(No Model.) 2 Sheets—Sheet 1.

D. WISE.

MECHANICAL POWER.

No. 300,425. Patented June 17, 1884.

Fig 1.

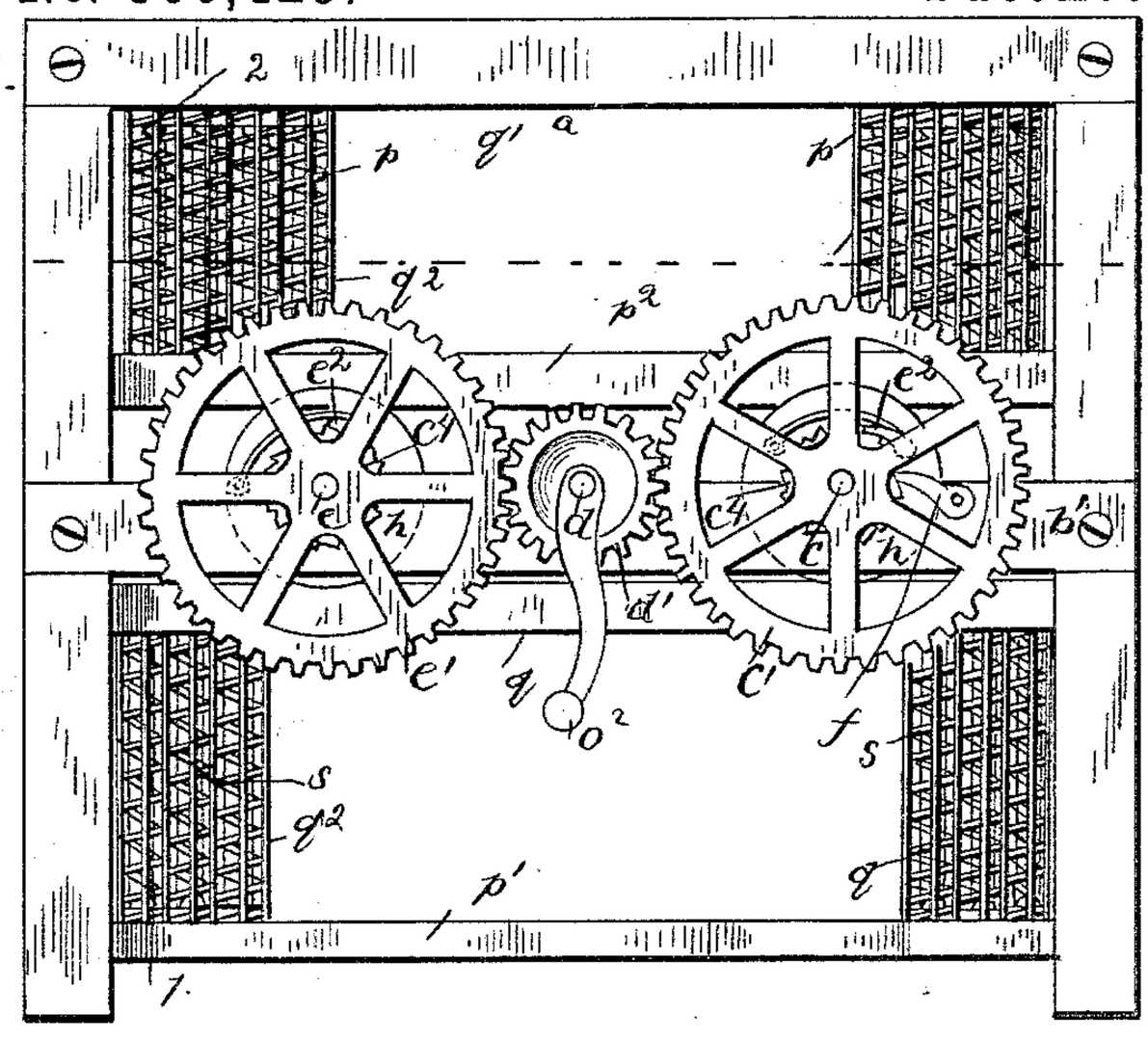


Fig 5.

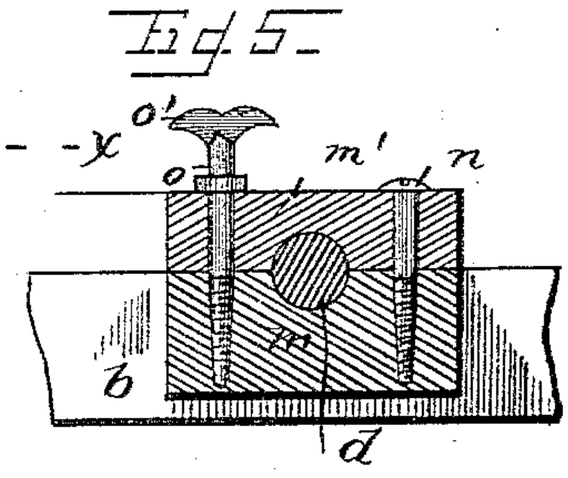


Fig 3.

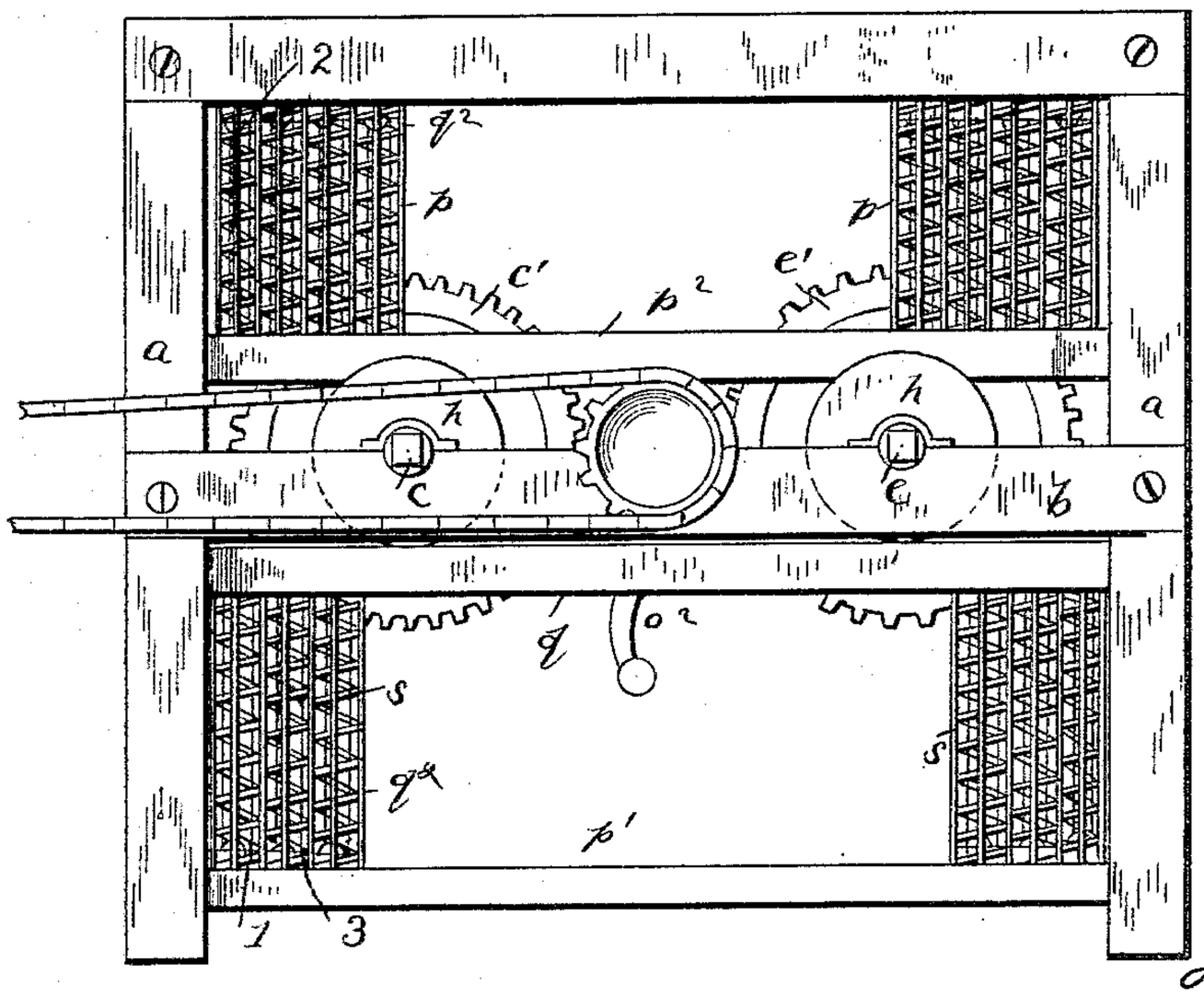
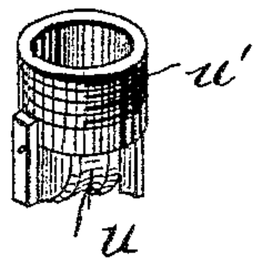


Fig 7.



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(No Model.) 2 Sheets—Sheet 2.

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Fig 4

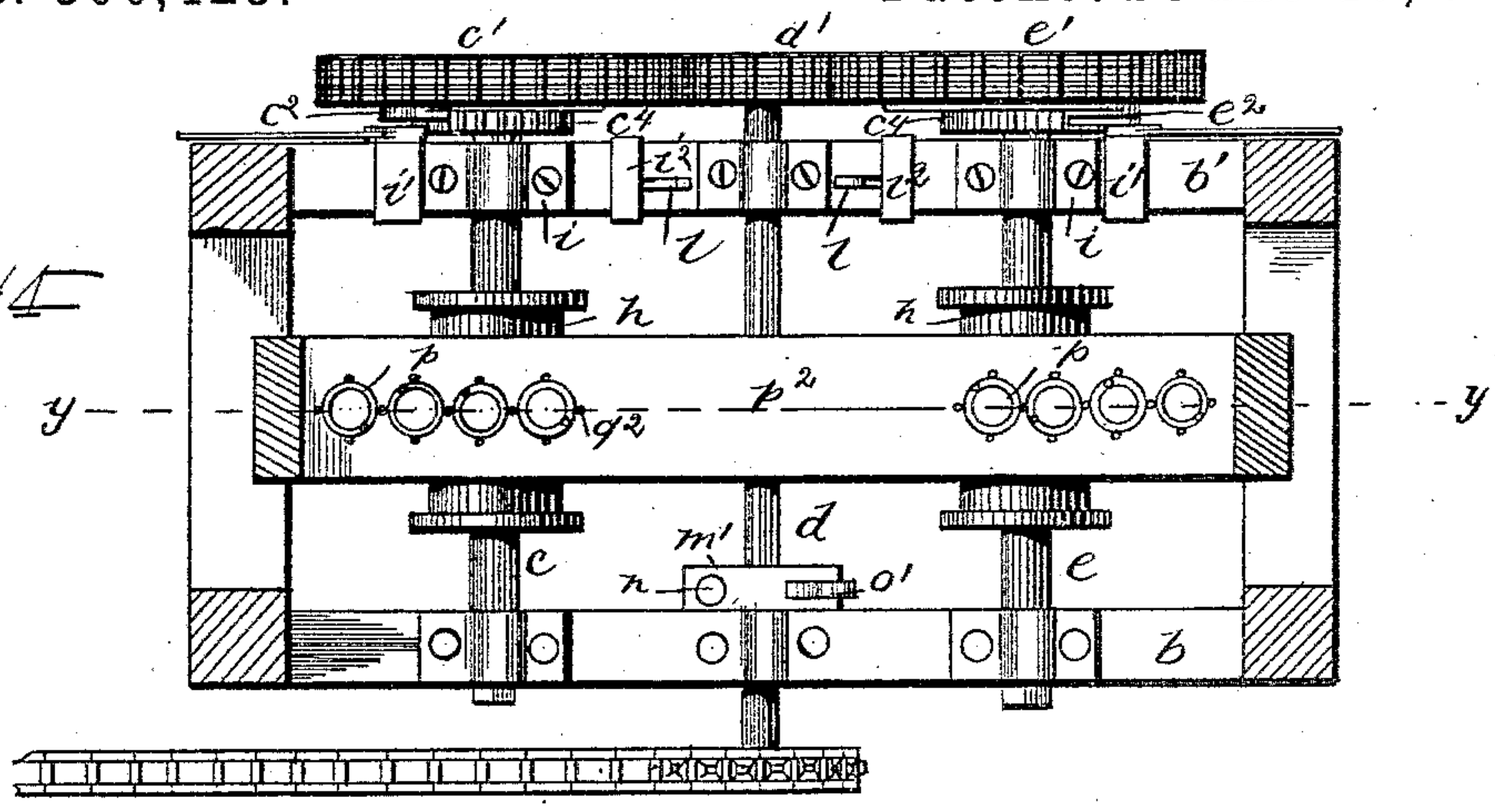


Fig. 6.

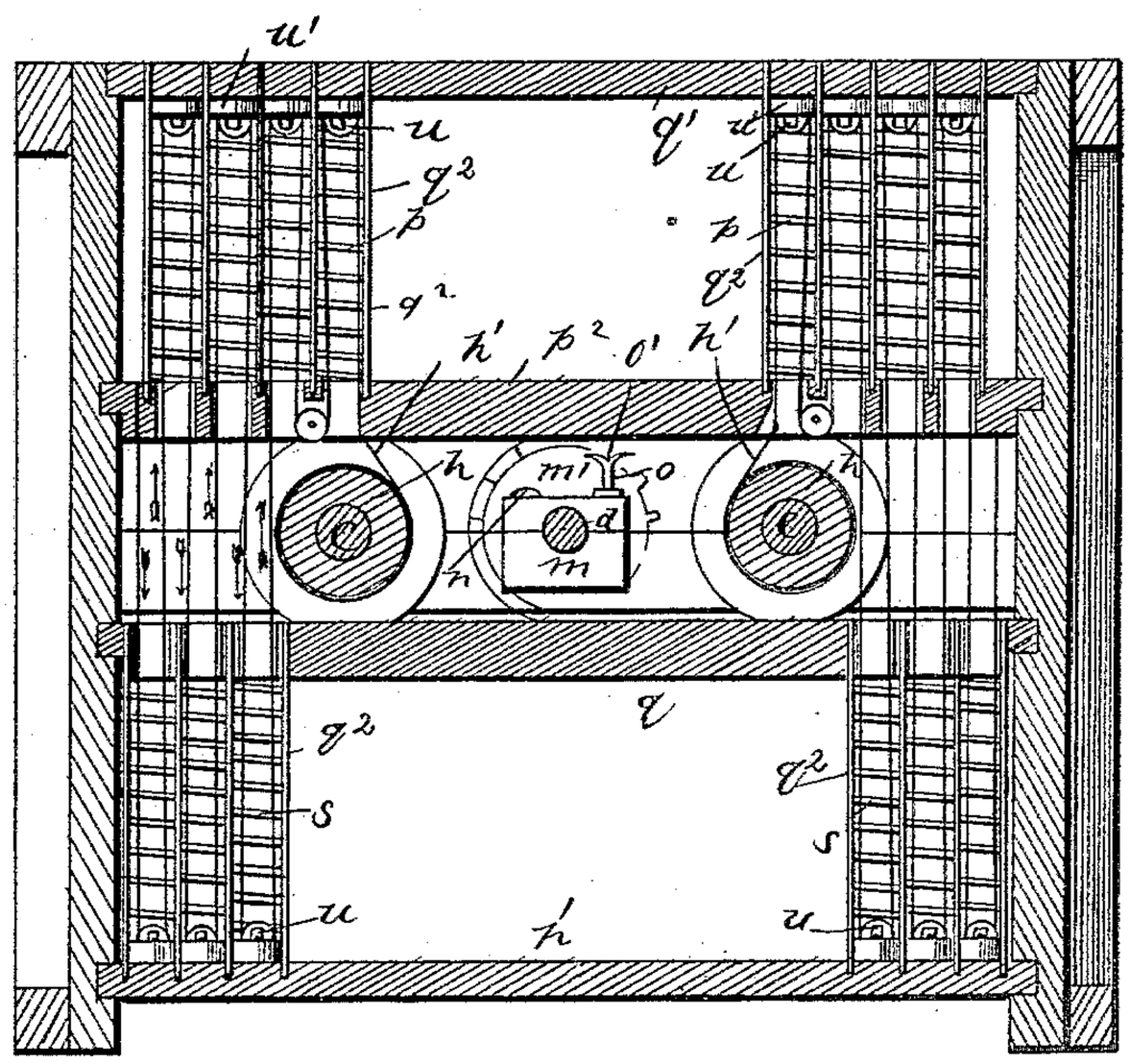
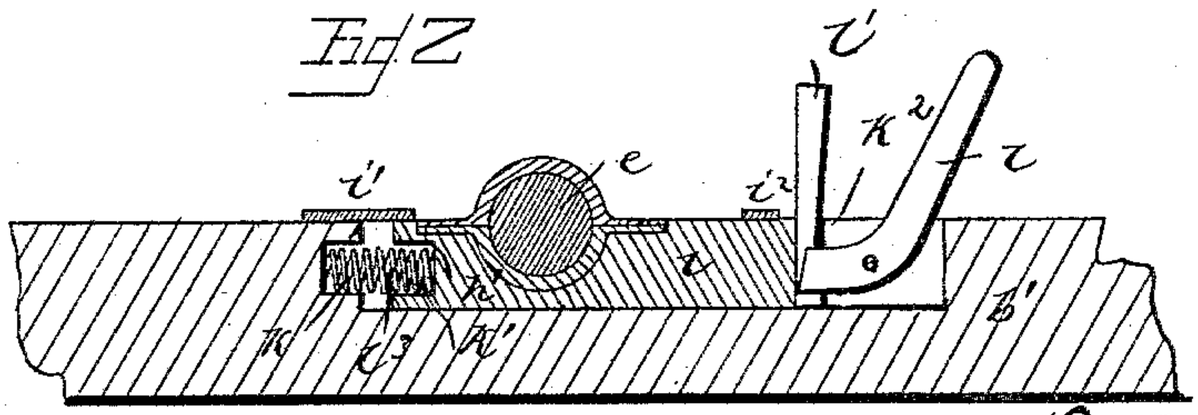


Fig 7



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UNITED STATES PATENT OFFICE.

DAVID WISE, OF COTTONDALE, TEXAS.

MECHANICAL POWER.

SPECIFICATION forming part of Letters Patent No. 300,425, dated June 17, 1884.

Application filed April 10, 1884. (No model.)

To all whom it may concern:

Be it known that I, DAVID WISE, a citizen of the United States, residing at Cottondale, in the county of Wise and State of Texas, have invented a new and useful Mechanical Power, of which the following is a specification, reference being had to the accompanying drawings.

This invention has relation to mechanical powers designed for running light machinery—such as well-pumps, churns, sewing-machines, washing-machines, &c.; and it consists in the construction and novel arrangement of parts, as will be hereinafter fully described, and particularly pointed out in the claims.

Figure 1 is a side elevation taken from the side on which the gear-wheels are mounted. Fig. 2 is a sectional detail view of one of the adjustable boxes, its guides, spring, lever, and wedge for holding it in the out-of-gear position. Fig. 3 is an elevation of the opposite side of the machine. Fig. 4 is a horizontal sectional view on the line *x x* in Fig. 1. Fig. 5 is a sectional detail view of the brake mechanism applied to the intermediate shaft. Fig. 6 is a vertical longitudinal sectional view on the line *y y* in Fig. 4, but showing the full height of the machine; and Fig. 7 is a perspective detail view of one of the pulleys and its holder, over which the spring-actuated cords run.

Referring by letter to the accompanying drawings, *a* designates the frame of the machine, which is provided with two complete motors, which are arranged in the frame to operate independently or in conjunction to drive the same shaft to impart power to the machinery that is to be operated; and as the motors are alike in construction, a description of one will suffice for both in many particulars.

b and *b'* designate the side beams intermediate of the top and bottom of the frame, which are provided with the boxes in which the three transverse horizontal shafts *c*, *d*, and *e* are journaled. The shafts *c* and *e* are provided at one end with gear-wheels *c'* and *e'*, which, when the machine is in gear, mesh with a pinion, *d'*, on the end of the intermediate shaft, *d*. The gear-wheels *c'* and *e'* are provided with spring-pawls c^2 and e^2, which engage ratchet-wheels c^4 c^4 on their respective shafts inside of the said wheels. Pivoted detents *f* are also arranged at this side of the frame, and are adapted to engage the ratchet-wheels c^4 c^4, which are fixed to the shafts *c* and *e*, and prevent them from turning backward. At the middles of the shafts *c* and *e* drums *h* are keyed, in order that they may revolve with the said shafts, and on these drums the operating-cords *h' h'* are wound. The boxes *i* for the shafts *c* and *e* are made adjustable longitudinally of the rail *b'* in guides i' i^2, secured to said rail *b'*, and are held in their normal positions—*i. e.*, in gear—by springs i^3, let into recesses in the shoulders *k* of the rails, and also into recesses *k'* in the outer ends of said boxes. The shoulders k^2, or inner shoulders on the rail *b'*, are kerfed vertically and longitudinally for short distances, and in these kerfs levers *l* are fulcrumed, and are used to throw the motors out of gear with the pinion *d'*, when desired. Wedges *l'* are inserted in the spaces formed by shifting the boxes outwardly to hold the motor out of gear for any desired length of time. When the wedges are withdrawn, the springs return the boxes to their normal positions. The opposite ends of the shafts *c* and *e* are made rectangular, to receive the crank-handle by which the cord is wound upon its drum. The rail *b* at this side of the frame is provided on its inner face with the brake mechanism, by which the speed of the motor or motors, as the case may be, is regulated; and this mechanism consists of a half-box, *m*, fixed to the rail *b* and a half-box, *m'*, secured over the shaft *d* to the top of the half-box *m* by a bolt, *n*, threaded only at its lower end, and working in a threaded seat in the half-box *m*, the opening in the half-box *m'* through which it passes not being threaded. The holes at the other ends of these half-boxes *m m'* are similarly constructed; but in these openings, instead of a simple bolt, a shouldered lever-screw, *o*, is provided, its lower end only being threaded, the shoulder resting on the top of the half-box *m'*, and the cross-head *o'* being adapted to be grasped by both hands, and the lever-screw turned to force the upper half-block *m'* down upon the shaft *d*, thereby causing it to serve as a brake to regulate the speed of the motors. At this end of the shaft *d* a chain-wheel is provided, over which the chain from a pump may run to pump water from a

well. The other end of this shaft *d* is provided with a crank, o^2, to which a churn or other article may be connected at the same time, so that power may be imparted at both ends of the shaft *d* at the same time, if desired.

The spring-power which runs the gearing is constructed and arranged as follows: The springs *p s* are arranged in upper and lower columns—*i. e.*, above and below the shafts. p' designates the base-rail for the lower columns, and p^2 the base-rail for the upper columns, and *q q'* are the top rails. The springs are coil-springs, and work vertically in guides formed by rods q^2, arranged around said springs, as shown, the ends of said rods being fixed in the base and top rails of their respective columns. The base-rail p^2 and the top rail, *q*, are perforated for the passage of the cords or ropes *h'*. The upper ends of the springs *p* of the upper columns are provided with pulleys *u*, and the lower ends of the springs *s* are provided with pulleys *u*. The pulley-holder *u'* for the pulley *u* is provided with a few screw-threads, and the ends of the springs that receive the holders are closely coiled, to serve as the threads to hold the pulley-holders. The shafts for these pulleys should be held in their bearings by nuts, to prevent them from turning or working out. The cords or ropes *h'* are connected at one of the ends to the central uprights of the frame above the lower top rail, *q*, and pass down the perforation therein, through the axis of spring 1, around its pulley, up through its axis, and through the perforations in the rails *q* and p^2, thence up through the axis of spring 2, over its pulley, down through its axis and the perforation in rail p^2 that it passed up through, then down through the next perforation in the top rail, *q*, and down through the axis of spring 3, around its pulley, and again up through the axis of the same spring, and thus on, following the direction of the arrows, until it reaches its drum, on which it is to be wound. When the cords are wound upon their drums, the springs are all compressed in their guideways, and it is their power of expansion that drives the gearing through the media of the cords.

Any number of springs may be employed, and their dimensions may be varied to suit the uses to which the motors are to be applied, and enough springs may be employed to run the motor all day with one winding. Suppose there were twelve springs—six above and six below—the springs in the upper column to be six feet long each, and those below three feet long. This would give one hundred and eight feet of cord to each motor, and the drum on which the cord is wound, being eight or ten times as large in diameter as the wheel that is driven, gives a sufficient cord capacity to run a pump without any intermission from twelve to fifteen hours. A boy of from twelve to fifteen years old can wind the machine, and as the keys that hold the drums upon the shafts penetrate grooves in the shafts made longitudinally of the same, the drums are permitted to move laterally, so that the cord will be wound in layers around the spools.

These motors are simple, durable, and efficient, and are not likely to get out of order. If one runs down the other can be applied immediately, and the other one wound up, ready for use; or they may be both used at the same time.

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

1. In a motor, the combination, with the upper and lower columns of coil-springs incased in fixed guides, and provided with pulleys at their movable ends, and their operating-cord, of a power-shaft provided with a winding-drum movable laterally thereon, and a loose cog-gear, with a spring-pawl engaging a fixed ratchet-wheel on said shaft, the latter being journaled in an adjustable box at one end on the bearing-rail of the frame, substantially as specified.

2. In a motor, the combination, with the shafts *c* and *e*, provided with the cog-gears *c'* and *e'*, the pawls and ratchets, and winding-drums, said shafts being mounted in adjustable boxes on one bearing-rail of the frame, of the intermediate shaft, *d*, having the pinion *d'*, and the brake at the opposite bearing-rail, and the columns of coil-springs, and the operating-cords connected to the drums, substantially as specified.

3. In a motor, the combination, with the bearing-rail having recesses in its upper face and guides at said recesses, of the spring-actuated boxes, the shifting-levers, and wedges for throwing the cog-gears on the shafts *c* and *e* out of gear with the pinion on the shaft *d*, substantially as specified.

4. In a motor, the combination, with one of the bearing-rails of the frame and the shaft *d*, journaled in a box thereon, of a lower fixed half-box and an upper adjustable half-box, secured thereto by a bolt and a lever-bolt, to be operated as a brake for the motor, substantially as specified.

5. In a motor, the shaft *d*, provided with a sprocket-wheel at one end and a crank at the other end, and mechanism, substantially as herein described, for applying power to said shaft *d*, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

DAVID WISE.

Witnesses:
I. W. KEEN,
WILLIAM READ.