

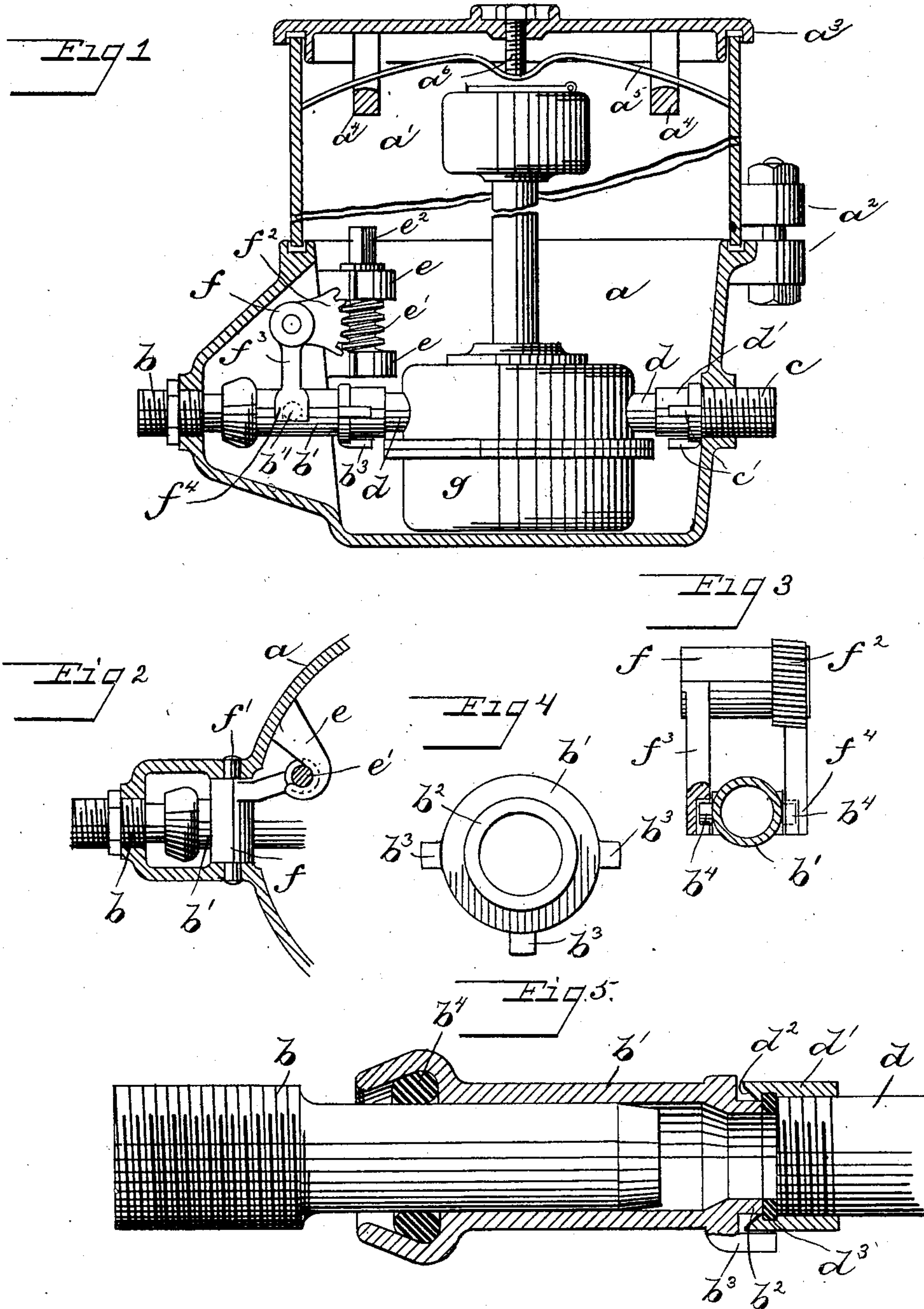
No. 699,174.

Patented May 6, 1902.

J. J. HOPPES.
METER BOX CONNECTION.

(Application filed Aug. 31, 1901.)

(No Model.)



WITNESSES:

Edw. W. Walker
Chas. J. Meleh

INVENTOR.
John J. Hoppes
BY *Atty & Brown*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN J. HOPPES, OF SPRINGFIELD, OHIO.

METER-BOX CONNECTION.

SPECIFICATION forming part of Letters Patent No. 699,174, dated May 6, 1902.

Application filed August 31, 1901. Serial No. 73,922. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. HOPPES, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Meter-Box Connections, of which the following is a specification.

My invention relates to a box or casing for water-meters; and the object of my invention is to provide means whereby the meter can be lowered in the ground below the frost-line and the connection made in such a manner that the meter can be disconnected and removed without disturbing the box or casing.

In the Letters Patent heretofore granted me—viz., No. 582,354, of May 11, 1897, and No. 620,588, of March 7, 1899—the devices employ a vertical connection with a slip-joint, the connection being made by simply lowering the meter. My present invention is a radical departure from this in that I provide rests to receive the meter in position for making the connection in a horizontal plane and I employ means for changing a rotary to a reciprocating motion, whereby the connection is forcibly made by pressure, and for this connection I also employ a nut or sleeve constructed in such a manner as to hold the packing in place while setting or removing the meter. Furthermore, in my former patents I made use of connections that added four bends or elbows in attaching the meter, which I obviate in my present construction and at the same time provide for the easy setting or removing of the meter without digging up the box. I attain these and other objects by the constructions and combinations hereinafter more fully described, and set forth in the drawings, in which—

Figure 1 is a vertical section of a device employing my invention. Fig. 2 is a detail in horizontal section, showing the screw, its frame, and the segment and sleeve. Fig. 3 is another view in detail of said parts. Fig. 4 is a detail showing the position of the fingers to receive the meter-box spuds, and Fig. 5 is a sectional view showing the connection with the spud of the meter.

Like parts are represented by similar letters of reference in the several views.

In constructing my device I employ an

outer casing, consisting of the lower part a and the upper part a' , said parts having the ears a^2 formed thereon, by which the two parts are bolted together. The upper casing is provided with the top a^3 , having the downwardly-extending ears a^4 , through which the cross-bar a^5 extends, said bar being of greater length than the diameter of the casing and depressed in the middle, the set-screw a^6 in said top operating against said depression to force the ends of said cross spring-bar a^5 outwardly and impinge against the sides of the casing to hold said top in place.

For the purpose of description I will call the inlet b and the outlet c ; but, in fact, either may be the inlet or outlet. The inlet b is screw-threaded in said casing and extends into said casing in the form of a long nipple, smooth on its outer periphery, which extends into and is formed to fit the sleeve b' , said sleeve at its outer end being enlarged and having a cone-shaped recess formed therein to receive a ring b^4 , made of rubber or other elastic material, thus forming a water-tight slip-joint.

At the outer ends of the oppositely-extending spuds d of the meter I attach the nuts or sleeves d' . This nut or sleeve may be attached in any suitable manner; but I have shown same screw-threaded thereon, and this nut I form at its outer end with the inwardly-beveled edges d^2 to guide the connection in place, and in the bore of said nut or sleeve, between the inner ends of said bevel edges and the outer end of the meter-spud, I form the annular chamber d^3 , in which I insert a suitable packing extending to the openings in said spuds, against which the inner end b^2 of the sleeve b' and the inner end of the outlet c are adapted to impinge, said outlet c being screw-threaded into said casing. On the inner ends of the sleeve b' and the outlet c I form the extending fingers b^3 and c' , so that when the meter g is lowered into the casing the nuts d' will rest within these extending fingers and seat the meter there for the purpose hereinafter mentioned.

To the inner side of the lower casing a I attach the bifurcated frame e , in which I journal the screw e' , having the head e^2 , adapted to receive the end of the socket-wrench to op-

erate the same. Adjacent to said frame *e* I pivot to the casing *a* the barrel *f*, which may be formed in a solid piece and turned down at its ends and journaled in the casing *a* at *f*¹,
 5 or a shaft may be used and the barrel journaled on same. On said barrel I form the projecting segment *f*², which is adapted to be engaged by the screw *e*¹, and at right angles to said segment I also form on the barrel *f*
 10 the projecting arms *f*³, having the bifurcated ends *f*⁴, adapted to engage the trunnion-pins *b*⁴, projecting from opposite sides of the sleeve *b*¹.

It will be seen I provide the meter-box casing with its inlet and outlet, the movable sleeve with its segmental operating-lever and the screw for same, the sleeve and the outlet being arranged with their projecting fingers on the lower side, so that the meter, with its oppositely-projecting spuds and nuts, may be lowered to rest in said fingers, and that by means of a long socket-wrench the screw may be operated to move the sleeve longitudinally and force its inner end, as well as the inner end of
 25 the outlet *c*, so as to contact with and impinge upon the packing extending from the annular chambers *d*³, thus forming a water-tight connection in both the inlet and outlet to said meter. It will be further seen that by
 30 reason of the outer casing being made in two parts the lower part *a* may be made in large quantities suitable for any depth to which the casing is to be placed in the ground, and such additional length may be supplied by the upper casing as is necessary to furnish the required depth. It will be further seen that I provide a tongue-and-groove connection between the two parts of the casing as well as between the upper casing and the top.

40 In constructing my present device it will be further seen that I provide for the inlet and outlet connections in a horizontal plane, thus relieving it from the objections to the bends heretofore employed where the inlet and outlet were vertically arranged, and that I employ means whereby the rotary motion given to the screw and wrench is changed to a reciprocating motion for the purpose of making the connection, and that said connection is
 50 firm and positive by the pressure of the segmental arm.

Having thus described my invention, I claim—

1. In an outer casing such as described, the
 55 combination with the meter having oppositely-extending spuds, of an inlet and outlet extending horizontally into said casing, adapted to form with said spuds a straight way through said casing to said meter, telescoping connecting devices and mechanism
 60 to positively move said devices for connect-

ing and disconnecting said inlet and outlet with said spuds, substantially as specified.

2. In an outer casing such as described, the combination with the meter having the oppositely-extending spuds, of an inlet and outlet
 65 extending horizontally into said casing, having rests extending from the inner ends thereof to receive said spuds when the meter is lowered into the casing, and adapted to form
 70 with said spuds a straight way, and means for connecting and disconnecting said inlet and outlet with said spuds, substantially as specified.

3. In an outer casing such as described, the
 75 combination with an inlet and outlet extending horizontally into said casing, having rests extending from the inner ends thereof, of a meter having on each of its oppositely-extending spuds, a connection carrying a
 80 packing, said connection, when said meter is lowered into said casing, being adapted to be received into said rests, and means, including a slip-joint, for connecting by pressure
 85 said inlet and outlet with the packing of said connection, substantially as specified.

4. The combination with the outer casing having the horizontal inlet and outlet extending into said casing, of a meter having oppositely-extending spuds, telescoping connecting
 90 devices and means transmitting a positive reciprocating motion to said telescoping connecting devices, for connecting and disconnecting said inlet and outlet with said
 95 spuds, substantially as specified.

5. The combination with the outer casing having the horizontal inlet and outlet, extending into said casing, and a meter with oppositely-extending spuds, of a vertically-disposed screw, a segment to engage said screw,
 100 having an arm at right angles thereto, and a sleeve pivotally connected to said arm, whereby upon the rotary movement of said screw, said sleeve will be given a longitudinal movement, substantially as and for the purpose
 105 specified.

6. The combination with the meter having the oppositely-extending spuds, and nuts extending beyond the ends of said spuds, having annular chambers therein, of packing in
 110 said chambers extending to the openings in said spuds, inlet and outlet pipes, and means for connecting by pressure said pipes with the packing of said nuts, substantially as specified.
 115

In testimony whereof I have hereunto set my hand this 28th day of August, A. D. 1901.

JOHN J. HOPPES.

Witnesses:

PERCY NORTON,
 CHAS. I. WELCH.