

(No Model.)

A. B. HERRICK.

MEANS FOR TAKING READINGS OF METER DIALS.

No. 504,159.

Patented Aug. 29, 1893.

FIG. 1.

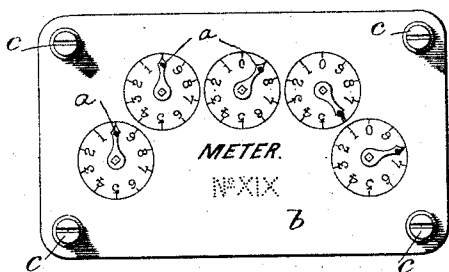


FIG. 4.

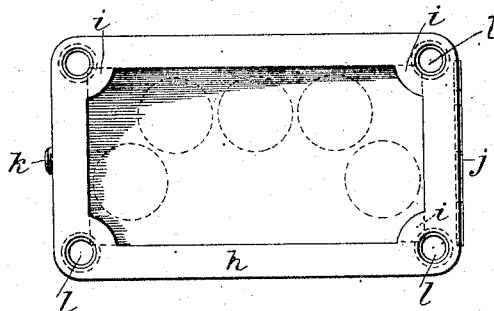


FIG. 2.

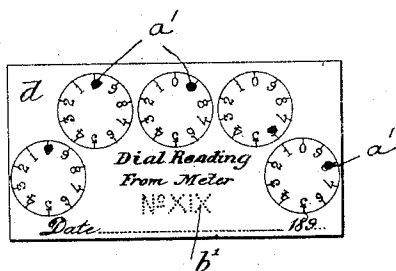


FIG. 5.

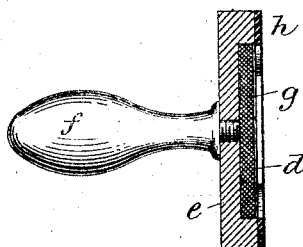
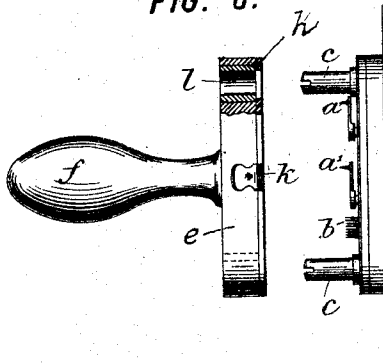


FIG. 3.



FIG. 6.



WITNESSES:

John H. Dennis.
Fred White

INVENTOR:

Albert B. Herrick,

By his Attorneys,

Arthur C. Fraser & Co.

UNITED STATES PATENT OFFICE.

ALBERT B. HERRICK, OF SCHENECTADY, NEW YORK, ASSIGNOR TO THE
GENERAL ELECTRIC COMPANY, OF BOSTON, MASSACHUSETTS.

MEANS FOR TAKING READINGS OF METER-DIALS.

SPECIFICATION forming part of Letters Patent No. 504,159, dated August 29, 1893.

Application filed June 13, 1892. Serial No. 436,561. (No model.)

To all whom it may concern:

Be it known that I, ALBERT B. HERRICK, a citizen of the United States, residing at Schenectady, in the county of Schenectady and State of New York, have invented certain new and useful Improvements in Means for Taking Readings of Meter-Dials, of which the following is a specification.

The indications afforded by the dials of gas meters, water meters, electric meters, &c., are commonly taken by an employé who visits the meters from time to time and records the date, the number of the meter, and the reading of the meter, in a book carried by him for that purpose.

The object of the present invention is to provide a means by which an indisputable record may be taken from meter dials in lieu of the system of recording heretofore practiced. To this end, I construct the dial of the meter in such manner that an indented or punctured impression may be taken from it upon a sheet or strip of paper or other suitable material which is or should be printed with a facsimile of the markings upon the dial. The impression thus made upon the facsimile indicates upon the latter the position of the hands upon the dial, so that a reading may be made from the facsimile the same as from the dial itself, and the facsimile may be dated and preserved for reference in case of dispute. In order to identify the facsimile with the particular meter from which the impression was taken, the dial of the meter is provided with a characteristic mark peculiar to itself, preferably a number, so applied to it that the impression is made from this mark or number upon the facsimile at the same time that the impression is made from the hands. I provide for making the impression by means of pricking or puncturing the facsimile. To accomplish this, I provide each hand with an outwardly projecting point or spur near its outer end, so that upon pressing the facsimile against the dial, the spurs upon the several hands will prick through the paper of the facsimile, making punctures therein having the same relation to the particular graduations printed upon the facsimile that the

points of the hands have to the numbers or graduations marked upon the dial, so that by the position of these pricks or punctures upon the facsimile the angular positions of the hands upon the dial will be clearly indicated. The characteristic mark or number of the dial is provided by grouping a series of needle points, so that by the same impressing operation these points shall prick into the facsimile the number characteristic of the meter. To enable the impression to be readily and accurately taken on the facsimile, I provide a movable pad or platen having a yielding surface against which the facsimile is held, and having also some means of properly guiding it to the dial of the meter, in direction parallel with the needles so that the operation of taking a reading consists simply in fastening the sheet of paper containing the facsimile to the face of the pad or platen, and pressing the latter against the dial of the meter in the positions indicated by the guides. Preferably the facsimile is made with two leaves by folding a sheet of paper printed with two facsimiles so that the two are superposed, and in this manner the impression is pricked simultaneously through both, so that one of them may be retained by the company or purveyor owning the meter, and the other may be delivered as a voucher to the customer whose consumption of a commodity is indicated by the meter.

Figure 1 of the accompanying drawings is a front view of the dial-plate or face of any suitable kind of meter, as for example a water meter, the dial being constructed or provided with means for making an impression in accordance with my invention. Fig. 2 shows a printed facsimile on which a reading or record has been taken from the meter dial shown in Fig. 1. Fig. 3 is a perspective view showing one of the hands of the dial shown in Fig. 1. Figs. 4 and 5 are respectively a face view and a vertical transverse section of the pad or platen for carrying the facsimile. Fig. 6 is a side elevation of the meter dial and pad or platen showing the operation of making the impression.

The meter-dial shown in Fig. 1 is of an or

dinary kind, having a series of revolving hands moving over graduated circles indicating respectively units, tens, hundreds, thousands, &c. In the construction shown each hand is provided as shown in Fig. 3 with a pricking point, needle, or spur *a*. This spur is preferably constructed with a shoulder, and is riveted to the end portion of the hand from underneath before the hand is forced on its spindle. The meter number is formed of a series of needle points projecting from the dial face, as shown at *b* in Figs. 1 and 6. In the construction shown the meter-dial is formed with four guiding pins *c c* projecting outward from its surface.

The facsimile *d*, shown in Fig. 2, is a piece of paper or similar fabric having printed thereon circles and graduations like those on the meter-dial. On being impressed against the meter-dial the spurs on the hands thereof prick holes through the paper, as shown by the black dots *a'* in Fig. 2, thereby indicating the angular positions of the hands. At the same time the needles *b* prick through the paper the number or characteristic mark of the meter, as shown at *b'* in Fig. 2.

The pad or platen shown in Figs. 4, 5, and 6 consists of a plate or block *e* adapted to hold the paper sheet or facsimile, and having preferably a handle *f* by which to grasp it. In the face of the plate *e* is preferably embedded a cushion *g*, which may be of any yielding material, as cloth, felt, or rubber. The facsimile is placed against the face of this, as shown at *d*, and held in its place by any suitable means. In the construction shown a metal plate or open frame *h* is provided against the face of the platen, adapted to hold the facsimile either at the corners as shown at *i i*, or by slightly overlapping and confining the edges of the facsimile. The frame *h* may be applied to the platen in any way by which the facsimile may be readily inserted and removed. The manner shown consists in hinging it at *j* at one side of the platen, and providing a catch or snap *k* at the other side to hold it when closed, but various other means may be provided. The facsimile might be held in many other and different ways than by means of such a frame. The platen is in the construction shown provided with guiding holes *l l* near its corners, which are so placed as to register with and fit over the guiding pins *c c* on the meter-dial. By this means the application of the pad or platen to the dial to make the impression is facilitated, the pad being presented in a proper position to the dial, while the facsimile is held in a fixed position relatively to the platen. Hence by the proper relative construction of these parts the presentation of the facsimile to the dial in proper position or register is insured.

I propose to make simultaneous impressions on two or more facsimile sheets, for which purpose the facsimiles are preferably printed in

duplicate or triplicate, and properly folded for insertion in the platen. The pricking points or spurs simultaneously puncture through the two, three, or more layers thus impressed. This feature constitutes one great advantage of my invention over those systems wherein it is proposed to apply ink to projections on the dial and to print an impression thereof on a piece of paper, since with such a system only one impression can be obtained. Such a system also involves the troublesome manipulation of an inking roller, which is difficult to keep charged with the proper amount of ink, and inconvenient to carry and apply.

The particular construction of pins *c* and holes *l* may be substituted by any other suitable kind of guides by which the presentation of the facsimile in correct position against the meter-dial will be assured. The guiding surfaces should extend parallel to the direction of the needles, to insure the correct presentation of the paper against the needles. I do not limit myself to any of the mechanical means or details herewith shown, as these may readily be substituted by others operating in substantially equivalent manner.

I claim as my invention the following-defined novel features, substantially as hereinbefore specified, namely:

1. The combination with a meter dial having pricking needles on its hands, and having an exposed or unobstructed face, of an impression-platen for taking readings from such meter dials, consisting of a block *e* distinct and separable from the meter, having a yielding pad on its face and means for attaching thereto a fac-simile sheet for receiving the impression, and reciprocally-engaging guiding devices on the meter and platen for guiding the platen into correct coincidence with the dial, and causing it to be pressed thereagainst in direction parallel with the needles.

2. The combination with a meter dial having pricking needles on its hands, and having an exposed or unobstructed face, of an impression-platen for taking readings from such meter dials, consisting of a block *e* distinct and separable from the meter, having a yielding pad on its face and means for attaching thereto a fac-simile sheet for receiving the impression, and reciprocally-engaging guiding devices on the meter and platen for guiding the platen into correct coincidence with the dial, consisting of guiding pins *c c* on the meter projecting parallel with the needles, and corresponding holes or sockets *l l* in the platen, whereby the platen is guided in its movement toward the dial in direction parallel to the needles.

3. The combination with a recording meter dial having pricking needles on its hands, and having an exposed or unobstructed face, of an impression platen for carrying a record facsimile consisting of a block *e* separable

from the meter having a yielding pad on its face and means for attaching the facsimile thereto, and a handle *f* projecting from the back thereof and adapted to enable the fac-
5 simile to be presented to the front of the dial and pressed thereagainst in direction parallel with the needles.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ALBERT B. HERRICK.

Witnesses:

GEO. C. HOLBERTON,
HENRY F. MARX.