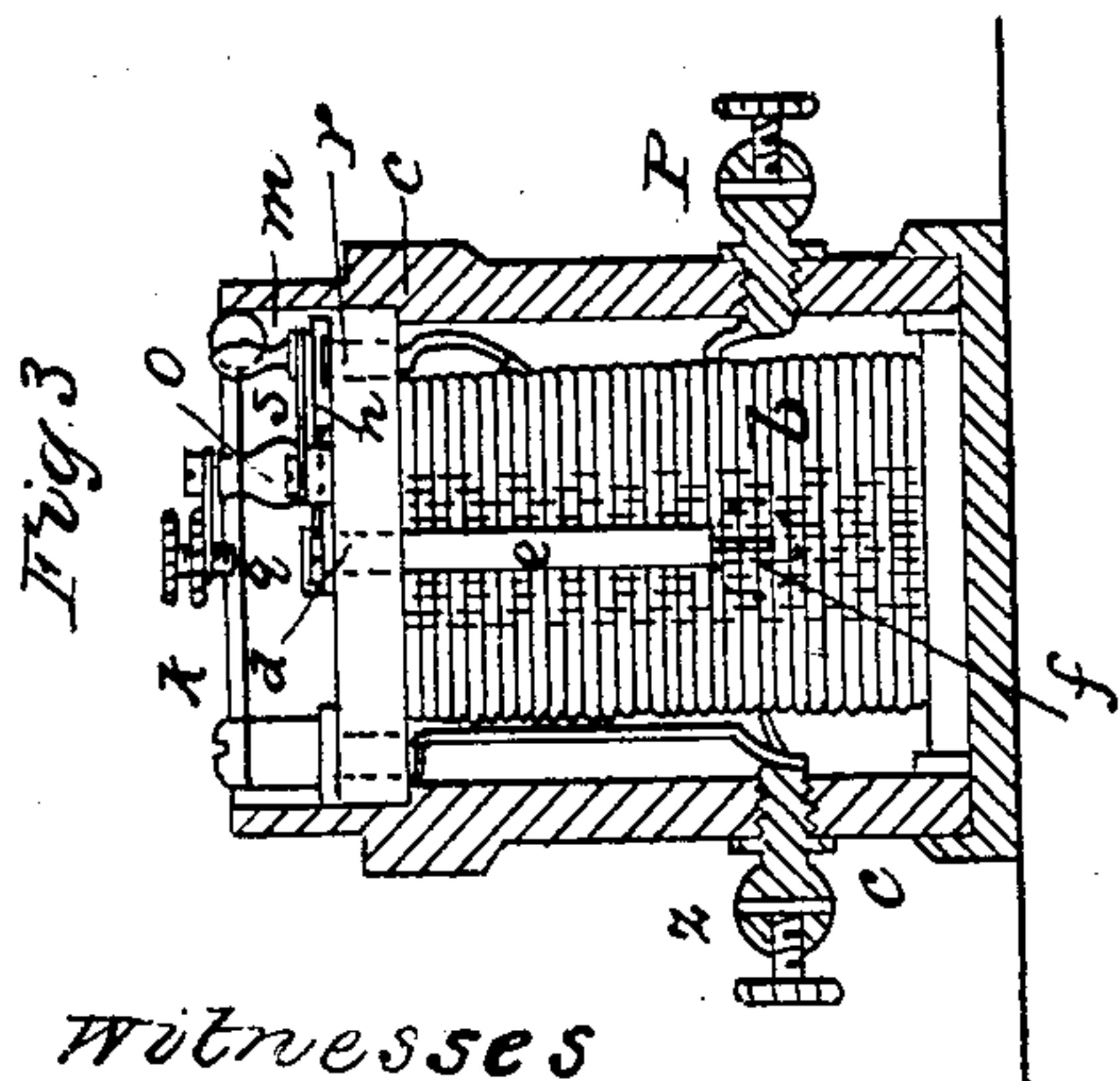
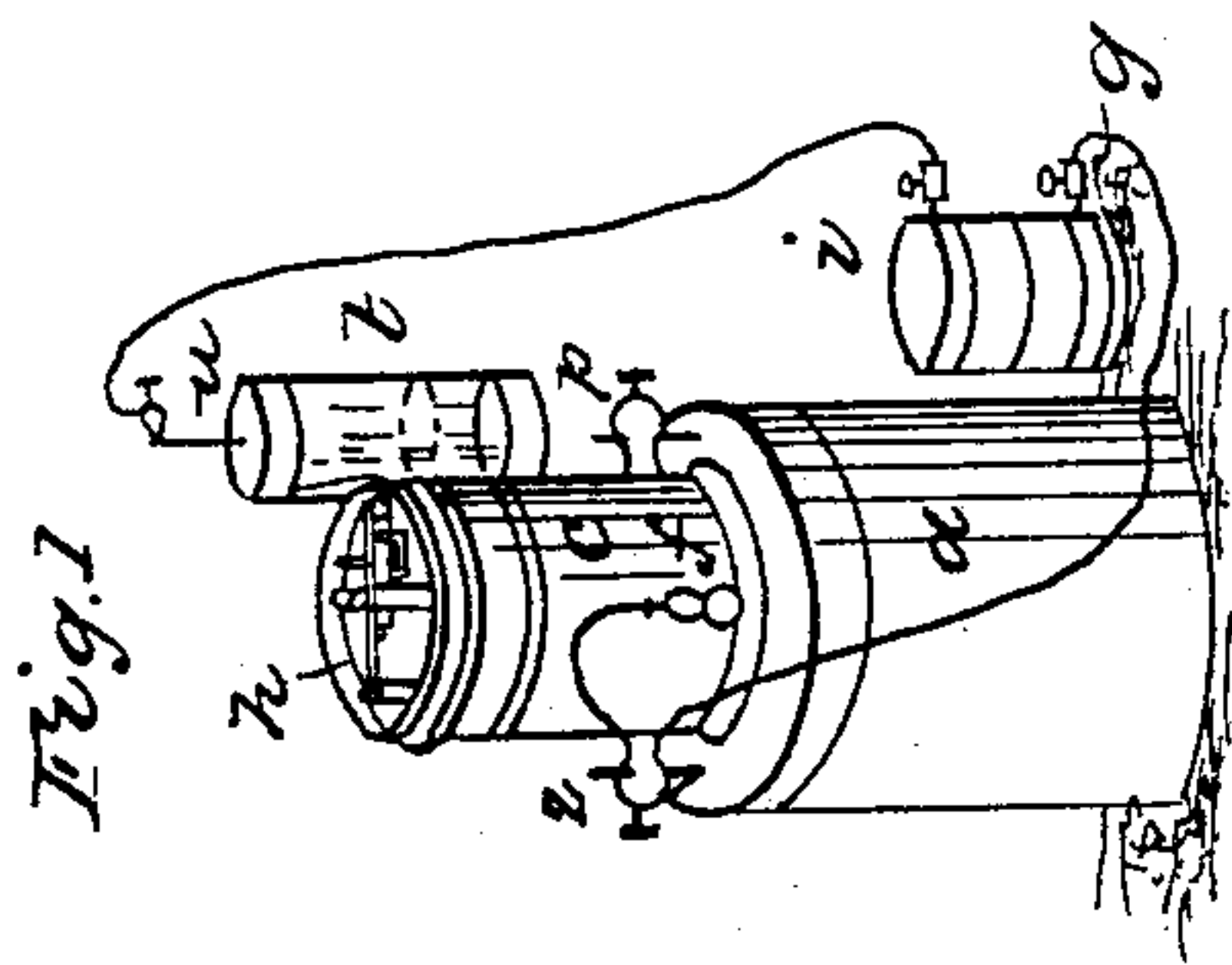
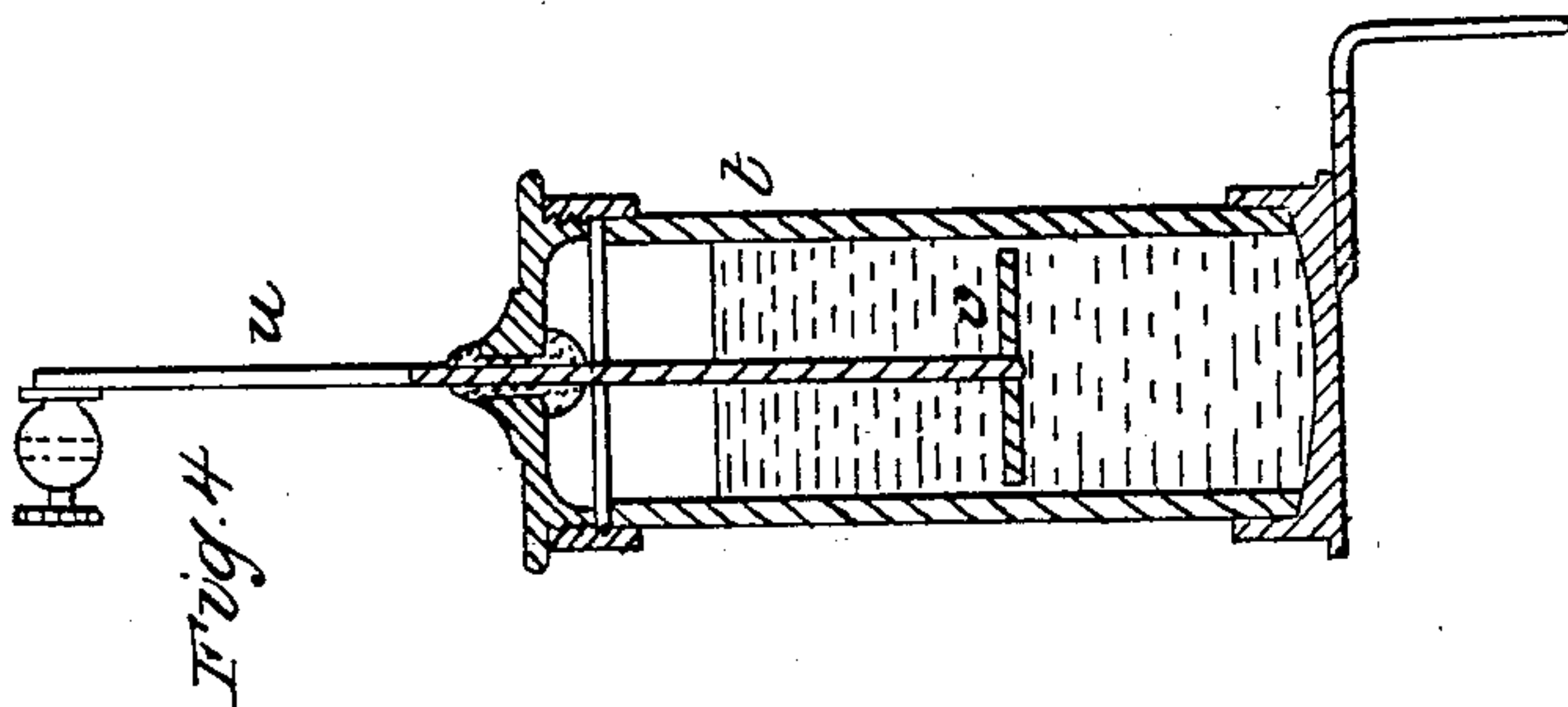


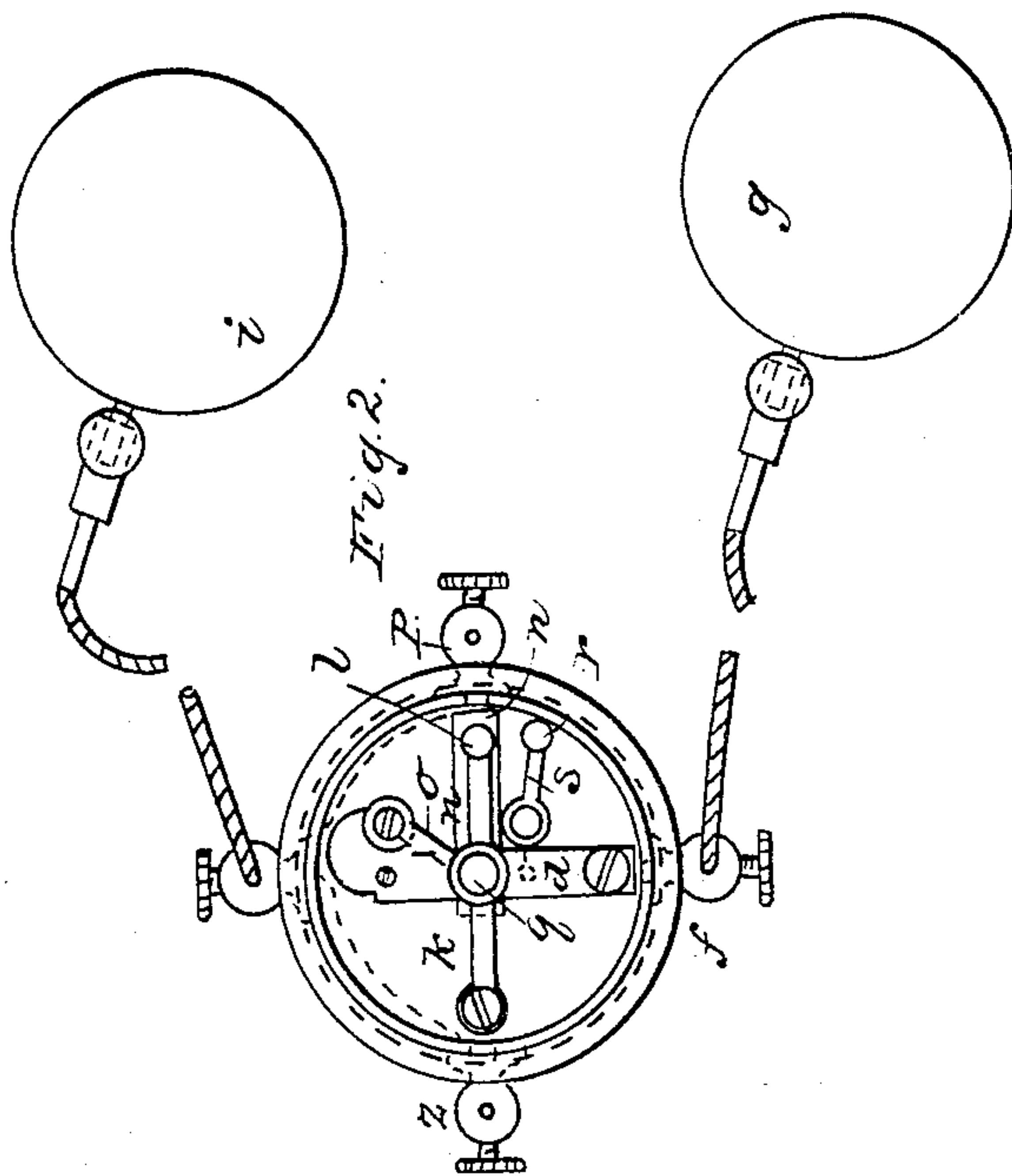
H. SOLTMANN.
Medical-Electric Machine.

No. 23,272.

Patented March 15, 1859.



Witnesses
Lemuel W. Serrell
Thomas G. Harold



Inventor
Henrich Soltmann.

UNITED STATES PATENT OFFICE.

HEINRICH SOLTSMANN, OF NEW YORK, N. Y.

IMPROVED ELECTRO-MAGNETIC MEDICAL APPARATUS.

Specification forming part of Letters Patent No. 23,272, dated March 15, 1859.

To all whom it may concern:

Be it known that I, HEINRICH SOLTSMANN, of the city, county, and State of New York, have invented, made, and applied to use certain new and useful Improvements in Medical Electrical Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making part of this specification, wherein—

Figure 1 is a perspective view of my apparatus complete. Fig. 2 is a plan of my magnet and its attachments; and Fig. 3 is a side view of the same with the inclosing-case partially removed.

Similar marks of reference denote the same parts.

The nature of my said invention consists in an arrangement of vibrating armature, in connection with a circuit-breaker, whereby the shock can be thrown off the person or brought into action at short intervals as a repeater, to give a sudden and powerful shock in a manner that is highly beneficial in rheumatism and similar diseases. I also make use of a regulator to determine the strength of the instrument, so that any person can take a very weak shock and then increase the same as they are enabled to bear it until the whole force of the current is obtained.

In the drawings, *a* is a battery, which I prefer be formed of a zinc cylinder outside a cylinder of coke, within which is nitric acid, and outside of which is salt and water, the zinc being immersed in the latter, although any suitable battery may be used.

P is the positive wire from the coal of the battery, and *z* is the negative wire from the zinc of the battery. The positive wire *P* passes through the coil or helix *b* in the inside of the inclosing wood cylinder *c*, and the end of said helix-wire connects to the plate *d*, from which a strip of metal, *e*, passes inside the cylinder *c* to the positive binding-screw *f*, whence the flexible wire connects, as usual, to the conductor or ball *g*. From the negative pole *z* a wire connects to the negative binding-screw *h* and its conductor *i*, and also to the spring-armature *k*, on the end of which is a ball, *l*, that is attracted by the magnet *m* when the current passes through the helix, and said magnet is formed by an iron pin or screw within the helix *b*, surrounded by metal rods, and said magnet or anvil *m* is connected to the central magnet by the plate *n*. The positive plate *d* passes

over, but does not touch, the magnet *n*, and is provided with a bracket, *o*, and platina-pointed screw *q*, that makes or breaks the circuit with the spring *k* as the magnet is operating, thus giving shocks through the person by the breaking and closing of the circuit.

r is an anvil connected to the negative binding-screw *h*, over which is a spring-key, *s*, the screw of which is connected to the positive wire and binding-screw *f*, so that when this key is closed the circuit passes through the helix *b* from *P*, and back again *via* the binding-screws *h* and *z* to the battery; but when this circuit is broken a shock goes through the instrument, which is increased or decreased by the frequency of operating the key *s* until the whole strength of the electricity is obtained.

In order to regulate the power of a continuous or pulsating current in this medical electrical machine, I make use of a glass cylinder, *t*, filled with water. (See section Fig. 4.) At one end of this cylinder the metal socket is provided with a wire that enters one of the binding-screws, and at the top a cap is provided with an india-rubber or non-conducting packing, through which a wire, *u*, passes, to the upper end of which one of the conductors *g* or *i* is connected, and at the lower end a disk, *v*, is attached, and according to the position of this disk so will be the force of current, for when this disk is in contact with the bottom a nearly full current passes, and when raised up therefrom the current is weakened by the intervening water. Thus the patient can regulate the intensity of the electrical current to suit his physical condition.

I do not claim the vibrating armature; neither do I claim the glass cylinder in itself as a regulator of electrical currents; but

What I claim, and desire to secure by Letters Patent, is—

1. The arrangement of the vibrating spring-armature, and the connections therefrom, in combination with the key *s*, arranged and acting as specified to throw the shock off the person, or repeat the same, as set forth.

2. The regulating-cylinder *t*, constructed as specified, in combination with the medical electrical machine, fitted and acting in the manner and for the purposes set forth.

In witness whereof I have hereunto set my signature this 8th day of February, 1859.

HEINRICH SOLTSMANN.

Witnesses:

LEMUEL W. SERRELL,
THOMAS G. HAROLD.