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Patented Apr. 23, 1901.

L. FELDMANN & L. KORACH.

ARRANGEMENT FOR OPERATING COCKS, VALVES, &c.

(Application filed July 30, 1900.)

(No Model.)

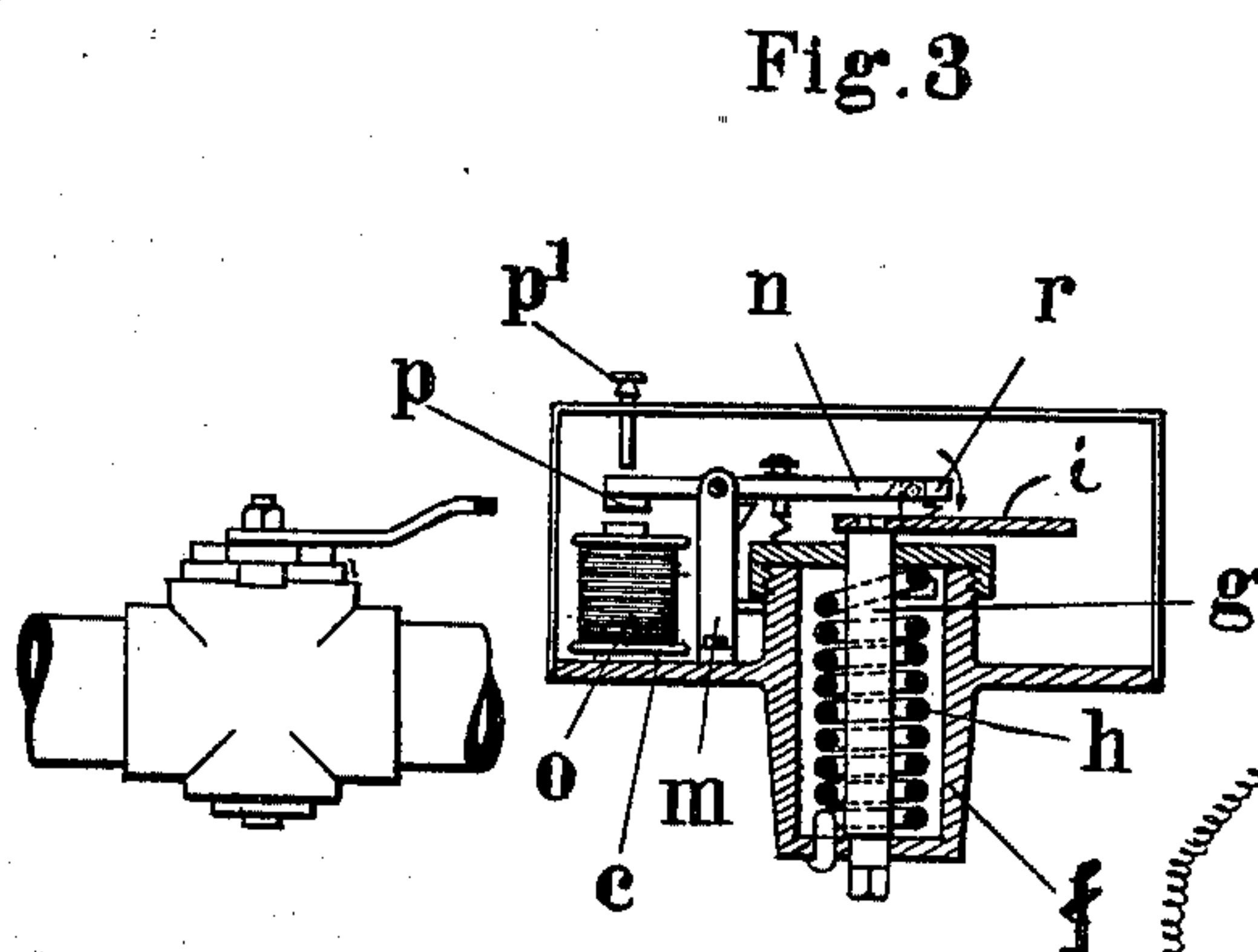
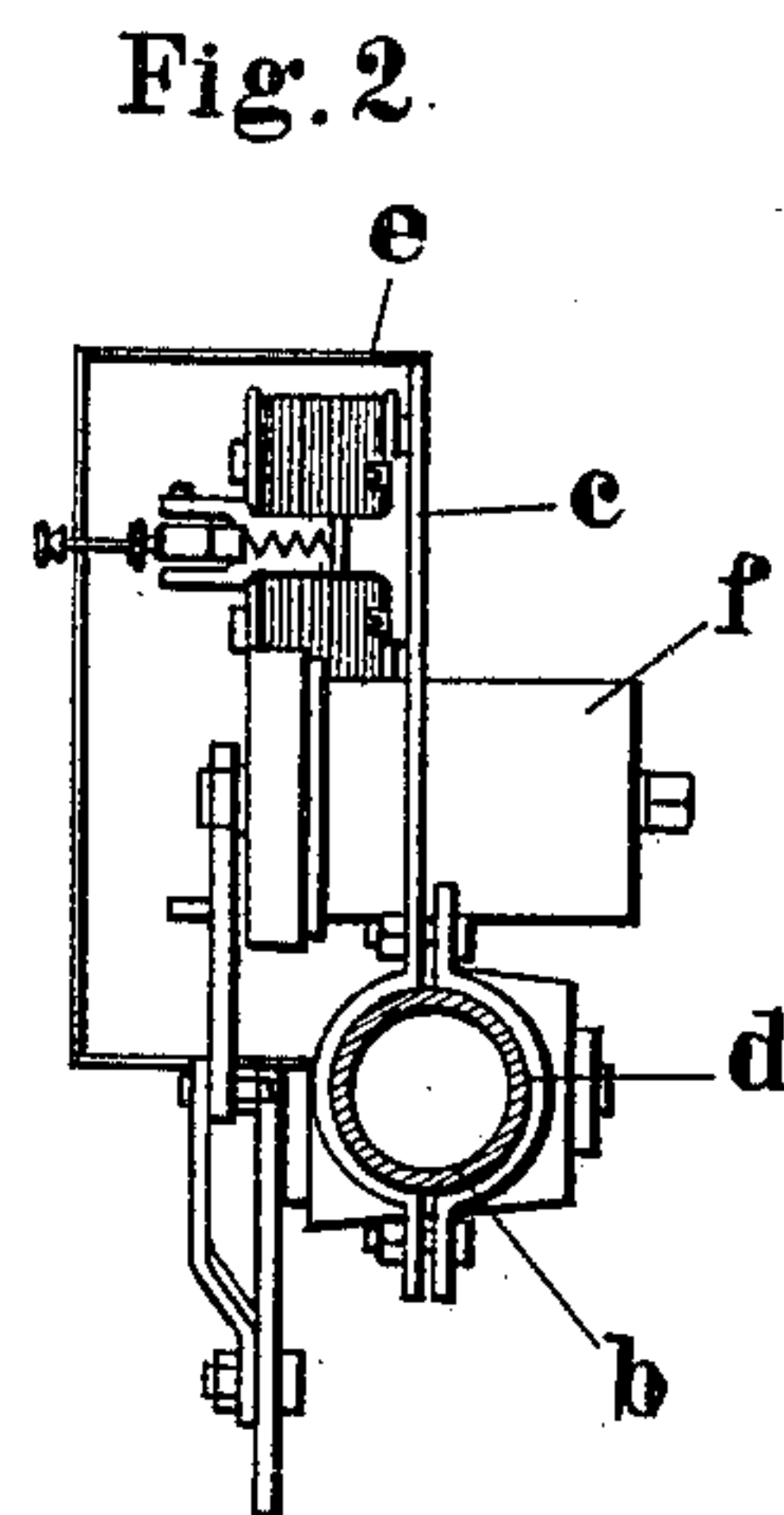
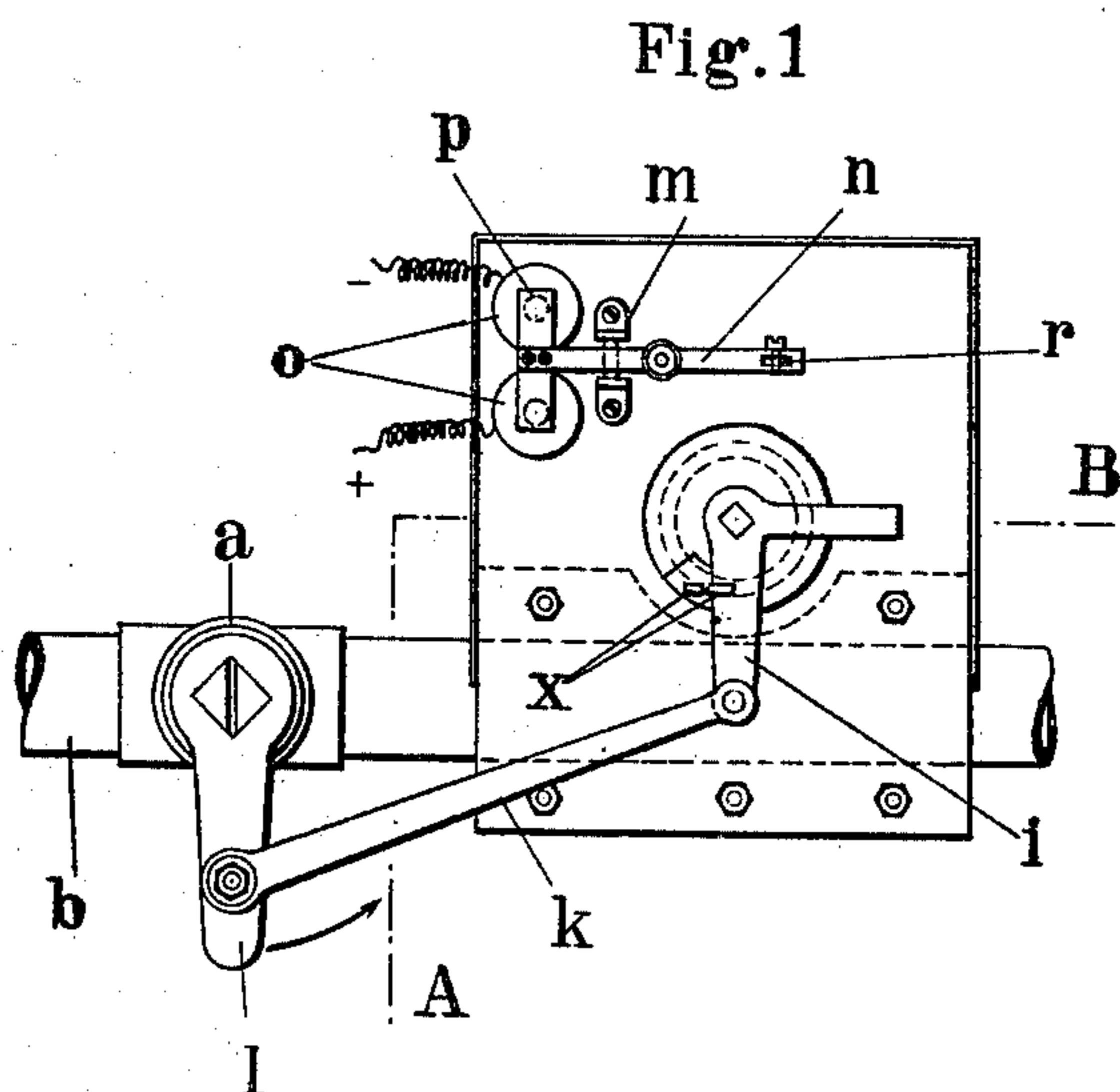


Fig. 4

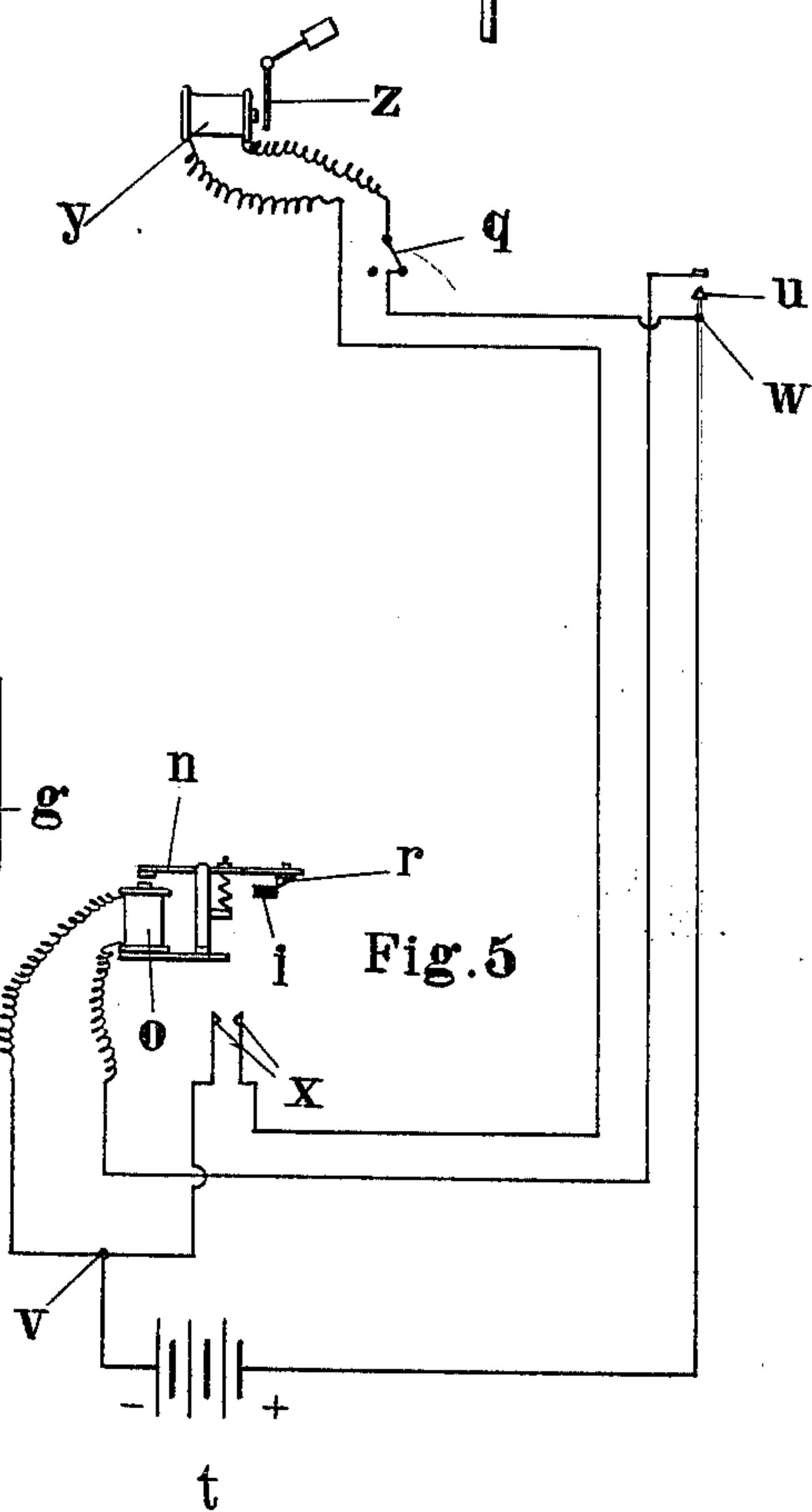


Fig. 5

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UNITED STATES PATENT OFFICE.

LOUIS FELDMANN AND LOUIS KORACH, OF BUDA-PESTH, AUSTRIA-HUNGARY.

ARRANGEMENT FOR OPERATING COCKS, VALVES, &c.

SPECIFICATION forming part of Letters Patent No. 672,600, dated April 23, 1901.

Application filed July 30, 1900. Serial No. 25,294. (No model.)

To all whom it may concern:

Be it known that we, LOUIS FELDMANN and LOUIS KORACH, subjects of the Emperor of Austria-Hungary, residing at Buda-Pesth, Austria-Hungary, have invented certain new and useful Improvements in Arrangements for Operating Cocks, Valves, and other Regulating Devices from Distant Points, of which the following is a full, clear, and exact specification.

This invention has reference to an arrangement for operating cocks, valves, electric switches, or other regulating devices from a distant point by electrical means whereby they can be closed at any time after being opened by hand, or vice versa.

The invention will be readily understood from the following specification, with reference to the accompanying drawings, which show an arrangement for closing the cock of a conduit, although obviously the same arrangement may be used for opening a cock or the like instead of closing it.

Figure 1 is a front elevation of a portion of a pipe fitted with a cock and with an arrangement for closing the cock. Fig. 2 is a side elevation of the same, but with the end plate of the casing removed. Fig. 3 is a section taken on the line A B of Fig. 1. Fig. 4 is a side elevation of the cock in its open position. Fig. 5 is a diagram of the electric circuit.

The cock *a* is connected with the pipe *b*, and to the latter is fitted a plate *c*, in the manner shown more clearly at Fig. 2, by fitting its lower portion around the pipe *b* and securing it in position by a corresponding front portion or clip *d*, provided with screw-bolts. The plate *c* carries a casing *e* and a spring-barrel *f*, which projects through the plate to the rear thereof and which is firmly attached to the latter, or it may be formed in one piece therewith, as indicated at Fig. 3. In the interior of the spring-barrel there is mounted a rotary spindle *g*, formed with a shoulder and connected with a spring *h*, attached by one end to the spring-barrel *f*, the arrangement being such that the rotation of the said spindle causes the spring *h* to be wound up and to impart thereto the tendency of turning the spindle back again. To one end of the spindle

is fixed a bell-crank lever *i*, having one arm connected by a link *k* with the key *l* of the cock *a*. If the cock *a* (shown in its closed position at Fig. 1) is turned in the direction of the arrow by means of its key *l*, the link *k* will turn the bell-crank lever *i* in such a manner as to place the free arm of the latter in the position shown by dotted lines, and thereby causes the spindle *g* to tighten the spring *h*.

In order to prevent the spring *h* from causing the levers *i k* to return immediately and close the cock and to enable the latter to be closed at any time from a distant point, we provide the following arrangement: Upon the plate *c* is fixed a support *m*, carrying a spring-controlled pivoted arm *n*, formed at one end with a cross-plate *p*, which is disposed above the iron cores of the magnet-coils *o* and forms the armature thereof. The outer end of the arm *n* is provided with a hinged catch *r*, adapted to yield in one direction only, as indicated by the arrow in Fig. 3. The arm *n* is normally retained in position by a spring attached to the casing. When, however, at the opening of the cock *a* the free arm of the bell-crank lever *i* strikes against the hinged catch *r* of the lever-arm *n*, it deflects the catch and then engages behind the square end thereof and allows it to return to its normal position, and thus to retain the bell-crank lever *i*. The spring *h* is now wound up and will at once return the bell-crank lever to its initial position when allowed to do so by the catch *r*, and thus cause the link *k* to close the cock *a*. When the magnets *o* receive the current, the armature *p* will be attracted and the arm *n* oscillated, so as to cause the catch *r* to disengage from the bell-crank lever *i*, and so allow it to return and close the cock. The current for operating the magnets is sent from a distant point. Referring to the diagram Fig. 5, the conductors from the battery *t* are leading the one to the magnet-coils *o* and the other to the push *u*, which latter is also connected with the magnet-coils *o*, so completing the circuit each time the push *u* is depressed, and thereby causing the lever-arm *n*, with its catch *r*, to be moved so as to disengage the bell-crank lever *i*. To this main circuit there is, at the points *v* and *w*,

connected a shunt-line comprising the contacts x and a coil y . When the contacts x are closed and contacts u open, a current flows around the coils o into the coil y . The armature-lever z of the latter carries an indicating-tablet with the word "Closed," which is exhibited when the armature z is attracted by the coil y . When the cock a is open, the contacts x separate, and so interrupt the circuit and cause the signal to disappear, which signifies that the cock is open. The circuit of the coil y may be provided with a switch q , so that when the cock is kept closed for a long time the circuit may be interrupted in order to save the battery t .

It is advantageous to provide a pin p' on the casing, by which the arm n can be operated when the electric circuit is deranged.

Having now described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination with a fluid-supply pipe provided with a cut-off valve, a casing secured to said pipe, a spring-motor in said casing, a bell-crank lever secured to the motor-spindle, and a connection between one arm of said lever and the valve, so arranged as to wind up the motor when the valve is moved from one position to another; of an electrically-operated lock-lever automatically engaging the other arm of the bell-crank lever

when said valve is moved as set forth, for the purposes specified.

2. The combination with a fluid-supply pipe provided with a cut-off valve, a casing secured to said pipe, a spindle in said casing, a spring one end connected to the casing and the other to the spindle, a bell-crank lever connected to said spindle, a connection between one arm of said lever and the valve; of electrically-released locking appliances engaging the other arm of said bell-crank lever and electrical contacts arranged to be closed by said bell-crank lever when released, substantially as set forth.

3. The combination with a fluid-cut-off valve, of a spring-held bell-crank lever, one arm thereof connected to the valve, an electromagnetically-operated detent arranged to engage the other arm of said bell-crank, independent means for releasing the detent from said lever, and a fixed contact engaged by the bell-crank lever when released to close a signal-circuit, substantially as set forth.

In testimony that we claim the foregoing as our invention we have signed our names in presence of two subscribing witnesses.

LOUIS FELDMANN.
LOUIS KORACH.

Witnesses:

JOHN GERGUTSO,
FRANK DYER CHESTER.