

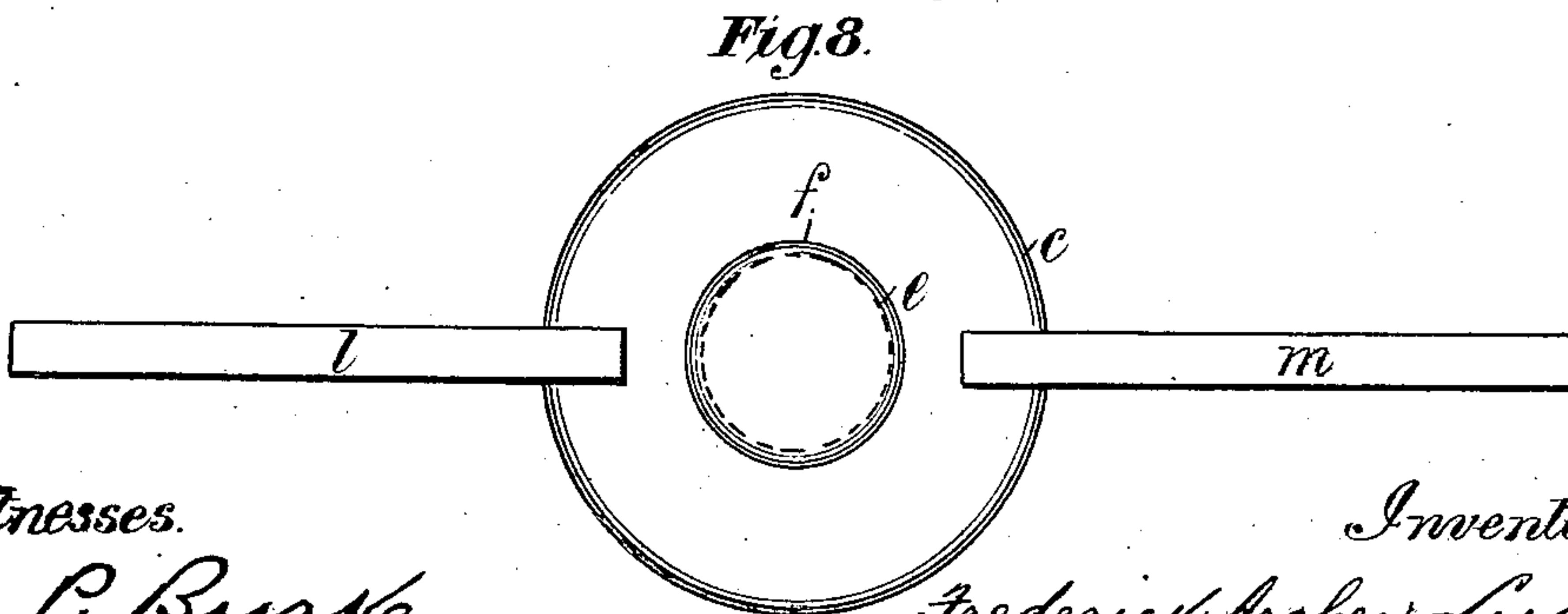
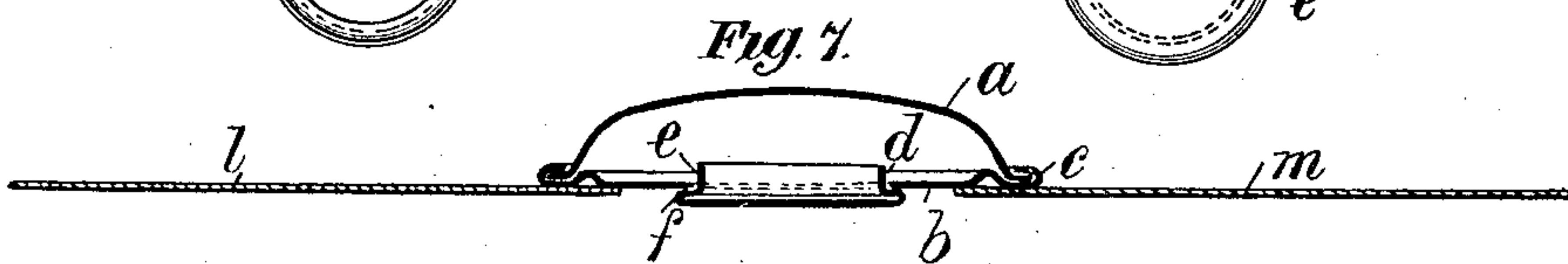
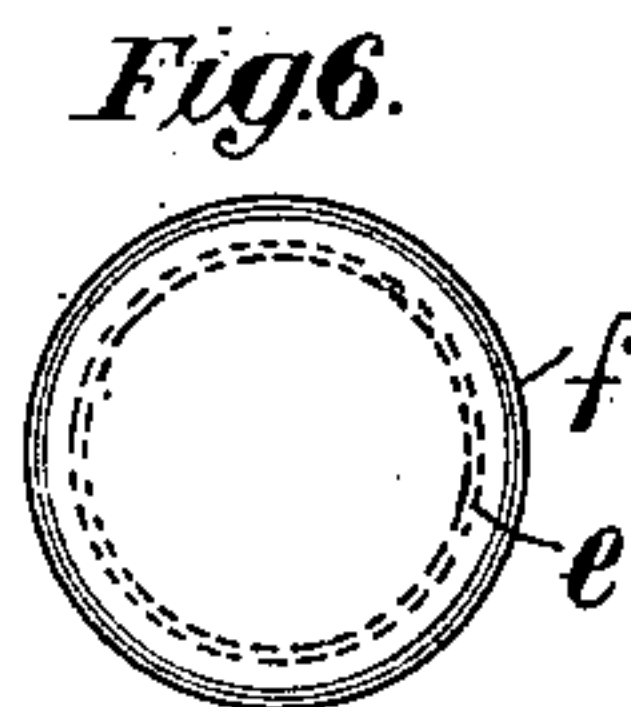
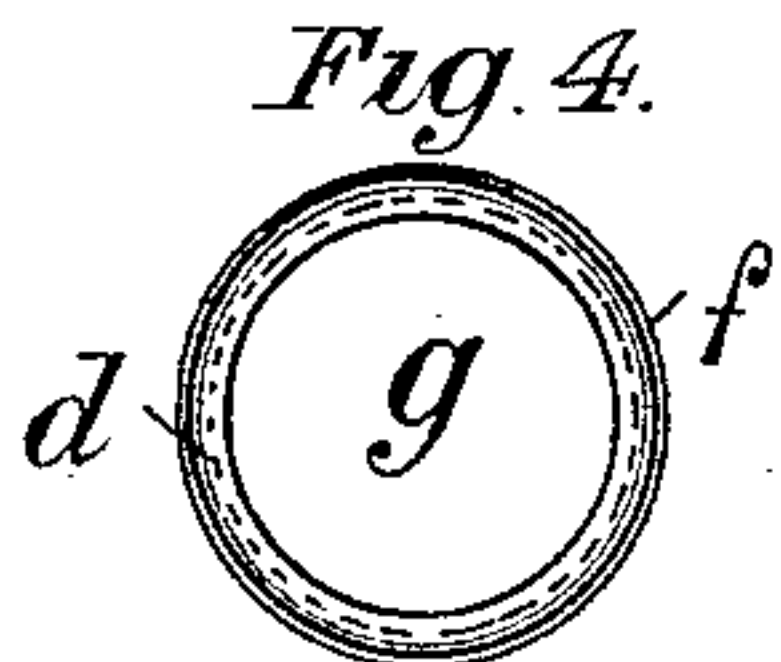
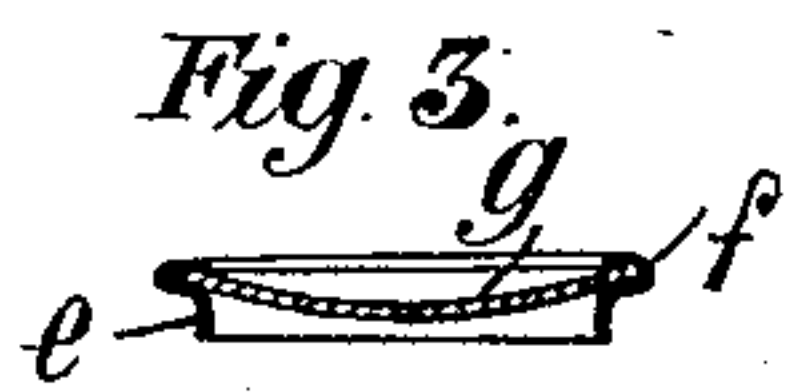
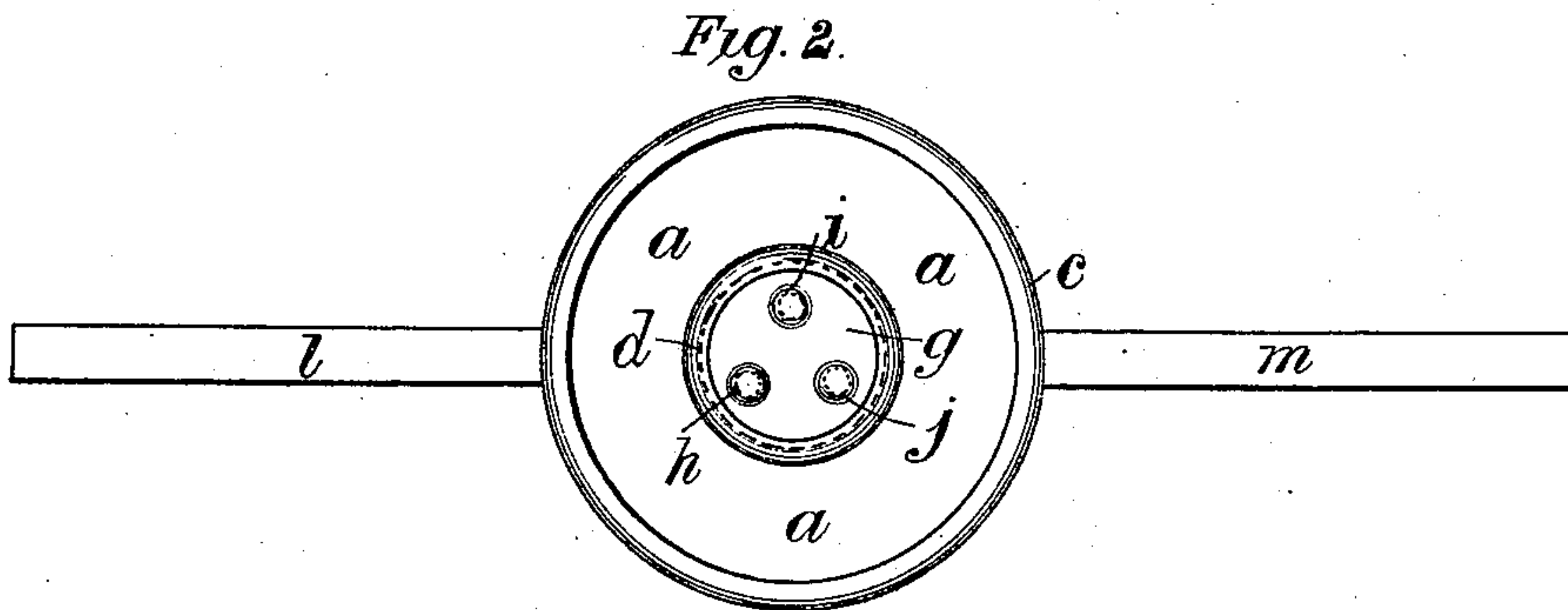
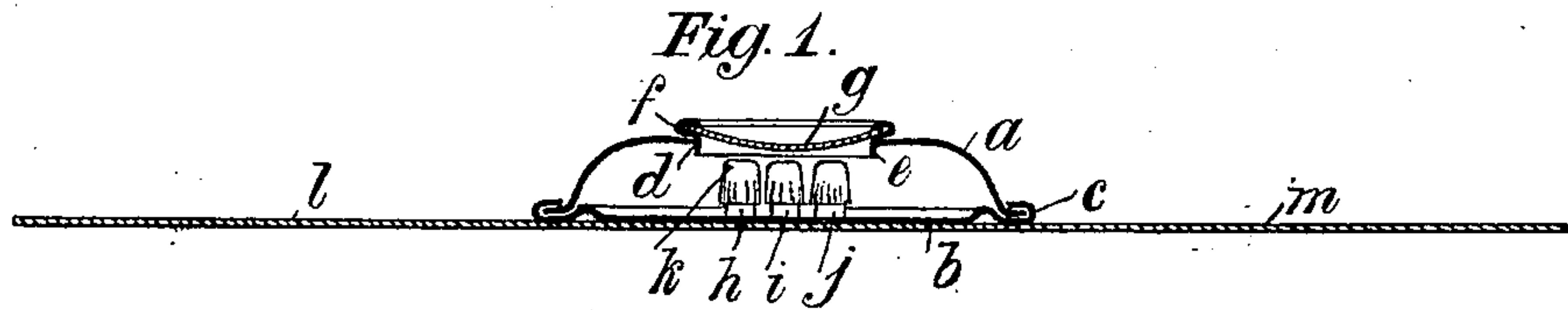
No. 868,201.

PATENTED OCT. 15, 1907.

F. A. LUDLOW.

CASE OF DETONATING FOG SIGNALS FOR RAILWAYS.

APPLICATION FILED MAR. 27, 1907.



Witnesses.

W. P. Burke
W. P. Burke

Inventor.

Frederick Archer Ludlow
Frederick Archer Ludlow
ATTY.

UNITED STATES PATENT OFFICE.

FREDERICK ARCHER LUDLOW, OF BIRMINGHAM, ENGLAND.

CASE OF DETONATING FOG-SIGNALS FOR RAILWAYS.

No. 868,201.

Specification of Letters Patent.

Patented Oct. 15, 1907.

Application filed March 27, 1907. Serial No. 364,931.

To all whom it may concern:

Be it known that I, FREDERICK ARCHER LUDLOW, a subject of His Majesty the King of Great Britain and Ireland, residing at Birmingham, England, fog-signal manufacturer, have invented new and useful Improvements in the Cases of Detonating Fog-Signals for Railways, of which the following is a specification.

This invention has reference to the cases of detonating fog signals sometimes called torpedoes for railways and consists of the improvements herein described to enable the manufacture of the cases to be finished and the cases shipped empty, that is without the gunpowder or other explosive material, which owing to my peculiar construction of the cases can be inserted therein at their destination thus preventing any possibility of the fog signals exploding in transit. My invention also enables the contents of the fog signal cases when closed to be clearly seen without opening the case.

According to this invention the detonating case, which is of the usual flattened circular form, is made with an opening in the top or in the bottom of considerably smaller diameter than the outside of the case and this opening is fitted with a removable lid or cover adapted to fit tightly in the opening and made with an outwardly projecting flange which joints on to the top or on to the bottom of the case, so that by the detonating case being made with this removable cover these parts of the case can be finished and packed and shipped separately from the explosive substance which at the destination can be inserted in the case and there retained by merely pushing the cover into position to close the opening in the case. The lid or cover is by preference, although not necessarily, made transparent so that without opening the case it is possible to ascertain whether or not the interior of the fog signal is complete in all its parts and in perfect condition so as to be exploded by the engine or train passing over it, as it sometimes happens that the maker has accidentally omitted to place caps on the anvils (for those fog signals which are filled with gunpowder) or has omitted the gunpowder or other explosive material, or from some defect in the detonator case the gunpowder or other explosive material contained therein has got wet or deteriorated in some way so that it will not explode.

My invention is illustrated by the accompanying drawings on which

Figure 1 is a sectional side elevation of a detonating railway fog signal constructed in accordance with this invention but the gunpowder or other explosive substance is omitted therefrom; Fig. 2 is a plan of the same; Fig. 3 is a sectional side elevation and Fig. 4 is a plan of the lid part of the said fog signal; Fig. 5 is a sectional elevation and Fig. 6 is a plan of a modified form of the said lid; Fig. 7 is a sectional side elevation

of a modified form of a detonating railway fog signal constructed in accordance with this invention but with the explosive material omitted and Fig. 8 is an inverted plan of the same.

The same reference letters indicate the same or corresponding parts in all the figures.

Referring first more particularly to the arrangement shown by Figs. 1 to 6 both inclusive *a* is the stamped sheet metal top part of the detonator case which is made of the usual flattened dome shape and *b* is the usual bottom plate of the case the periphery *c* of which is closed on to and around the periphery of the top part *a*. In the top part *a* and by preference in the center of the same I provide an opening *d* which is by preference of circular form and of considerably smaller diameter than the case and this is fitted with and closed by a removable cover which is made with a cylindrical part *e* adapted to fit tightly in the hole *d* and also with an outwardly projecting flange *f* which bears upon the top of the dome shape part *a*, and thus properly closing the hole *d*. The cover can readily be removed by first inserting the thumb nail or a knife or other instrument under the flange *f* and then the gunpowder or other explosive substance can be placed in the interior of the case through the hole *d* which can then be closed by the cover. When the cover is formed of transparent substance so as to show the interior of the detonating fog signal as aforesaid the transparent substance which I prefer to use is a disk *g* of celluloid which is by preference dished as shown so as not to be scratched or pressed by contact with the next detonator case when several of them are packed together for storage or transit. This celluloid disk *g* is made of somewhat larger diameter than the hole *d* and is mounted in a raised ring like mount or bezel as shown in Figs. 1, 2, 3 and 4 this bezel being formed with the cylindrical part *e* which fits in the hole *d* and also with a flange *f* the rim of which is closed around and upon the periphery of the celluloid disk *g* thereby effectually securing the same to the bezel. Instead of the removable cover for closing the hole *d* being made transparent as aforesaid, the said cover may, as shown in Figs. 5 and 6, be made solid and opaque but provided with the cylindrical part *e* to fit in the hole *d* as aforesaid, and also with the outwardly projecting flange *f* to bear upon the top of the dome part *a*. In Figs. 1 and 2 I have shown the usual three anvils *h*, *i* and *j* fixed on the base *b* and each provided with the usual cap *k* which is the ordinary construction when the case is intended to be filled with gunpowder but it will be understood that where the case is filled with an explosive substance which will explode when struck with a sufficient blow then the anvils and caps are not required as is well understood. *l*, *m*, are the two sheet lead clips which clip the detonator case to the rail. The arrangement of my invention shown by Figs. 1 and

2 with the hole *d* in the top of the case is what I prefer, but if desired the hole *d* may, as in Figs, 7 and 8, be made in the bottom *b* of the case and be similarly closed by a removable cover as above described with reference 5 to Figs. 1 and 2 where the hole *d* is made in the top of the case.

What I claim as my invention and desire to secure by Letters Patent is:—

- 10 1. A sheet metal detonator case for railway fog signals having a filling hole and a transparent cover for said hole, substantially as described.
2. A sheet metal detonator case for railway fog signals having a filling hole and a celluloid cover for said hole.
- 15 3. The combination of a sheet metal detonating railway fog signal case made with a filling hole of smaller diameter and a removable cover fitting in said hole and provided

with a flange which bears upon said case, substantially as set forth.

4. In a detonating railway fog signal case the combination of a flattened dome shape top part made with a filling 20 hole, a bottom disk like part fixed thereto by the periphery of the one being closed over the periphery of the other, and a removable cover fitted in said filling hole said cover being formed of a disk of transparent substance mounted in a bezel which fits in the hole in the case and is provided with a flange to fit on to said case, substantially as 25 set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FREDERICK ARCHER LUDLOW.

Witnesses:

CHARLES BOSWORTH KETLEY,
THOMAS JOHN ROWE.