C. J. SCHUMACHER.

Improvement in Motors.

No. 131,631. Patented Sep. 24, 1872.

Fig: 1.

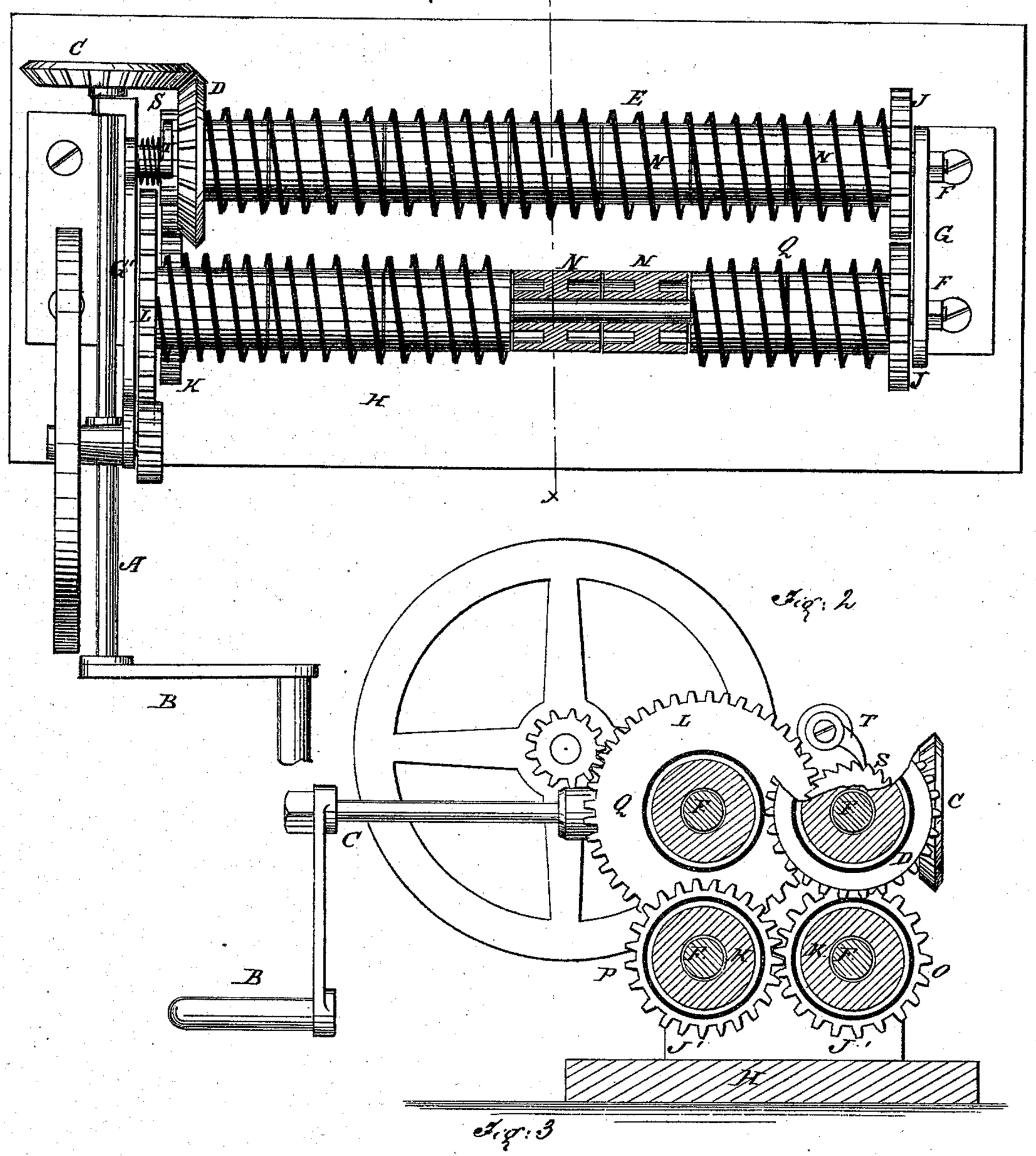
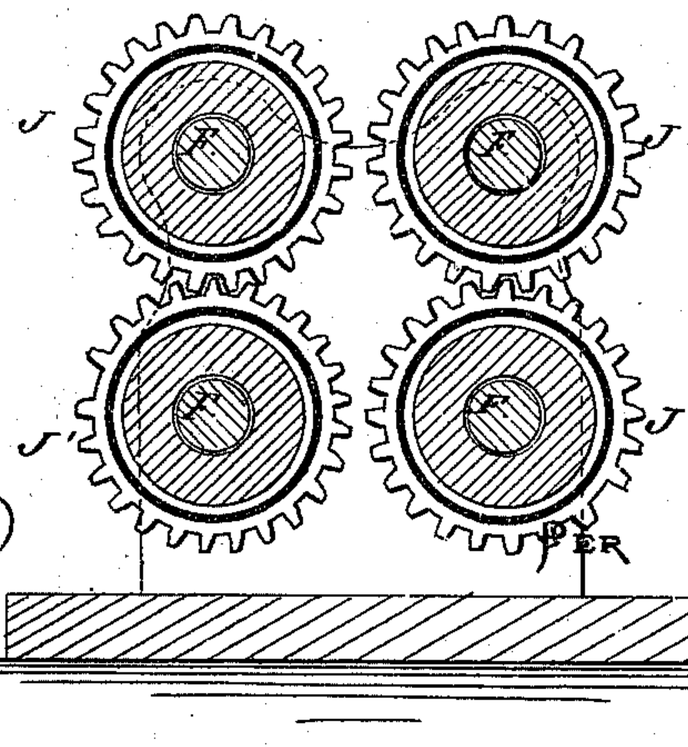


Fig: 2.

Fig: 3



Witnesses:

Chas. Nida

C. Sedgwick

Inventor:

C. J. Schumacher

Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES J. SCHUMACHER, OF PORTLAND, MAINE.

IMPROVEMENT IN MOTORS.

Specification forming part of Letters Patent No. **131,631**, dated September 24, 1872.

To all whom it may concern:

Be it known that I, CHARLES J. SCHUMACHER, of Portland, in the county of Cumberland and State of Maine, have invented a new and useful Improvement in Motors, of which the following is a specification:

This invention relates to an apparatus for storing up power for driving sewing-machines and other light machinery; and it consists in a series of spiral springs arranged on stationary spindles and revolved by means of gearing and crank, the construction and arrangement of parts being as hereinafter described.

In the accompanying drawing, Figure 1 is a top or plan view of the machine, partly in section. Fig. 2 is a vertical cross-section of Fig. 1 taken on the line *x x*, with a part broken away. Fig. 3 is a detail, showing the driving-wheels in their proper positions at one end of the machine.

Similar letters of reference indicate corresponding parts.

A is the driving-shaft, and B is the crank by which the machine is wound up. C and D are bevel or miter gears, the former being on the end of the shaft A, and the latter is connected with the spring E. In this example of my invention I employ four springs, but I do not confine myself to any particular number. F represents stationary spindles or rods confined by the heads G G′ of the machine. H is a bed-plate, to which the heads are attached. The driving-shaft A is connected with the head G′. The four springs are parallel with each other, each being supported on a rod or spindle, as represented. J J′ are spur-wheels on the ends of the spindles next the head G. K K are spur-wheels on the ends of the two lower wheels, next the head G′, which mesh together. L is a large spur-wheel on the end of the upper spindle F, connected with the spring Q. The springs are securely attached to the wheels by means of solder, and freely turn on their respective spindles. N represents short cylinders, or rollers which are slipped loosely onto the cylinders, around which rollers the springs are arranged. These rollers revolve freely on the spindles.

As before stated, the power is first imparted to the spring E by means of the bevel-gears C and D, the latter being connected with the spring E. From the spring E the power is imparted to the spring O directly beneath by means of the spur-wheels J J′. At the other end of the machine the spur-wheels K K mesh together, which conveys the power to the spring P, and from the spring P it is imparted to the upper spring Q by the wheels at the opposite end of the machine. The upper spring Q carries the power to the large spur-wheel L.

In applying this piece of mechanism to a sewing-machine or similar piece of machinery the large wheel L is geared with or attached to such machine.

S is a ratchet-wheel on the back of the bevel-wheel D, and T is a pawl which engages therewith, attached to the head G′, by means of which the strain or torsion which has been imparted to the spring and conveyed from one to the other is retained as long as may be desired.

The power thus stored up can be renewed while the sewing-machine is running, so that no time need be lost in winding up or supplying the power.

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

1. A machine for imparting power and motion, composed of spiral springs, spindles, and gear-wheels, when the same are arranged to operate substantially as described.

2. The rollers or cylinders N, in combination with the spindles F and springs E Q and P O, as and for the purpose described.

3. The arrangement of the shaft A, bevel-wheels C D, spur-wheels J J and J′ J′, K K, and L, spindles F, heads G G′, and rollers N, as and for the purposes described.

CHS. J. SCHUMACHER.

Witnesses:
HANSON E. LEWIS,
A. R. MAYNARD.