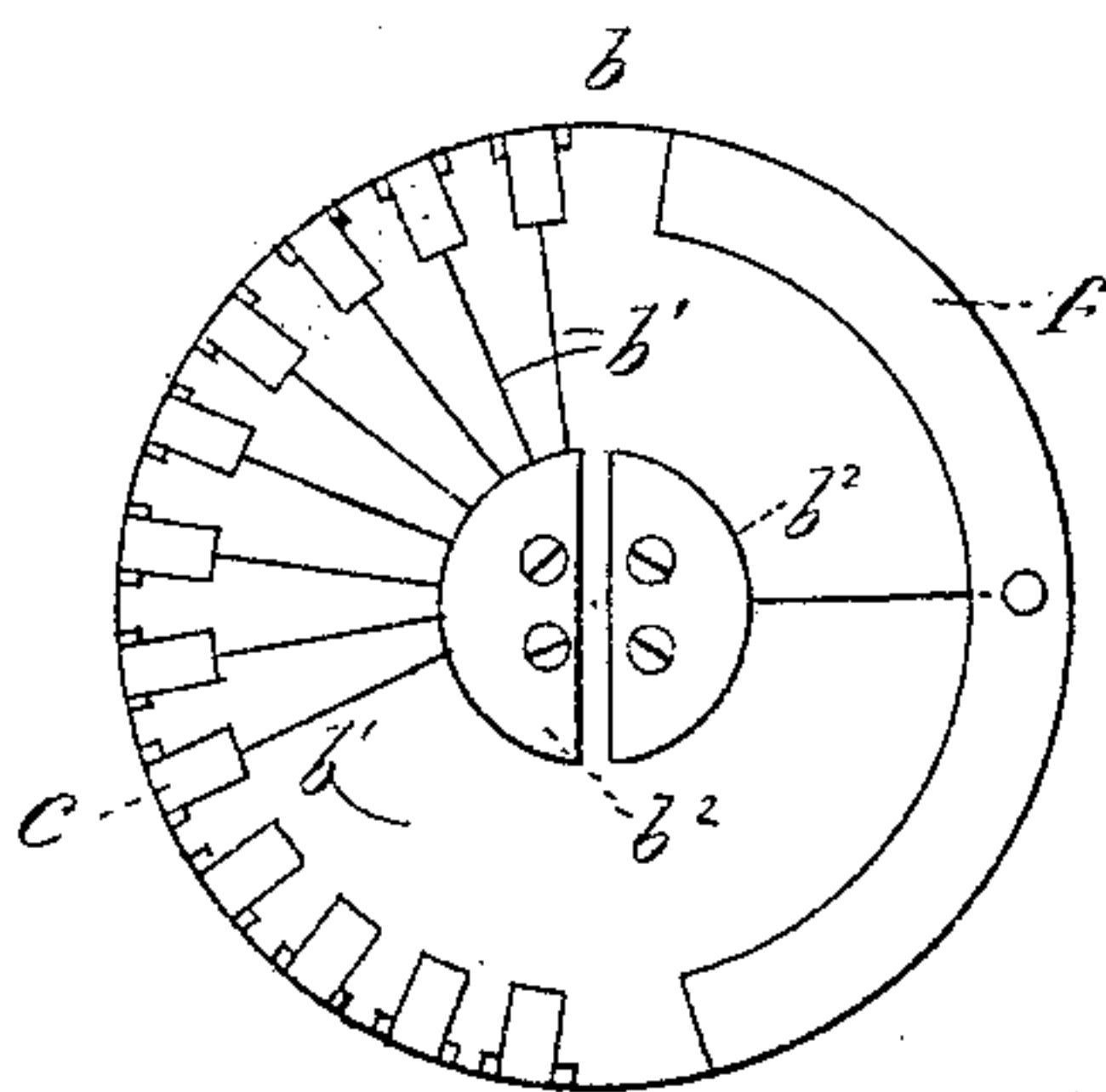
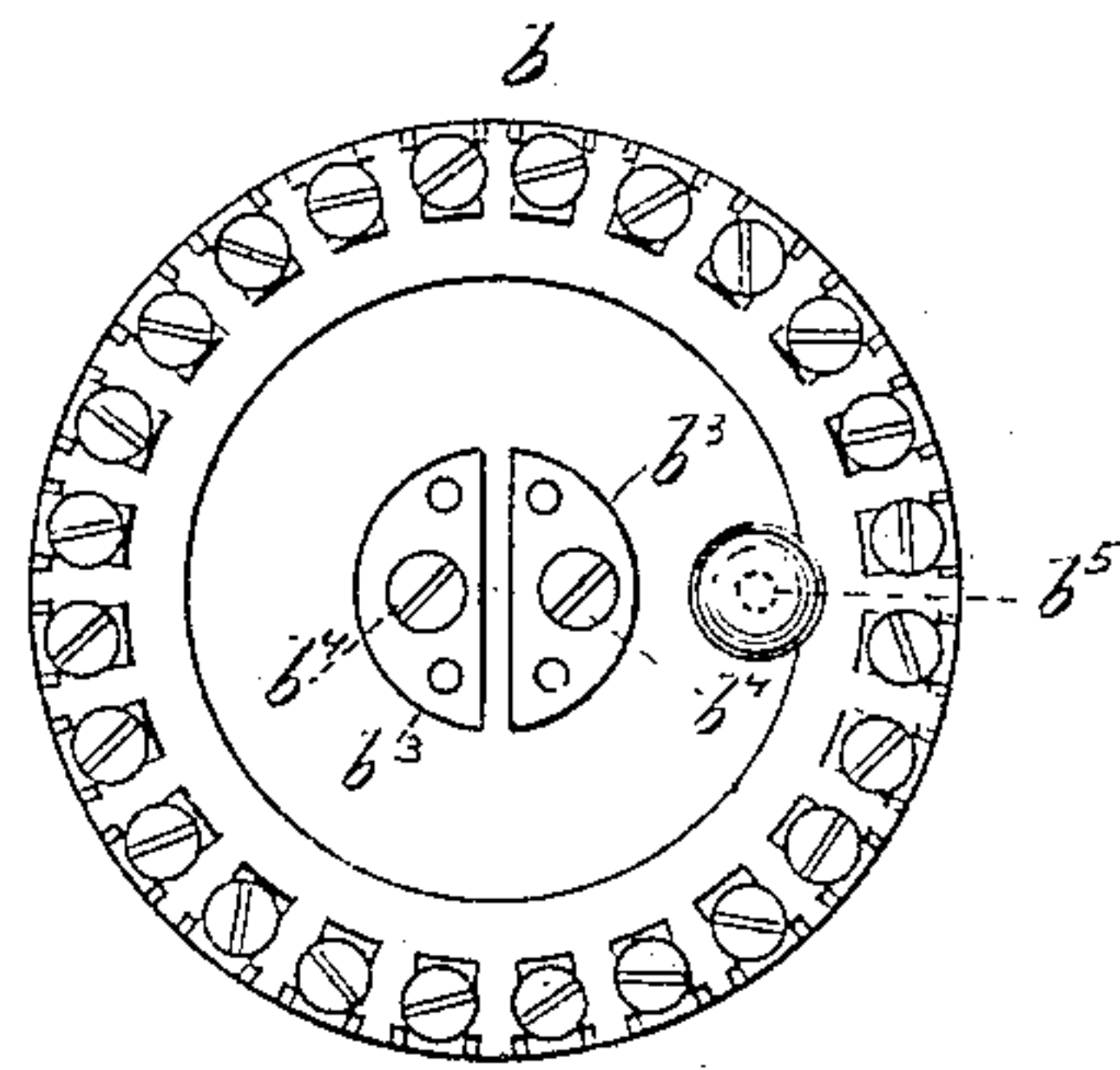
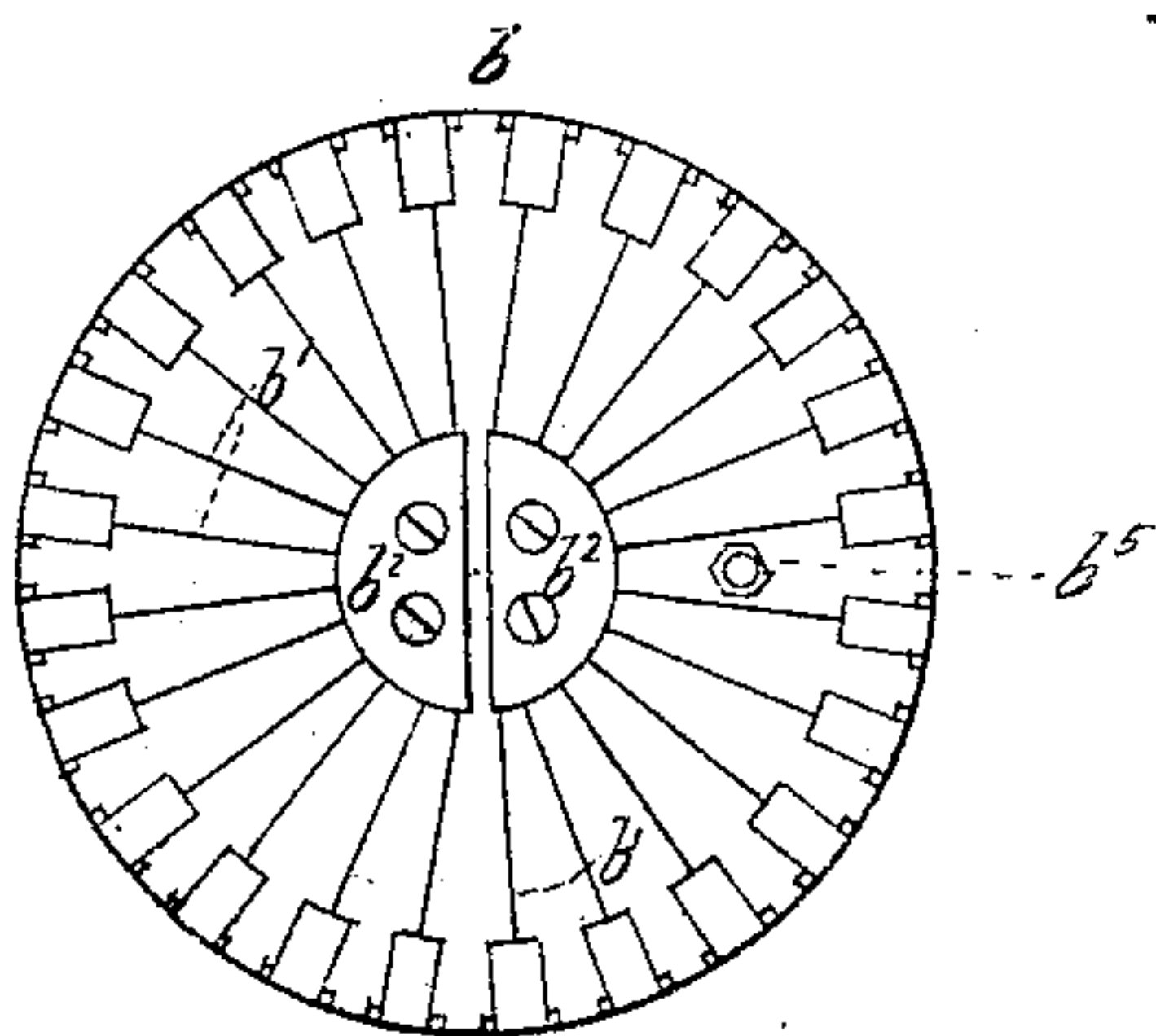
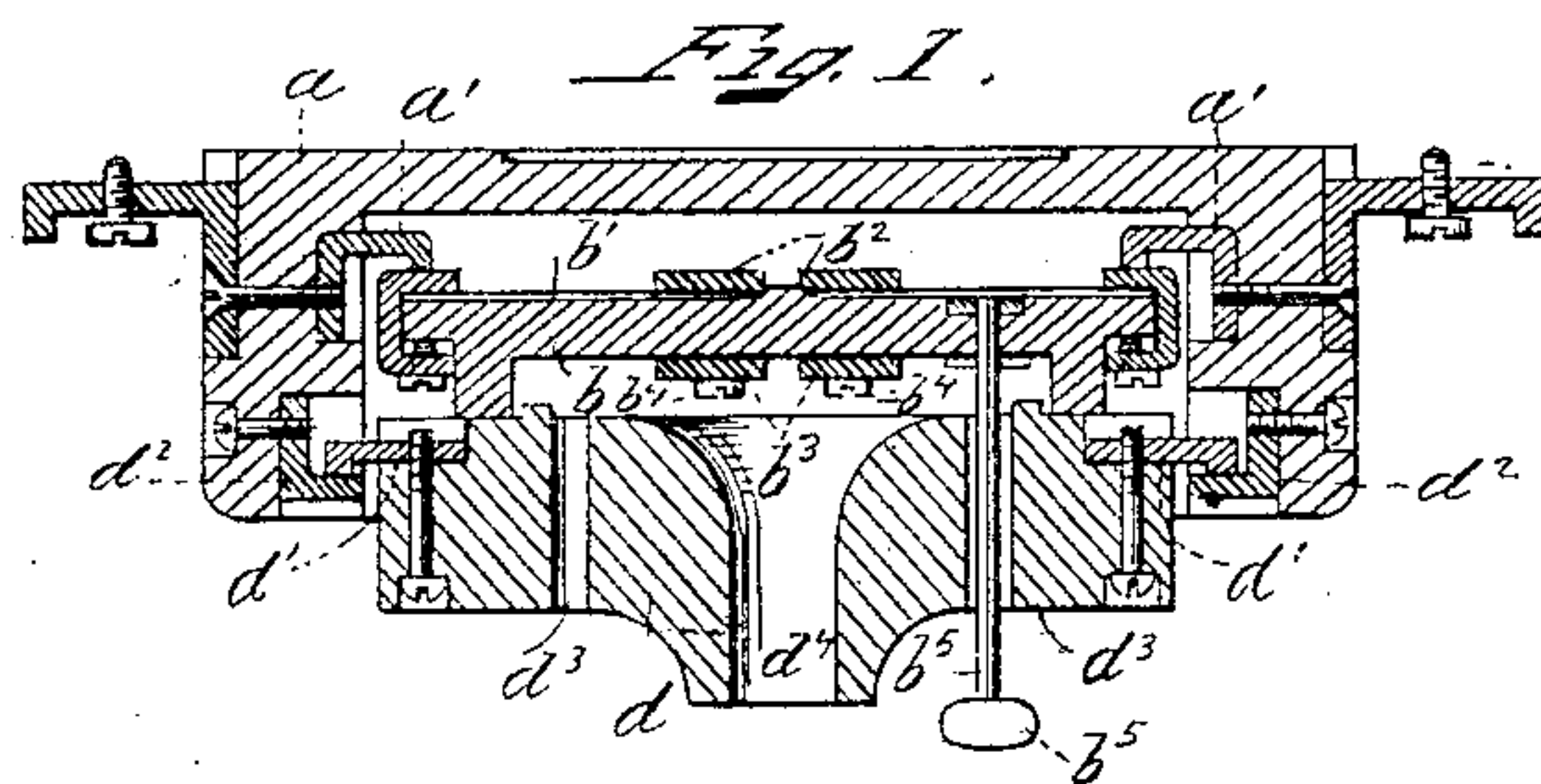
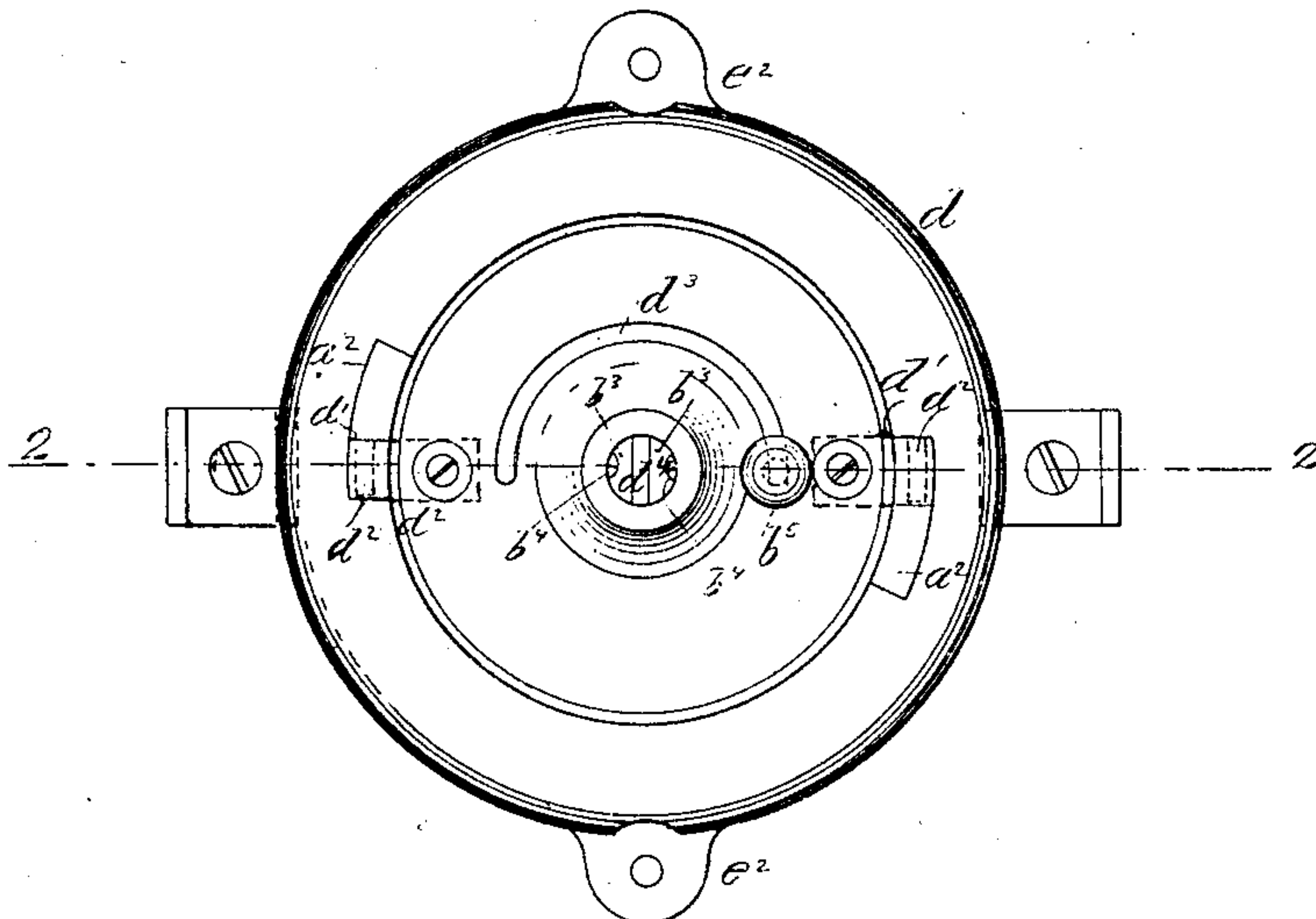


(No Model.)

G. T. VOORHEES.  
MULTIPLE FUSE.

No. 502,333.

Patented Aug. 1, 1893.



Witnesses:  
John R. Snow.  
H. E. Benick & Co.

Inventor:  
Gardner Tufft Voorhees.  
By his Attorneys,  
Maynard, O'Brien & Co.



# UNITED STATES PATENT OFFICE.

GARDNER TUFFTS VOORHEES, OF BOSTON, ASSIGNOR TO JAMES E. MAYNARDIER, TRUSTEE, OF TAUNTON, MASSACHUSETTS.

## MULTIPLE FUSE.

SPECIFICATION forming part of Letters Patent No. 502,333, dated August 1, 1893.

Application filed May 25, 1892. Serial No. 434,366. (No model.)

*To all whom it may concern:*

Be it known that I, GARDNER TUFFTS VOORHEES, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Multiple Fuse, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a plan, and Fig. 2 a sectional view on line 2—2 of Fig. 1. Figs. 3 and 4 are plan views of the fuse carriage. Fig. 5 shows a modification.

One feature of my invention is separating the fuses into two sets, so that the end of each fuse of one set may be united electrically to one terminal, and one end of each fuse of the other set united electrically to a second terminal, thereby uniting two pairs of terminals by two fuses which may be replaced by a second pair of fuses by simply bringing the contacts at the free ends of the fuses into contact with the terminals.

In the drawings, showing one form of my invention, on the whole, the best embodiment thereof, now known to me, *a* is the supply terminal support and *a'* *a'* the supply terminals.

*b* is the fuse carriage and *b'* a series of fuses carried thereby and secured thereto in any suitable manner. Ends of each set of plus and minus fuses are in contact with corresponding plates *b<sup>2</sup>* and these plates are in electrical connection with corresponding plates *b<sup>3</sup>* to which the feed wire of the contrivance which is to be cut out are connected say by the binding screws *b<sup>4</sup>*. The terminals *a'* are one set, and are connected by the two sets of fuses *b'*. The other set of terminals *b<sup>2</sup>* are connected together as by a lamp, as will be clear. Carriage *b* is in this construction supported on a support *d* which is conveniently secured to the support *a* by ears *d'* which engage lugs *d<sup>2</sup>* on support *a*. Support *a* is slotted at *a<sup>2</sup>* and the ears *d'* pass into these slots and then the support *d* is turned so that the ears *d'* ride over the lugs *d<sup>2</sup>*. This is one of many ways of securing the supports *a* and *d* together.

One convenient way of moving the fuse

carriage is to provide it with an arm *b<sup>5</sup>* which projects through a semicircular slot *d<sup>3</sup>* in support *d*. Preferably the support *d* has a central opening *d<sup>4</sup>* for the wires to pass to the binding screws *b<sup>4</sup>*.

The operation of this form of my device is this: in case a fuse is burned out, the fuse carriage is shifted to bring a fresh fuse to the supply terminals.

My device may be constructed in many different forms without departing from my invention.

In the modification shown in Fig. 5, the fuse carriage is provided with a plate *f* with which one of the supply terminals is in constant contact.

What I claim is—

1. In combination, a case, a fuse carriage supported by the case; two sets of terminals *a'*, *b<sup>2</sup>*; two sets of fuses connected to one set of terminals *b<sup>2</sup>*; and means for revolving the carriage to bring the free ends of the fuses successively into contact with the second set of terminals, all substantially as described.

2. In a multiple fuse cut out, two sets of fuses *b'*, with their free ends connected with contact pieces, and the other ends of the fuses of each set connected with one terminal *b<sup>2</sup>*; in combination with terminal contact pieces *a'* and means for successively and simultaneously bringing one contact piece of each set of fuses, in contact with its terminal contact piece, substantially as described.

3. In a multiple fuse cut-out a fuse carrier, two sets of fuses and insulated contact pieces, the fuses of each set being electrically connected at their inner ends, but each provided with its insulated contact piece at its outer end, all substantially as described.

4. The improved multiple fuse cut-out above described, consisting of the body *a*, the detachable cover *d*, the fuse carriage *b*, fuses *b'* and terminals *a'* and *b<sup>2</sup>*, all combined and operating substantially as described.

GARDNER TUFFTS VOORHEES.

Witnesses:

EDWARD S. BEACH,

JOHN R. SNOW.