

No. 825,333.

PATENTED JULY 10, 1906.

P. C. MORGANTHALER.  
FUSE BOX.

APPLICATION FILED JULY 29, 1905.

Fig. 1.

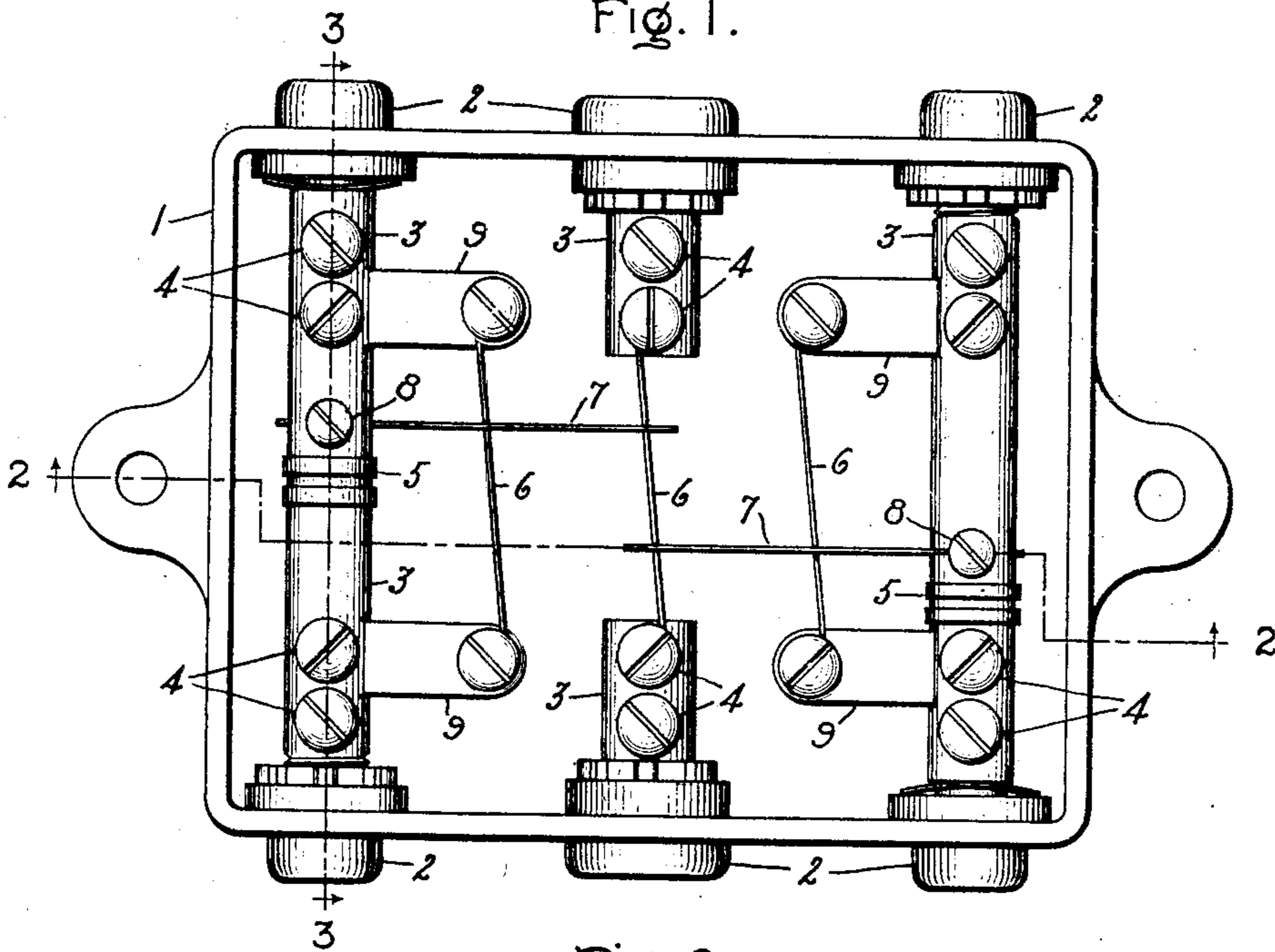


Fig. 2.

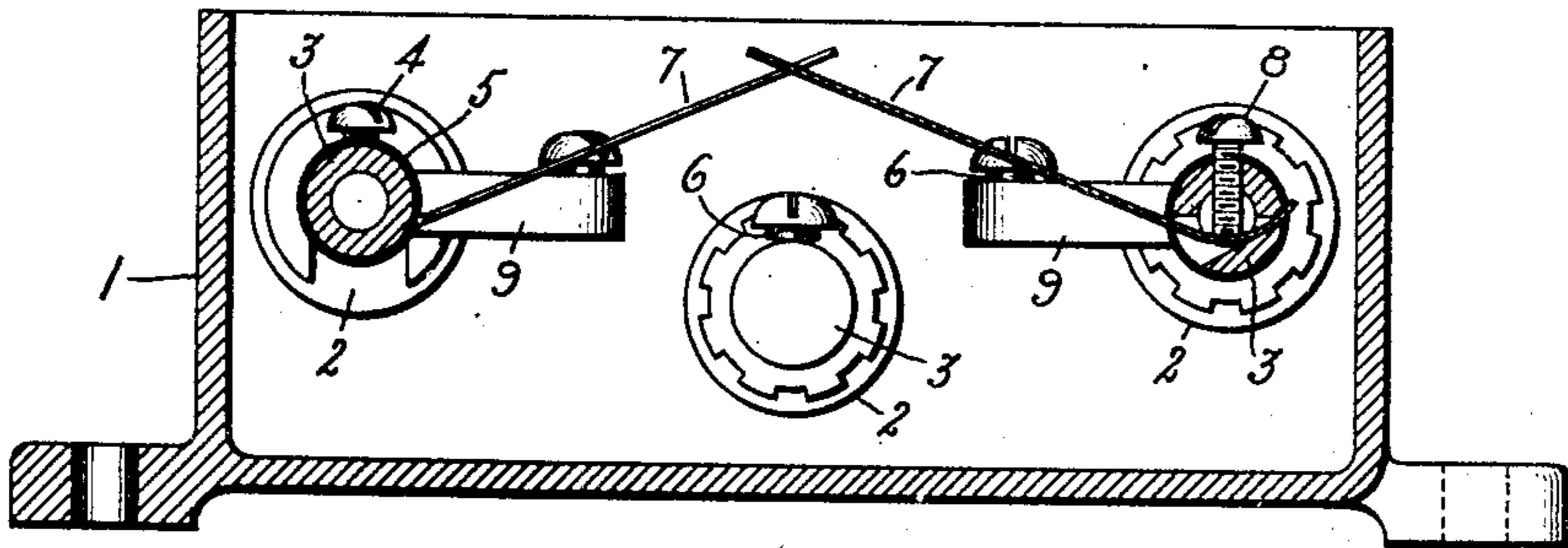
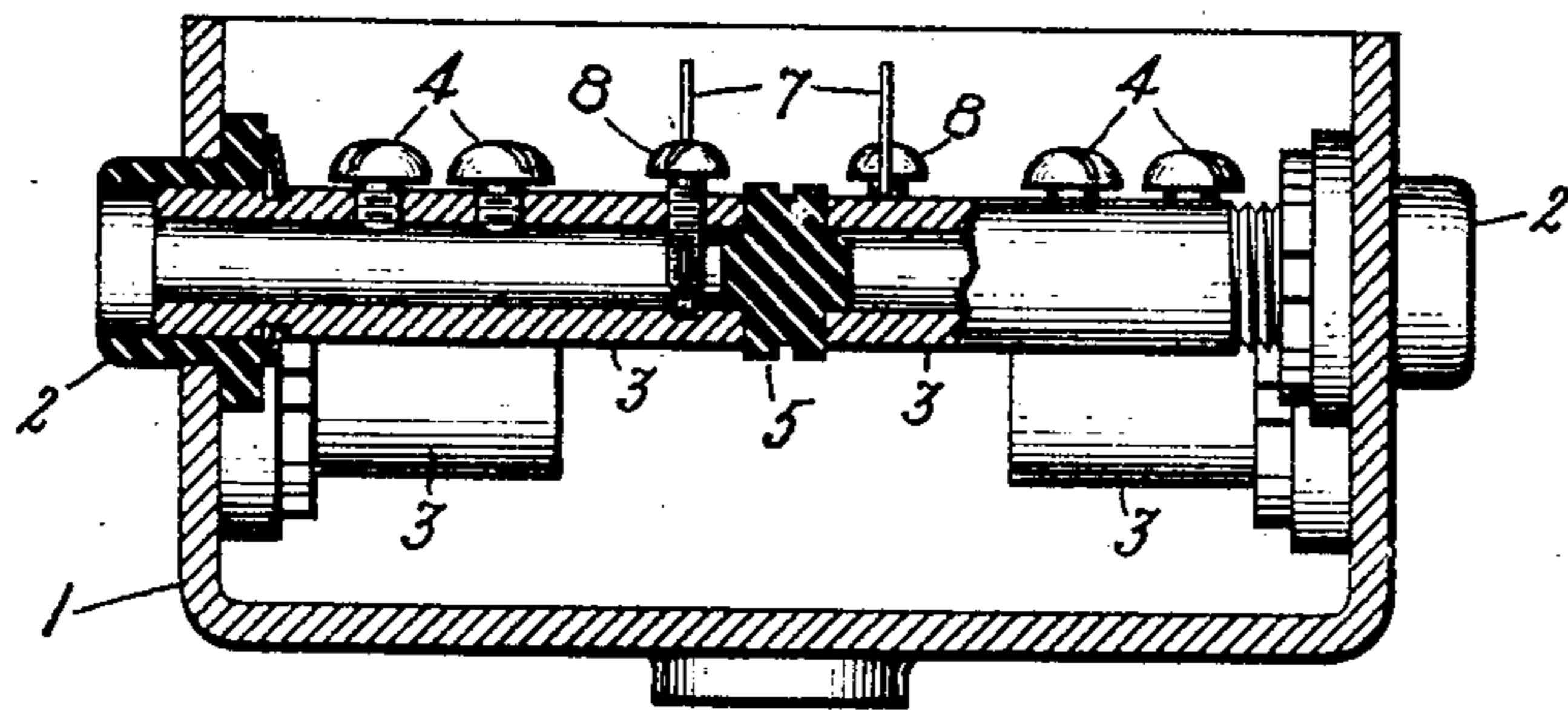


Fig. 3.



Witnesses:

*George H. Tilden.*  
*Allen Oxford*

Inventor:

Peter C. Morganthaler,

by *Albert H. Davis*  
Att'y.

# UNITED STATES PATENT OFFICE.

PETER C. MORGANTHALER, OF FORT WAYNE, INDIANA, ASSIGNOR TO  
GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

## FUSE-BOX.

No. 825,333.

Specification of Letters Patent.

Patented July 10, 1906.

Application filed July 29, 1905. Serial No. 271,776.

*To all whom it may concern:*

Be it known that I, PETER C. MORGANTHALER, a citizen of the United States, residing at Fort Wayne, county of Allen, State of Indiana, have invented certain new and useful Improvements in Fuse-Boxes, of which the following is a specification.

This invention relates to thermal cut-outs; and its object is to provide such a cut-out for a three-wire system of distribution so arranged that if a customer attempts to short-circuit one side of the system in order to stop his wattmeter the other side will also be cut out automatically and all three legs of the system open-circuited.

In a three-wire system the field-magnet of the wattmeter comprises two coils, one of which is in series with one side or leg of the system and the other with the other side, while the armature-coils are connected across the outside conductors of the system. It is customary to provide a fuse in each leg of the system. Now by removing or blowing either one of the outside fuses the potential circuit will be opened, and thus the wattmeter will be stopped; but the lights on the other side of the circuit will continue to burn. My invention aims to prevent the possibility of this occurrence; and to that end it consists in a mechanical circuit-breaker arranged to open the neutral line whenever the fuse in either of the side lines is blown. The preferred arrangement is a self-closing switch, such as a spring-actuated arm normally held inoperative by the fuse in the outside line, but adapted to move and strike the neutral fuse whenever the fuse which holds said arm is destroyed.

In the accompanying drawings, Figure 1 is a plan view of a fuse-box embodying my invention, the cover being removed to expose the fuses and the spring-arms. Fig. 2 is a cross-section on the line 2 2, Fig. 1; and Fig. 3 is a transverse section on the line 3 3, Fig. 1.

The box 1 is of any suitable material and is provided with a lid, which is not shown in the drawings. In two opposite sides of the box are three holes each in line with the one opposite to it. In each hole is an insulating-bushing 2, supporting a tubular line-terminal socket 3, provided with set-screws 4. The sockets in each pair may be separated by an air-space, or they may have their inner ends mechanically connected by an insulating-

plug 5. Each pair of sockets is connected electrically by a fuse 6, the three fuses being included, respectively, in the three lines of a three-wire system, the middle one being preferably the neutral.

Adjacent to each of the outside fuses is a self-closing switch, such as a spring-actuated arm, preferably a piece of resilient wire 7, having one end inserted in a hole in one of the sockets 3 and secured there by a set-screw 8. The arm is bent upward to put it under tension, and it is retained in this position by the fuse, which is preferably carried on the ends of lugs 9, projecting from the sockets. The free ends of the arms stand above the neutral, which is preferably arranged a little distance below them, as shown in Fig. 2. The arms are separated from each other and from the neutral fuse far enough to avoid any danger of a short-circuit between them.

In case either of the outside fuses is blown it releases the arm bearing on it, which instantly flies down and makes contact with the neutral fuse, thereby short-circuiting the line and causing the neutral fuse to blow, so that the entire system is open-circuited. It will thus be impossible for a consumer to short-circuit one side of his line for the purpose of stopping his wattmeter without at once opening the entire system and necessitating a replacing of the fuses before he can receive any more current.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination with a three-wire system, of automatic means for closing a circuit between either of the outside lines and the neutral when the circuit of said outside line is broken.

2. The combination with a three-wire system, of automatic means for closing a circuit between either of the outside lines and the neutral when a fuse blows in said outside line.

3. The combination with a three-wire system, of a self-closing switch between an outside line and the neutral, and a thermal cut-out in said outside line normally holding said switch open.

4. The combination with a three-wire system, of fuses in the several lines of the system, and a self-closing switch between an outside line and the neutral, normally held open by the fuse in said line.

5. The combination with a three-wire sys-

tem, of a spring-arm adapted to close the circuit between an outside line and the neutral, and a fuse in said outside line normally holding said spring-arm inoperative.

5 6. The combination with a three-wire system, of fuses in the three lines thereof, and spring-arms attached to the outside lines and resting against the fuses therein, and adapted when released to close the circuit between  
10 said outside lines and the neutral.

7. The combination with three pairs of ter-

minal sockets, of fuses connecting each pair, and spring-arms secured to two of said pairs and resting on the fuses thereof and adapted when released by the blowing of said fuses to  
15 make contact with the fuse of the third pair.

In witness whereof I have hereunto set my hand this 14th day of July, 1905.

PETER C. MORGANTHALER.

Witnesses:

JAMES J. WOOD,  
FRANK McMASTER.