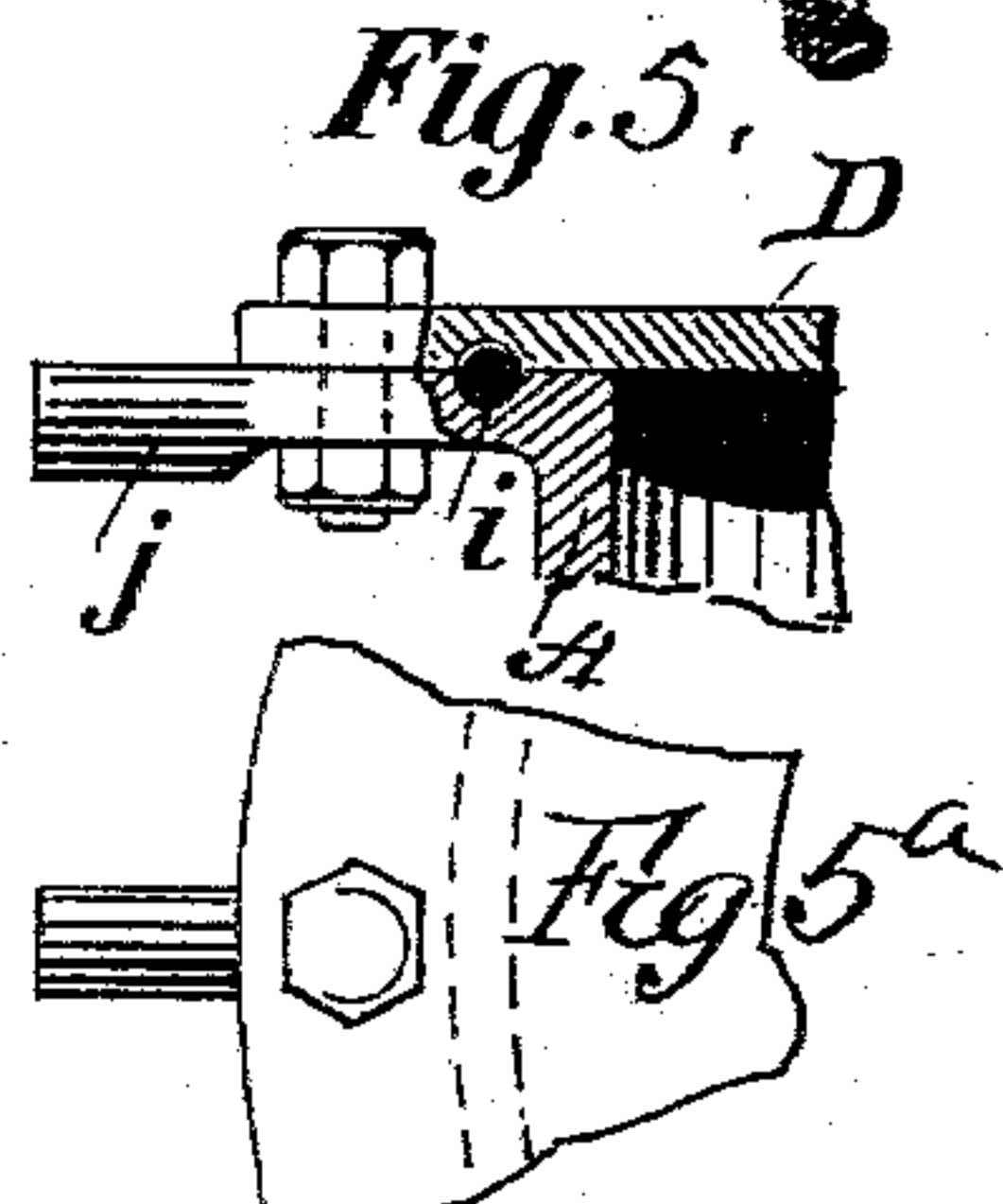
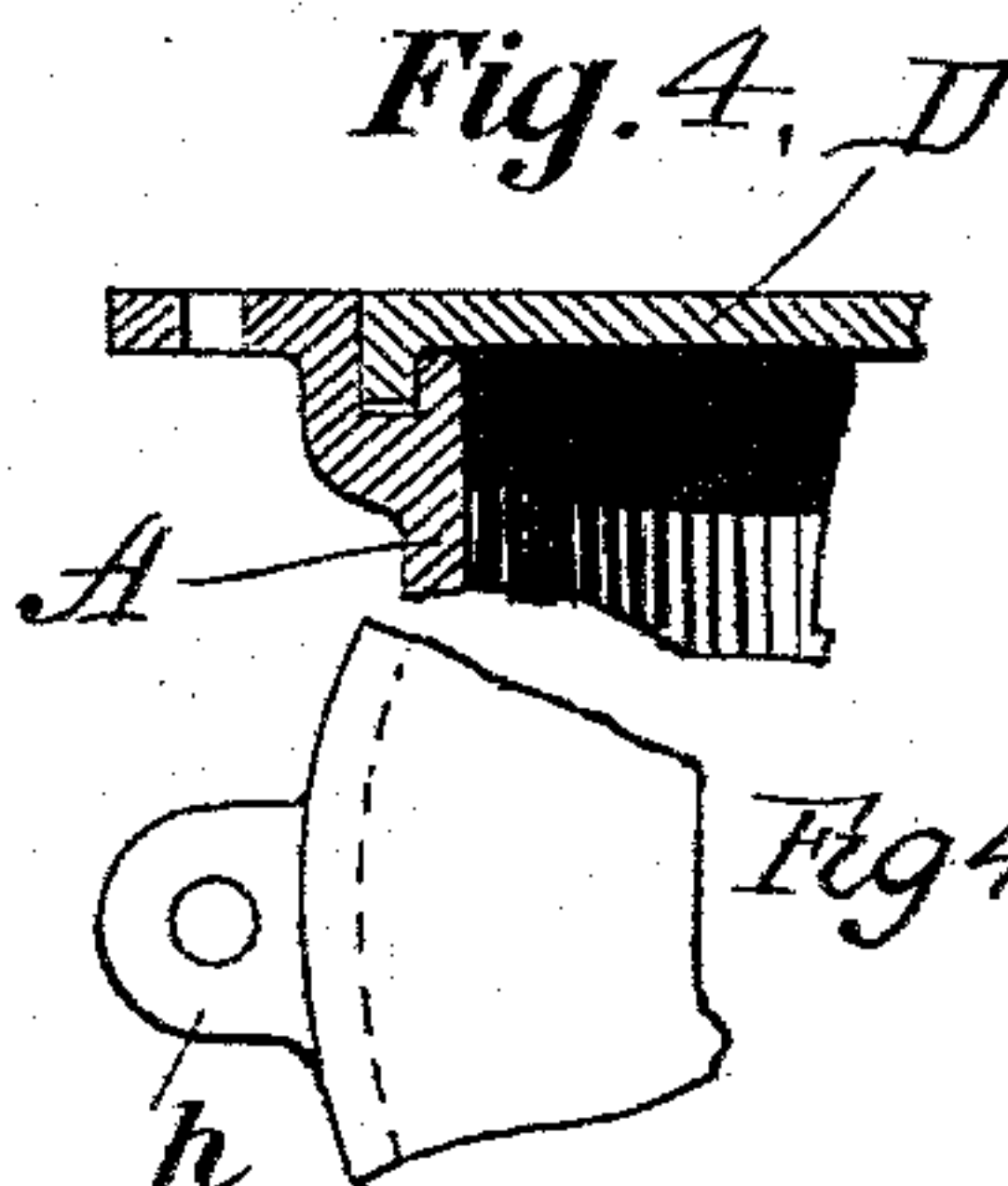
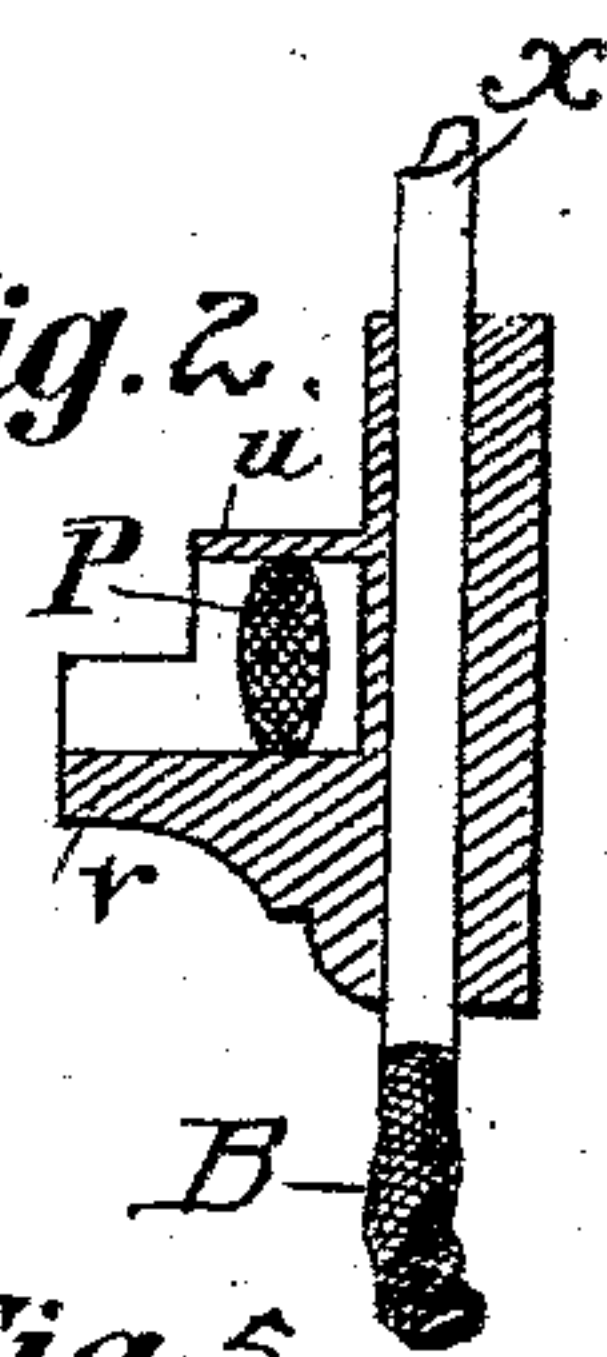
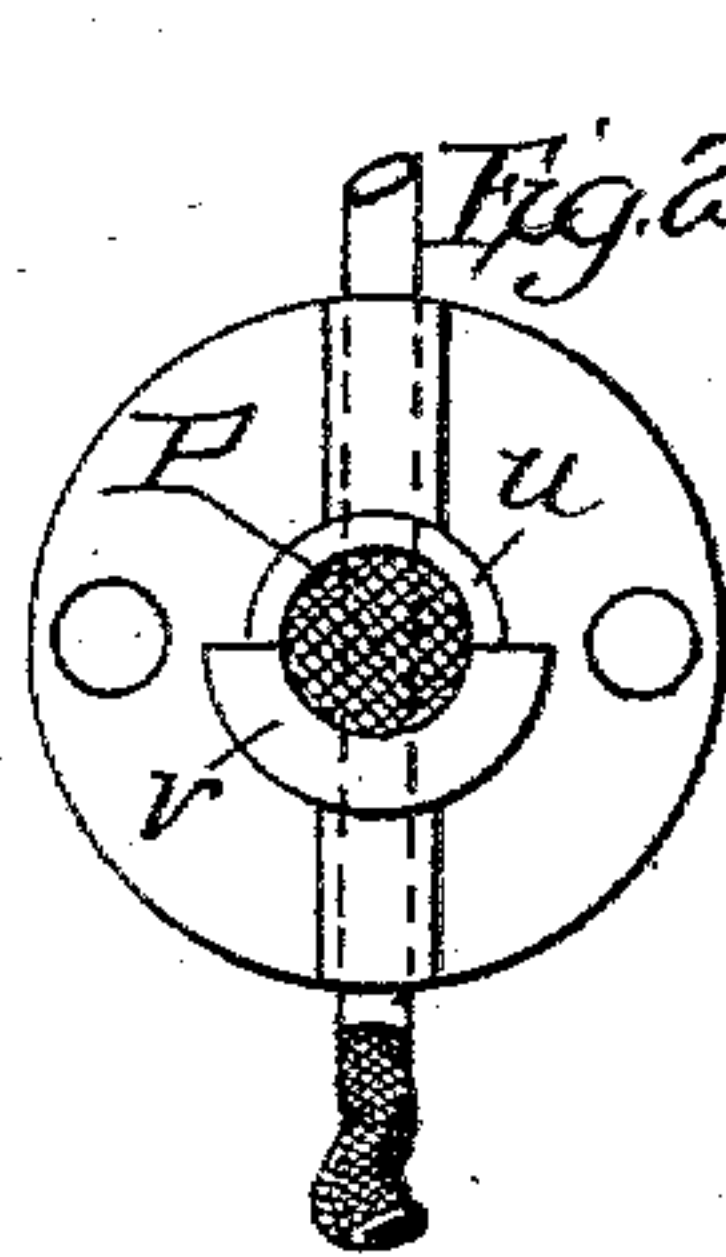
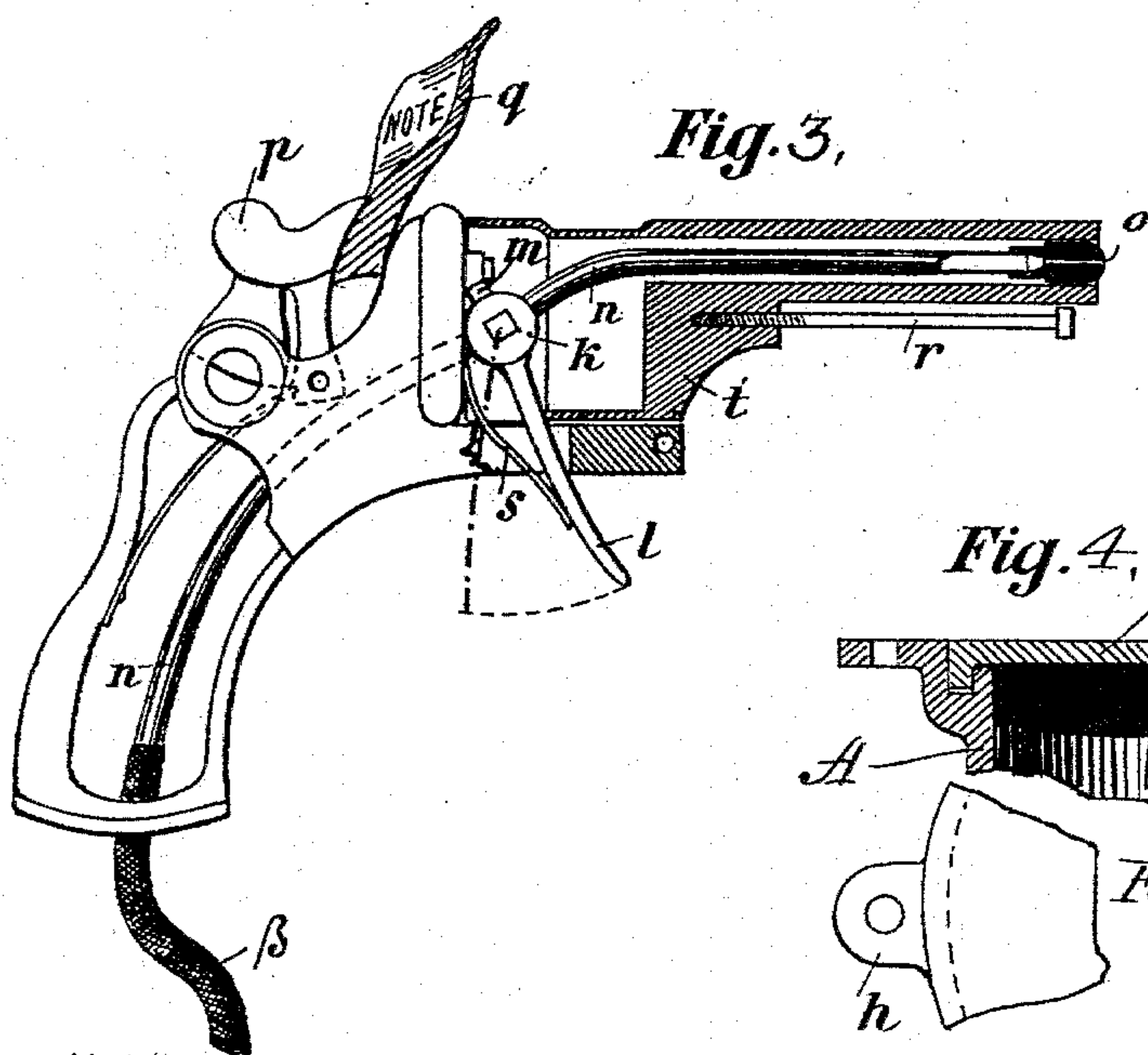
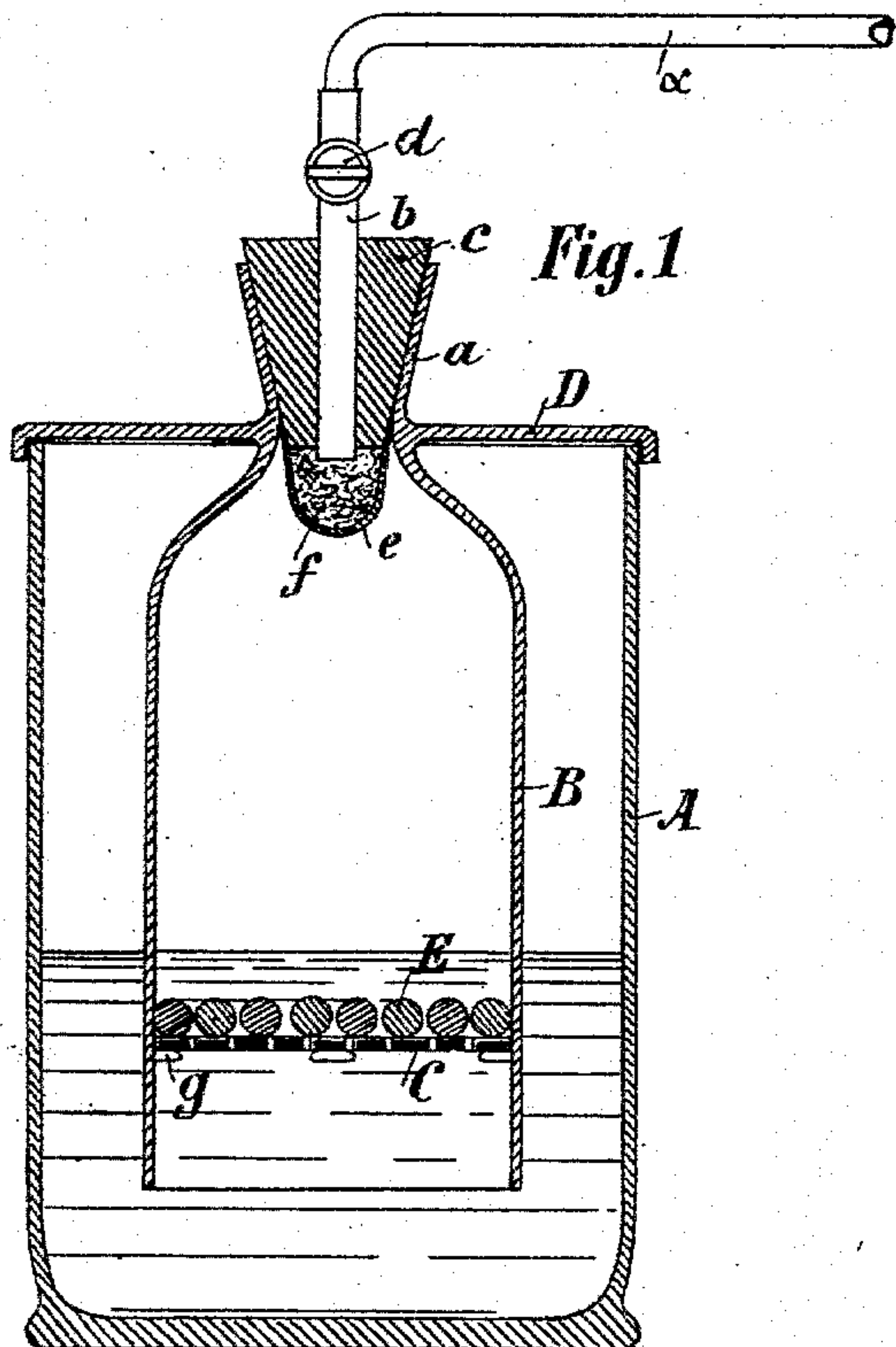


(No Model.)

A. MISTARO.  
FIRE GENERATOR.

No. 515,782.

Patented Mar. 6, 1894.



Witnesses:  
E. H. Sturtevant.  
W. H. Russell.

Inventor:  
Antonio Mistaro,  
by *Reinhardt & Co.*  
Attorneys



# UNITED STATES PATENT OFFICE.

ANTONIO MISTARO, OF VIENNA, AUSTRIA-HUNGARY.

## FIRE-GENERATOR.

SPECIFICATION forming part of Letters Patent No. 515,782, dated March 6, 1894.

Application filed December 13, 1892. Serial No. 455,006. (No model.)

*To all whom it may concern:*

Be it known that I, ANTONIO MISTARO, manufacturer, a subject of the Emperor of Austria-Hungary, residing at Schlosselgasse, No. 19, Vienna, Austria-Hungary, have invented a certain new and useful Improved Fire-Generator, of which the following is a specification.

The objects of my invention are to produce a new construction of fire-generator or tinder box which, based on chemical effects, will at once be convenient and answer every use that can be required of such an article.

Referring to the drawings which form a part of this specification Figure 1 is a sectional elevation of the gas generator, comprising vessel, bell, plug, and outlet pipe. Fig. 2 shows the tinder box in detail said figure being a sectional view. Fig. 2<sup>a</sup> is an end view of the same. Fig. 3 is a sectional elevation of a revolver in which the apparatus is fitted. Fig. 4, is a sectional detail view of part of the vessel having a lug by which it may be supported. Fig. 4<sup>a</sup> is a plan view of the same. Fig. 5, is a detail sectional view of a modification showing a peg for supporting the vessel. Fig. 5<sup>a</sup> is a plan view of the same.

The gas generator shown in Fig. 1 consists of the vessel A, the bell B, the bottom C for carrying the metal bodies E, and the cover D. The bell and cover are made in one piece, the neck of said bell being made to project above the cover in the form of a funnel *a* in which the pipe *b* for gas supply is fastened by means of the plug *c*. This plug must effect a hermetic closing of the opening, and should therefore be made out of cork saturated with paraffine or similar substance, or out of vulcanized india rubber.

In order, on the one hand, to prevent metal atoms being brought along with the gas, and thus having an unfavorable influence on the operation of the platinum sponge or tinder holder, and to keep on the other hand the flame from beating back, down the pipe in the gas generator, a metallic sieve or gauze *e* is fitted on the plug *c*, in which cotton from which the grease has been removed is loosely placed, so covering up the orifice of the tube

*b*, that the metal atoms must deposit themselves in the cotton. Instead of cotton a piece of pumice stone turned in conical form and saturated with sulphuric acid could be fitted under the plug, so that it would answer the further purpose of drying the gas which would be compelled to pass through it.

At a suitable height in the inside of the bell, the metal bodies E are located on the bottom C; for this purpose projections *g*, are fitted in the bell side, on which the bottom C made out of perforated glass or lead plate, rests. The metal bodies E can be small staves or shavings, rivets, nails, or residue from zinc or the like.

The vessel, bell and cover are made either out of glass, porcelain, glazed clay, or enameled cast-iron, and are filled with diluted sulphuric acid.

When the vessel is to be fastened to any object, such as a writing desk, &c., it is provided with a projection *h* (Fig. 4) through which the screw passes. In order to use the gas-generator on board ship it is made out of enameled cast-iron, and the cover is calked with a wax taper *i* (Fig. 5) or anything similarly suitable, and screwed on to the rim of the vessel which is provided with a peg *j* in order to be fitted in suitable bearings if necessary.

The second part of the apparatus consists of the tinder box or fire-generator proper, of which the main feature is a loose metal tube which can be closed at any desired place by a cock or valve. The one end of this tube is connected with the gas-generator through the supply pipe which can be of thin lead pipe as *x* in Fig. 1 and which runs from the gas-generator to the point where it is desired to have the igniting place, when an india rubber pipe B (Fig. 3) is then fitted on said lead pipe as continuation of same, and connected with the aforesaid tube forming the fire-generator or tinder box proper. The other end of the tube being the burning place, is formed somewhat stronger, and provided with a capillary opening. The holder for the end of the igniting tube is shown in Fig. 3 as a miniature revolver, but it can of course just as well have other forms. The tube *n* is fitted in the han-



dle and barrel of the revolver, the gas cock *k* being opened by pulling the trigger *l* which, when released, is worked back into its original position by the spring *s*, closing the gas cock *k* at the same time. The movement of this gas cock *k* is limited by the projection *m* which catches against the cylinder back. The tube terminates at the mouth of the revolver in a sort of oval point provided with a capillary opening *o*. The cock *p* of the revolver is adapted for holding notice leaves, &c. The ramrod *r* is for regulating the insertion of the revolver barrel in the tinder holder, and for this purpose can be screwed more or less in the groove *t*.

The necessary platinum or iridium sponge *P* for igniting the gas is located in a metal casing *u* as is shown in Figs. 2 and 2<sup>a</sup>, and which is provided with a slot hole *v* limiting the insertion of the revolver barrel, so that same does not come in contact with the sponge. The arrangement is generally such, that the connection between the lead pipe *x* and the india rubber pipe *B* is made at the frame of the tinder holder as shown in Fig. 2, the holder thus serving as a support as well as a connection for the lead and flexible pipes *x* *B*. Such sponge or tinder holder is

fastened either where it is wished to have the igniting place, or on a movable frame, the connection of the lead and india rubber tubes being in the latter case not in the sponge or tinder holder itself, but at another place.

The gas generator can be fixed up in any place as for instance in the corner of a room, in a box, writing desk, or any other piece of furniture, the lead supply tube being arranged just as is customary with pneumatic ringing apparatus.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In combination with a generator, a portable igniter in connection with said generator, a tinder holder and an adjustable stop carried by the igniter and adapted to limit the movement of the igniter into the tinder holder, substantially as described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ANTONIO MISTARO.

Witnesses:

PETER DABOVICH,  
JOSEF ZEHETNER.