(No Model.)

E. F. ROBERTS.

ELECTRICAL TELL TALE DEVICE.

No. 427,014. Patented Apr. 29, 1890.

Fig. 2.

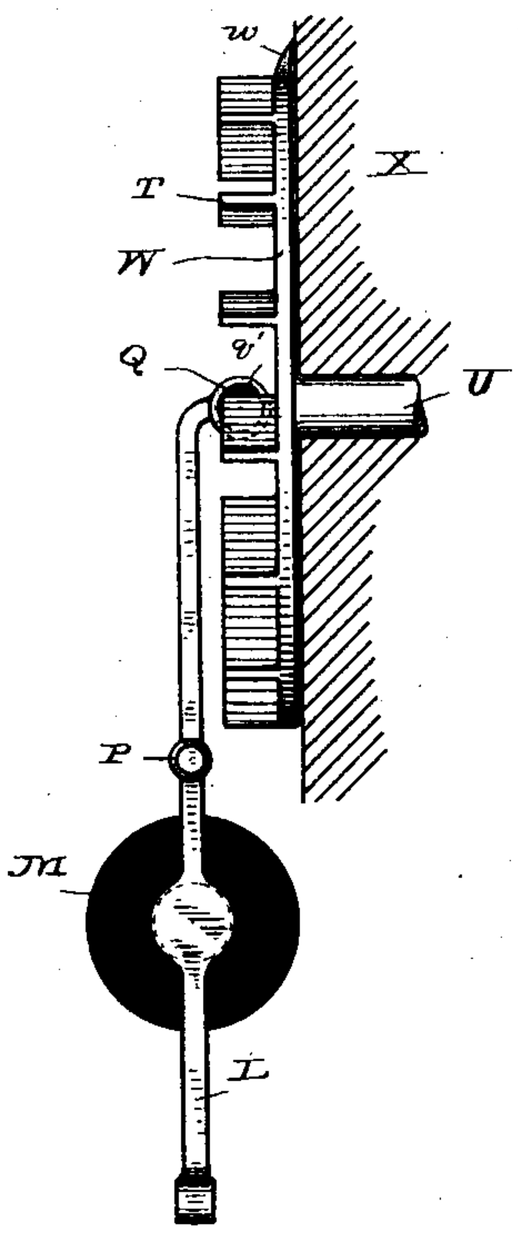
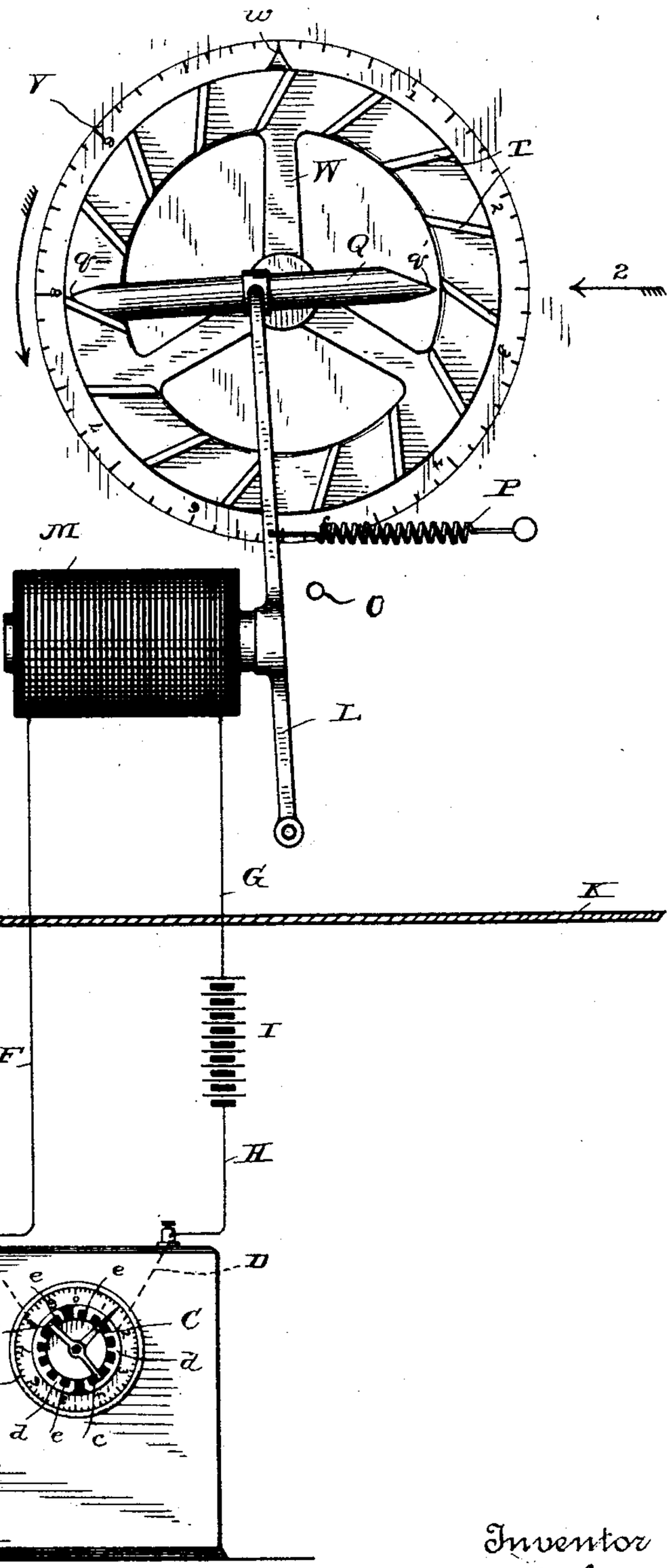


Fig. 1.



Witnesses
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UNITED STATES PATENT OFFICE.

EDWARD F. ROBERTS, OF ROCHESTER, NEW YORK.

ELECTRICAL TELL-TALE DEVICE.

SPECIFICATION forming part of Letters Patent No. 427,014, dated April 29, 1890.

Application filed June 11, 1889. Serial No. 313,899. (No model.)

To all whom it may concern:

Be it known that I, EDWARD F. ROBERTS, a citizen of Great Britain, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Electrical Tell-Tale Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention consists in an apparatus by which one or more tell-tale devices, located at different points, may be operated by the index-finger of an ordinary gas-meter or other registering device.

In the drawings, Figure 1 represents my invention as attached to a gas-meter. Fig. 2 is a side view and partial section of the tell-tale device.

A is the gas-meter situated in the cellar or lower room of a house beneath the floor K. B is the ordinary dial-face upon said meter, and C the index-finger revolving before the same. Upon the dial-face are placed two semicircular pieces of brass or other conducting material *d d*, which are connected by wires D D to two binding-posts upon the meter. Between the raised portions of said conducting-pieces are placed insulating-segments *e e*. Attached to the index-finger C is a light bridge of conducting material, having the branches *c c*, which bear either on the raised portion of the insulating-segments *d d*, thereby making electrical connection between the two, or else upon the opposite insulating-segments *e e*, thereby breaking the connection between the segments *d d*. A battery I and an electro-magnet M are in circuit with the binding-posts on the meter-casing by means of the wires F, G, and H. The electro-magnet M has an armature mounted on a vibrating lever L, which carries a reciprocating piece Q. An index-wheel W, mounted on a shaft U in suitable bearings, has on its face certain teeth T, which are placed at any desired angle of inclination to the radii of the said wheel. The said index-wheel actuates an index finger or pointer *w*, which revolves before a dial-face V, which has on it figures corresponding to those upon the dial-face of the gas-meter A. The reciprocating piece Q may have its ends beveled, as shown at *q q*, to correspond to the angle of inclination of the teeth T. When the electro-magnet is dead, the armature L is retracted by the spring P until it strikes the stop O. The shaft U is shown in Fig. 2 as being mounted in a solid piece X, which forms the face of the dial for the tell-tale device.

The operation of the device is as follows: The number of projections on the conducting-segments *d d* correspond to the number of the teeth T on the tell-tale device. Consequently as the index-finger revolves it makes and breaks the electrical circuit extending through the magnet M and the battery I as many times in each revolution as there are teeth on the wheel W, and consequently the reciprocating piece Q moves back and forth under the alternate action of the electro-magnet M and the spring P in such manner as to cause the tell-tale wheel to revolve at the same rate of speed as the index-finger of the gas-meter. Consequently by looking at the dial of the tell-tale device, which may be placed in any room or any number of rooms, the observer can tell the reading of the gas-meter at once. By making the reciprocating piece Q of such length that one end engages a tooth on that side before the other end disengages itself from a tooth on the opposite side, the dial-wheel W is always under positive control, and cannot be revolved except by the action of the said reciprocating piece Q, and is practically locked thereby in any position until the other parts of the device operate.

It is of course evident that certain changes in the arrangement and construction of the various parts of my invention can be made without departing from the spirit of my invention so long as the tell-tale device is operated by the reciprocation of the armature of the electro-magnet, which shall be alternately excited and deadened by the making and breaking of an electric circuit by the circuit-breaker attached to the index-finger of the gas-meter.

Having therefore described my invention, what I claim as new, and desire to protect by Letters Patent, is—

1. The combination of a conducting bridge-piece attached to the index-finger of a meter, alternating conducting and non-conducting

segments which surround the arbor of said index-finger and on which the bridge-piece bears, an electrical circuit to one terminal of which half of said conducting-segments are connected, while the other half are connected to the other terminal, an electro-magnet in said circuit, an armature for said magnet, and a tell-tale device operated by the vibrations of said armature, substantially as described.

2. The combination of a conducting bridge-piece attached to the index-finger of a meter, alternating conducting and non-conducting segments which surround the arbor of said index-finger and on which the bridge-piece bears, an electrical circuit to one terminal of which half of said conducting-segments are connected, while the other half are connected to the other terminal, an electro-magnet in said circuit, an armature for said magnet, and a reciprocating piece operated by said armature, together with an index-wheel which has teeth upon its side inclined at an angle to the radii of said wheel, with which teeth the reciprocating piece alternately engages and disengages, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD F. ROBERTS.

Witnesses:
A. P. SMITH,
WASHN. DANENHOWER.