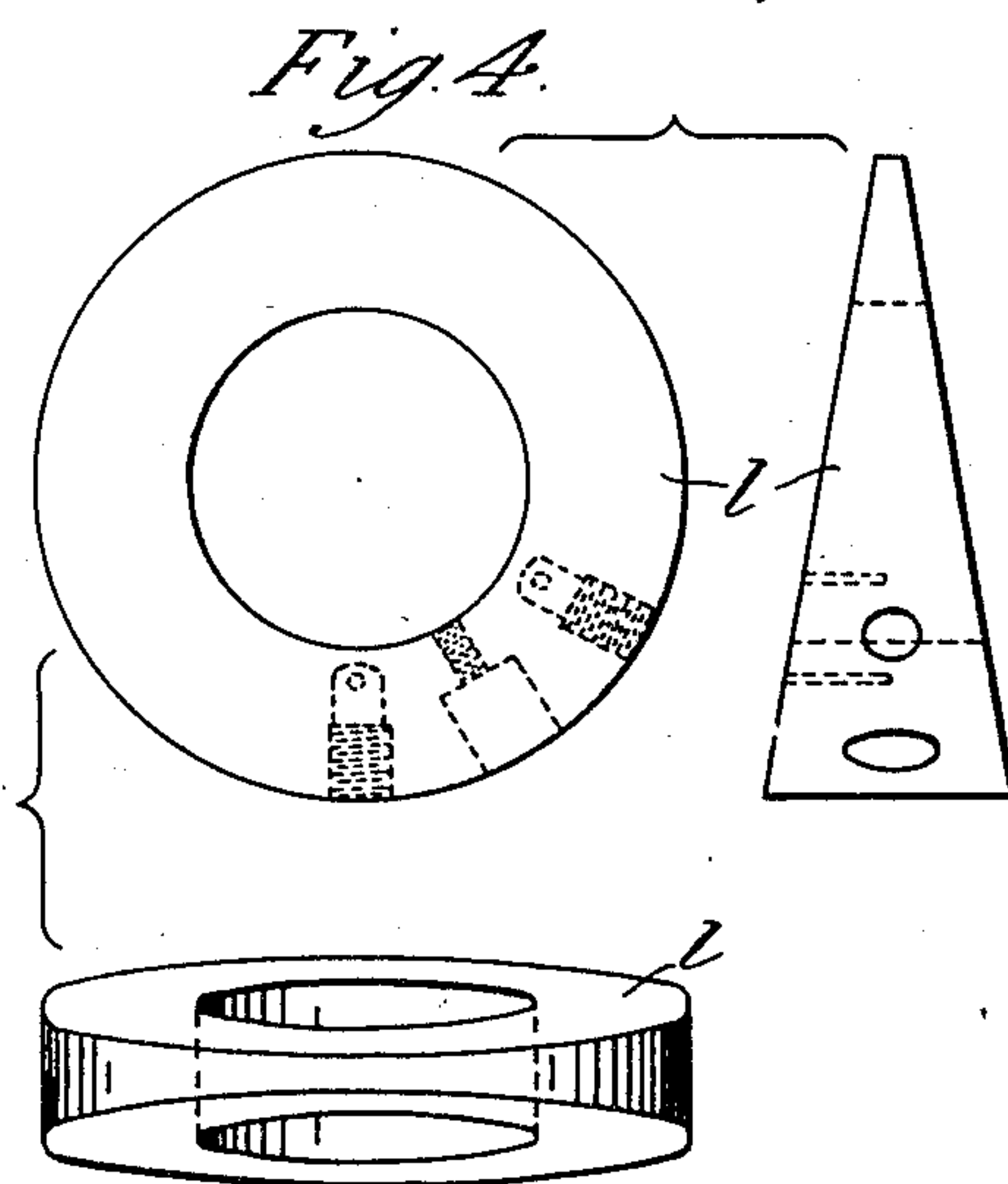
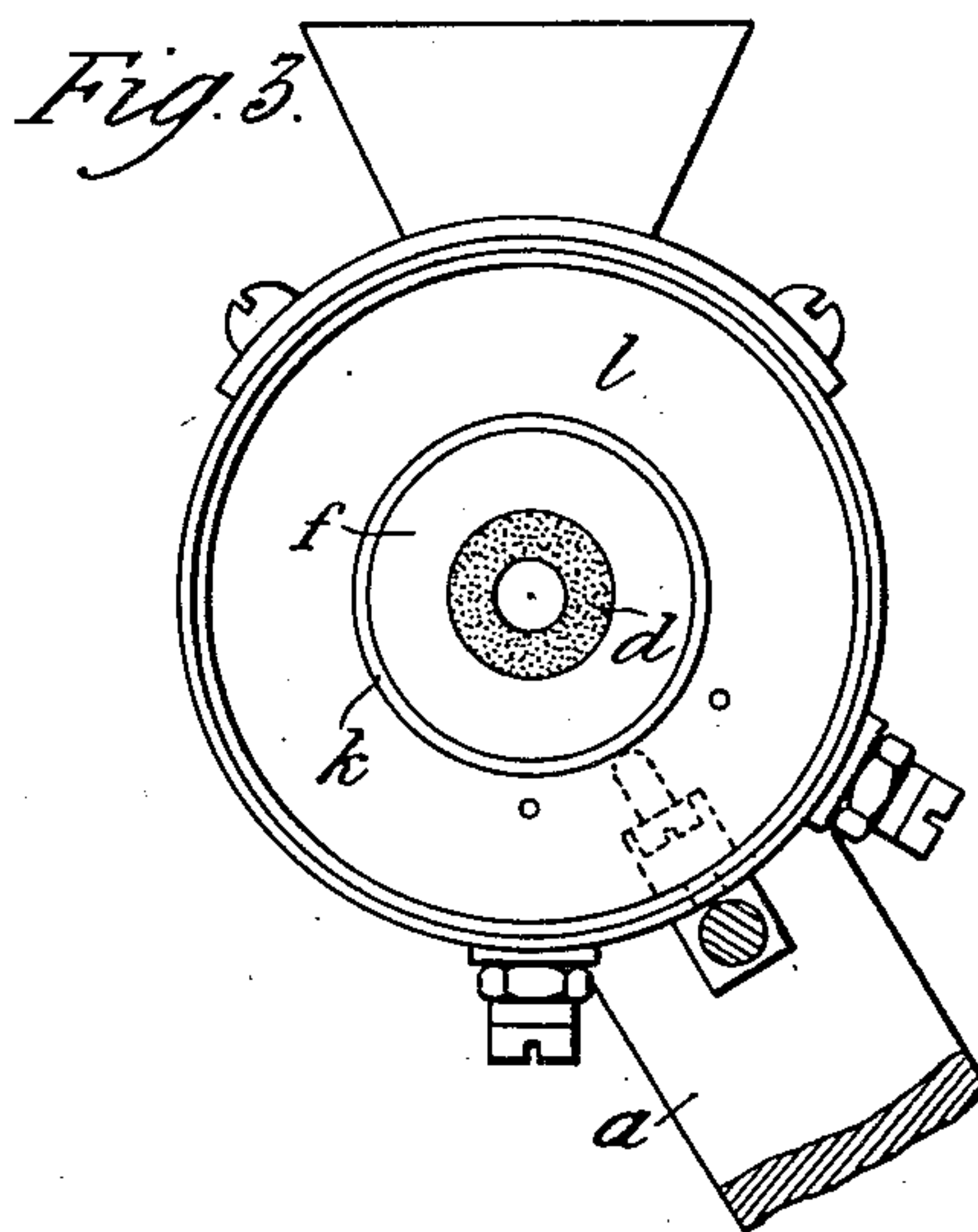
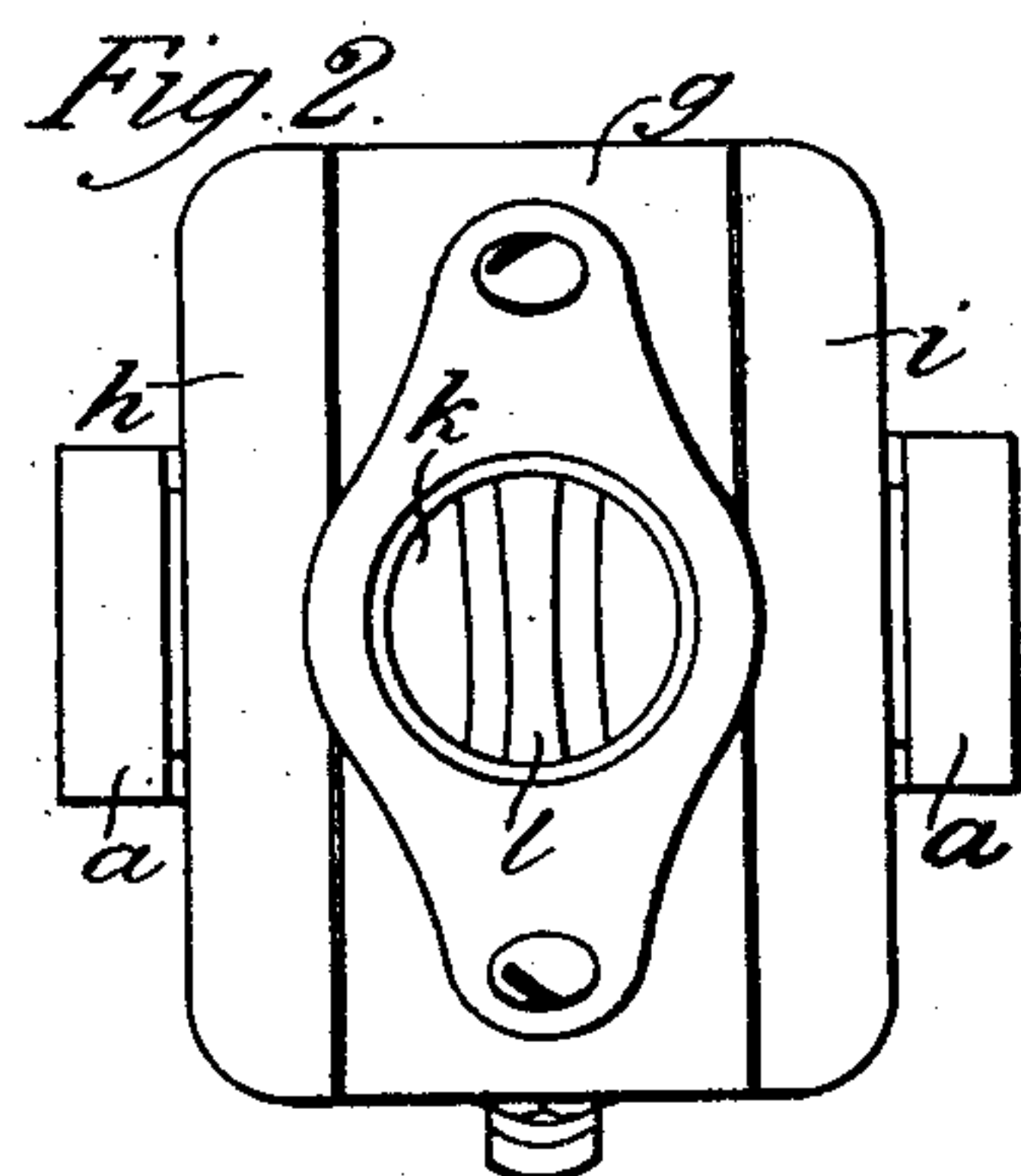
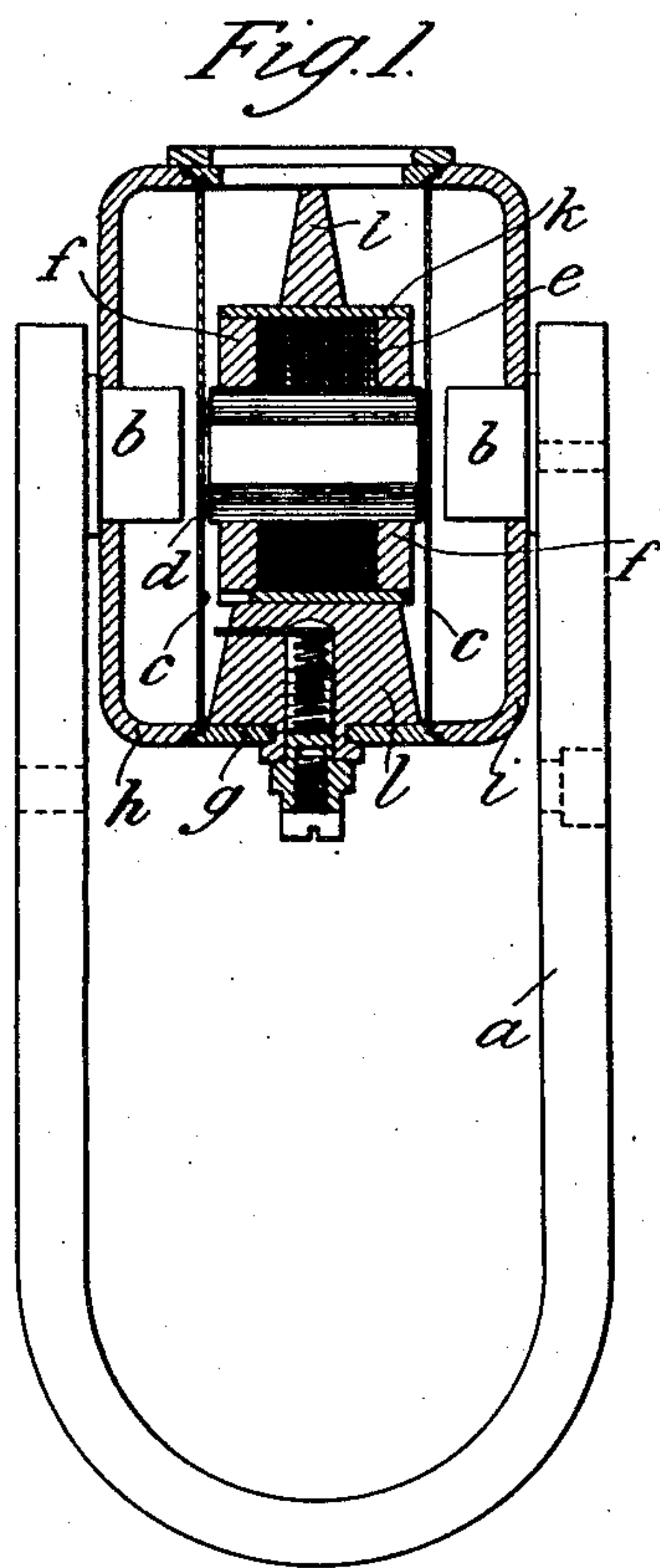


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APPLICATION FILED SEPT. 2, 1908.

912,878.

Patented Feb. 16, 1909.
2 SHEETS—SHEET 1.



WITNESSES

E. B. Blumling
H. M. Corwin

INVENTOR

A. H. Nicholson,
by Baker, Bymer & Carmichael,
his Attys.

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Fig. 5.

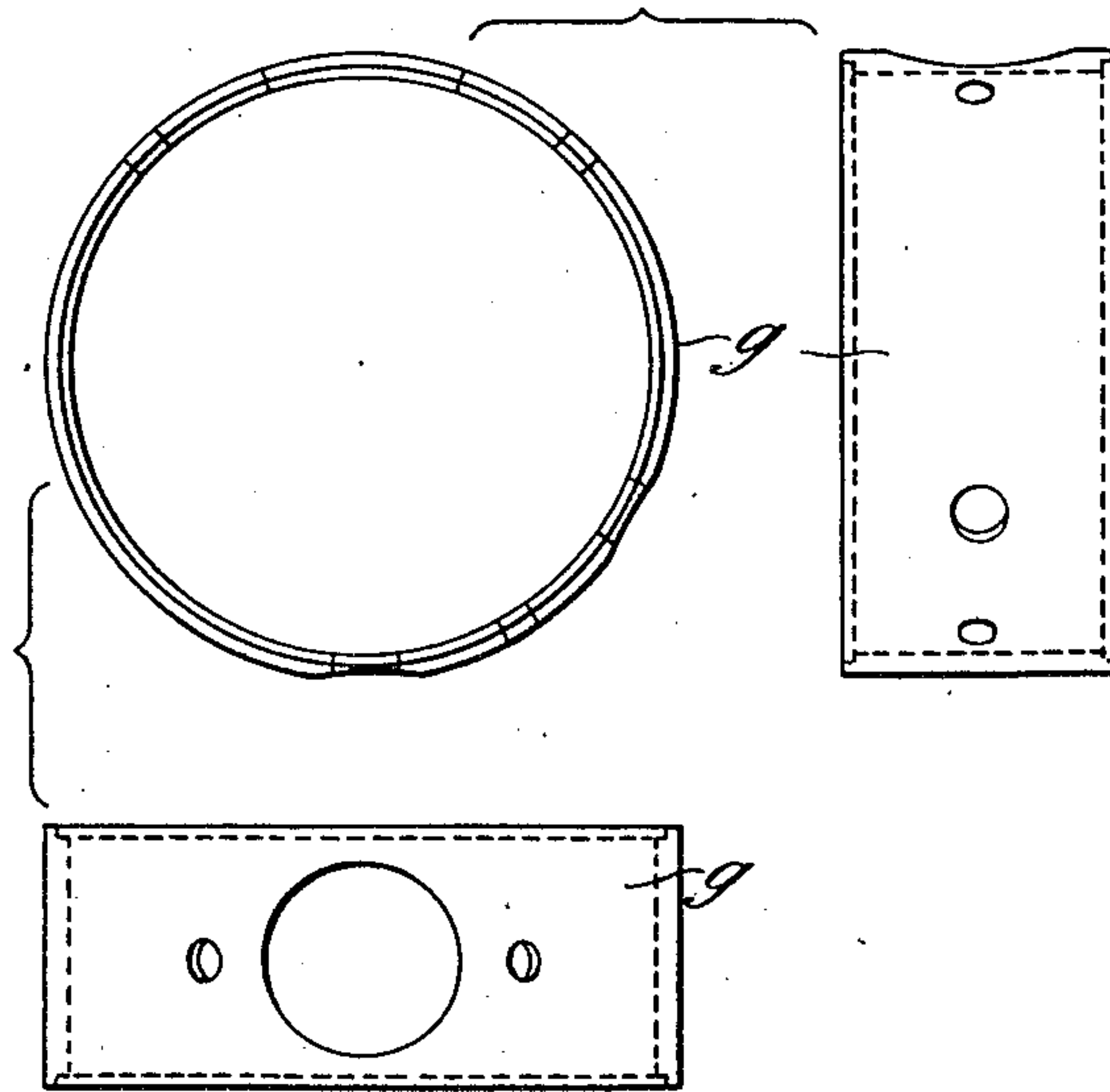
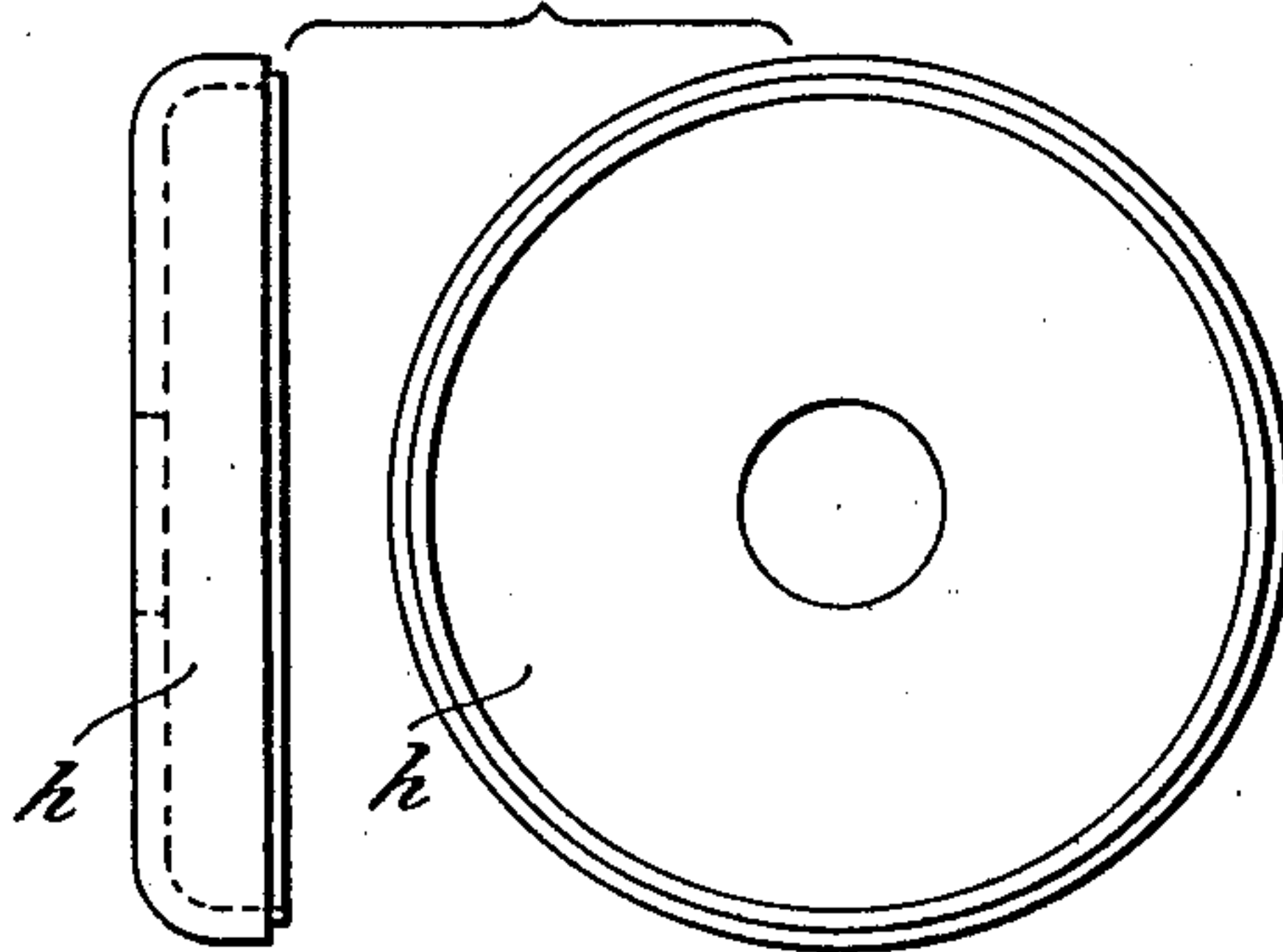


Fig. 6.



WITNESSES

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UNITED STATES PATENT OFFICE.

ARTHUR HAROLD NICHOLSON, OF WENDOVER, ENGLAND, ASSIGNOR TO THE NEW
PHONOPORE TELEPHONE COMPANY, LIMITED, OF LONDON, ENGLAND.

TELEPHONIC RECEIVER.

No. 912,878.

Specification of Letters Patent.

Patented Feb. 16, 1909.

Application filed September 2, 1908. Serial No. 451,462.

To all whom it may concern:

Be it known that I, ARTHUR HAROLD NICHOLSON, a subject of the King of Great Britain, residing at 5 Chiltern road, Wendover, in the county of Bucks, England, electrical engineer, have invented certain new and useful Improvements in Telephonic Receivers, of which the following is a specification.

A well known form of telephonic receiver comprises two parallel diaphragms between the poles of a permanent horseshoe magnet, a bar electromagnet being arranged between the diaphragms and included in the line or speaking circuit. The diaphragms form the ends of a drum held between the poles of the permanent magnet and the ends of the bobbin that carries the winding of the electromagnet are of the same diameter as the internal diameter of the drum; the periphery of these ends is cut away to allow of perforations through the part of the periphery of the casing at which the ear-piece is fixed, so that there may be communication between the recesses at the inner faces of the diaphragms and the ear-piece. By my invention such a receiver may be made more efficient and at the same time may be more easily and cheaply constructed if the arrangement illustrated in the accompanying drawings be adopted.

Figure 1 is a section through the receiver, Fig. 2 is a plan, Fig. 3 an end view with parts removed and Figs. 4, 5 and 6 are detail views.

a is the permanent horseshoe magnet, *b* are its pole pieces, *c* are the diaphragms, *d* is the bar electromagnet of which *e* is the winding and *f* are the bobbin ends of insulating material.

The casing is made in three parts, a central ring *g* and two end pieces *h* and *i*, the diaphragms being held between the end pieces and the central ring.

The bobbin is fitted in a metal sleeve *h* which itself fits in a circular wedge *l* of suitable insulating material. This wedge is shown in side elevation, front elevation and plan in Fig. 4. This wedge, holding the bobbin, is fixed in the casing in such a position that the narrow part of the wedge is next the cir-

cular opening in the casing above which the ear-piece is fixed.

Having thus described the nature of my invention and the best means I know of carrying the same into practical effect, I claim:—

1. A telephone receiver comprising a permanent horseshoe magnet, two parallel diaphragms between the poles of this magnet, a bar electromagnet between the said diaphragms and a circular wedge-shaped piece carrying the bar electromagnet.

2. A telephone receiver comprising a permanent horseshoe magnet, two parallel diaphragms between the poles of this magnet, a circular wedge shaped piece between the said diaphragms, a bar electromagnet and a perforation in the said wedge shaped piece adapted to receive the bobbin of the said bar electromagnet.

3. A telephone receiver comprising a permanent horseshoe magnet, oppositely arranged pole pieces to the said magnet, a casing situated co-axially between the said pole pieces, two diaphragms within the said casing, a circular wedge shaped piece between the said diaphragms, a central perforation in the said wedge shaped piece, a sleeve within the said perforation, and a bar electromagnet the bobbin of which fits in the said sleeve.

4. A telephone receiver comprising a permanent horseshoe magnet, a cylindrical casing situated between the poles of the said magnet, an opening in the periphery of the said casing, two diaphragms within the said casing, a circular wedge shaped piece between the two diaphragms having its narrower end next to the said opening and a bar electromagnet carried by the said circular wedge shaped piece.

5. A telephone receiver comprising a permanent horseshoe magnet, oppositely arranged pole pieces to the said magnet, a casing situated co-axially between the said pole pieces and consisting of a central ring and two end pieces, a diaphragm clamped between each end piece and the central ring, an opening in the periphery of the said ring, a circular wedge shaped piece between the

said diaphragm having its narrower edge
next the said opening, a central perforation
in the said circular wedge shaped piece, a
sleeve fitting the said perforation and a bar
5 electromagnet having its bobbin fitting the
said sleeve.

In testimony whereof I have signed my

name to this specification in the presence of
two subscribing witnesses.

ARTHUR HAROLD NICHOLSON.

Witnesses:

EDWARD GARDNER,
WALTER I. SKERTEN.