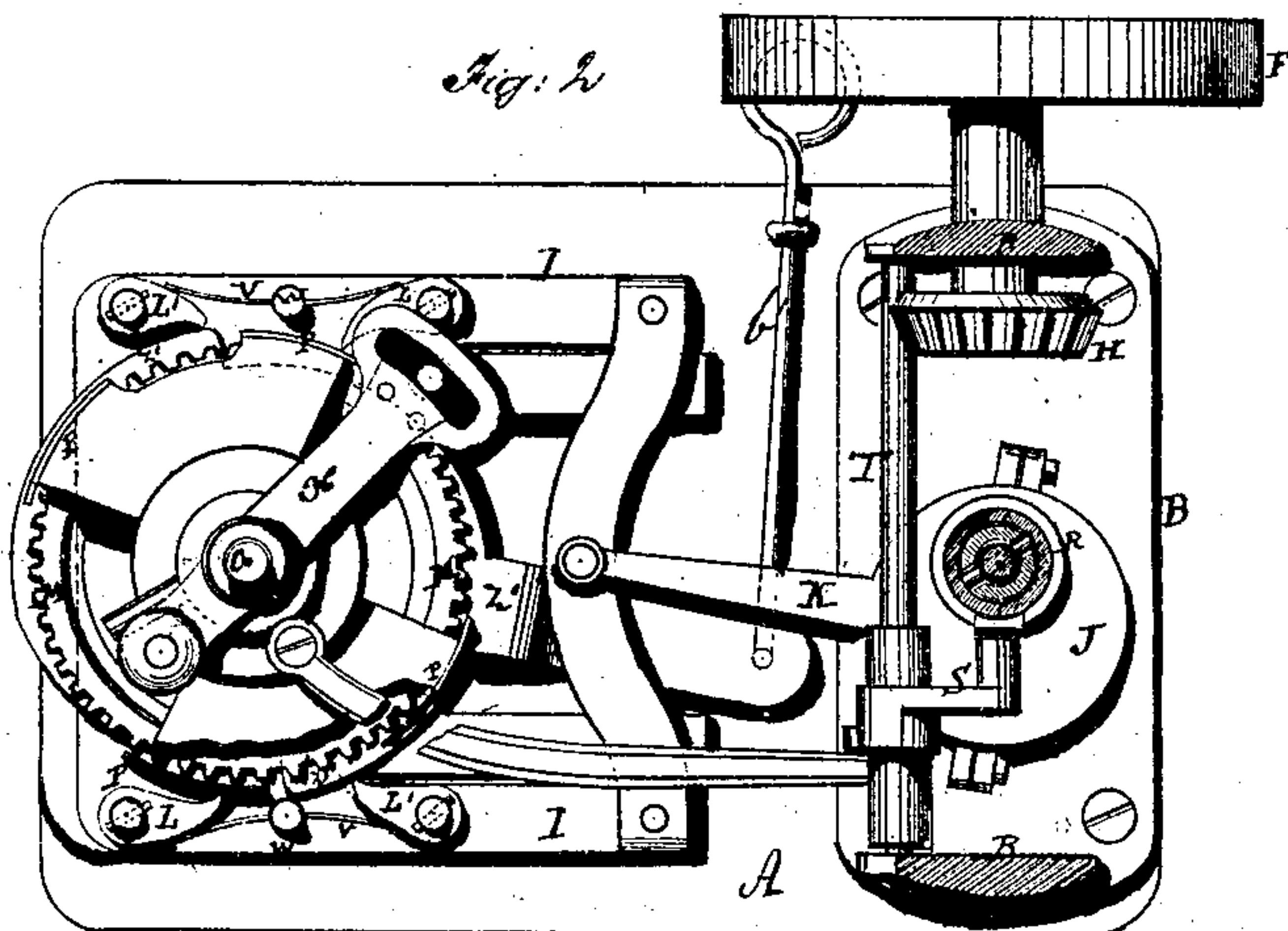
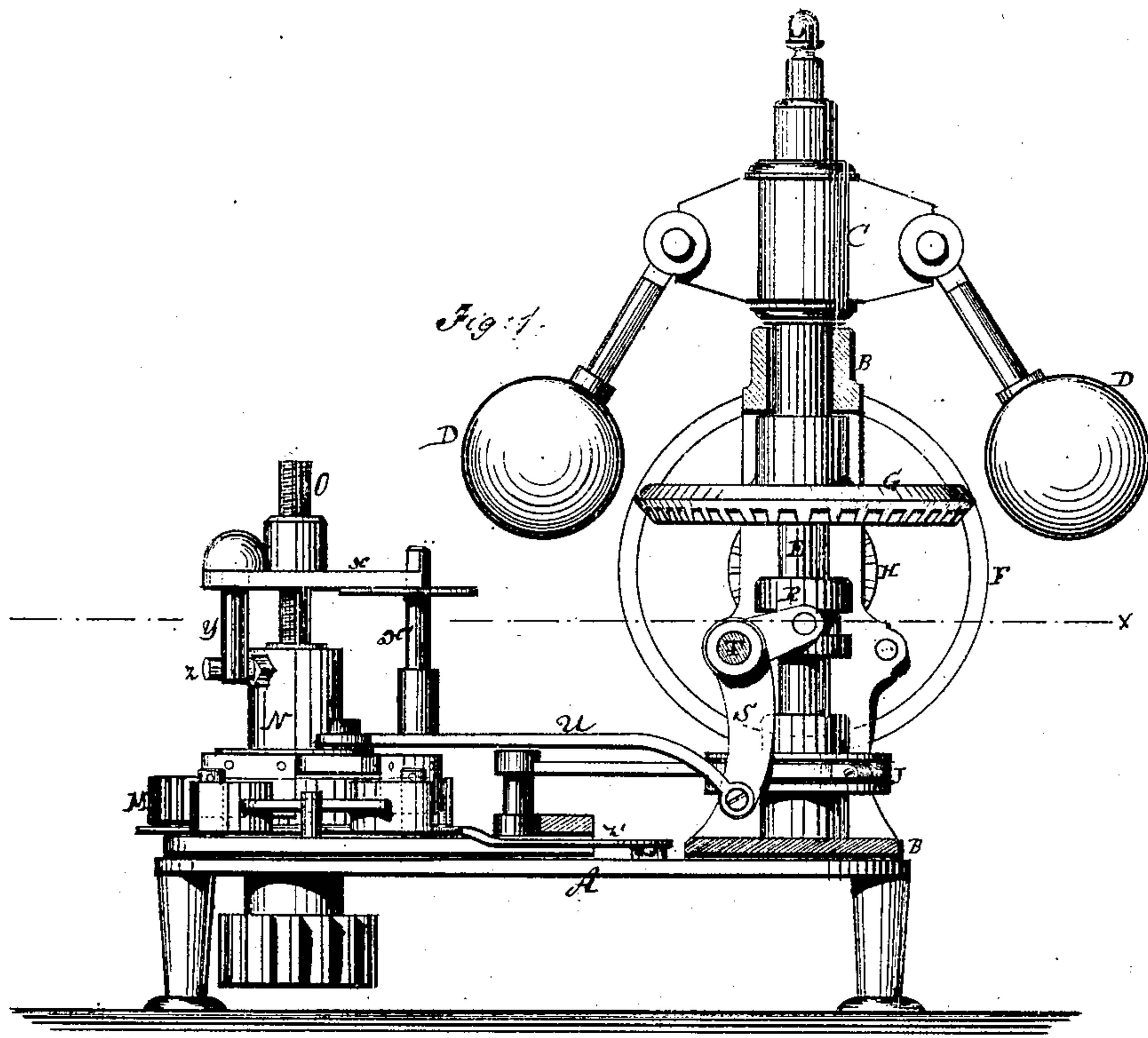
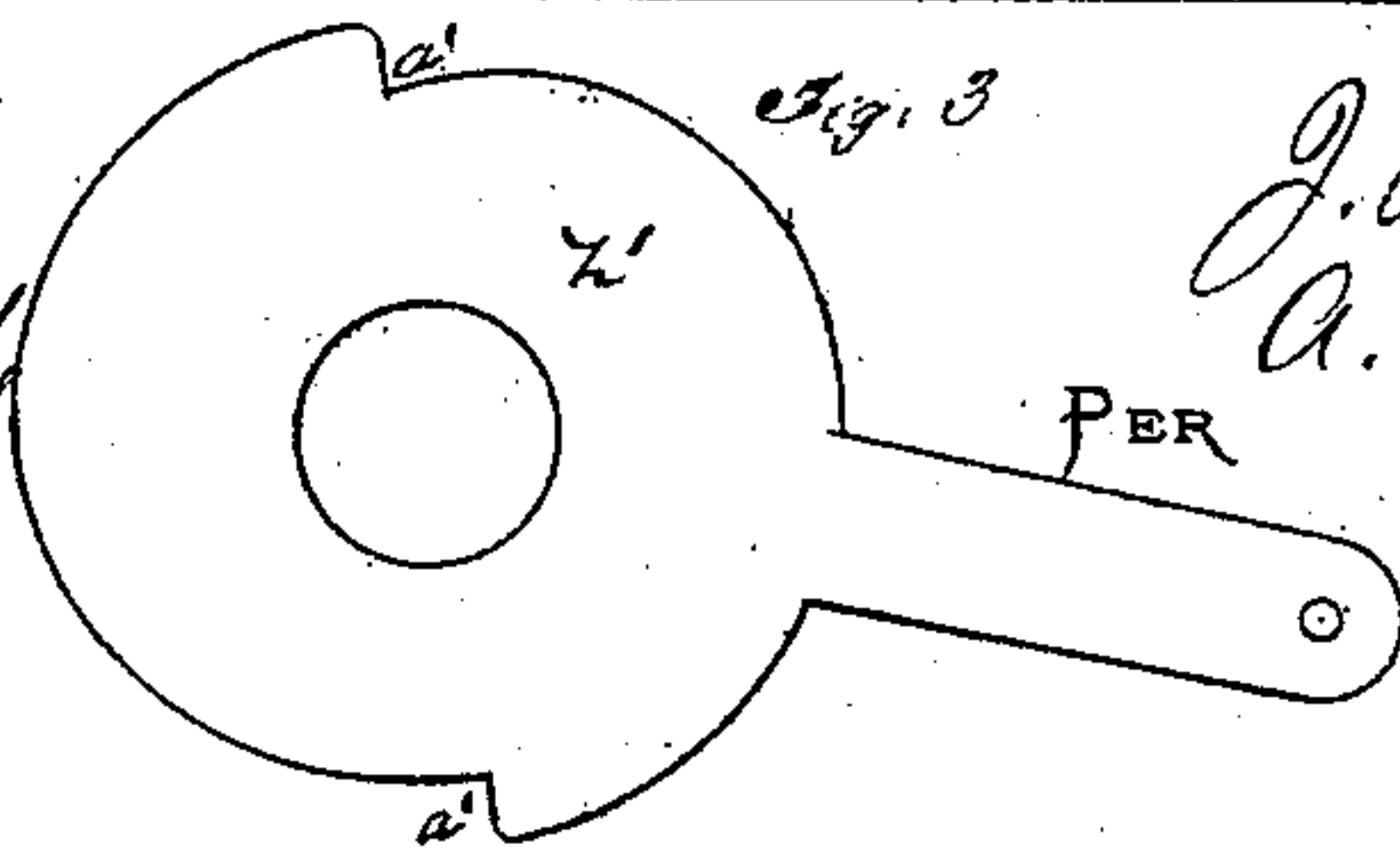


*Sibley & Walsh,*  
*Water-Wheel Governor,*  
*No 102,056. Patented Apr. 19, 1870.*



**Witnesses:**

*Chas. Nida.*  
*Alex. F. Roberts*



**Inventor:**

*J. P. Sibley*  
*A. Walsh*

*Attorneys.*



# United States Patent Office.

JAMES P. SIBLEY AND ARTHUR WALSH, OF BENNINGTON, VERMONT.

Letters Patent No. 102,056, dated April 19, 1870.

## IMPROVEMENT IN WATER-WHEEL REGULATORS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, JAMES P. SIBLEY and ARTHUR WALSH, of Bennington, in the county of Bennington and State of Vermont, have invented a new and useful Improvement in Regulators; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings forming part of this specification.

The object of this invention is to provide a regulator for water-wheel gates, which may also be applied to steam-engines or other machines, for regulating the speed of machinery, and consists in the construction, arrangement, and combination of parts, as hereinafter more fully described.

In the accompanying drawing—

Figure 1 represents a sectional elevation of the regulator.

Figure 2 is a horizontal section of fig. 1, through the line  $x x$ .

Figure 3 is a view of the stop-plate which operates upon the pawls, (detached,) or to detach the pawls.

Similar letters of reference indicate corresponding parts.

A is the bed-plate, upon which the frame and operating parts of the regulator are supported.

B is the frame.

C is the head of a centrifugal governor.

D D represent the balls of the governor.

E is the governor-spindle, which is supported in an upright position by the frame B.

F is a pulley, by which the governor is rotated by means of the gear-wheels G and H.

I is a frame, sliding on the bed, and receiving its motion from the eccentric J on the governor spindle by means of the rod K, or by a strap.

This frame is provided with four pawls, L L', which are made to engage with the ratchet-wheel M by the reciprocating motion of the frame I.

The pawls L L' turn the ratchet-wheel in one direction, and the pawls L' L' turn it in the opposite direction. These pawls are allowed to engage with the wheel only when there is a variation in the speed of the governor.

N is a shield on the shaft or spindle O. (The ratchet-wheel M is attached to this shaft O.)

The shield N reaches out to the circumference of the ratchet-wheel, and has guard-plates P which drop down directly over the cogs or teeth of the wheel, so as to prevent the pawls from engaging with the wheel, except when opening or when closing the gate for increasing or diminishing the power. The position of this shield and the plates P is controlled by the action of the governor.

The motion is imparted from the grooved thimble R by the forked bell-crank S, which oscillates on the shaft T, and the rod U, which is attached to the top of the shield so as to give the shield a rotating or cir-

cular motion on the shaft O, and thus change the position of the plates P.

The pawls are kept in constant contact with the plates, when not engaging with the teeth of the wheel, by the small springs V, which are attached to the studs W.

X is the stop, which consists of a bar, through which the upper portion of the shaft O works by means of a screw-thread, so that the bar X acts as a nut, and is carried up and down as the shaft is turned.

As the ratchet-wheel is turned, the stop-bar will be brought down against the shoulder on the screw-shaft O. When the stop is in this position the gate or valve is fully open, and it will then turn with the ratchet-wheel, its motion being limited by the stud X'.

The pin  $y$  in the stop-bar X will come in contact with the pin  $z$  in the shield, and hold the shield and guard-plates P in such position as to prevent the pawls from engaging with the ratchet-wheel. At the same time the regulator will be left free to close the gate or valve when the speed is increased above the required velocity.

$z$  (fig. 3) is a plate, which is made to turn on the shaft O, and is allowed to operate directly on the points of two or of all the pawls L' L', so as to disengage them from the ratchet-wheel when it is necessary to close the gate.

$a a$  are recesses in the rim of this plate, which allow the pawls to engage with the wheel at other times.

This plate is operated or adjusted by means of the rod  $b'$ .

It will be seen that the regulator may be made single-acting by detaching two of the pawls.

We do not confine ourselves to any particular position in which to place the operating parts of the regulator. Instead of placing the ratchet-wheel in a horizontal position, as represented, we may place it in a vertical position, or on a horizontal shaft, with the parts connected therewith in corresponding positions.

Having thus described our invention,

We claim as new and desire to secure by Letters Patent—

1. The ratchet-wheel M, in combination with the sliding frame I and pawls L L' arranged to operate substantially as and for the purpose herein shown and described.

2. The plate  $z$ , in combination with the pawls, substantially as and for the purpose specified.

3. The stop X, in combination with the shaft O and ratchet-wheel M, substantially as and for the purpose specified.

JAMES P. SIBLEY.  
ARTHUR WALSH.

Witnesses:

JAMES B. MEACHAM,  
JAS. A. N. WILLIAMS.