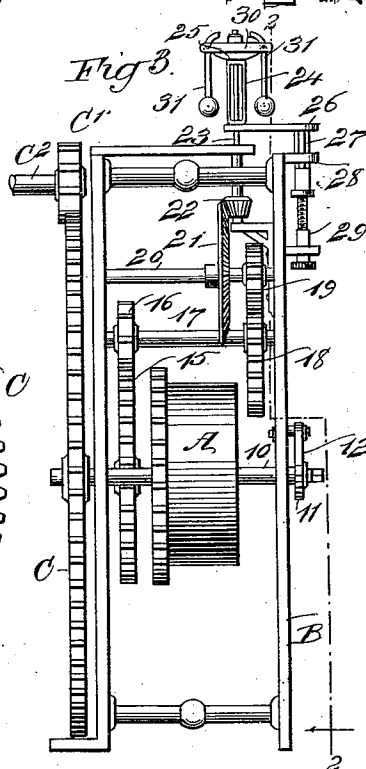
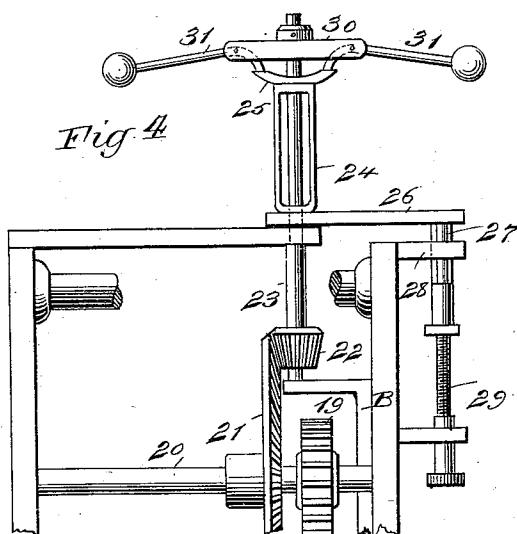


W. H. D. LUDLOW.
MOTOR.

Patented Apr. 9, 1895.



INVENTOR
W. H. S. Ludlow
BY Munn & Co
ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM H. D. LUDLOW, OF TECUMSEH, NEBRASKA.

MOTOR.

SPECIFICATION forming part of Letters Patent No. 537,052, dated April 9, 1895.

Application filed May 5, 1894. Serial No. 510,156. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. D. LUDLOW, of Tecumseh, in the county of Johnson and State of Nebraska, have invented a new and Improved Motor, of which the following is a full, clear, and exact description.

My invention relates to improvements in spring motors and the invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the motor, illustrating its application to a small machine. Fig. 2 is a front elevation of the motor, the frame being shown in section, the section being substantially on the line 2-2 of Fig. 3. Fig. 3 is a side elevation of the motor; and Fig. 4 is an enlarged view of the governor and the parts immediately connected therewith.

In carrying out the invention two spring drums A are mounted in a suitable frame B, and the shafts 10 upon which the drums are located are key shafts, and are provided with suitable ratchets and pawls 11 and 12. The main or driving shaft 13, is located between the two drum shafts, and has secured thereon a pinion 14, which pinion is made to mesh with gears produced upon both of the drums, as shown in Fig. 2. The driving shaft 13 likewise carries a large gear 15 within the frame, and a master wheel C, preferably located outside of the frame, which is made to mesh with a pinion C', mounted upon a shaft C², which may be the driving shaft of a churn, or the pinion C' may be located upon any portion of the driving mechanism of the machine to be driven.

The motor is adapted to be controlled through the medium of a governor, and to that end power is transmitted, through the gear 15 meshing with a pinion 16, to a shaft 17, journaled in the frame. This shaft is made to carry a gear 18, which in turn meshes with a pinion 19 mounted upon a shaft 20, likewise journaled within the frame, which shaft further carries a beveled gear 21. The gear 21

meshes with a beveled pinion 22, fast upon a governor shaft 23, journaled in the frame and extending preferably above the top thereof.

A frame 24, is loosely mounted upon the upper portion of the governor shaft 23, the upper portion of the frame being made to carry a plate 25 preferably made in the form of a disk and provided with a dished upper central face. The frame 24, is made to rest upon a brake bar 26, which bar is provided with a finger 27, which extends through a suitable guide 28, and is brought to an engagement with an adjusting screw 29. The governor consists of a plate 30, which is secured upon the upper end of the shaft 23 above the plate 25, loosely revolving around the governor shaft, and governor arms 31, are pivoted in opposite sides of the governor plate 30, the outer ends of which arms are weighted, or made to terminate in balls, while the inner ends are curved downward in such manner that they may strike the loosely mounted plate 25. When the machine is at rest, the governor will be in the position shown in Fig. 3, in which the arms will be perpendicular; and when the machine is at full speed the arms of the governor will be in substantially a horizontal position, as shown in Fig. 4, and the motion of the governor shaft will be arrested by the inner ends of the governor arms being brought into frictional engagement with the upper marginal surface of the loosely mounted plate 25; and in proportion to the speed at which the machine is run will the governor arms bear more or less upon said plate, touching but lightly on the plate when the machine is run at low speed, and bearing well upon the plate when the machine is run at full speed.

By adjusting the screw 29 in a manner to carry the brake bar 26 upward, the frame 24 and attached plate 25, will be lifted to a frictional engagement with the governor plate 30, and the machine will be stopped almost instantly and without exerting undue strain upon the springs in the drums A.

Such a motor is exceedingly simple, durable and economic in its construction, and is adapted to run any light machine.

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

1. In a motor, the combination, with spring-controlled drums, a power shaft driven by the said drums, a master wheel carried by the power shaft, and means, substantially as shown and described, for transmitting motion from the master wheel, of a governor comprising a governor shaft in gear connection with the power shaft, a disk loosely mounted upon the governor shaft, held in a predetermined position, a second disk secured to the governor shaft above the loosely mounted disk, governor arms pivoted in the governor disk, and having downwardly curved inner ends which arms are adapted for frictional engagement with the loosely mounted disk, the loosely mounted disk being capable of frictional engagement with the governor disk and means for adjusting the loose disk on the governor shaft, as and for the purpose specified.

2. In a spring motor, the combination, with spring-controlled drums, a power shaft driven by said drums, a master wheel carried by said shaft, and means, substantially as shown and described, for transmitting power from the master wheel, of a governor, a sliding disk adapted for engagement with the governor arms and for frictional engagement with the governor body, and a brake bar for operating

the sliding disk, and means for adjusting the said brake bar, as and for the purpose specified.

3. In a spring motor, the combination, with spring-controlled drums, a power shaft driven by said drums, a master wheel carried by the said shaft, and means, substantially as shown and described, for transmitting power from the master wheel, of a governor, the same consisting of a shaft geared with the power shaft, a frame loosely mounted upon the said governor shaft, provided with a friction plate at its upper end, a plate comprising the body of the governor secured to the governor shaft above the loosely mounted disk, governor arms pivoted in the governor plate or body, and having downwardly curved inner ends which arms are adapted, when said arms are extended, for frictional engagement with the said disk, a brake bar, and means for operating the brake bar to carry the disk into frictional engagement with the body of the governor, thereby stopping the motion of the said governor, as and for the purposes set forth.

WILLIAM H. D. LUDLOW.

Witnesses:

P. V. R. DAFOE,
EDMON M. ATTERBERRY.