

S. H. HOLDEN.
ELECTRICITY METER.
APPLICATION FILED JULY 18, 1908.

925,185.

Patented June 15, 1909.
3 SHEETS—SHEET 1.

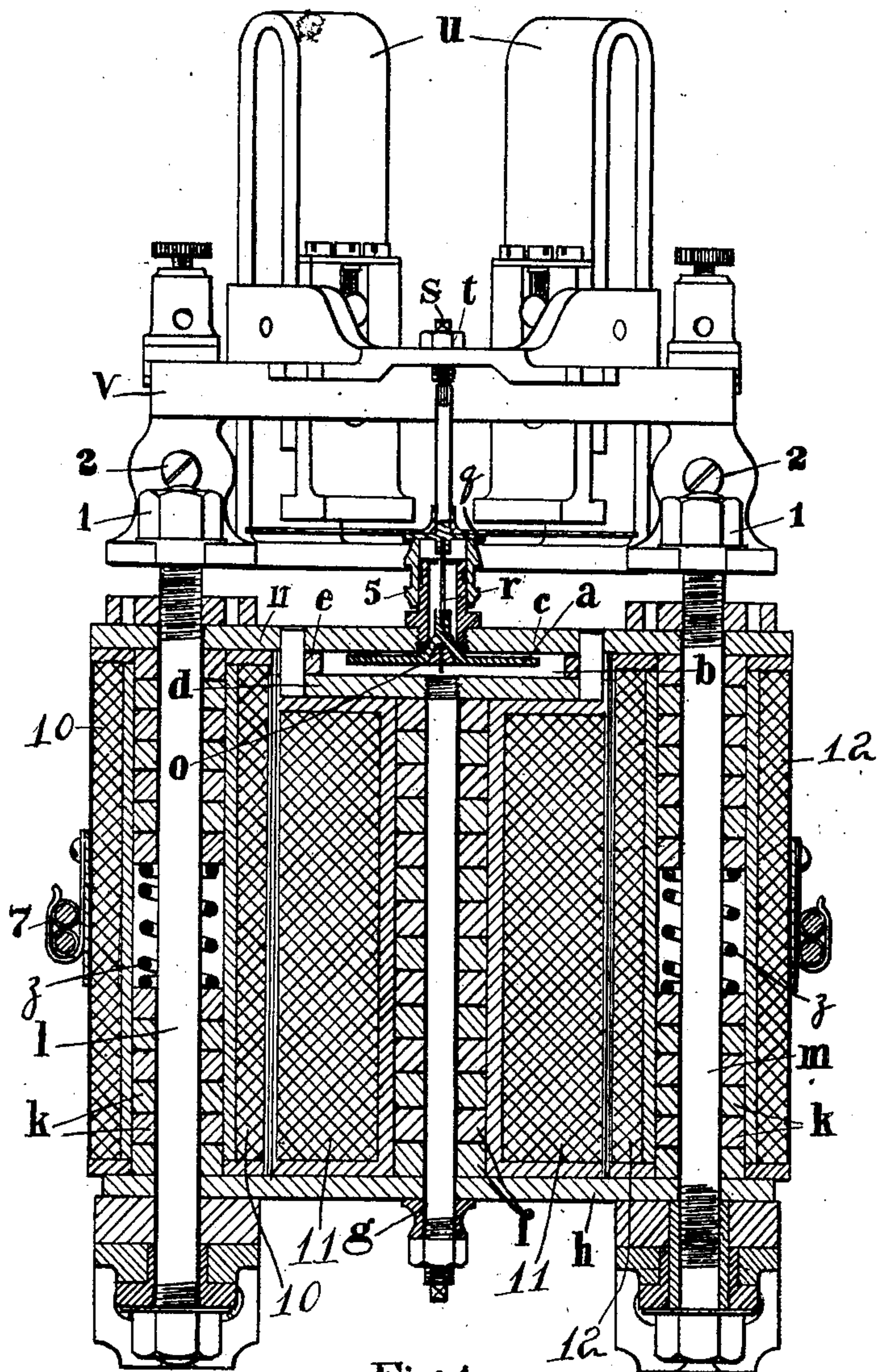


Fig. 1.

Attest
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Arthur Middleton

Inventor
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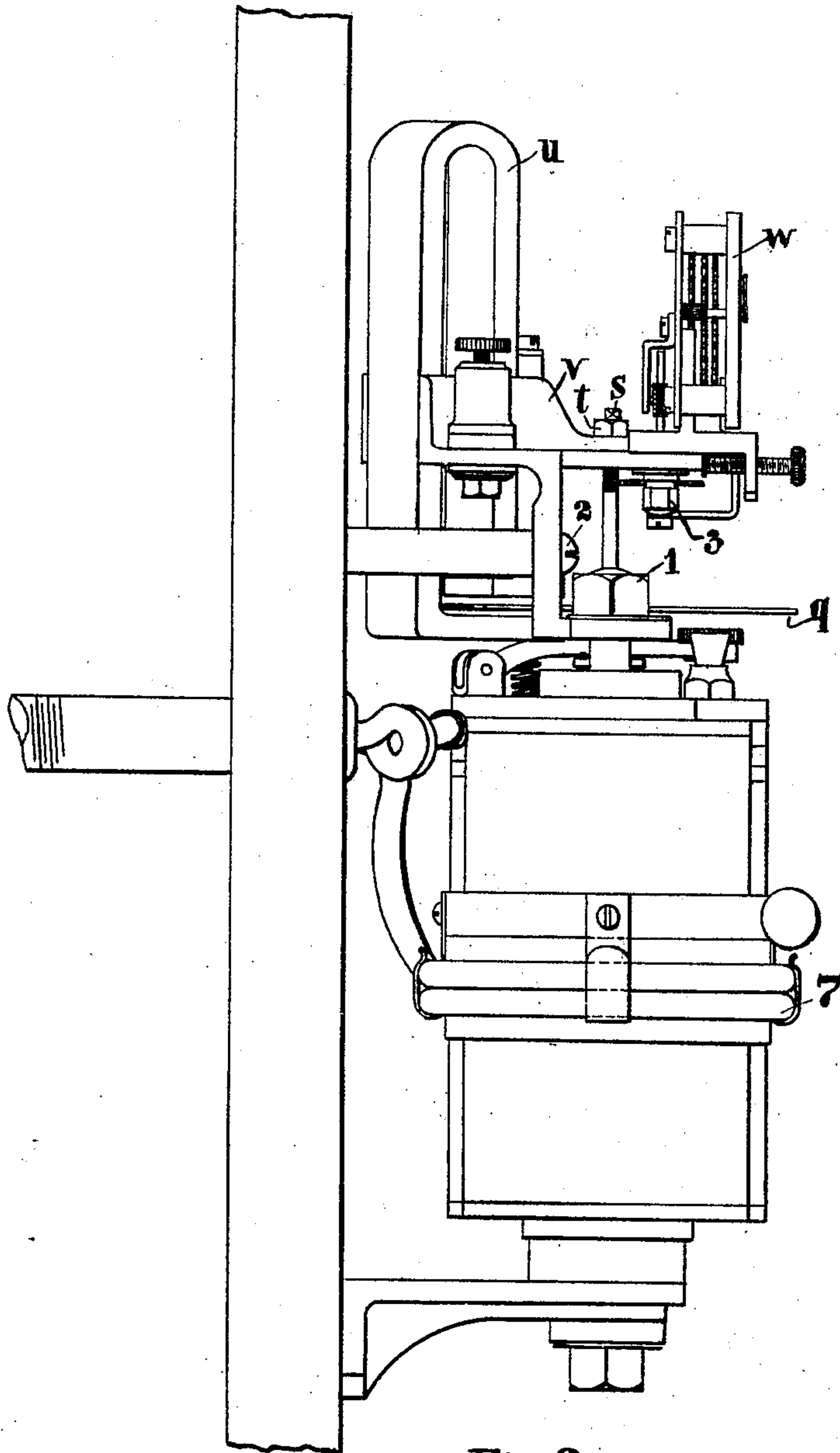


Fig. 2.

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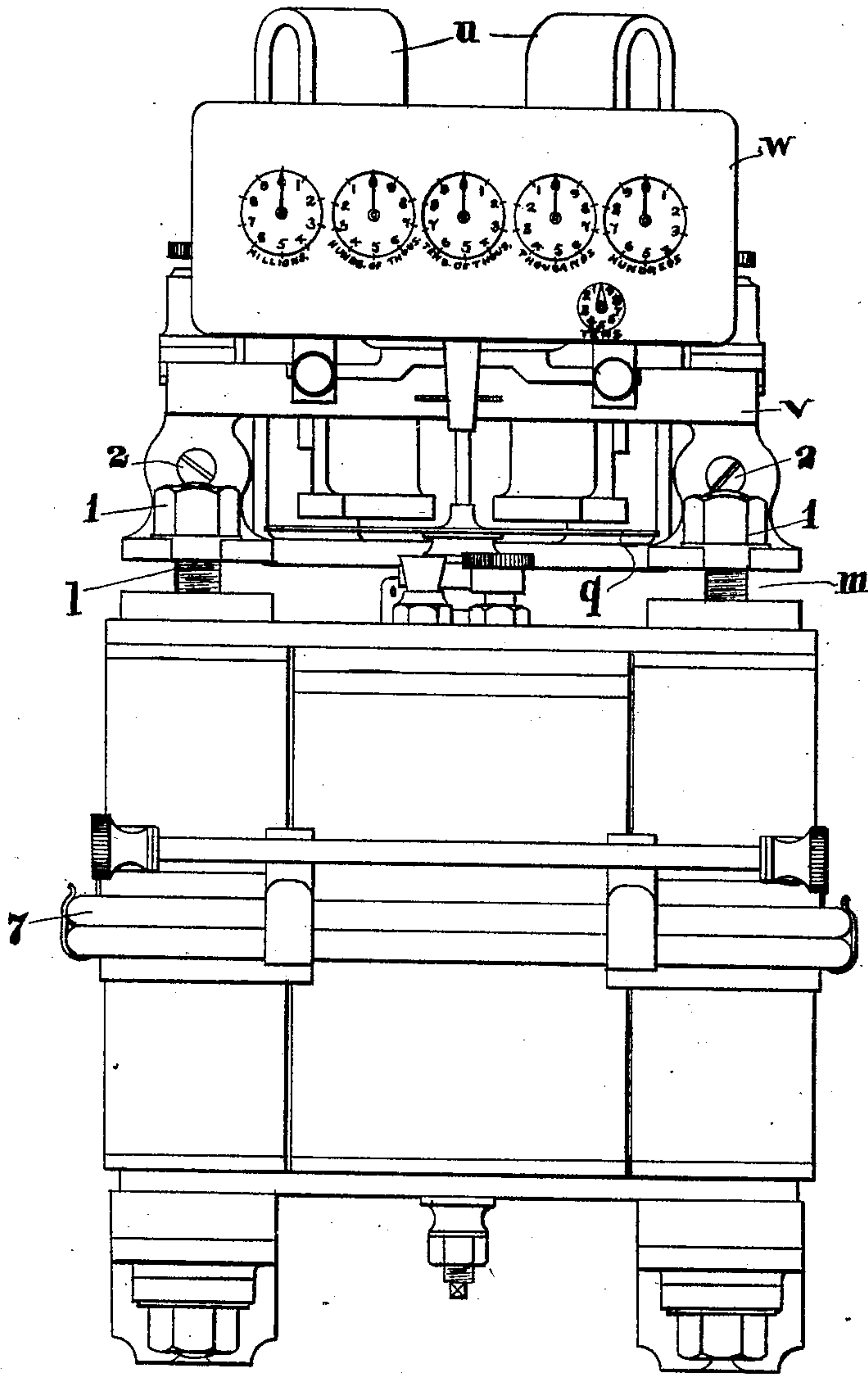


Fig. 3.

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UNITED STATES PATENT OFFICE.

SYDNEY HOLMWOOD HOLDEN, OF BIRMINGHAM, ENGLAND.

ELECTRICITY-METER.

No. 925,185.

Specification of Letters Patent.

Patented June 15, 1909.

Application filed July 18, 1908. Serial No. 444,206.

To all whom it may concern:

Be it known that I, SYDNEY HOLMWOOD HOLDEN, a subject of the King of Great Britain and Ireland, and residing at Solar Works, New Bartholomew street, Birmingham, Warwick, England, have invented certain new and useful Improvements in Electricity-Meters, of which the following is a specification.

The invention consists in a continuous current watt hour meter of the type in, which a disk armature revolves in a mercury bath so constructed that the counting train can be readily removed and also the upper bearing of the spindle together with the braking magnets and brake disk, whereby the mercury chamber in which the disk armature revolves can be readily got at for examination and repair.

By dividing up the magnetic core into small lengths separated by non-magnetic material the effect of residual magnetism is greatly decreased and by the use of a nearly complete magnetic circuit the meter is rendered less susceptible to external magnetic forces.

Referring to the accompanying drawings, Figure 1 is a sectional elevation of a meter constructed according to the invention. Fig. 2 being a side elevation of the same; while Fig. 3 is a front elevation of the meter.

In the meter illustrated the armature disk *a*, revolves in a mercury chamber *b*, formed between a magnetic plate *c*, and a plate *d*, and inclosed by a ring *e*. The electro-magnet is formed with three coils, 10, 11, 12, in series in shunt across the working circuit which produce a magnetic field acting on the current through the armature which is in series in the working circuit. The central core of the electromagnet is formed by a number of washers *f*, threaded on a rod *g*, and separated by paper or other thin non-magnetic material. The yoke is formed of a plate *h*, and the side limbs of the magnet by washers *k*, separated by non-magnetic material and threaded on rods *l*, *m* as it is unnecessary that the rods *l*, *m*, should be surrounded by washers along their whole length, springs *z* are provided to keep the washers in place. The upper pole of the magnet is formed by a plate *n*, joining the tops of the rods, *k*. The rod *g*, carries the lower bearing *o*, for the armature disk *a*. The brake disk *q*, is mounted on a spindle *r*, which fits into a socket fixed to the top

of the armature disk *a*, and the brake disk may be readily removed by simply lifting the spindle *r*, out of its socket when the upper bearing of the brake disk spindle is loose. This may be effected by screwing the screwed bearing *s*, upward after loosening the nut *t*.

The upper bearing for the brake disk spindle and the permanent magnets *u*, operating on the brake disk are carried on a bracket *v*, which also carries the counting train *w*. This bracket is readily removed by loosening the nuts, 1, and removing the screws 2, while the counting train itself is easily removable from the bracket *v*, by loosening the bolts 3. The lower part of the meter, viz., the windings on the electromagnet with the mercury chamber are thus easily accessible from the top when the bracket *v*, is removed.

A telescopic tube 5, is provided adapted to press against the lower side of the brake disk, forming the closure for the mercury chamber and lifting the spindle off its lower pivot when it is desired to pack the meter for transit. Any usual means may be employed for the purpose of operating the telescopic tube. Also correcting coils 7, surrounding the whole of the magnetic part of the meter may be provided.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:—

1. A continuous current watt hour electricity meter comprising in combination an electro-magnet, a mercury chamber, an armature in said chamber, said armature being actuated by said electro-magnet, means for recording the revolutions of said armature, a brake disk, permanent magnets operating on said disk, a frame carrying said permanent magnets and the upper pivot of said brake disk, said frame being attached to the meter by screws so as to be readily removable; as set forth.

2. In continuous current watt hour electricity meters, in combination, a mercury chamber, a disk armature in said chamber, a socket in said armature, a spindle resting in said socket, a brake disk mounted upon said spindle, a readily removable upper bearing for said spindle, so that the brake disk is readily removable, as set forth.

3. In continuous current watt hour electricity meters, a mounting plate, an electro magnet and mercury chamber supported thereby, rods forming a portion of some of the cores of said electro-magnet, a frame

mounted above the mercury chamber and
electro magnet, a brake disk pivot, perma-
nent magnets, and a counting train carried
by said frame, and readily detachable means
5 connecting said frame to the mounting plate
and to the said rods, substantially as de-
scribed.

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

SYDNEY HOLMWOOD HOLDEN.

Witnesses:

ARTHUR BERNARD FISHER,
WILLIAM WORTON.