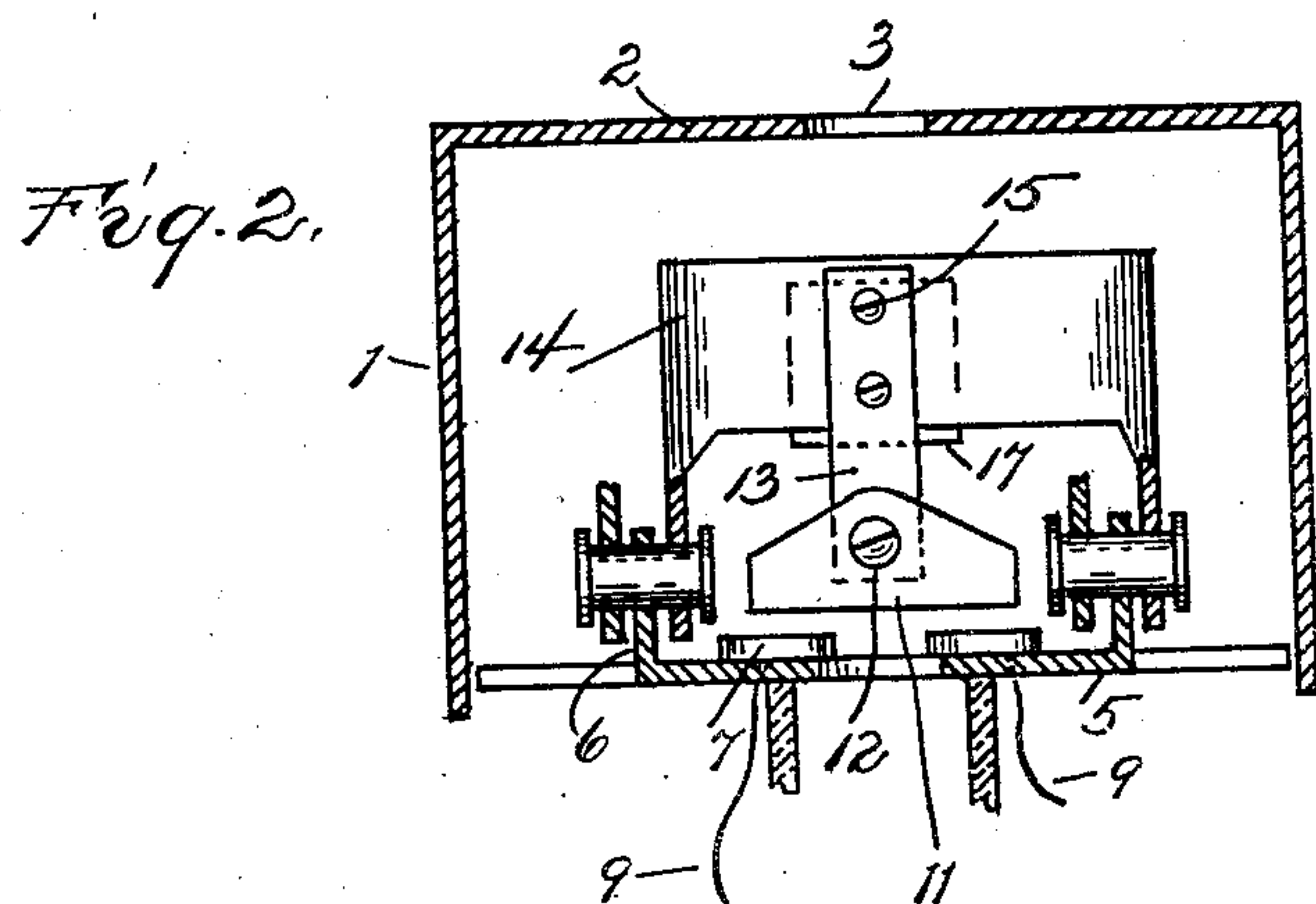
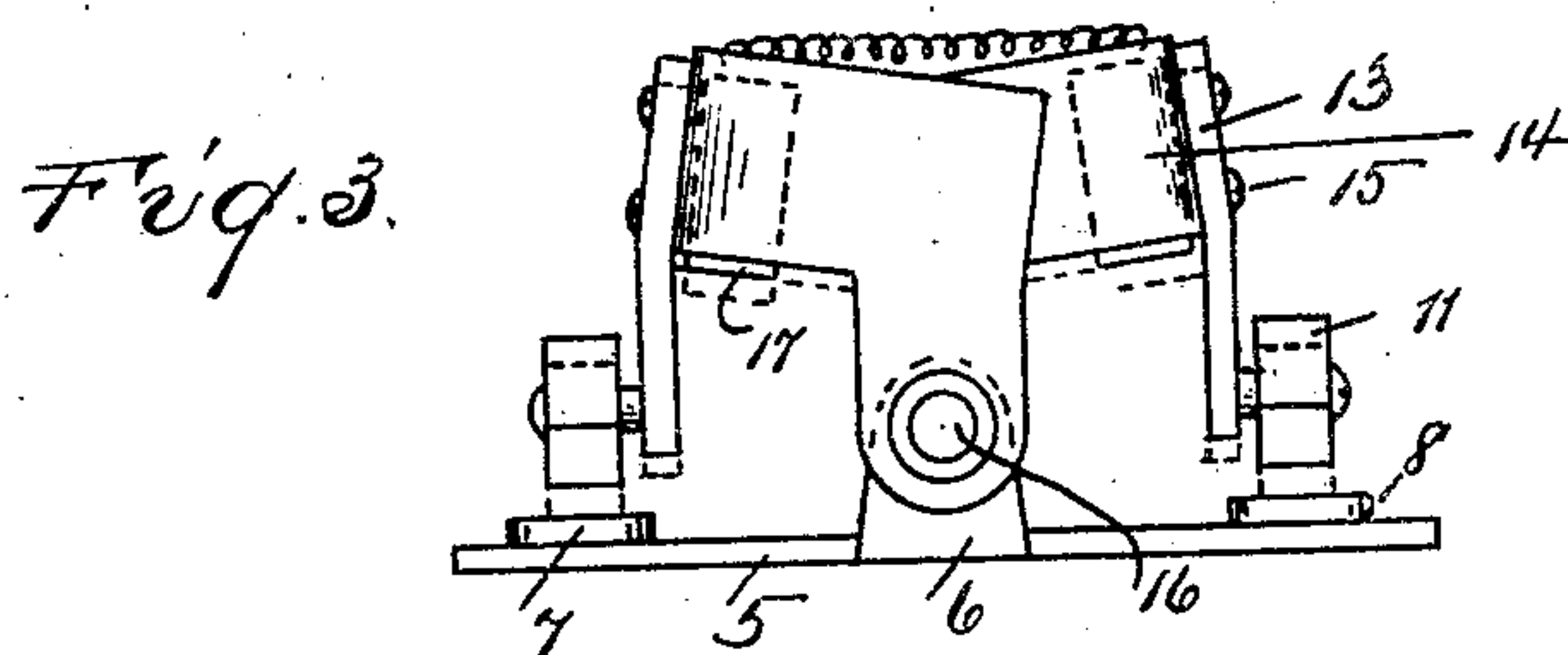
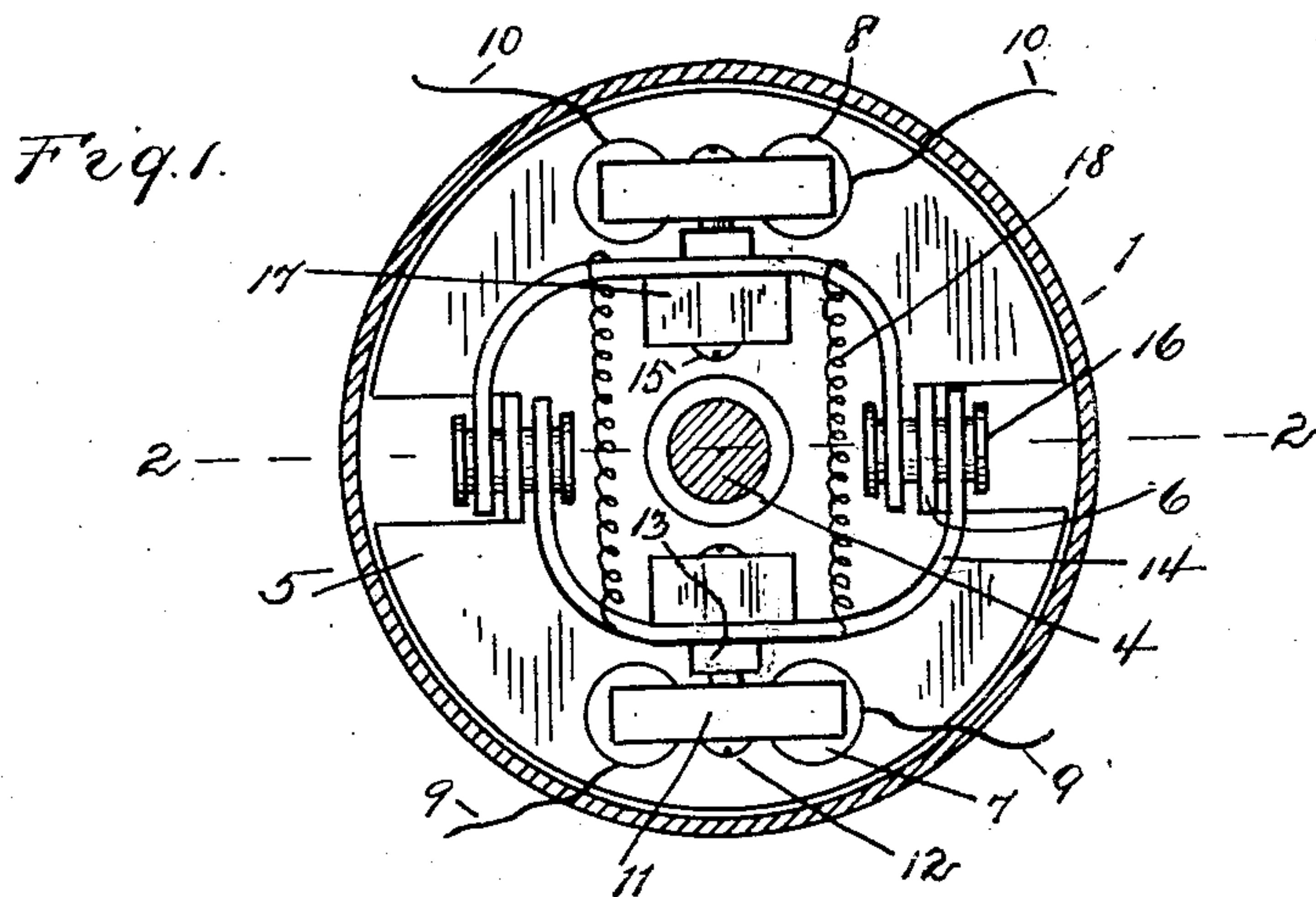


June 19, 1923.

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C. L. VOLZ  
ELECTRIC SWITCH  
Filed Sept. 3, 1921



Inventor.  
Chris L. Volz

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Attorneys



# UNITED STATES PATENT OFFICE.

CHRIS L. VOLZ, OF DETROIT, MICHIGAN.

ELECTRIC SWITCH.

Application filed September 3, 1921. Serial No. 498,291.

*To all whom it may concern:*

Be it known that I, CHRIS L. VOLZ, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Electric Switches, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to electric switches and refers more particularly to centrifugal switches adapted to close a circuit. The invention is particularly applicable to repulsion-induction motors in which the switch is mounted on the revolving member of this motor.

The object of my invention is to provide a compact switch which is reliable in operation and simple in construction. With these objects in view, the invention resides in the novel features of construction and combinations and arrangements of parts as more fully hereinafter set forth.

In the drawings:

Figure 1 is an end view of a centrifugal switch embodying my invention, with the end removed;

Figure 2 is a cross section on the line 2—2 of Figure 1;

Figure 3 is a side view thereof at right angles to Figure 2 and with the housing removed.

1 is a cylindrical housing having the end 2 with the axial opening 3 therein of suitable size to accommodate the shaft 4 of a repulsion-induction motor. 5 is the switch carrier comprising a disk extending transversely of the shaft 4 and fixedly mounted thereon. This disk has the diametrically opposite ears 6 struck out therefrom and bent to extend transversely of the disk. 7 and 8 are diametrically opposite pairs of spaced contacts or binding posts to which the leads 9 and 10 of two motor circuits are respectively secured. These contacts are fixedly secured to the disk 5 in such position that the line connecting the two pairs is at right angles to the line connecting the ears 6.

To electrically connect the contacts 7 to each other and to thereby close a circuit when the shaft 4 and switch carrier 5 have reached a predetermined speed of rotation, there is the contact yoke 11 which is adapted to bridge the contacts. This contact yoke is pivotally mounted at 12 upon the lower end of

the supporting bar 13, the upper end of which is secured to the middle of the U-shaped or bowed member 14 by suitable means such as the screws 15. The legs of this U-shaped member are connected to the ears 6 upon the disk by the pivots 16. A weight 17 is also provided upon the middle of the U-shaped member 14, the screws 15 being used to secure this weight in place.

There is a similar arrangement for electrically connecting the contacts 8 to each other, the pivots 16 being common to both the U-shaped members. To have both U-shaped members identical the legs of one are upon the same sides of the ears 6 while the legs of the other are upon the opposite sides.

For the purpose of normally holding the contact yokes out of engagement with their contacts until the predetermined speed of rotation of the shaft and carrier has been reached, there are the coil springs 18 extending between the U-shaped members and adapted to hold the same in inclined position relative to the disk as shown particularly in Figure 3. However, as soon as the shaft and carrier reach the predetermined speed of rotation, the centrifugal force is sufficient to swing the U-shaped members with their contact yokes toward the disk and into engagement with the contacts against the tension of these coil springs, thereby closing the circuits to which the contacts are connected.

From the above description it is seen that the contacts or binding posts revolve with the switch carrier upon the motor shaft and that the cooperating contacts pivotally mounted upon the switch carrier move into engagement with their respective contacts when the predetermined speed of rotation of the shaft has been reached. Also, the arrangement of the parts is compact and their construction is simple.

What I claim as my invention is:

1. In an electric switch, the combination with a revoluble carrier centrally apertured to receive a driven shaft, of a plurality of contacts mounted thereon, and a plurality of contact members having a common pivotal mounting on said carrier and adapted to engage the respective contacts when said carrier reaches a predetermined speed of rotation.

2. In an electric switch, the combination with a revoluble carrier sleeved upon a driven shaft, of a contact member compris-



ing complementary members having a common pivotal mounting on said carrier, means for normally holding said complementary members at an angle to the plane of rotation thereof, and a contact adapted to be engaged by said members when the latter swing toward the plane of rotation of said carrier.

3. In an electric switch, the combination with a revoluble carrier, of a pair of spaced contacts mounted thereon, and a cooperating contact yoke comprising complementary members having a common pivotal mounting upon said carrier and adapted to bridge said contacts when said carrier reaches a predetermined speed of rotation.

4. In an electric switch, the combination with a revoluble carrier, of pairs of spaced contacts mounted thereon, diametrically opposite each other, a pair of U-shaped members pivotally mounted upon said carrier and normally extending at an angle relative to the plane of rotation of said carrier, and a contact yoke upon each of said U-shaped members adapted to bridge the contacts of one pair.

5. In an electric switch, the combination with a revoluble shaft, of a transverse disk secured thereto, diametrically opposite ears upon said disk, a pair of contacts mounted upon said disk, a U-shaped member having its legs pivotally connected to said ears and a contact yoke carried by said U-shaped member and adapted to bridge said contacts.

6. In an electric switch, the combination with a shaft, of a transverse disk secured thereto, diametrically opposite transverse ears projecting from said disk, two pairs of diametrically opposite contacts mounted upon said disk, a pair of U-shaped members having their legs pivotally connected to said ears, means for normally maintaining said U-shaped members inclined relative to said disk, and contact yokes mounted upon said U-shaped members and adapted to bridge the contacts of each pair when said shaft and carrier has reached a predetermined speed of rotation.

7. In an electric switch, the combination with a revoluble carrier, of a contact mount-

ed thereon, a U-shaped member pivotally mounted upon said carrier and normally extending at an angle relative to the plane of rotation of said carrier, and a contact member upon said U-shaped member adapted to engage said contact.

8. In an electric switch, the combination with a revoluble carrier, of a transverse disk secured thereto, diametrically opposite ears upon said disk, a contact mounted upon said disk, a U-shaped member pivotally connected to said ears, and a contact member carried by said U-shaped member and adapted to engage said contact.

9. In an electric switch, the combination with a shaft of a transverse disk secured thereto, diametrically opposite transverse ears projecting from said disk, diametrically opposite contacts mounted upon said disk, U-shaped members pivotally connected to said ears, means for normally maintaining said U-shaped members inclined relative to said disk, and contact members mounted upon said U-shaped members and adapted to engage said contacts when said shaft and carrier has reached a predetermined speed of rotation.

10. In an electric switch, the combination with a revoluble carrier apertured to receive a driven shaft, of a contact mounted on said carrier, a yoke member pivotally attached to said carrier on substantially diametrically opposite sides thereof, and a cooperating contacting member upon said yoke adapted to engage said contact when said carrier reaches a predetermined speed of rotation.

11. In an electric switch, the combination with a revoluble carrier apertured to receive a driven shaft, of a plurality of contacts mounted upon said carrier, a plurality of yoke members pivotally mounted on said carrier, each being attached thereto on substantially diametrically opposite sides of said shaft, and cooperating contact members upon said yoke members adapted to engage the respective contacts when said carrier reaches a predetermined speed of rotation.

In testimony whereof I affix my signature.

CHRIS L. VOLZ.