E. EVANS.

CONTROLLING MECHANISM FOR ELECTRICITY METERS.

APPLICATION FILED JUNE 3, 1908.

934,902. Patented Sept. 21, 1909.

FIG. 1.

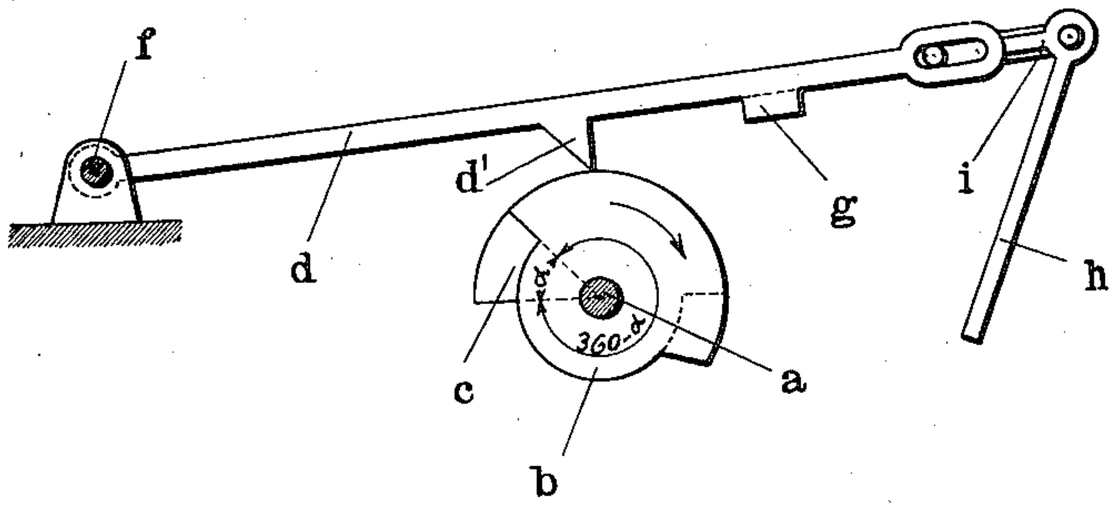
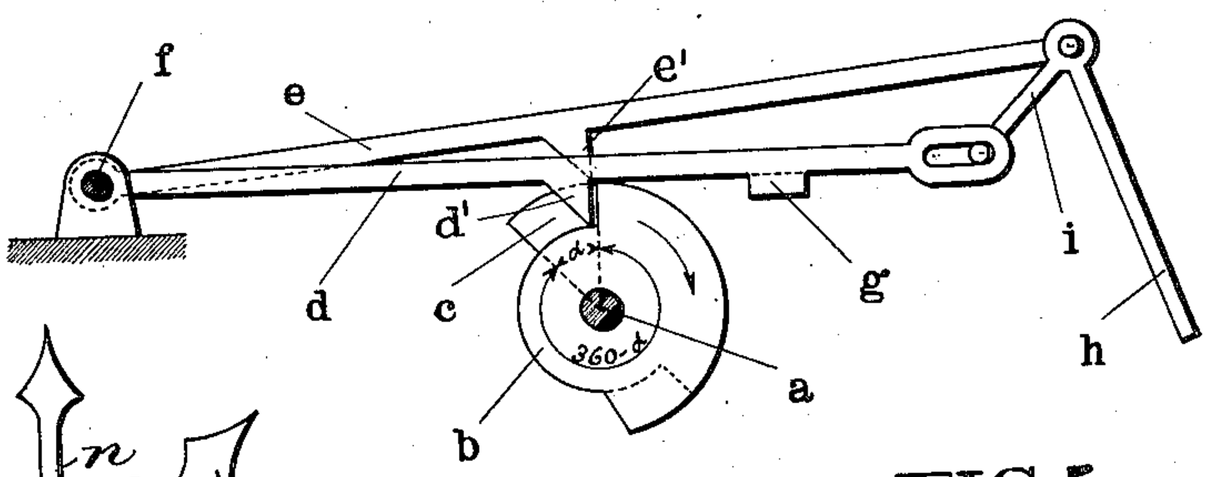


FIG. 2.



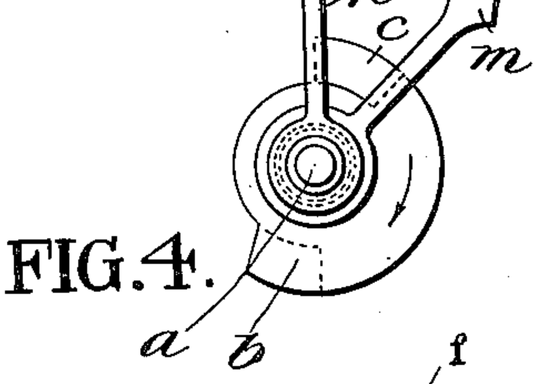


FIG. 4.

FIG. 3.

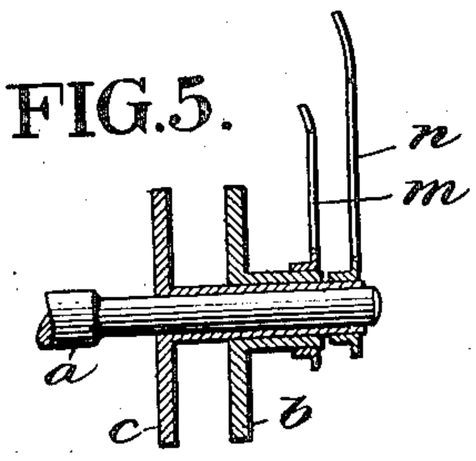
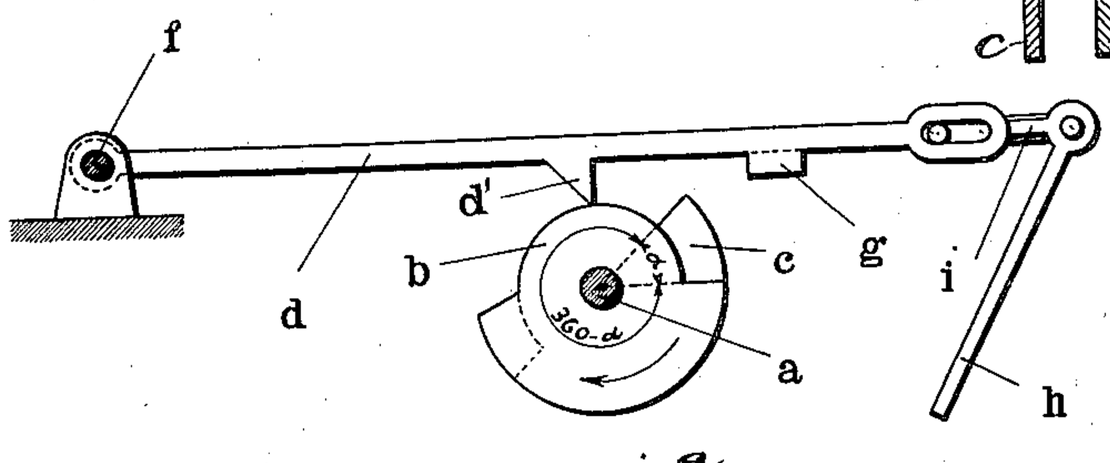


FIG. 5.



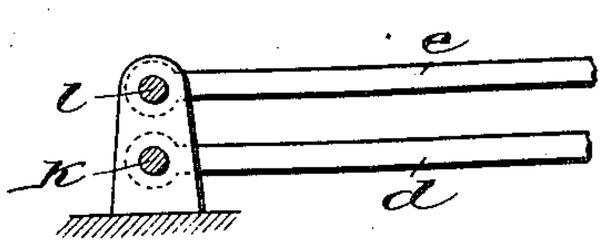


FIG. 6.

WITNESSES:

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CONTROLLING MECHANISM FOR ELECTRICITY-METERS.

934,902. Specification of Letters Patent. Patented Sept. 21, 1909.

Application filed June 3, 1908. Serial No. 436,418.

To all whom it may concern:

Be it known that I, EVAN EVANS, a subject of the Emperor of Germany, and a resident of Berlin, Germany, have invented certain new and useful Improvements in Controlling Mechanism for Electricity-Meters, of which the following is a specification.

My invention relates to electricity meters and particularly to such in which provision is made for changing the rate charged for the consumption of electricity, at predetermined times of the day or night.

The object of my present invention is to provide a simple device which will allow the change in rate to be effected at any desired moment, the device being adjustable for this purpose and a further object of my invention is to effect the change suddenly, so as to secure a positive operation.

My invention will now be described in detail and its novel features pointed out in the appended claims.

Reference is to be had to the accompanying drawings, in which—

Figure 1 is a side elevation of the main parts of my invention in one position; Figs. 2 and 3 are similar views thereof in different positions; Fig. 4 is a front elevation of the adjusting device; Fig. 5 is an axial section thereof; and Fig. 6 is a partial side elevation of another construction.

a indicates a shaft which is rotated constantly for instance by means of a clockwork and may be so constructed as to perform one revolution in 24 hours. To this shaft are secured, so as to rotate therewith, yet adjustable circumferentially, two cam disks *b* and *c* respectively, preferably arranged side by side. These disks may be simply mounted on the shaft *a* tightly enough to cause them to follow its rotation under normal circumstances, yet not tightly enough to prevent their being adjusted when desired. The cam disk *b* is engaged by a projection *d'* upon a lever *d* and the cam disk *c* is similarly engaged by a projection *e'* of another lever *e*. These two levers may be fulcrumed on the same axis *f*, as in Figs. 1, 2, and 3, or they may be fulcrumed at different points, as indicated at *k*—*l* in Fig. 6. One of the levers, *d*, is provided with a lateral projection *g* forming a stop for the other lever *e*, so that the latter cannot take a lower position than the lever *d*. Each of the disks *b*—*c* is rigidly connected with a pointer or hand *m*—*n* respectively, which may be arranged to indicate on an hour dial.

The levers *d*—*e* are arranged to govern an electricity meter of any suitable character in such a way as to change the rate of indication at predetermined times. This may be accomplished in different manners. In Figs. 1, 2 and 3 I have pivoted to the free end of the lever *e* an elbow lever, one arm of which *i*, is guided at its end in a longitudinal slot of the lever *d;* the other arm *h* of said elbow lever is connected with a suitable shifting device of the electricity meter. The lever *i*—*h* is therefore a shifting lever.

The operation is as follows if the cam disks *b*—*c* are so set that their end surfaces will form the angle *a* with each other. At first, in the position shown in Fig. 1, the projections *d'*—*e'* of both levers will rest on the larger portions of both cam disks, which portions have the same radius, so that the levers will stand in the same position. The shifting lever is therefore in such a position that its arm *i* extends in the same direction as the levers *d*—*e*, and the meter indicates at a predetermined rate. If now, after the shaft *a* has rotated for a certain time in the direction indicated by the arrow, the projection *d'* reaches the shoulder of the cam as shown in Fig. 2 the lever *d* will drop while the lever *e* still remains in its raised position. This will cause the shifting lever *i*—*h* to swing about its fulcrum, thus changing the rate at which the electricity meter indicates. This condition will continue for a time corresponding to that which the shaft *a* takes to rotate through the angle *a*. After such lapse of time the lever *e* will in turn drop off the shoulder of its cam disk *c*, so that the two levers will be in the lower position side by side, as shown in Fig. 3, thus swinging the shifting lever *i*—*h* to substantially its initial position. This condition will continue for a time corresponding to the rotation of the shaft *a* through an angle of 360°—*a*. In explanation I would say that it is customary in some places to charge a different rate per unit of electricity consumed at different hours of the day and my invention applies to the wants of such cases.

The advantages of my present invention reside, first, in the fact that the cam disks *b*—*c* may be set at any desired point, or in other words that the angle *a* may be adjusted to any size desired. The device is

very simple and efficient in operation. The change of rate is effected suddenly corresponding to the dropping off of one or the other lever at the shoulder of its cam disk, so that the operation will take place at the exact moment desired. The device allows of adjusting not only the exact moment from which the rate shall be changed, but further the exact length of time during which such rate shall govern.

I claim as my invention:

1. In a device of the class described, the combination of a rotary shaft, two cam disks mounted to rotate therewith yet adjustable circumferentially one relatively to the other, two levers controlled individually by said cam disks, and a shifting lever carried by one of said levers and operatively connected with the other.

2. In a device of the class described, the combination of a rotary member, two cams mounted to rotate therewith yet adjustable circumferentially one relatively to the other, two levers controlled by said cams individually, and shifting mechanism carried by one of said levers and mechanically connected with the other.

3. In a device of the character described, the combination of a rotary member, two cams mounted to rotate therewith, two movable elements controlled by said cams, and shifting mechanism carried by one of said elements and mechanically connected with the other.

4. In a device of the character described, the combination of a rotary member, two operating members mounted to turn therewith yet adjustable circumferentially one relatively to the other, two movable elements controlled by said operating members, and shifting mechanism carried by one of said elements and mechanically connected with the other.

5. In a device of the character described, the combination of a rotary member, two operating members mounted to turn therewith, two movable elements controlled by said operating members, and shifting mechanism carried by one of said elements and mechanically connected with the other.

6. In a device of the class described, the combination of a rotary member, two operating members mounted to turn therewith, two levers controlled by said operating members, and a shifting lever fulcrumed on one of said levers and having a loose connection with the other lever.

7. In a device of the class described, the combination of a rotary member, two operating members mounted to turn therewith, two levers controlled by said operating members, and a shifting lever fulcrumed on one of said levers and having a pin-and-slot connection with the other lever.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

EVAN EVANS.

Witnesses:
HENRY HASPER,
WOLDEMAR HAUPT.