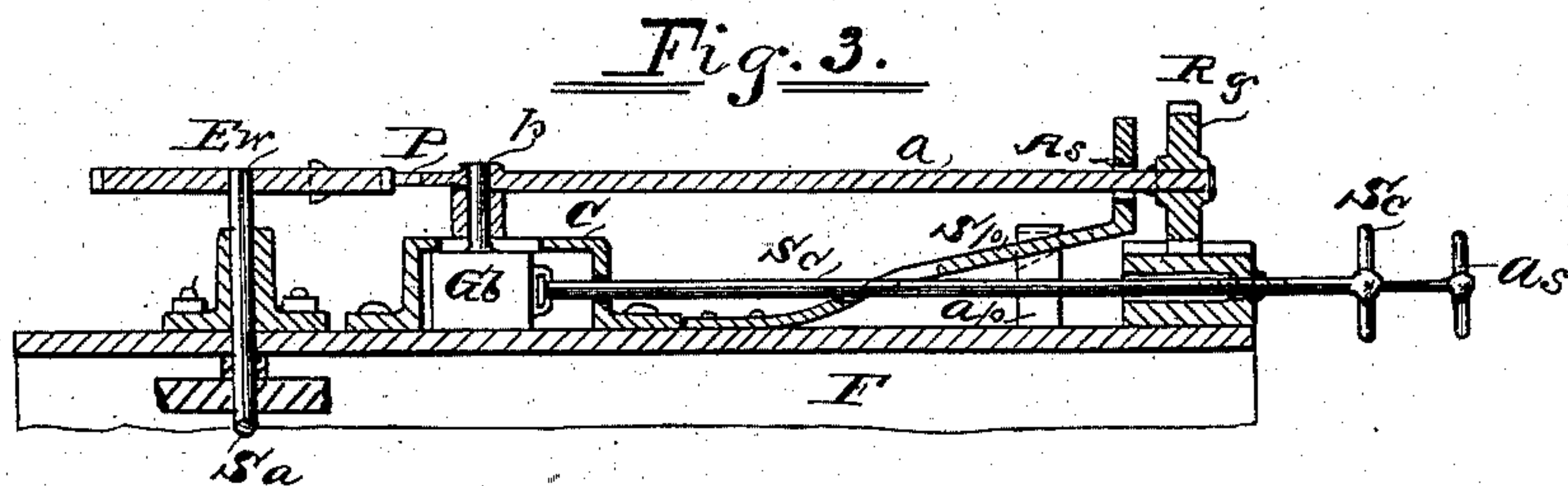
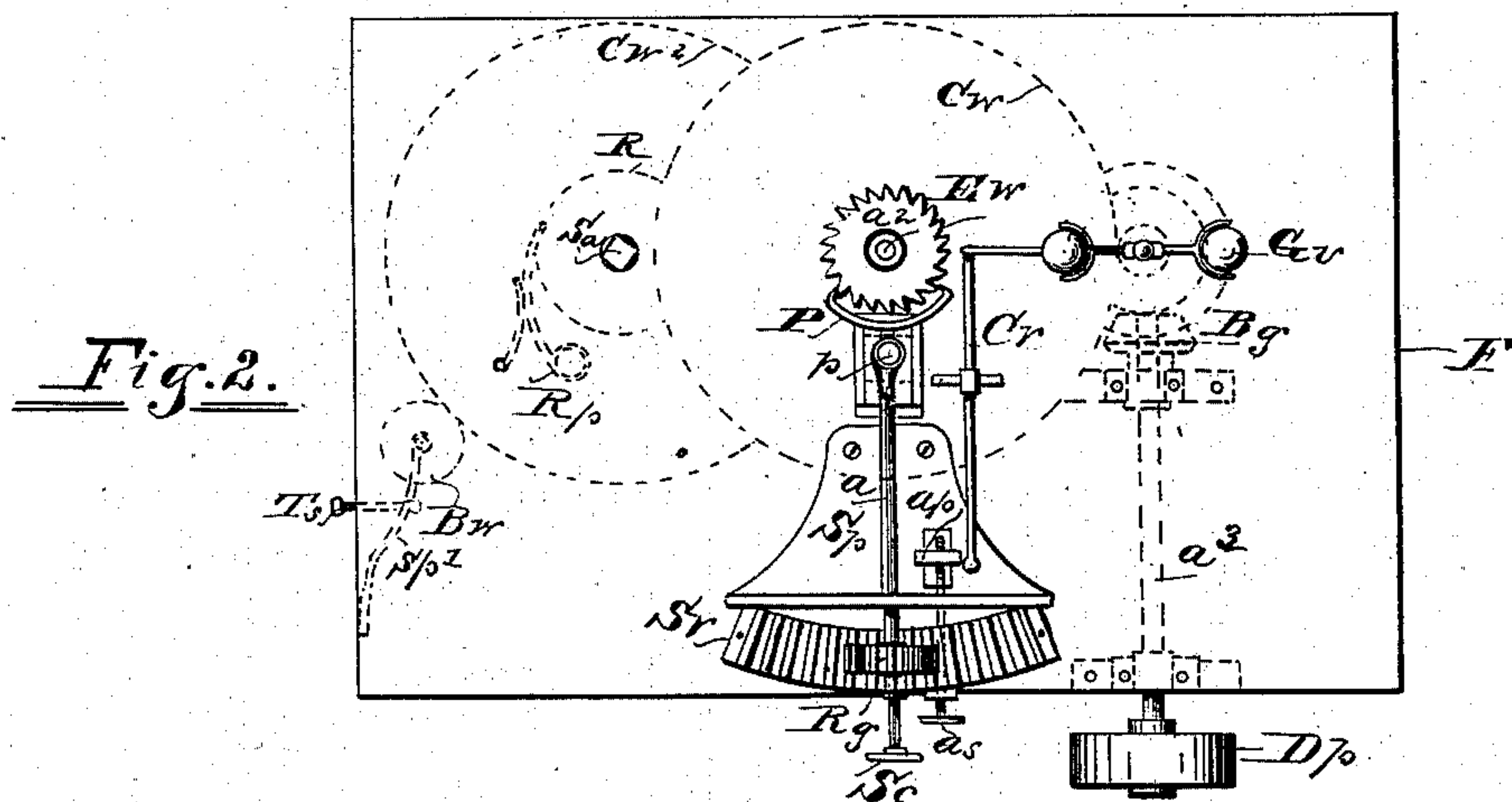
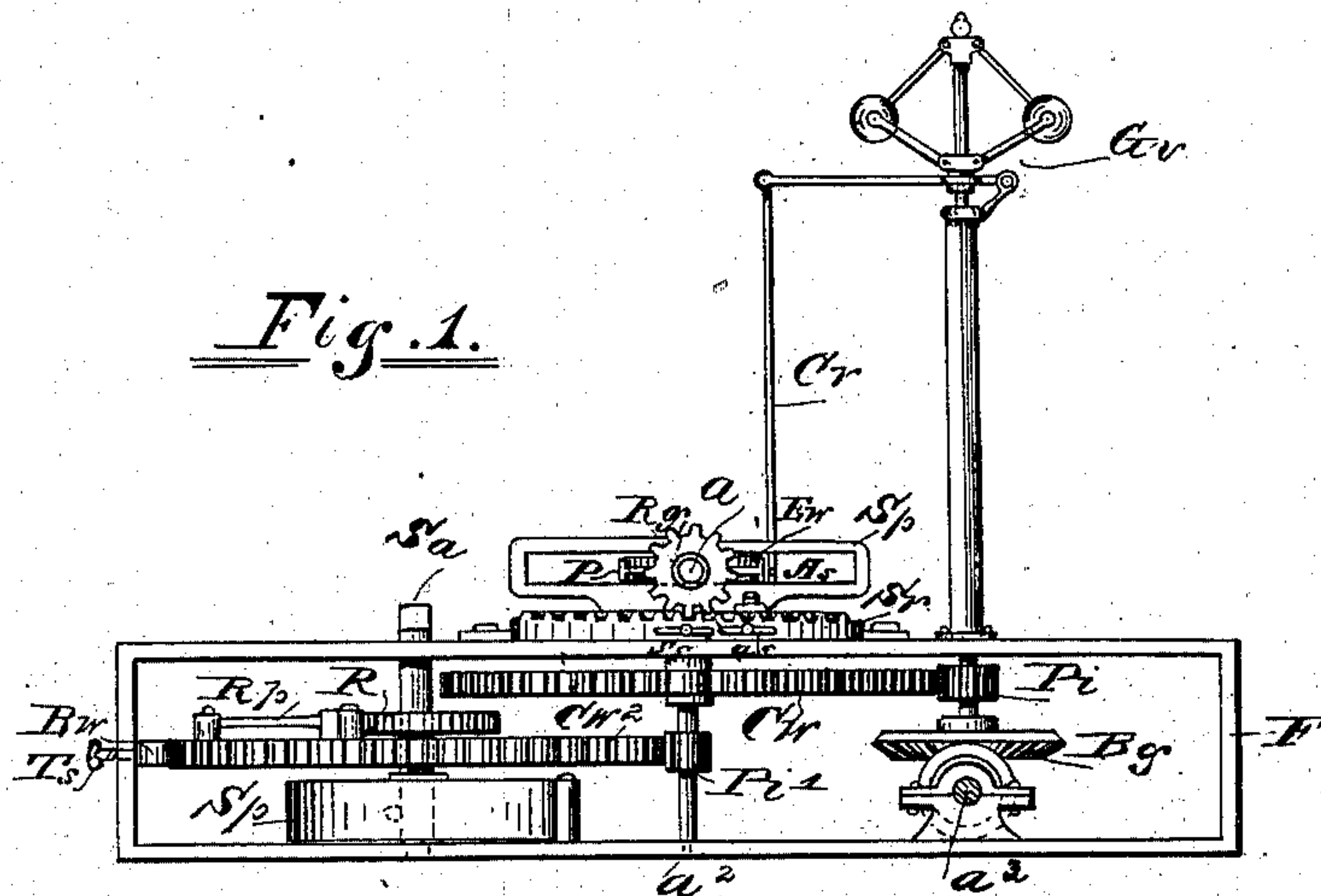


J. B. PUGH.  
SPRING MOTOR.

Patented Mar. 18, 1884.



Witnesses  
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attys



# UNITED STATES PATENT OFFICE.

JESSE B. PUGH, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF ONE-HALF TO  
E. A. NICHOLS AND A. S. VIEIRIA, BOTH OF SAME PLACE.

## SPRING-MOTOR.

SPECIFICATION forming part of Letters Patent No. 295,505, dated March 18, 1884.

Application filed October 22, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, JESSE B. PUGH, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Spring Motive Power and Devices for Regulating the Speed Thereof, as set forth in the annexed specification.

The object of my invention is to provide a cheap and convenient motive power to be applied to sewing-machines and dental lathes and other light machinery, with the necessary means for governing the motion of the same and regulating the speed thereof, as more fully set forth in the following specification.

Referring to the accompanying drawings filed herewith and made a part of this specification, and in which similar letters of reference designate similar parts of my invention, Figure 1 is a front view of my device. Fig. 2 is a top view, and Fig. 3 is an enlarged sectional view, of my appliance for governing the motion and regulating the speed of my motor.

In Fig. 1, F is a frame to inclose and support the mechanism, which consists of a coil-spring, Sp, to actuate the shaft Sa, upon which is mounted the cog-wheel Cw<sup>2</sup>, provided with ratchet R and ratchet-pawl Rp, said cog-wheel Cw<sup>2</sup> engaging with pinion Pi' mounted on shaft a<sup>2</sup>, which has mounted thereon a larger cog-wheel, Cw, which engages with and actuates pinion Pi, attached to the upright shaft of the governor Gv, to the lower end of which shaft is mounted the bevel-gearing Bg, which actuates shaft a<sup>3</sup> and imparts power to driving-pulley Dp. (See Fig. 2.)

In Fig. 2 the dotted lines indicate those parts of my device inclosed in the frame F.

The ratchet-wheel or escapement Ew, mounted on the shaft a<sup>2</sup>, is provided for regulating the motion and governing the speed of my device by means of the anchor or pallet P, to which is firmly attached shaft a, provided at the lower end with a rubber cog-wheel, Rg, working in the segmental rack Sr, said shaft a pivoted at p to an adjustable block, Gb, as seen in Fig. 3.

Sp is a spring-plate, firmly fastened at one end to the frame F and extending to the segmental ratchet-bar Sr, said plate Sp having an annular slot, As. (See Figs. 1 and 3.)

Gv is a governor, provided with connecting-rod Cr, the lower end of which is bolted to spring-plate Sp. (See Figs. 1 and 2.)

Bw is a rubber cog-wheel, pivoted to a spring, Sp', and regulated by means of a thumb-screw, Ts. (See Fig. 2.)

Sc is a set-screw, provided for regulating the guide-block Gb which works in the collar C; and Dp is a driving-pulley.

The method of operating my device is as follows: Winding up the spring Sp on shaft Sa with an ordinary crank or key, I turn the set-screw as, releasing the pressure of the spring-plate Sp on the shaft a, and the machinery is set in motion by the spring-power, imparting motion to the driving-pulley Dp. (See Fig. 2.) To obtain the desired rate of speed, I turn the set-screw Sc, which moves the guide-block Gb, provided with pivot p, on which the shaft a turns to or from the escapement Ew, thus lengthening the distance traversed by the rubber cog-wheel Rg, which, being loosely mounted on the shaft a and working in the rack-bar Sr, gives the machine a steady motion on account of its elasticity. The motion of the machine being thus regulated, the governor Gv preserves the regularity of the speed, as in any ordinary engine. To further control the speed, if a very slow speed should be desired, I turn the thumb-screw Ts, which presses the spring on which is mounted the rubber cog-wheel Bw, the cogs of which engage with the large cog-wheel Cw<sup>2</sup>, producing any desired speed.

Although my invention is designed for running sewing-machines and dentist-lathes, I do not confine myself to these uses, but propose also to apply the same power and means for regulating the same to propelling street-cars, to accomplish which I have but to increase the number of springs as occasion may demand.

Having thus fully described my invention, its purposes and uses, what I claim as new, and desire to secure by Letters Patent, is—

1. In a device for regulating the speed of spring-motors, the escapement Ew, working on pallet P, mounted on shaft a, working in annular slot As of spring-plate Sp, said shaft being provided with rubber cog-wheel Rg to work in segmental rack-bar Sr, substantially in the manner and for the purpose set forth.



2. In a device for regulating the speed of  
spring-motors, the set-screw *Sc* to move the  
guide-block *Gb* in collar *C*, in combination  
with the escapement *Ew*, pallet *P*, and shaft *a*,  
5 substantially in the manner and for the purpose  
set forth.

3. In a device for regulating the speed of  
spring-motors, the inclined spring-plate *Sp*,  
with annular slot *As*, T-shaped sliding block  
10 *ap*, and adjusting-screw *as* for clamping the  
shaft *a*, substantially for the purpose set forth.

4. In a device for regulating the speed of

spring-motors, the rubber cog-wheel *Bw*,  
mounted on spring *Sp'*, supplied with thumb-  
screw *Ts*, in combination with cog-wheel *Cw*<sup>2</sup>, 15  
substantially in the manner and for the pur-  
pose set forth.

In witness whereof I have hereunto set my  
hand and seal this 15th day of October, A. D.  
1883.

JESSE B. PUGH. [L. s.]

In presence of—

H. J. EVERETT,

R. M. COSBY.