

3 Sheets—Sheet 1.

No. 463,198.

Patented Nov. 17, 1891.

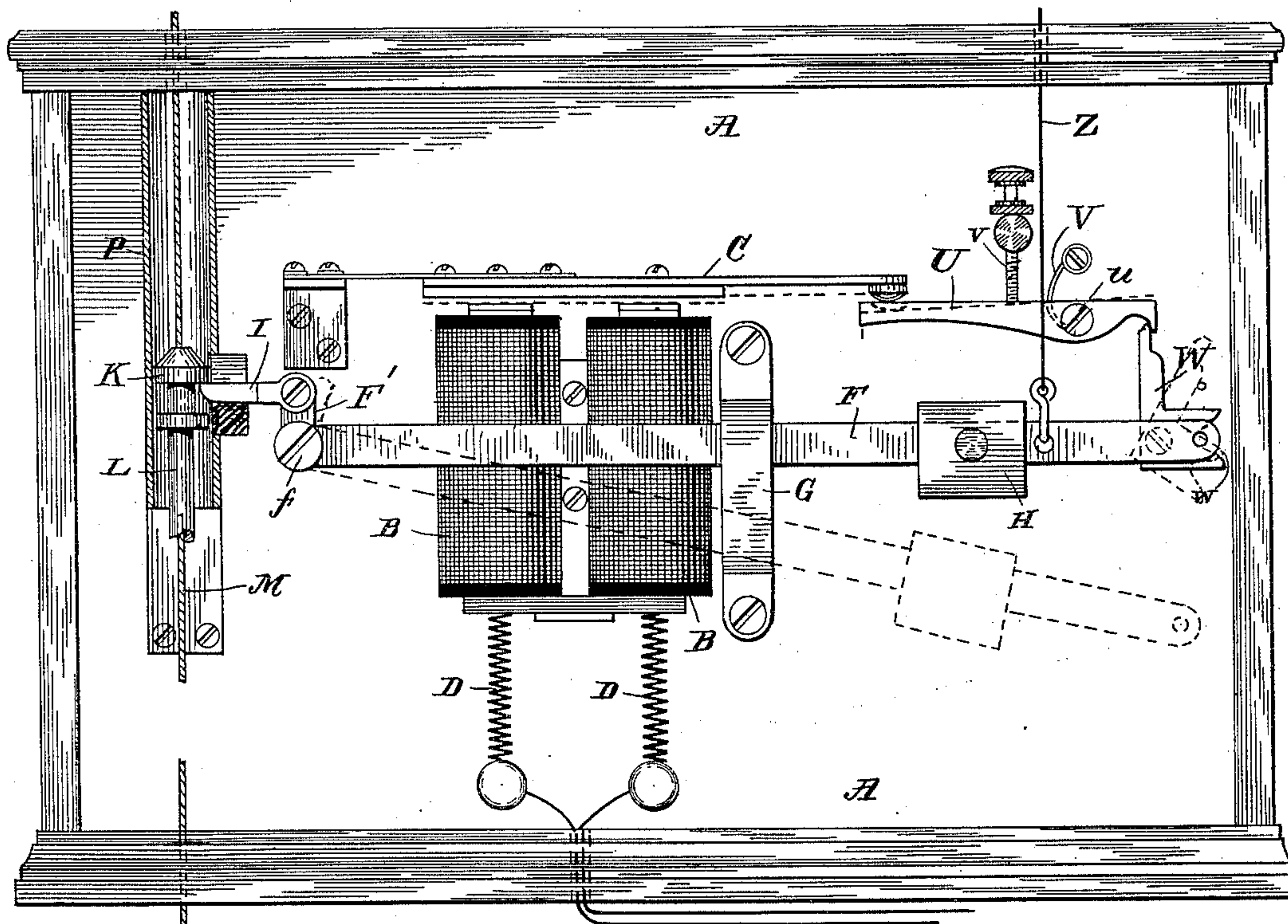


Fig. 1.

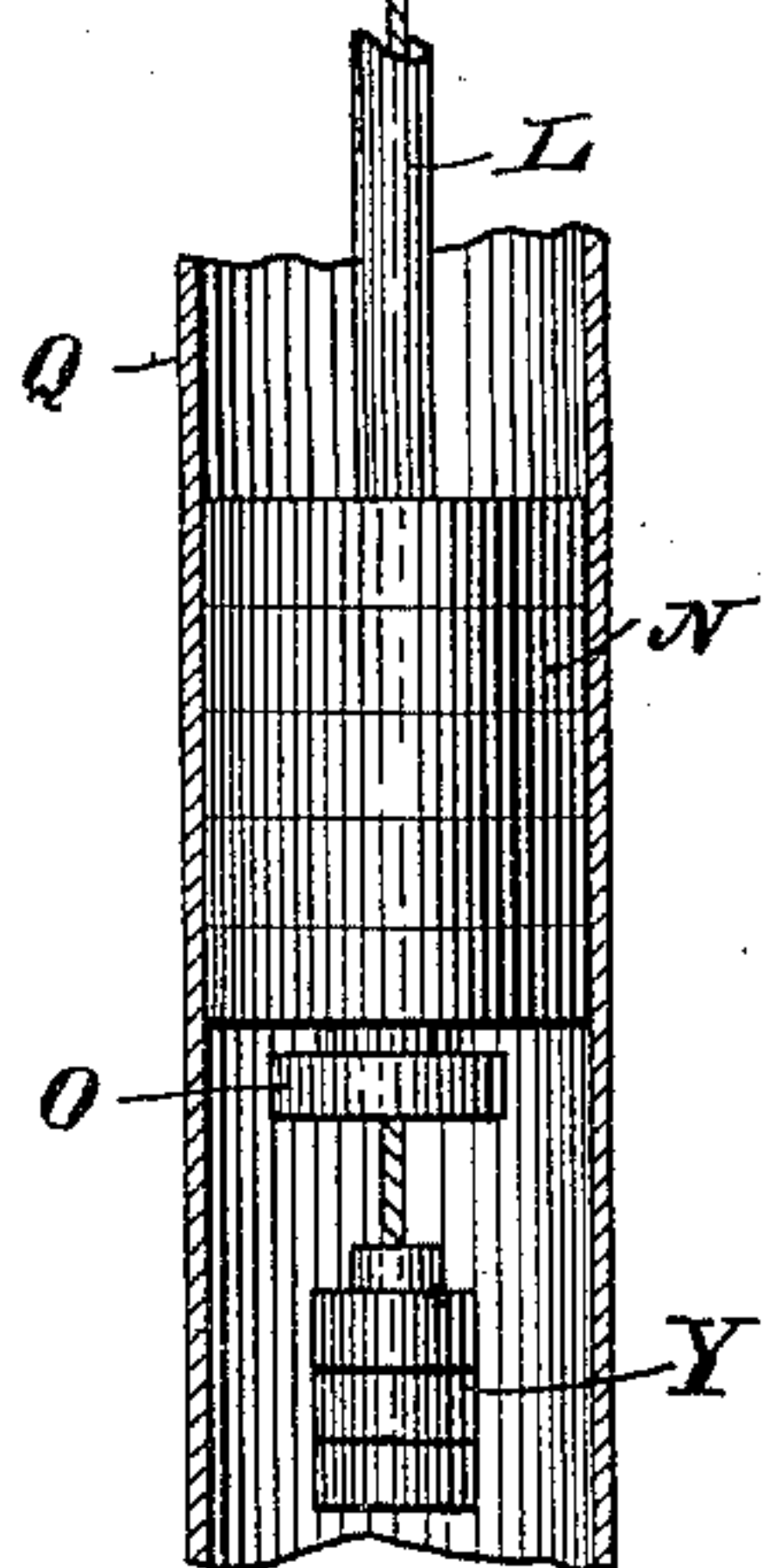
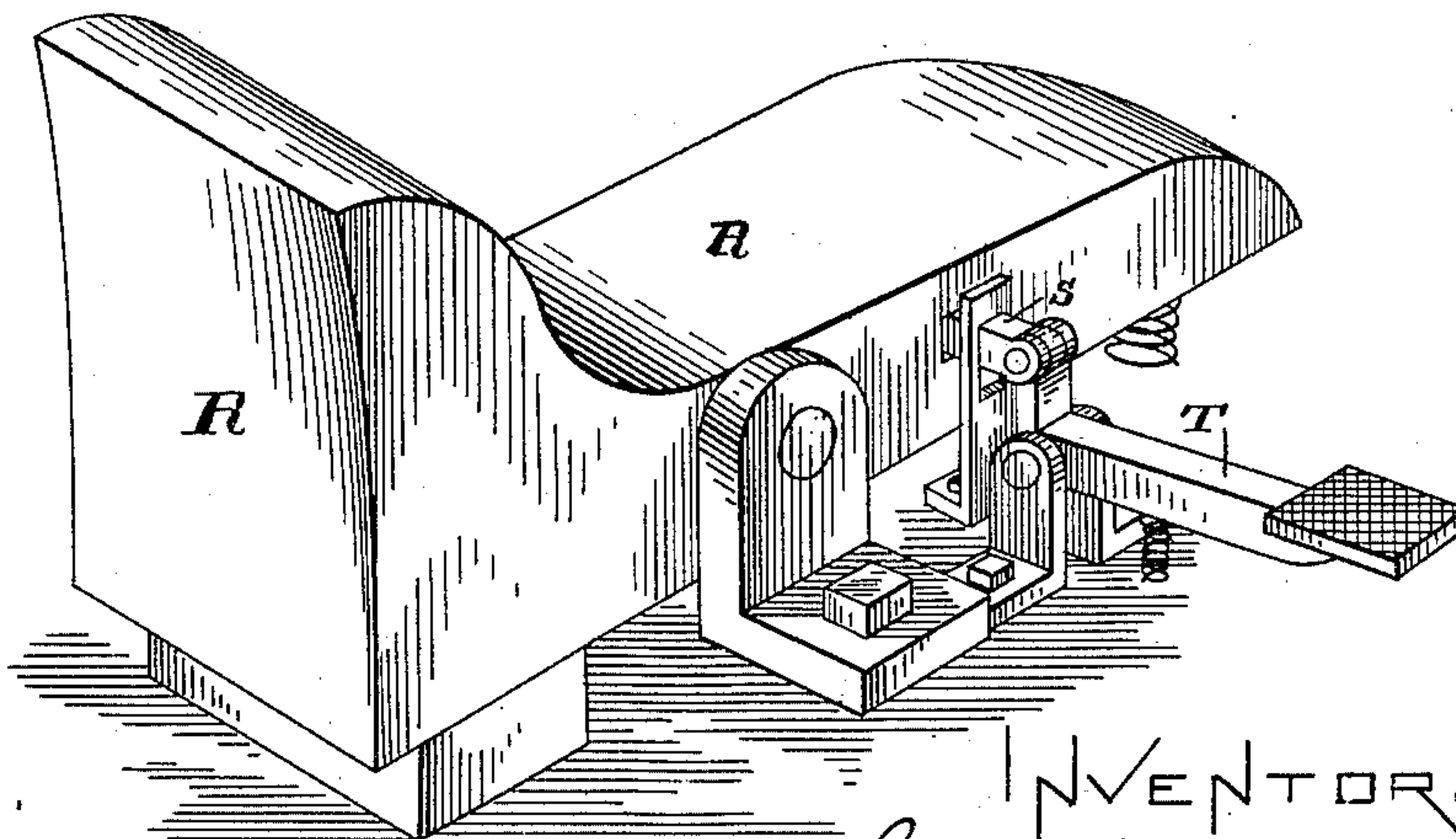


Fig. 2.



WITNESSES.

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(No Model.)

3 Sheets—Sheet 2.

L. MELLETT.
ELECTRIC STOP MECHANISM.

No. 463,198.

Patented Nov. 17, 1891.

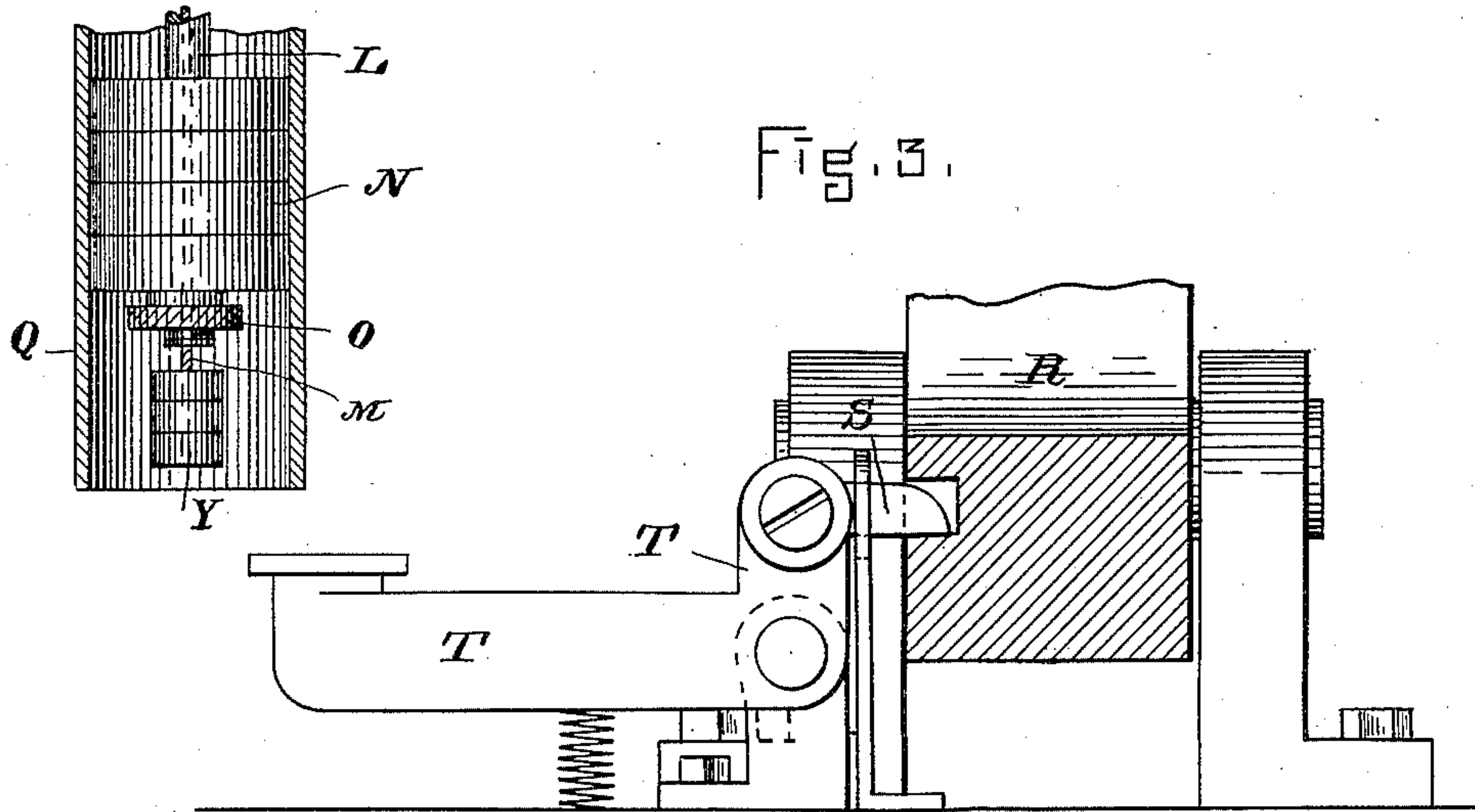


Fig. 3.

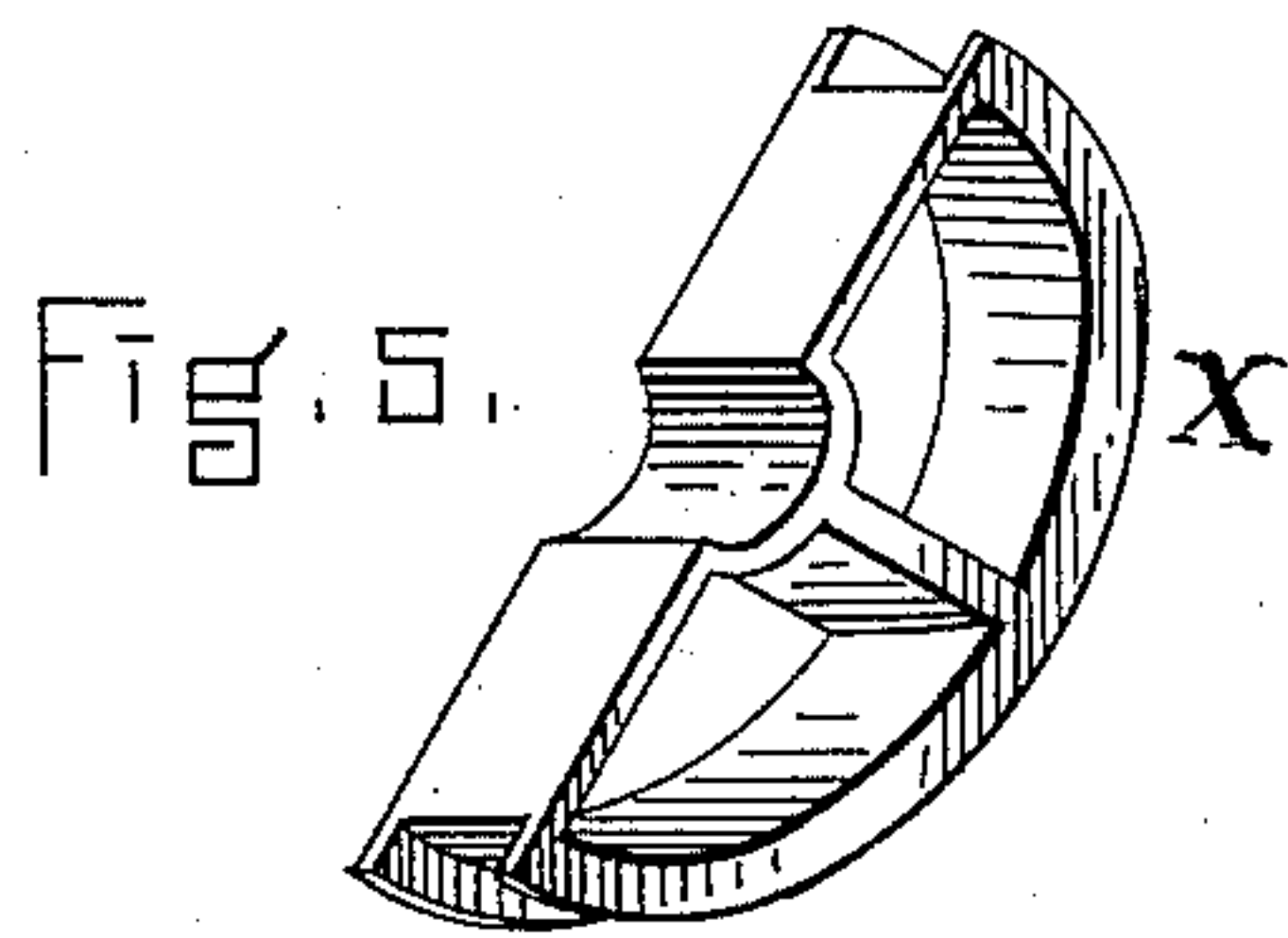
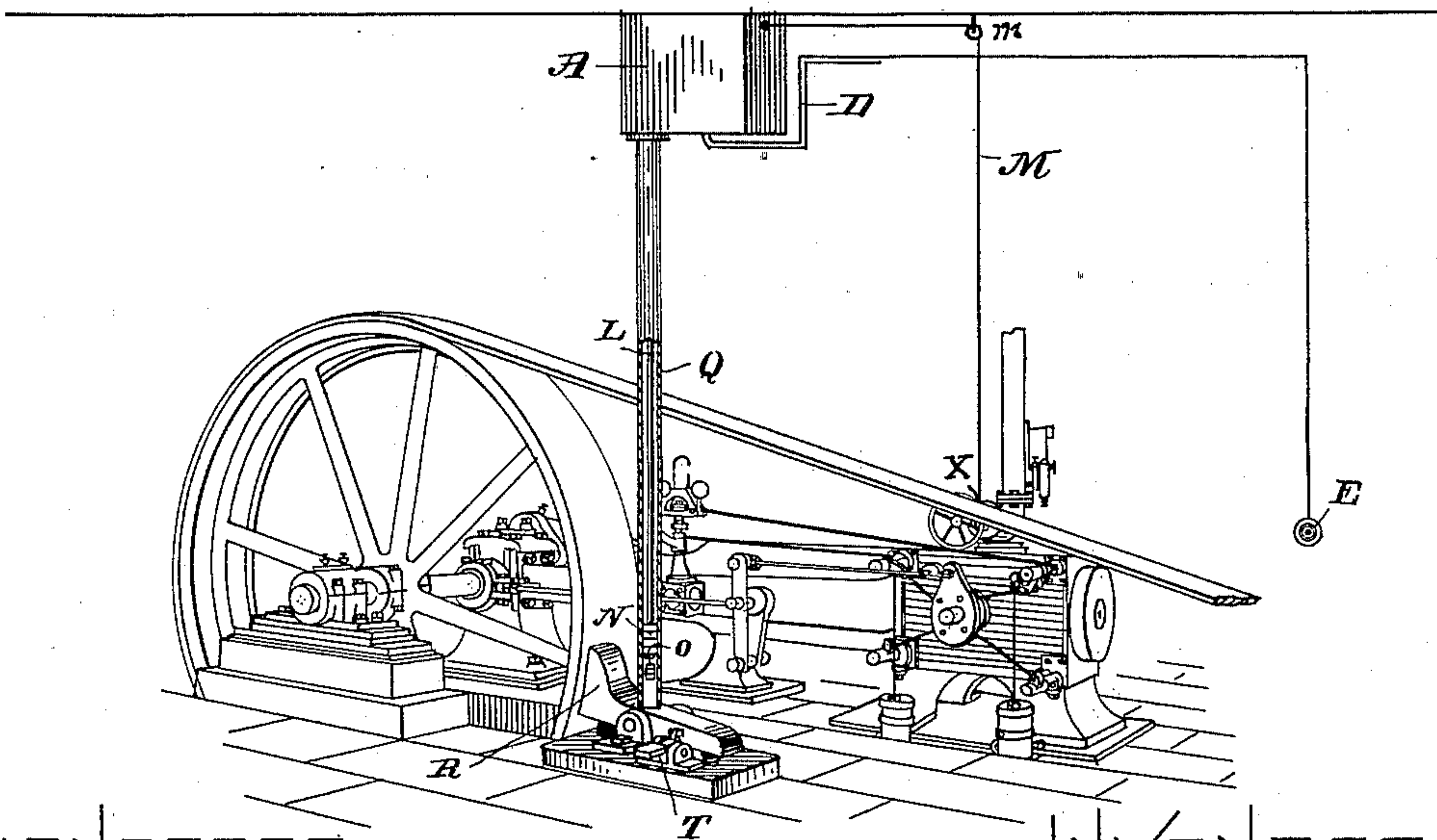


Fig. 5.

Fig. 4.



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(No Model.)

3 Sheets—Sheet 3.

L. MELLETT.
ELECTRIC STOP MECHANISM.

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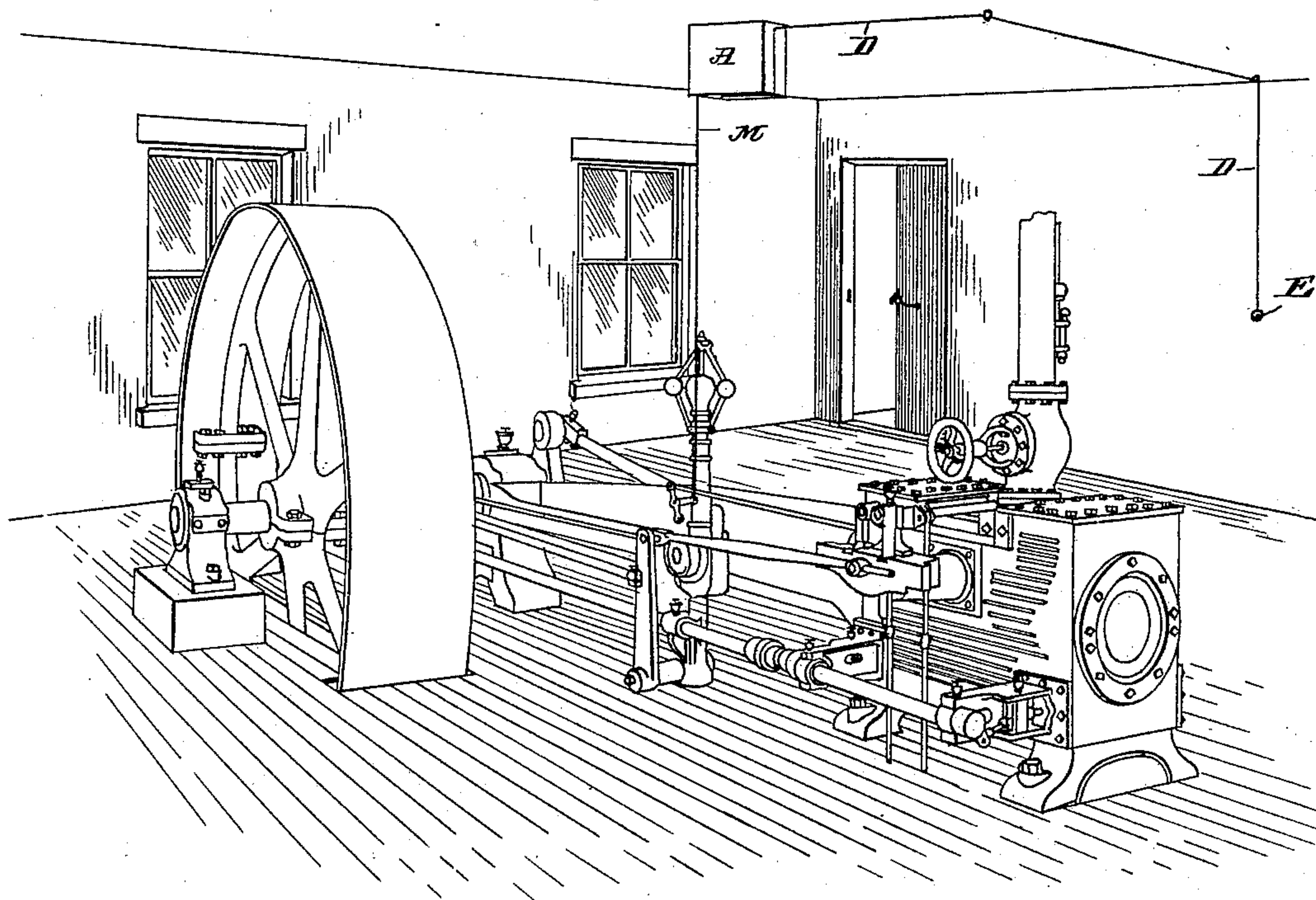


Fig. 6.

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UNITED STATES PATENT OFFICE.

LEMUEL MELLETT, OF SOMERVILLE, MASSACHUSETTS.

ELECTRIC STOP MECHANISM.

SPECIFICATION forming part of Letters Patent No. 463,198, dated November 17, 1891.

Application filed March 21 1890. Serial No. 344,789. (No model.)

To all whom it may concern:

Be it known that I, LEMUEL MELLETT, of Somerville, in the county of Middlesex and State of Massachusetts, have invented certain
5 new and useful Improvements in Engine-Stopping Apparatus, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to the class of apparatus employed to effect, electrically and
10 instantaneously, the shutting off of the steam from an engine by means of levers, press-buttons, or like devices located in remote parts of the works and connecting-wires completing an electric circuit and leading thence to
15 the engine in order to stop its action immediately when required.

My present invention is in the nature of an improvement upon that set forth in my application for Letters Patent of the United States
20 filed January 22, 1889, Serial No. 297,146, in respect to the combination of devices employed in shutting off the steam, and also as to a means for starting and stopping the engine repeatedly without disturbing the electrical cut-off apparatus, which is at all times
25 ready for operation, though actually needed but rarely.

My invention also provides a mechanical,
30 electrical, or steam-actuated brake applied by the same means to the fly-wheel simultaneously with the shutting off of the steam from the cylinder. This latter improvement reduces by more than one-half the time heretofore required to actually stop all movement
35 of the engine, shafting, and machinery, and thus tends in a marked degree to the saving of life and limb in case of accident. It is obvious that this simultaneous action of the cut-off and the brake, effected from a remote point
40 through the connecting-wires, is not dependent upon the specific form of apparatus employed for either purpose. Hence I do not limit my general claim to the particular devices herein shown and described.

The drawings represent suitable apparatus for the most speedy stopping of the engine under both branches of my present invention, and illustrate the simultaneous action of the
50 brake and steam cut-off devices.

Figure 1 shows in elevation and partial section an enlarged releasing device with the

two positions of the parts indicated in full and dotted lines. Fig. 2 is a perspective view showing one form of brake apparatus. Fig. 55
3 is a sectional detail of the same, and Fig. 4 a general view of an engine furnished with my apparatus for cutting off the steam and applying the brake. Fig. 5 is a detail. Fig. 6 illustrates the actuation of the cut-off direct
60 from the governor.

According to my present invention, a weight is released and caused to cut off the steam and to apply a brake to the face of the fly-wheel whenever the electrical circuit is completed by touching a press-button in any part
65 of building.

A represents a suitable case located in any convenient part of the engine-room and enclosing the weight-releasing mechanism. 70

B B are magnets, C the vibrating armature, and D D the conducting-wires connecting with the battery and extending through the building and furnished at intervals with
75 push-buttons E or the like, whereby the electric circuit may be instantaneously closed when required.

F represents a horizontal lever pivoted at f and having a limited movement controlled by a guide and stop G. An adjustable weight
80 H may be applied to this lever, if desired. At or near its pivoted end the lever has a rigid upright arm F', to which is pivoted a latch I, arranged to engage beneath a collar or projection K on a vertically-movable hollow stem
85 L, through which passes the cord M. The stem L is prolonged downwardly below the case A and furnished with a loading or weight N, formed, preferably, of a series of rings slipped one below another on said stem until
90 the desired amount of weight is obtained, the several sections or rings being supported and connected to said stem by means of the annular nut O, screwed thereon. Thus the weight
95 N and the stem L, with its collar K and nut O, are upheld by the engagement of the latch I under said collar. Suitable guides are furnished for the vertical movement of said parts.

Fig. 1 represents in section a tube P, in
100 which the upper end of the stem L moves, with a slot through which the latch I reaches to support the collar K. The stem is also guided at a lower point by the walls of the

opening, where it passes through the bottom of the case A, and the body of the weight N has a tubular guide Q.

R represents a pivoted and spring-pressed
 5 brake, the shoe of which is arranged to bear against the face of the fly-wheel when required to check and speedily stop its rotation. The brake is held at a short distance from the face of the wheel by means of a latch S,
 10 pivoted to the rigid upright arm of a tripping-lever T, upon the outer end of which the weight N strikes to withdraw the latch S, when such weight is dropped by withdrawal of the other latch I from position beneath the
 15 collar K. The free end of the lever F has a delicate support readily tripped by a single vibration of the armature C, as will be seen from Fig. 1. The armature is attracted to the magnets B when the circuit is closed, and this
 20 depresses the long arm of a lever U, pivoted at *u*, and held up, as shown, by a spring V, against the tip of an adjusting-screw *v*. The opposite end of the lever U engages detachably with an angular catch W, pivoted at the
 25 junction of its arms and furnished with a terminal mouth *w*, which receives a stud or pin projecting laterally from the end of the lever F. When the armature is depressed, it releases the lever F by causing the lever U
 30 to be disengaged from the catch W, which turns on its pivot, and the parts assume the position indicated by dotted lines, thus dropping the weight N and operating the brake and the steam-cut-off devices. The cord or
 35 wire M, which passes through the hollow stem L, by which the weight N is suspended, runs from the case A over a grooved wheel *m* and down to the throttle-valve or steam-cut-off valve of the engine, about as indicated in Fig.
 40 4. For convenient application to these cut-offs without altering the engine, I provide a pulley X, split in halves, adapted to be brought together laterally and secured rigidly upon the stem of the throttle-valve. The cord M is
 45 passed several times around this pulley, and when the weight N is dropped electrically, as herein described, the pull upon the cord M revolves the pulley X and closes the throttle-valve, to the stem of which said pulley is
 50 fixed. I sometimes connect the end of the

cord M to a lever normally controlled by the governor and actuating a steam cut-off, as in Fig. 6, such lever in the case of accident being actuated by said cord and the weight and releasing mechanism described. 55

The ordinary stopping and starting of the engine need not disturb my attachments at all, they being held in reserve and always ready in an emergency. The cord M, which passes around the pulley X on the throttle- 60 valve stem, has at its opposite end a small weight Y, sufficient simply to keep said cord drawn fairly taut. When the engineer opens or closes said valve, the cord, drawn by the small weight Y, runs freely through the hol- 65 low stem L of the main weight N without tripping the lever F and latch I, which support weight, and without striking the lever T or latch S, which controls the brake. A lifting-line Z is connected to lever F for the pur- 70 pose of conveniently restoring it to position after it has been tripped and without opening the case A. The tip of the angular catch W is beveled somewhat, to readily pass under the raised beak of the releasing-lever U. 75

I claim as my invention—

1. In an engine-stopping apparatus, the combination of a brake for the fly-wheel and a cut-off for the steam-supply, with means for actuating both devices simultaneously from a 80 remote point through an electric circuit, substantially as and for the purpose set forth.

2. In an engine-stopping apparatus, the lever F F' and tripping devices actuated by closing the electric circuit, in combination 85 with a brake for the fly-wheel, a weight N, having a hollow stem normally supported by said lever, a cord or wire M, passing freely through said weight and stem, connected at one end with the engine-valve and furnished at its 90 opposite end with a light weight Y, for the purpose set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 11th day of 95 March, A. D. 1890.

LEMUEL MELLETT.

Witnesses:

A. H. SPENCER,
 JAMES P. PRINCE.