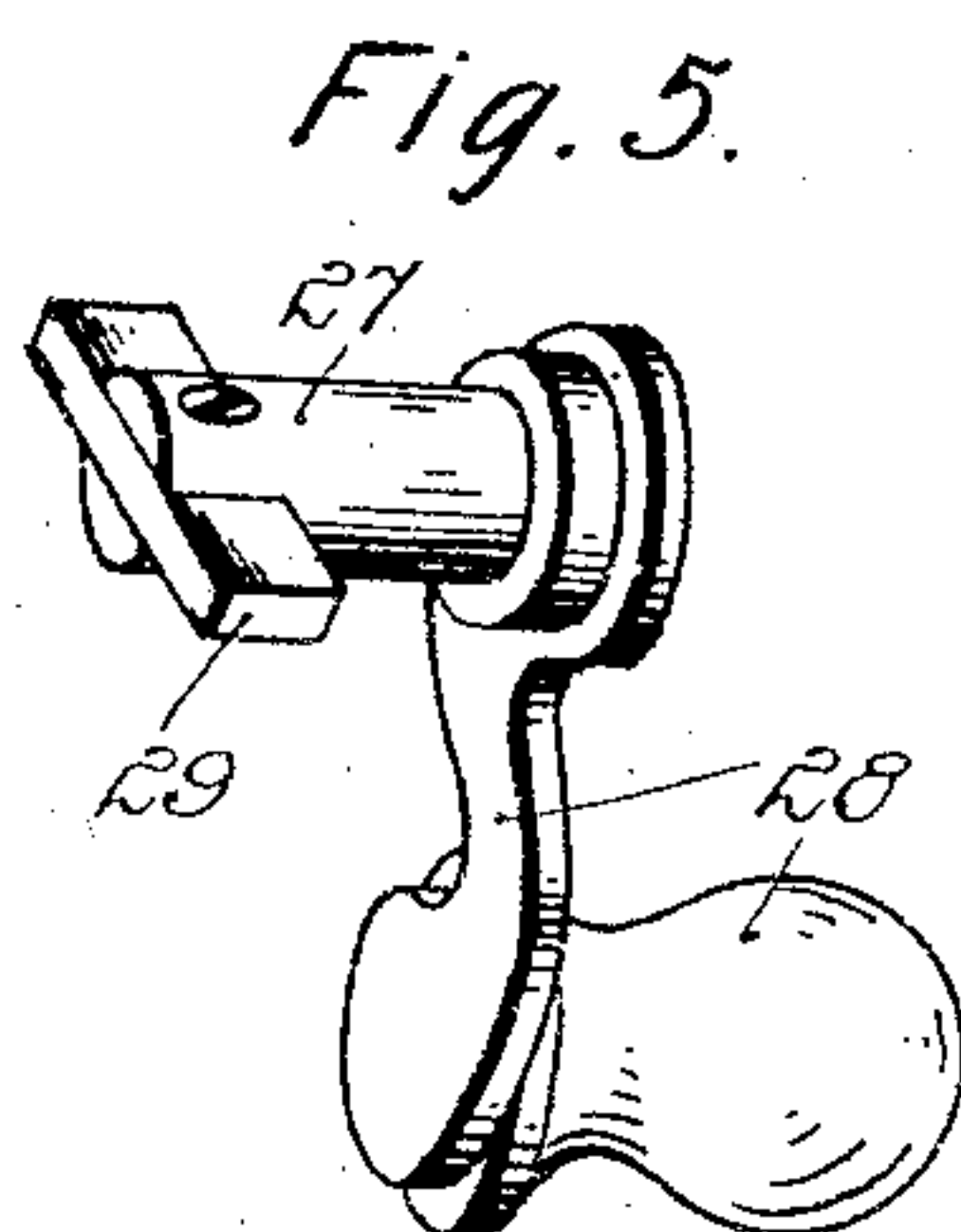
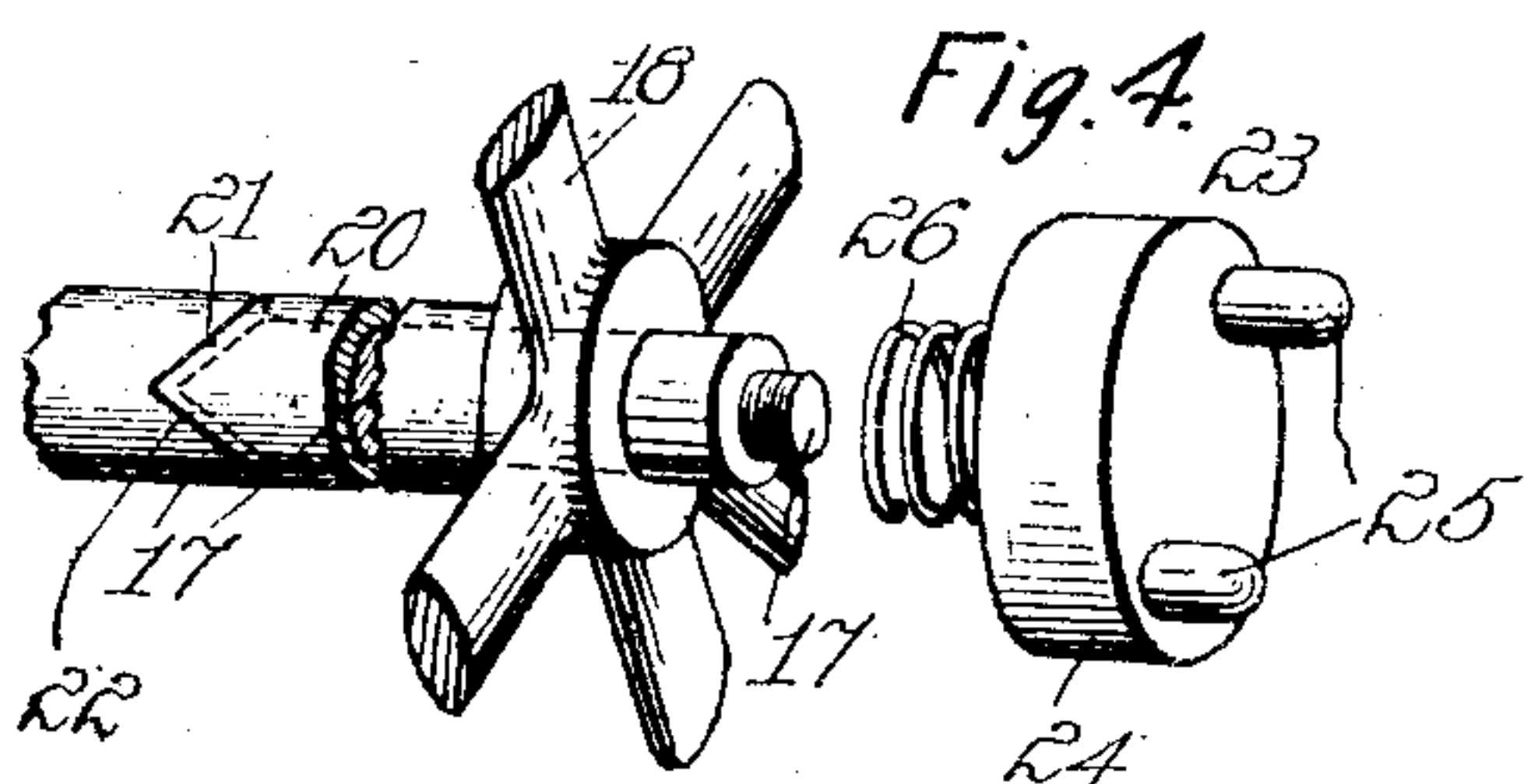
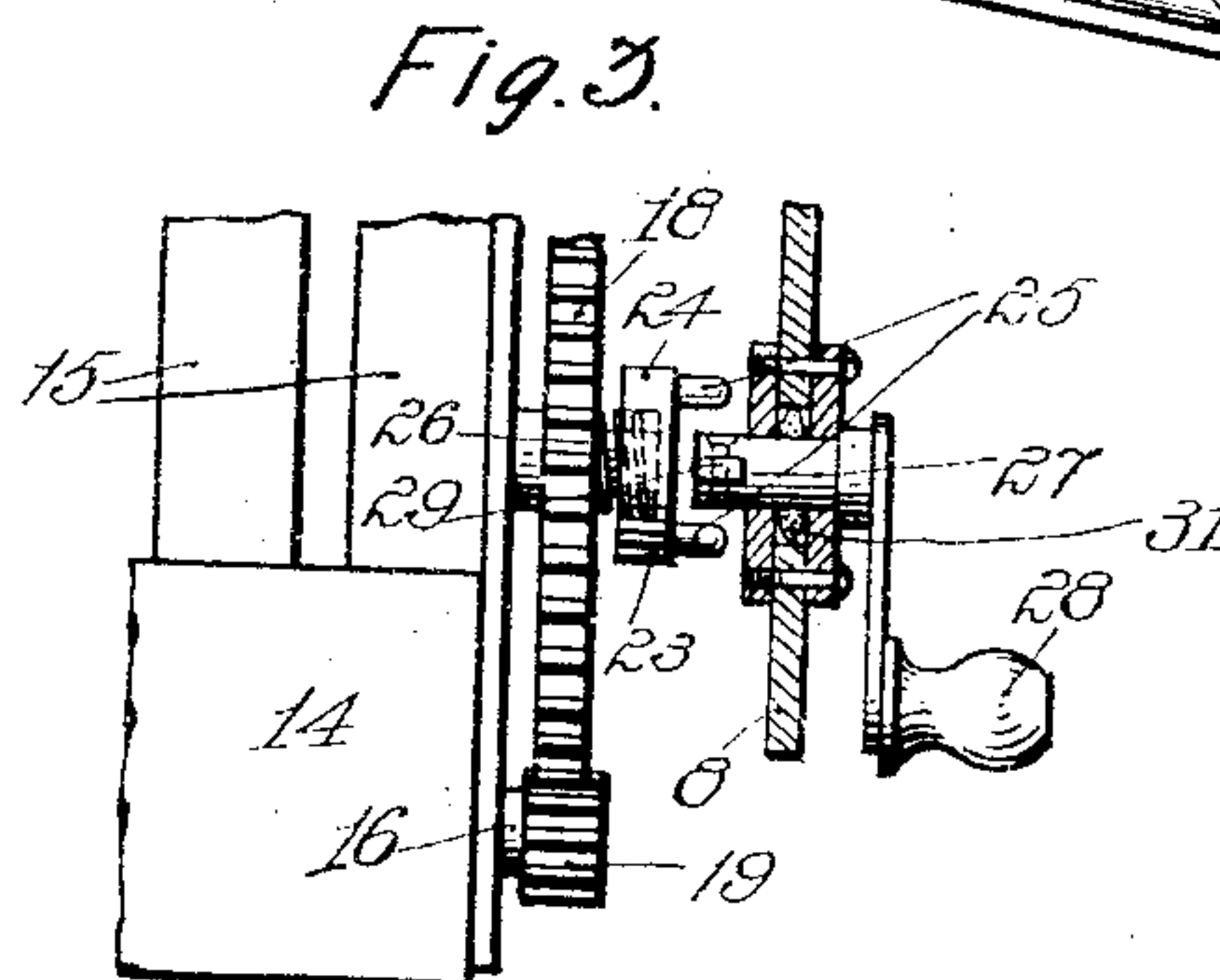
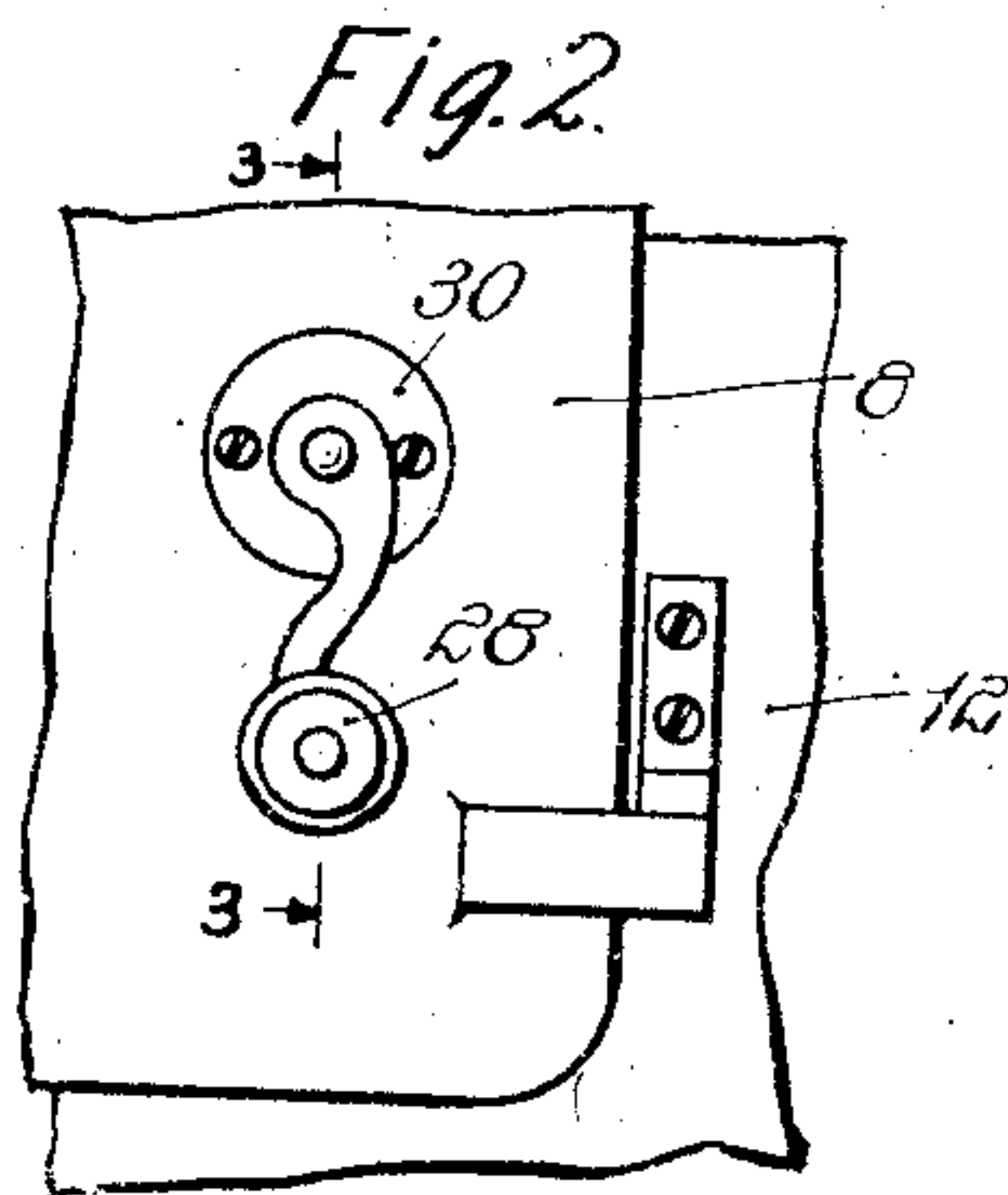
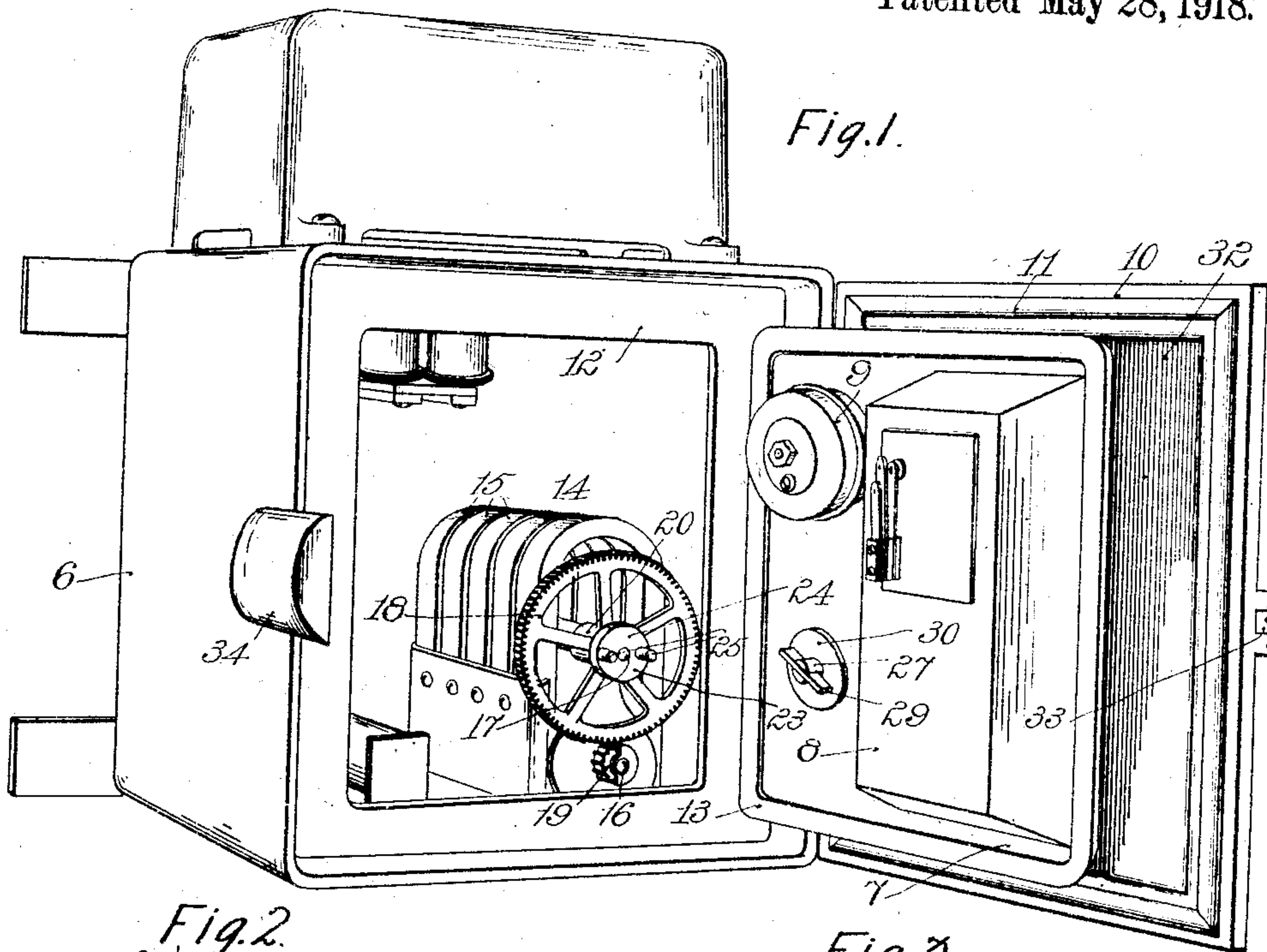


E. A. REINKE.
 DEVICE FOR MOISTURE AND GAS PROOF TELEPHONE SETS.
 APPLICATION FILED MAY 13, 1915.

1,267,804.

Patented May 28, 1918.



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UNITED STATES PATENT OFFICE.

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DEVICE FOR MOISTURE AND GAS PROOF TELEPHONE SETS.

1,267,804.

Specification of Letters Patent.

Patented May 28, 1918.

Application filed May 13, 1915. Serial No. 27,850.

To all whom it may concern:

Be it known that I, EUGENE A. REINKE, a citizen of the United States, and a resident of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Devices for Moisture and Gas Proof Telephone Sets, of which the following is a clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of the specification.

My invention relates to devices for water and gas proof telephone sets of the character adapted for use in mines or other places where the apparatus must necessarily be protected from moisture and from gases which would cause corrosion if allowed to come in contact with the delicate apparatus contained within the telephone box. The principal feature of my invention resides in the arrangement by which the handle or crank for operating the generator of the telephone set is positioned in one of the doors of the telephone box in a manner so as to make a moisture and gas tight receptacle, or casing, for the generator and parts carried thereby when the door is closed. A second door is provided which carries a packing member and is arranged when closed to extend over the first mentioned door and the generator operating crank to effectually seal the interior of the casing from water and gas.

Since the generator is disposed within and carried by the casing and the operating crank carried by one of the doors the crank and operating shaft of the generator will necessarily be separated when the door is opened. To facilitate simple and effective means for connecting the crank and operating shaft of the generator when the door is closed I provide a bifurcated member in the form of a disk carrying two pins disposed diametrically opposite, between which is arranged to extend an arm carried by the crank. This bifurcated member is adapted to move longitudinally so that if for any reason the arm above referred to engages the upper faces of the pins instead of extending between the pins the member will be allowed to move away from the door due to the pressure exerted upon it by the crank when the door is closed. Spring means is associated with this member so that when

a slight turn is given to the operating crank the same will be moved to its normal, or operating, position to afford connection between the crank and the operating shaft of the generator.

These and other features of my invention will be more clearly understood by referring to the accompanying drawings in which,

Figure 1 is a perspective view of a telephone set provided with the generator and operating crank of my invention.

Fig. 2 is a fragmentary front elevational view of the crank and door in which it is mounted.

Fig. 3 is a view partly in elevation and partly in section of the crank mechanism and bifurcated member carried by the generator. This view is taken along the line 3—3 of Fig. 2 looking in the direction indicated by the arrows.

Fig. 4 is a perspective view of a portion of the operating shaft of the generator. The bifurcated member in this figure is shown removed or disconnected from the operating shaft; and

Fig. 5 is a perspective view of the crank and arm carried thereby.

Similar characters of reference refer to similar parts throughout the several views.

Referring first to Fig. 1 6 illustrates an air tight casing, preferably made of cast iron. Hinged to the casing 6 is an inner door 7 which is dished at 8 to accommodate a receiver for the telephone set. A transmitter is illustrated at 9 carried by the inner door. An outer door is provided at 10, similarly hinged to the casing 6 and arranged when closed to extend over the inner door. The outer door 10 carries a sealing member 11 in the form of a rubber tube arranged when the door is closed to abut against the flange 12, forming a part of the casing 6. The inner door 7 may also carry a sealing flange 13 to cooperate with the flange 12 to effect an air tight joint when the door is closed.

Carried by the floor of the casing 6 is a generator 14 provided with the usual field magnets 15, armature shaft 16, and an operating shaft 17. Rotatably mounted upon this operating shaft is a gear wheel 18 meshing with the pinion 19 of the armature shaft. A collar 20 is fixed to the gear 18 and terminates at its rear end in a plurality of cam

faces 21. The cam faces 21 cooperate with similar cam faces 22 carried by the operating shaft 17. The shaft 17 is arranged to move longitudinally relative to the gear and collar 18 and 20, respectively, so that when the gear 18 is rotated the cam mechanism interposed between the collar 20 and the shaft 17 causes the shaft to move rearwardly whereupon it, as is well known in the art, cooperates with switching devices for controlling the circuit for the generator.

Screw threaded, or otherwise fixed to the shaft 17 is a bifurcated member 23 in the form of a disk 24 the end face of which carries a pair of pins 25—25. A spring 26 is interposed between the disk 24 and the gear 18 so that the operating shaft 17 is normally retained in the position illustrated in Fig. 4. Positioned adjacent the operating shaft 17 when the door 8 is closed is a crank shaft 27 carrying a crank 28 at its outer end and an arm 29 on its inner end. This shaft 27, as is most clearly shown in Fig. 3, extends through the door 8 where it is provided with a packing member in the form of a pair of plates 30—30, and a packing washer 31. Since the operating shaft 17 of the generator and the crank shaft 27 are co-axially aligned when the door 8 is closed the arm 29 will be inserted between the pins 25—25 carried by the disk 24 when the door is moved to closed position. If the crank 28 is then operated rotation will be transmitted to the operating shaft and thence to the armature shaft of the generator.

If in closing the door the arm 29 is not inserted between the pins 25—25, but is caused to engage the upper faces of the same the disk 24 will be caused to move toward the generator, this movement being permitted because the operating shaft is allowed to move relative to the gear 18. As soon as a slight rotation is given the crank shaft 27 the arm 29 will be caused to disengage the pins and thereby allow the spring

26 to relax to again return the bifurcated member to its normal position to effect a connection between the crank and generator.

The outer cover 10 is dished at 32 so as to accommodate the crank 28 when the doors are moved to closed position. The inner door 7 when closed may be held tightly against the flange 12 by screws, or equivalent means; and the outer door 10 also held in position by means of a catch 33 and extension 34 of the casing 6.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. In a telephone set, the combination with a casing of a generator disposed within the casing, a disk mounted on the operating shaft of the generator, a pair of pins carried by the disk and disposed diametrically opposite each other, a door for said casing, a crank provided with a shaft mounted in and extending through said door, and an arm secured to the inner end of the shaft arranged when the door is closed to extend between the pins carried by the disk.

2. In a telephone set, the combination with a casing of a generator disposed within the casing, a disk mounted on the operating shaft of the generator adapted to move longitudinally relative to the generator, a pair of pins carried by the disk and disposed diametrically opposite each other, a door for said casing, a crank provided with a shaft mounted in and extending through said door, an arm secured to the inner end of the shaft arranged when the door is closed to extend between the pins carried by the disk, and spring means for holding said disk toward the door of the casing.

In witness whereof, I hereunto subscribe my name, this 18th day of May, A. D. 1915.

EUGENE A. REINKE.

Witnesses:

M. VAN VLEET,
J. O. GIBSON.