stopping of the motor.

When it is desired to start the motor, the stop-pin E is drawn back in outward direction, as indicated in dotted lines in Fig. 4, so that the inner end of the stop-pin clears the buffer and slot and releases thereby the drum D', so that the motor can be run at its full speed.

The tubular spindle H is supported in bearings of the transverse bars h' and h^2 of the casing B, being threaded along a portion of its length, so as to engage the interiorly-threaded portion of the transverse bar h^2 , and is adapted to form contact with the brake-arm H^3 of the brake-shoe, which is also supported in bearings of the transverse bar h' . To the inner side of the brake-arm H^3 is applied an arc-shaped brake-shoe H' , which is provided with a dovetailed groove, into which is inserted a friction-packing h , of rubber, felt, or other suitable material, that corresponds in curvature to the circumference of the drum D', and produces when placed in contact therewith the retarding of the speed of the motor or the entire stopping of the same, if desired. To the outer end of the tubular spindle H is applied a hand-wheel H^2 , by which the spindle is turned and the brake-shoe H' adjusted up to or away from the drum D'.

In Figs. 3 and 4 of the drawings the brake-shoe is shown in contact with the drum, so as to retard the speed of the drum, while the dotted lines in Fig. 2 show the brake-shoe moved away from the drum by the hand-wheel H^2 , so as to release the drum and permit the rotation of the motor at full speed.

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

1. In a motor, the combination of a drum keyed to the driving-shaft, said drum being provided with a slot and an inwardly-projecting block having an elastic buffer at one end of said slot, a brake-shoe acting on the circumference of said drum, a hollow brake-arm attached to said shoe, a hollow spindle forming contact with said arm, means for adjusting said brake-shoe, and a stop-pin guided in the tubular spindle and brake-arm and adapted to be placed in the path of the buffer, so as to produce the stopping or permit the starting of the motor on the pushing in or withdrawing of the stop-pin, substantially as described.

2. In a motor, the combination of a drum on the driving-shaft, said drum having a slot and a block with an elastic buffer at one end of said slot, a brake device for the drum, comprising a tubular arm and a hollow spindle, and a stop-pin guided in said brake-arm and spindle, so as to produce the stopping or permit the starting of the motor, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

BRUNO REICHELT.

Witnesses:

JOHN ROTH,
GUST. STICKLE.