(No Model.)

G. B. SELLERS.

MOTOR.

No. 480,972. Patented Aug. 16, 1892.

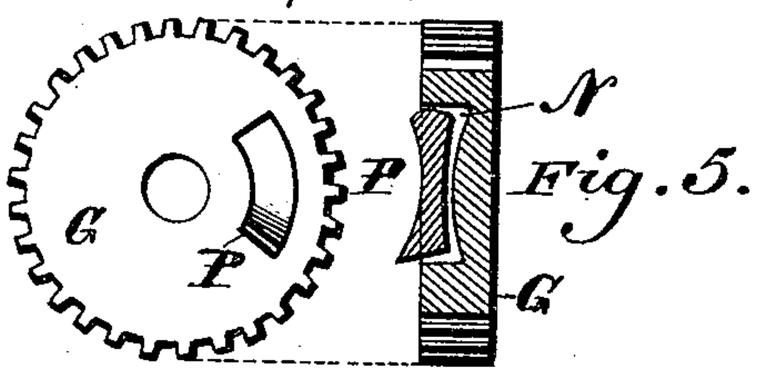
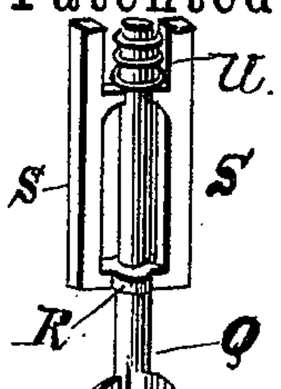


Fig. 5.



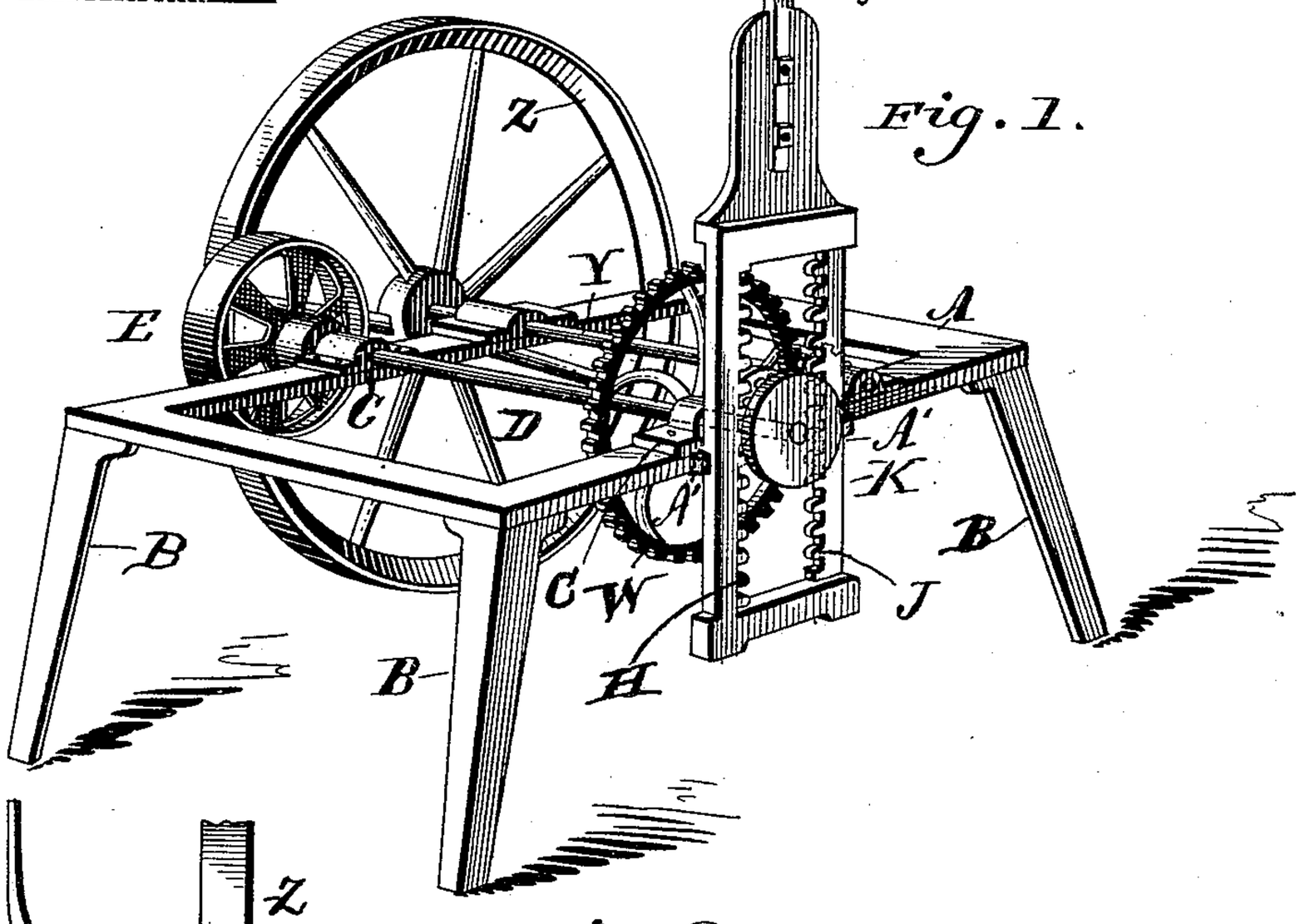


Fig. 1.

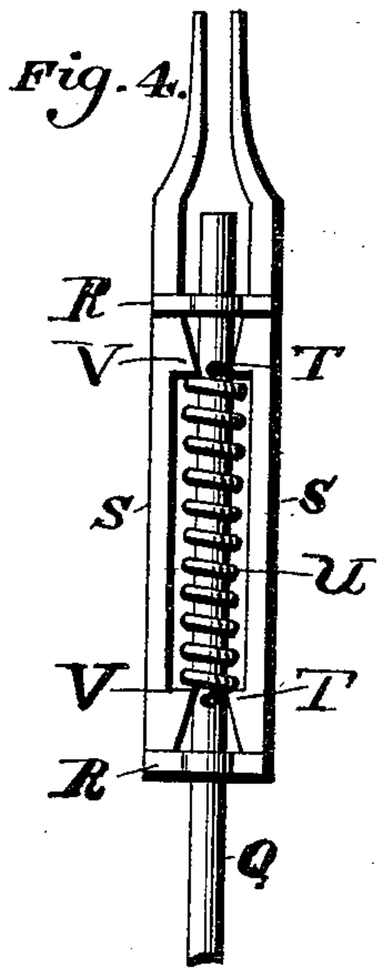


Fig. 4.

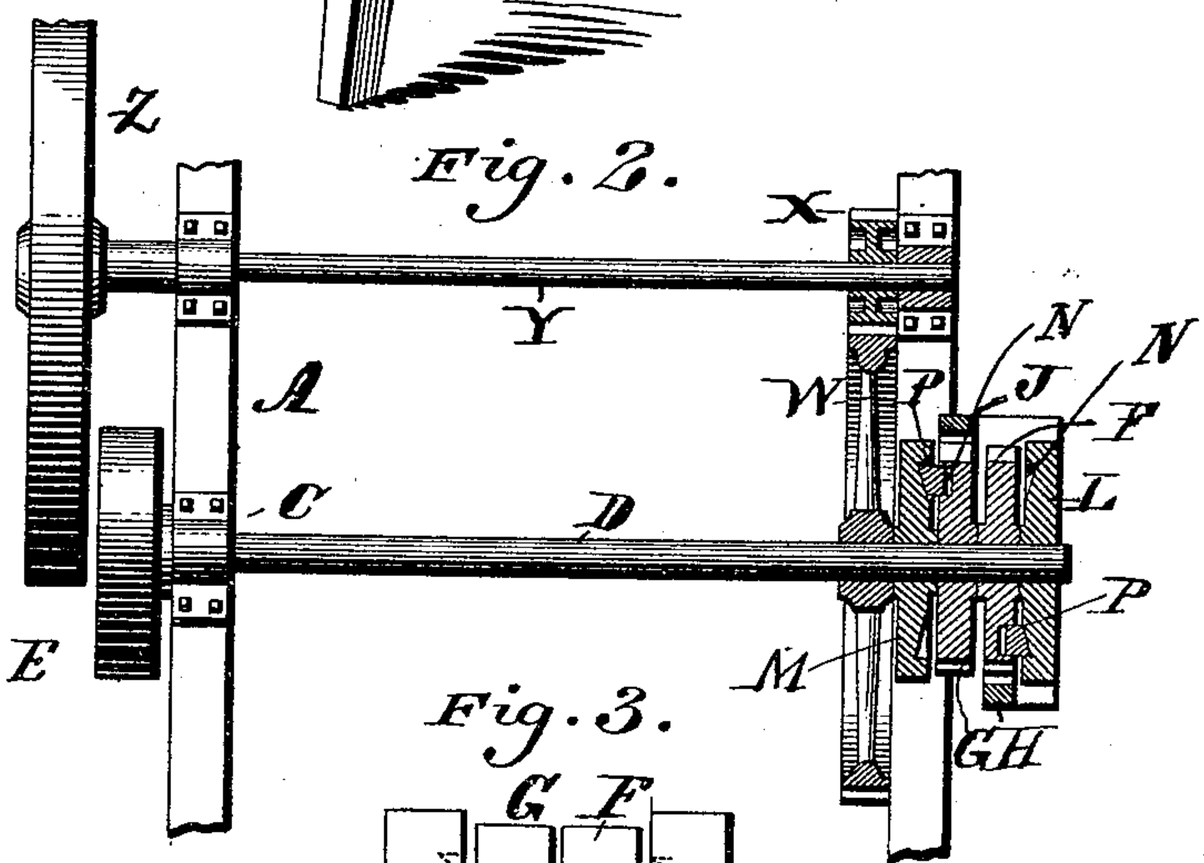


Fig. 2.

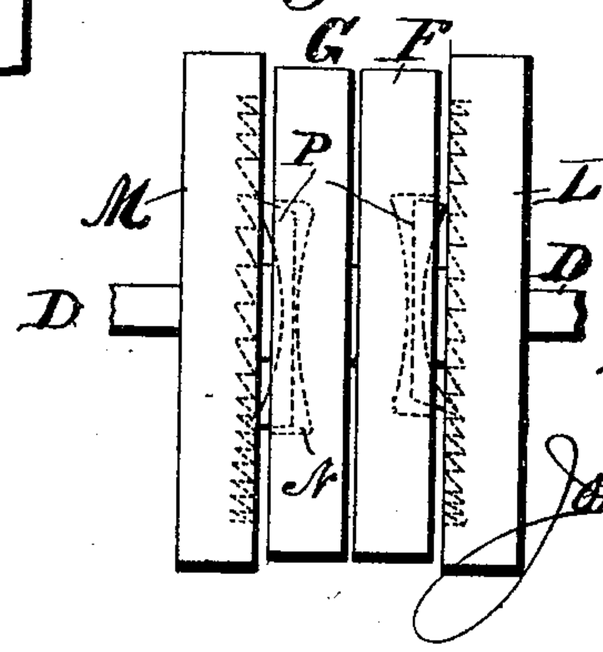


Fig. 3.

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MOTOR.

SPECIFICATION forming part of Letters Patent No. 480,972, dated August 16, 1892.

Application filed January 25, 1892. Serial No. 419,132. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. SELLERS, a citizen of the United States, residing at Marshalltown, in the county of Marshall, State of Iowa, have invented a new and useful Improvement in Motors, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to improvements in motors, and has for its object an economical and durable device by which the turning in either direction of a wind-wheel can be utilized to impart rotary motion to a driving-shaft; and for this purpose it consists of the combination of parts hereinafter set forth.

Figure 1 represents a perspective view of a machine embodying my invention. Fig. 2 represents a partial horizontal section and partial plan view of a portion of the machine shown in Fig. 1. Fig. 3 represents a top or plan view of a detail portion of the machine. Fig. 4 represents a front view of an automatic governor to which the wind-wheel is attached. Fig. 5 represents horizontal, sectional, and face views of the detail portion shown in Fig. 3.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates a frame having the standards or supports B connected therewith. Journaled in the bearings C on the said frame is the shaft D, having on one end a pulley or wheel E, by means of which power may be transmitted to any device, and on the other end the loosely-mounted toothed or cog wheels F and G, which mesh, respectively, with the racks H and J on the opposite interior faces of the rising and falling frame K. Keyed or splined on the shaft D, so as to rotate therewith and adjacent to the said wheels F and G, are the ratchet-wheels L and M, respectively. The teeth of the said wheels L and M are formed on the faces adjacent to the wheels F and G, and the teeth of the wheel L is in reverse order from that of the wheel M. The sides of each of the cog-wheels F and G adjacent to the teeth of the ratchet-wheels are formed with a recess N, in which is freely fitted a pawl P for locking its wheel to the adjacent ratchet-wheel when rotated in one direction, but permitting the movement of the pawl-wheel without the rotation of the ratchet-wheel when the pawl-wheel is rotated in the opposite direction.

The frame K is provided with a staff or vertical rod Q, on the upper end of which is mounted a rotatable bracket, consisting of the collars R, which freely rise and fall as well as revolve on said staff, and the side arms S, which are connected to said collars and at their upper ends carry the axle or shaft of a wind-wheel, the turning of which operates the machine.

Between pins or projections T on the staff is secured a coil-spring U, against which bears the projections V on the side arms S of the bracket.

On the shaft D is mounted a toothed wheel W, which meshes with a pinion X on a shaft Y, journaled in the frame A and parallel with the said shaft D, and on said shaft Y is mounted a fly or balance wheel Z, said mechanism regulating the movement of the driving-shaft D.

It will be understood that as the wind-wheel rotates the changes in speed will cause the rising and falling of the staff Q and the frame K, thus at the same time actuating in opposite directions the gear-wheels F and G. The rotation of the gear-wheel F will cause it to rotate the ratchet-wheel L, and thereby the shaft D, while the pawl of the gear-wheel G will pass over the teeth of the ratchet-wheel M. The movement of the frame K in the opposite direction will move the said wheels F and G in a different direction from their former movement, and in this case the wheel G will connect with the wheel M and rotate the shaft D, while the pawl of the wheel F will pass over the teeth of the ratchet-wheel L without connecting therewith. It is noticed that the rotation of the shaft D is in the same direction during either the rising or the falling of the frame K, so that continuous motion in one direction is imparted to the shaft D by the constant rotation of the wind-wheel.

The collars R and arms S, in connection with the coil-spring U, form an automatic governor, whereby any sudden change in the turning of the wheel is prevented from causing a jerking or jarring motion to the driving-shaft D. On the side of the frame A are formed guides or ways A′ for said frame K.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. In a motor, a frame, a shaft journaled thereon, two wheels mounted on said shaft to rotate therewith, each having ratchet-teeth on one side thereof, said teeth being reversed on the different wheels, two gear-wheels loosely mounted on said shaft, each having recesses in their sides, with pawls loosely inserted thereon and adapted to engage said ratchet-teeth, and a frame with racks on opposite sides engaging said gear-wheels, said parts being combined substantially as described.

2. A motor consisting of a frame, a shaft suitably journaled on said frame, ratchet-wheels keyed on said shaft, cog-wheels freely mounted on said shaft and having pawls engaging said ratchet-wheels, a frame with racks on its opposite interior faces engaging said cog-wheels, respectively, a staff connected with said rack-frame, and a governor loosely mounted on said staff and adapted to support a wind-wheel, said parts being combined substantially as described.

3. A motor consisting of a frame, a shaft journaled thereon, two ratchet-wheels keyed to said shaft and having their teeth in opposite directions, cog-wheels loosely mounted on said shaft, with pawls adapted to engage said ratchet-wheels, a frame with racks on its opposite interior faces engaging said cog-wheels, respectively, a staff connected with said rack-frame and adapted to support a wind-wheel, a second shaft journaled in the frame and having a pinion meshing with a cog-wheel mounted on the first-mentioned shaft so as to rotate therewith, and a balance-wheel on the last-mentioned shaft, said parts being combined substantially as described.

4. A motor consisting of a frame, a shaft journaled thereon, two ratchet-wheels having teeth in opposite directions keyed on said shaft, two cog-wheels loosely mounted on said shaft, and having pawls fitted in recesses in their faces engaging said ratchet-wheels, a rising frame with racks on its interior faces engaging said cog-wheels, respectively, a staff connected with said rack-frame, and a rising and falling governor rotatably mounted on said staff and adapted to support the axle of a wind-wheel, said parts being combined substantially as described.

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