May 5, 1925. 1,536,119

D. McDONALD

DEMONSTRATING INDEX DEVICE

Filed June 14, 1923 2 Sheets-Sheet 1

Fig. 1.

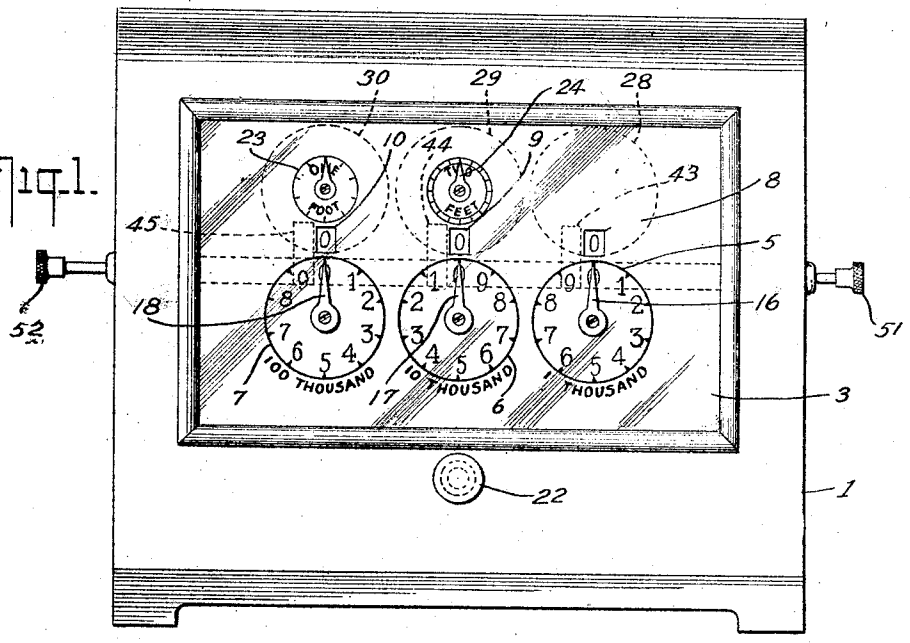
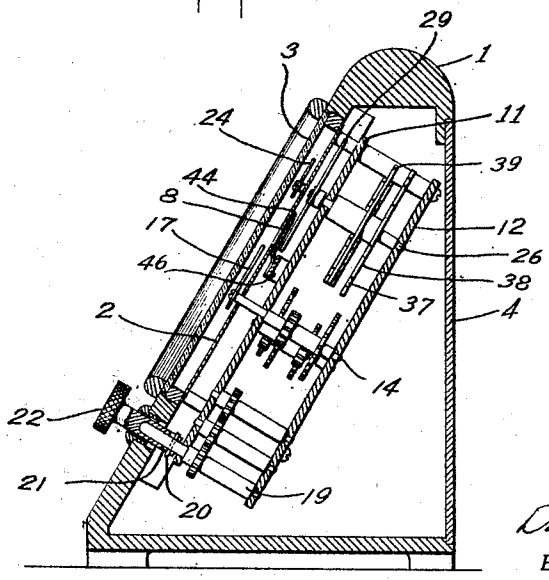


Fig. 2.



INVENTOR

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Filed June 14, 1923 2 Sheets-Sheet 2

Fig. 3.

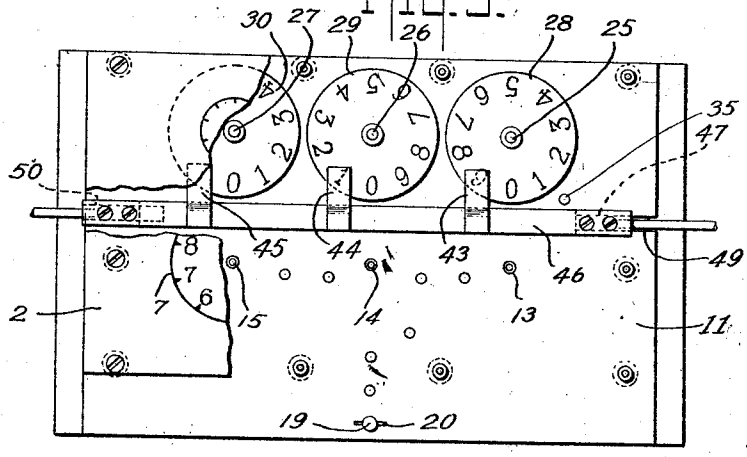


Fig. 4.

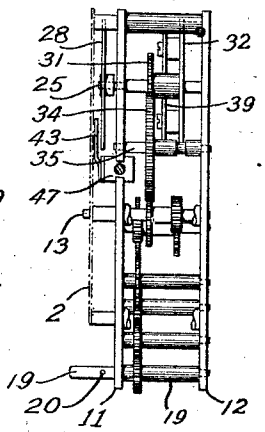


Fig. 5.

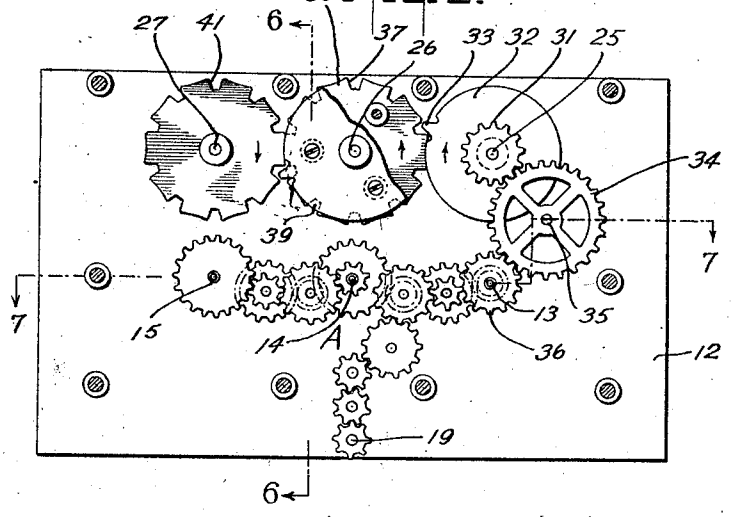


Fig. 6.

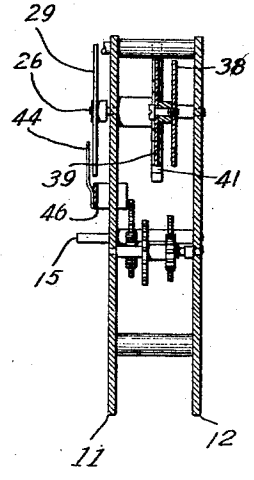
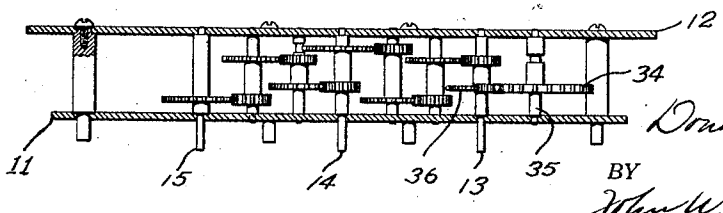


Fig. 7.



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Patented May 5, 1925. 1,536,119

UNITED STATES PATENT OFFICE.

DONALD McDONALD, OF NEW YORK, N. Y., ASSIGNOR TO AMERICAN METER COMPANY, INCORPORATED, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

DEMONSTRATING INDEX DEVICE.

Application filed June 14, 1923. Serial No. 645,243.

To all whom it may concern:

Be it known that I, DONALD McDONALD, a citizen of the United States, and a resident of the borough of Manhattan, city, county, and State of New York, have invented an Improvement in Demonstrating Index Devices, of which the following is a specification.

The present invention relates to an improvement in demonstrating index devices. Public service enterprises have frequently experienced considerable difficulty in the handling of their accounts because of the fact that the ordinary user of their service, whether it be water, gas, or electricity, does not learn how to read the meter correctly. One object of the present invention is to provide a device which may be placed in a convenient position in the office of a public utility corporation, for example, so that patrons of the corporation may be instructed in the correct method of reading the company's metering devices by reference to this improved demonstrating index device.

One embodiment of my invention is illustrated in the drawings accompanying the present specification, and in which

Figure 1 is a front elevation,

Figure 2, a central transverse vertical section,

Figure 3, a view of a portion of the dial mechanism, together with the frame for supporting the gear trains,

Figure 4, an end view of said mechanism,

Figure 5, a view of the gear trains and dial mechanism with the top plate removed,

Figure 6, a section on the line 6—6 of Figure 5, and

Figure 7, a section on the line 7—7 of Figure 5.

As shown in Figures 1 and 2 of the drawings, a preferred form of my invention will include a portable casing 1 provided with an opening in its front wall through which is visible a face plate 2, protected by a glass 3. An opening in the rear wall of the casing 1 is provided with a removable cover 4. The face plate 2 carries a plurality of groups of markings representing units of different values. Thus, the markings included within the circular marking 5 which may be referred to as group 5, represent hundreds while those in the circular markings 6 and 7 represent thousands and ten thousands, respectively. Obviously, the identity of the unit of measurement, the reading of which it is desired to demonstrate, may vary to suit the type of service supplied. Adjacent to each group is an opening 8, 9 and 10, respectively, in the face plate 2. Behind said face plate 2 and within the casing 1 is a frame having front and rear plates 11 and 12, respectively, between which is supported a train of gears for convenience here identified collectively at A (Figure 5), the construction and operation of said train being old and well known to those skilled in the art. This train includes three shafts 13, 14 and 15, respectively, which extend through the front plate 11 and the face plate 2 and carry on their exposed ends the indicators or markers 16, 17 and 18, respectively. The markings 5, 6, and 7, the gear train A and the pointers 16, 17, and 18, provide in effect a simulation of the ordinary measurement indicating devices of a typical gas meter. The gear train is manually actuated through gears driven from a shaft 19 having a pin 20 cooperating with a slot 21 in the hollow shank of a thumb piece 22. Thus, by turning said thumb piece, the gear train A operates in characteristic manner to impart continuous movement of rotation to the pointers at speeds proportioned to the relative sizes of the different units represented by the markings of the several groups. This operation reproduces for demonstration the action of the pointers on the dial of a common form of gas meter, for example, except that the pointers 23 and 24 indicating readings of less than 100 cubic feet may be dummies in the sense that they are not driven by the gear train.

As shown more clearly in Figures 3 to 7 inclusive, a plurality of shafts 25, 26, and 27 are journaled in the front and rear plates 11 and 12 with their forward ends extending through the front plate 11 and carrying a dial 28, 29, and 30, Figure 3, bearing the numerical markings 0 to 9, which form a group corresponding to the adjacent group of markings on the face plate hereinabove referred to, said dial markings being arranged on the dial in such a position as to be presented successively opposite the openings 8, 9, and 10, respectively, as indi-

cated in Figure 1, when the dials are rotated.

Intermittent rotation of the dials 29 and 30 is effected by any suitable Geneva or stop movement. As shown more clearly in Figure 5, a pinion 31 and a gear disc 32 having a single tooth 33 are secured to the shaft 25. A gear 34 mounted on a stud 35 meshes with a gear 36 in the gear train A and also meshes with the pinion 31, thus imparting continuous rotation to the shaft 25, the disc 32, and the dial 28. The tooth 33 of the disc 32 successively engages notches 37 in the star wheel 38 mounted in shaft 26 which also carries a disc 39 having a tooth 40 successively engaging the notches 41 in a star wheel 42 mounted on the shaft 27. Obviously, where the parts are geared as indicated, for each complete rotation of shaft 25, shaft 26 is rotated through 36° and similarly with respect to shaft 27. The numerical markings on the dials 29 and 30 are positioned so that they will stop periodically opposite the openings 9 and 10, respectively, as said dials are rotated intermittently by the mechanism thus far described. When the parts are properly synchronized the reading of the numerical markings disclosed at said openings will correspond to the total number of units through which the pointers 16, 17, and 18 shall have advanced. This will, of course, be indicated by reference to the group markings 5, 6, and 7 which the dial markings are intended to interpret.

It is contemplated that in use it will be desirable to conceal the interpretation of the group marking reading until the person who is being instructed shall have made an attempted reading. This reading can then be verified by disclosing the dial reading. To this end, shutters 43, 44, and 45 are movably mounted between the openings 8, 9, and 10, respectively, and the dials positioned behind them, on a bar 46 supported by blocks 47, Figure 4, and 48, which slide in slots 49 and 50 cut in the opposed side edges of the plate 11, said blocks being provided with top and bottom grooves to engage the upper and lower edges, respectively, of said slots. A rod is provided at each end of the bar 46 forming in effect an extension thereof and having the terminal thumb pieces 51 and 52, respectively, exposed outside the casing 1 so that the bar 46 may be moved endwise to position the shutters in inoperative or operative position as desired.

Although one field of utility and one mode of operation of my improved device has been indicated in connection with the foregoing description, it is contemplated that the device is capable of being used for other purposes and with the parts operating in different sequences from those hereinabove set forth.

I claim as my invention:

1. A demonstrating index device comprising a face plate having a series of groups of unit markings, each group having a different unit value, a pointer for each group, a train of driving gears cooperating with said pointers, and means cooperating with said train to expose a number marking corresponding to the number of units indicated by the pointer in each group.

2. A demonstrating index device comprising a face plate having a series of groups of unit markings, each group having a different unit value, a marking adjacent to each group to indicate its unit value, a pointer for each group, a train of driving gears cooperating with said pointers, and means cooperating with said train to expose a number marking corresponding to the number of units indicated by the pointer in each group.

3. A demonstrating index device comprising a face plate having a series of unit markings, each group having a different unit value, a pointer for each group, a train of driving gears cooperating with said pointers, and means cooperating with said train to expose a number marking corresponding to the number of units indicated by the pointer in each group, said means comprising a movable member for each group carrying a plurality of numeral markings, means for normally concealing said markings and manually operative means for moving a portion of the concealing means to expose a marked portion of each of said movable members.

4. A demonstrating index device comprising a face plate having markings in facsimile of the markings on a meter for gas, water, electricity, or the like, pointers operatively mounted with respect to said markings, a train of gears for driving said pointers, and manually operated means for actuating said train of gears.

5. A demonstrating index device comprising a face plate having markings in facsimile of the markings on a meter for gas, water, electricity, or the like, pointers operatively mounted with respect to said markings, a train of gears for driving said pointers, means for actuating the train of gears, and means cooperating with said train for exposing a numerical marking adjacent to each of said pointers and corresponding to the readings of the pointers with respect to the facsimile markings.

6. A demonstrating index device comprising a face plate having markings in facsimile of the markings on a meter for gas, water, electricity, or the like, pointers operatively mounted with respect to said markings, openings in said face plate adjacent to said markings, movable members behind the face plate and carrying numeral markings

arranged to be exposed through said openings, and a train of gears for operating the pointers and the movable members simultaneously.

7. A demonstrating index device comprising a face plate having markings in facsimile of the markings on a meter for gas, water, electricity, or the like, pointers operatively mounted with respect to said markings, openings in said face plate adjacent to said markings, movable members behind the face plate and carrying numeral markings arranged to be exposed through said openings, a shutter for each opening, a train of gears for operating the pointers and the movable members simultaneously, and manually operated means for moving the shutters toward and away from said openings.

8. A demonstrating index device comprising a face plate having a plurality of groups of markings, rotatable pointers operatively positioned with respect thereto, a plurality of discs each having numerical markings arranged to be moved past an opening in the face plate and means for simultaneously actuating said discs and said rotatable pointers whereby the numerical markings exposed through said openings will correspond with and indicate the reading of the pointers with respect to the aforesaid plurality of groups of markings.

9. A portable demonstrating index device comprising a casing, a face plate arranged therein and having a plurality of spaced openings, a group of markings arranged on the face plate adjacent to each opening, a rotatable pointer centrally arranged with respect to each group of markings and mounted on a shaft passing through the face plate, a plurality of dials mounted behind the face plate, and having a plurality of numerical markings arranged to move in paths opposite said openings, and means for actuating said rotatable pointers and said dials simultaneously.

10. A portable demonstrating index device comprising a casing, a face plate arranged therein and having a plurality of spaced openings, a group of markings arranged on the face plate adjacent to each opening, a rotatable pointer centrally arranged with respect to each group of markings and mounted on a shaft passing through the face plate, a plurality of dials mounted behind the face plate and having a plurality of numerical markings arranged to move in paths opposite said openings, means for closing said openings in the face plate, means for moving said closing means to inoperative position, and means for actuating the rotatable pointers and the dials simultaneously.

In testimony whereof, I have signed my name to this specification this 13th day of June, 1923.

DONALD McDONALD.