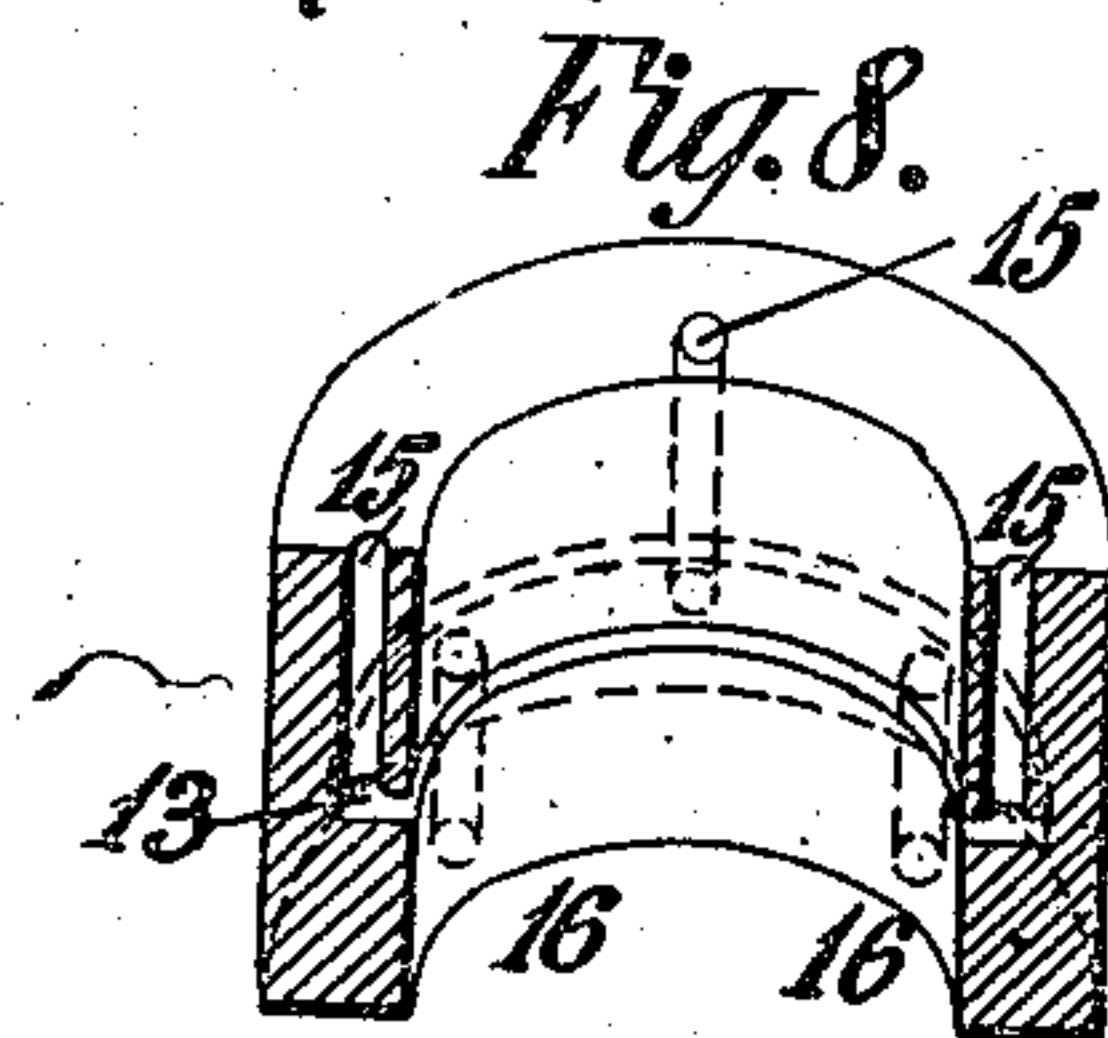
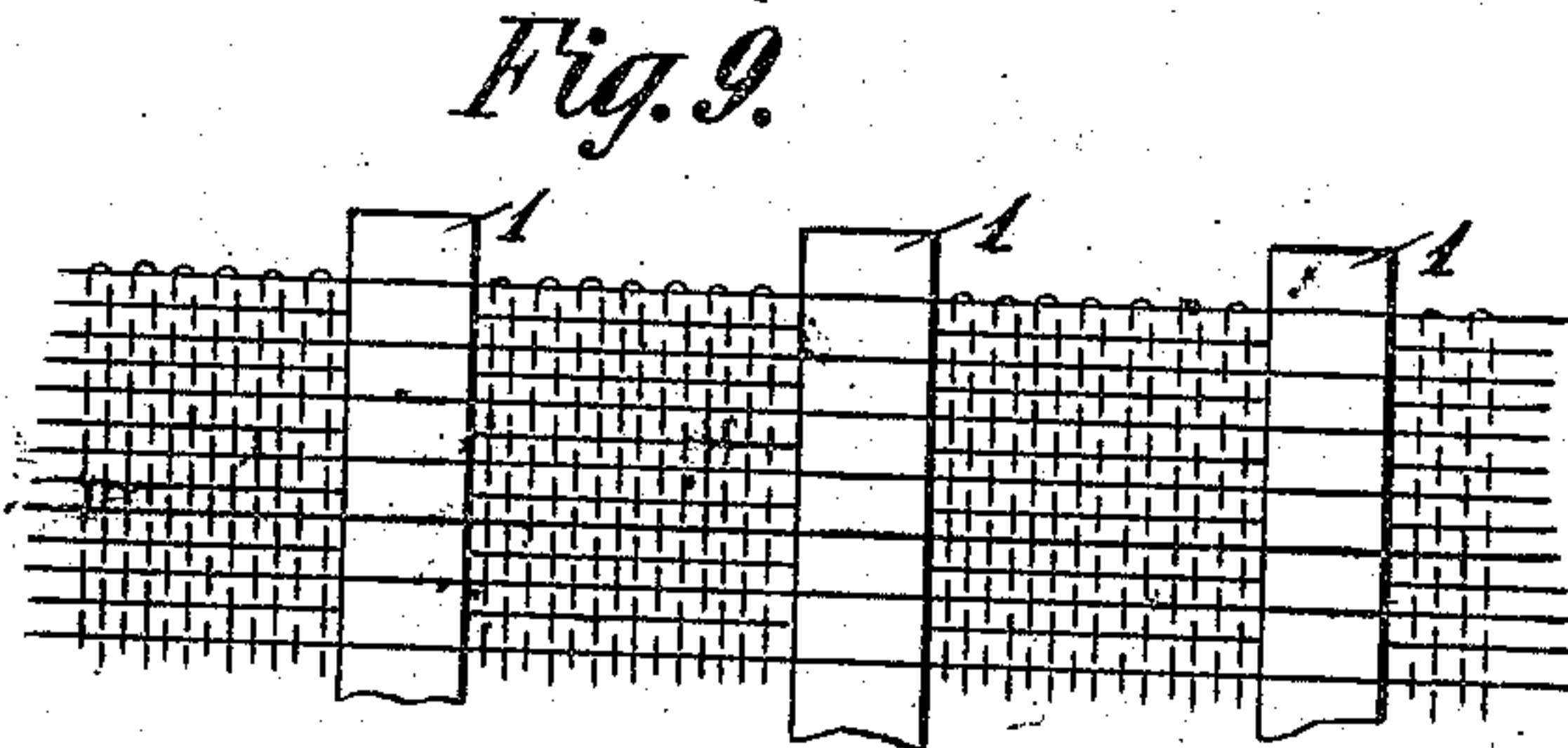
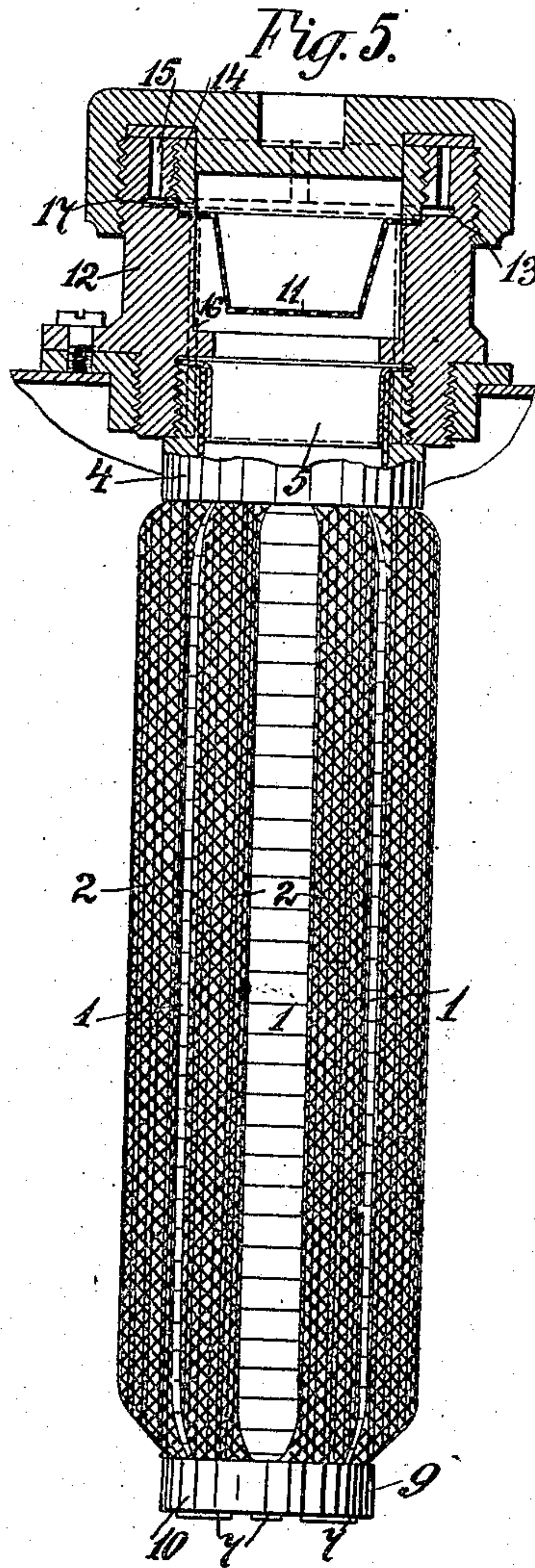
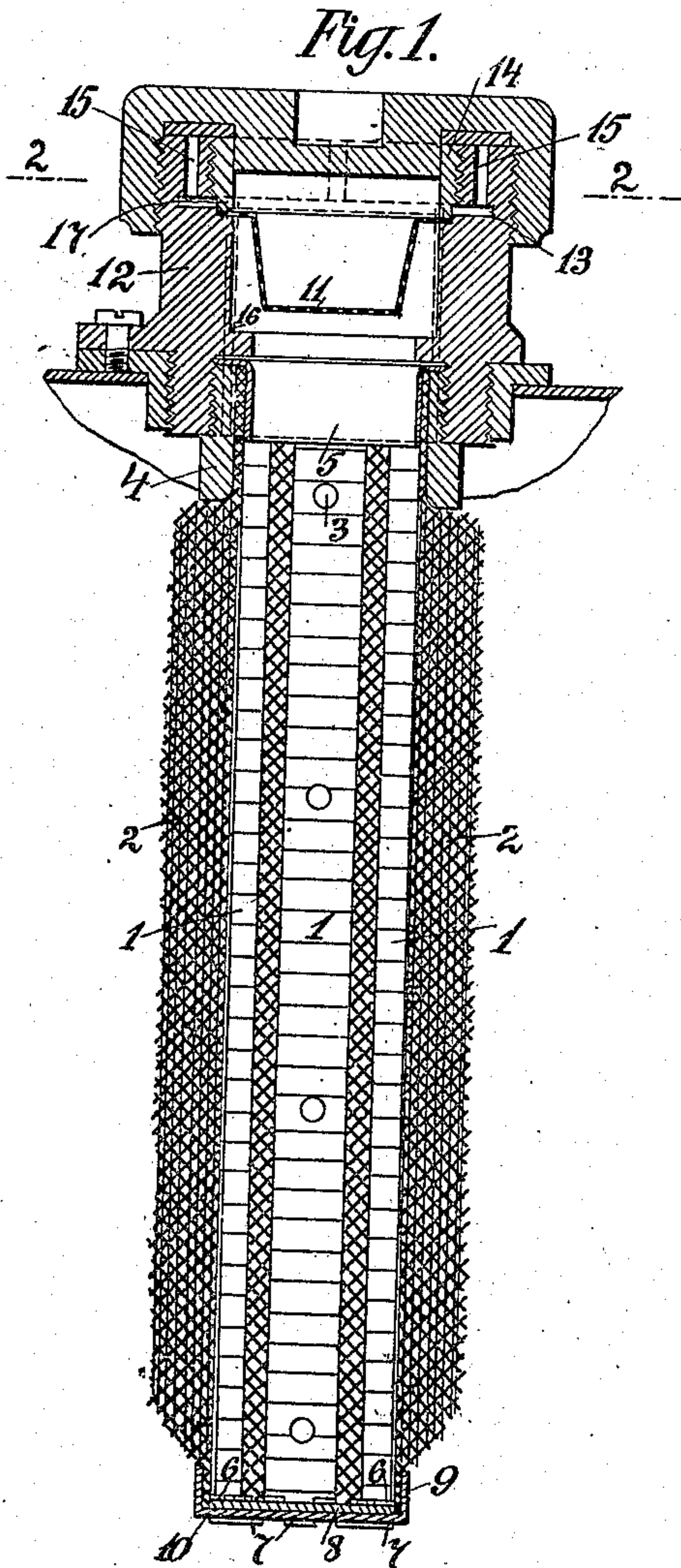


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SAFETY DEVICE FOR THE MOUTHS OF VESSELS CONTAINING VOLATILE COMBUSTIBLE LIQUIDS.
APPLICATION FILED JAN. 23, 1907.

899,911.

Patented Sept. 29, 1908.
2 SHEETS—SHEET 1.



Witnesses.

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Fig. 6.

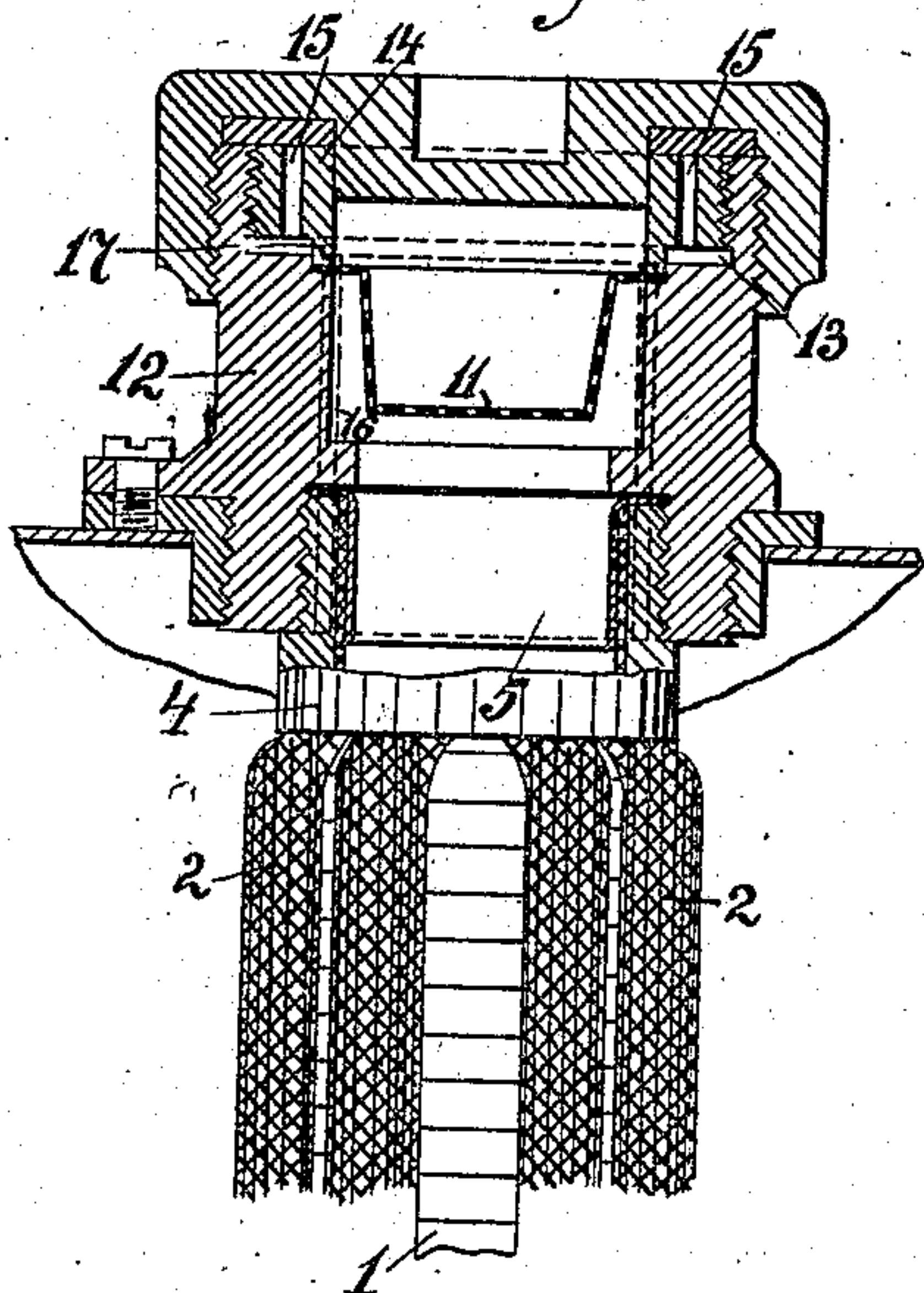


Fig. 2.

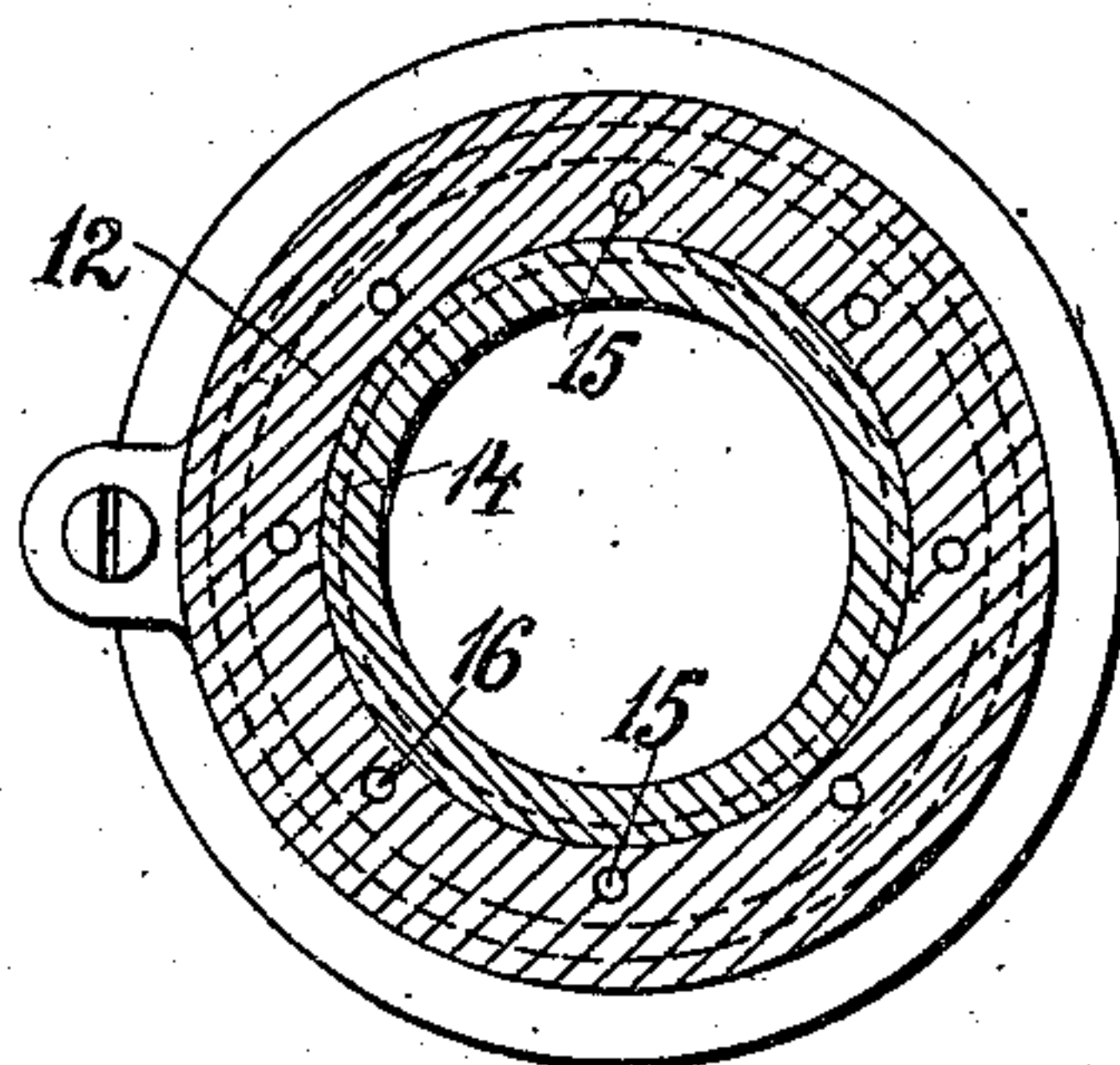


Fig. 3.

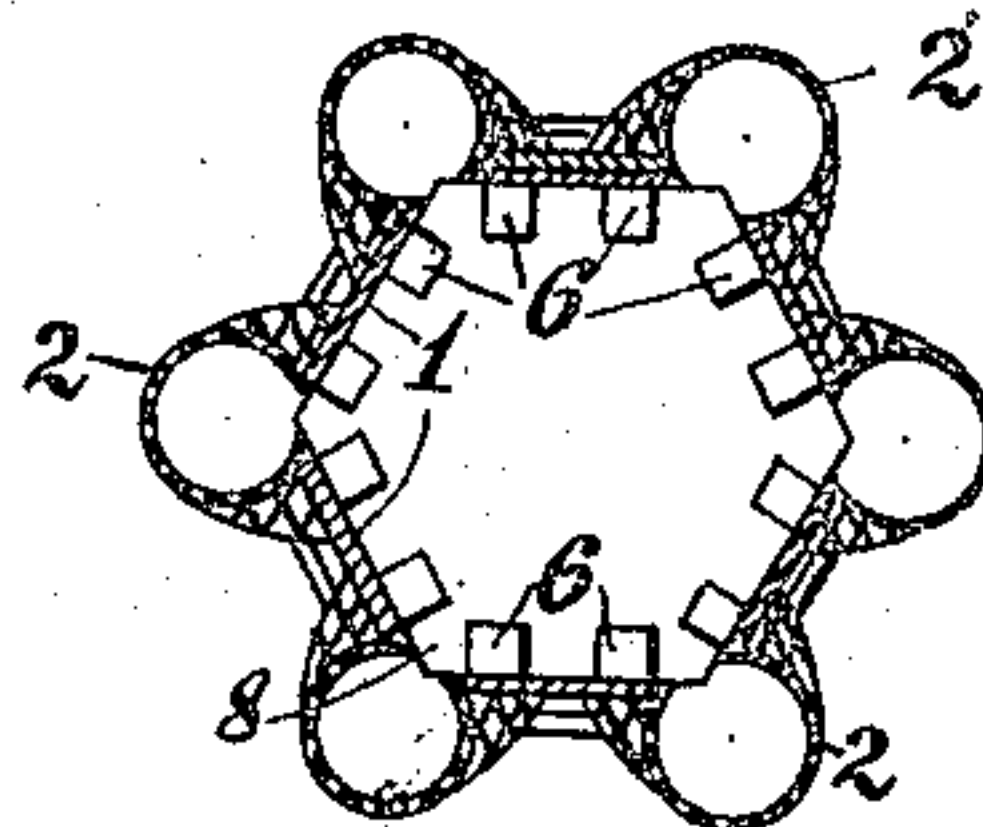


Fig. 10.

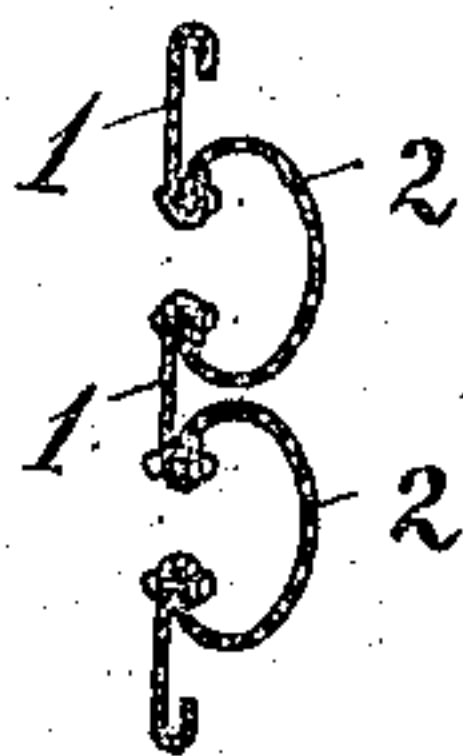


Fig. 7.

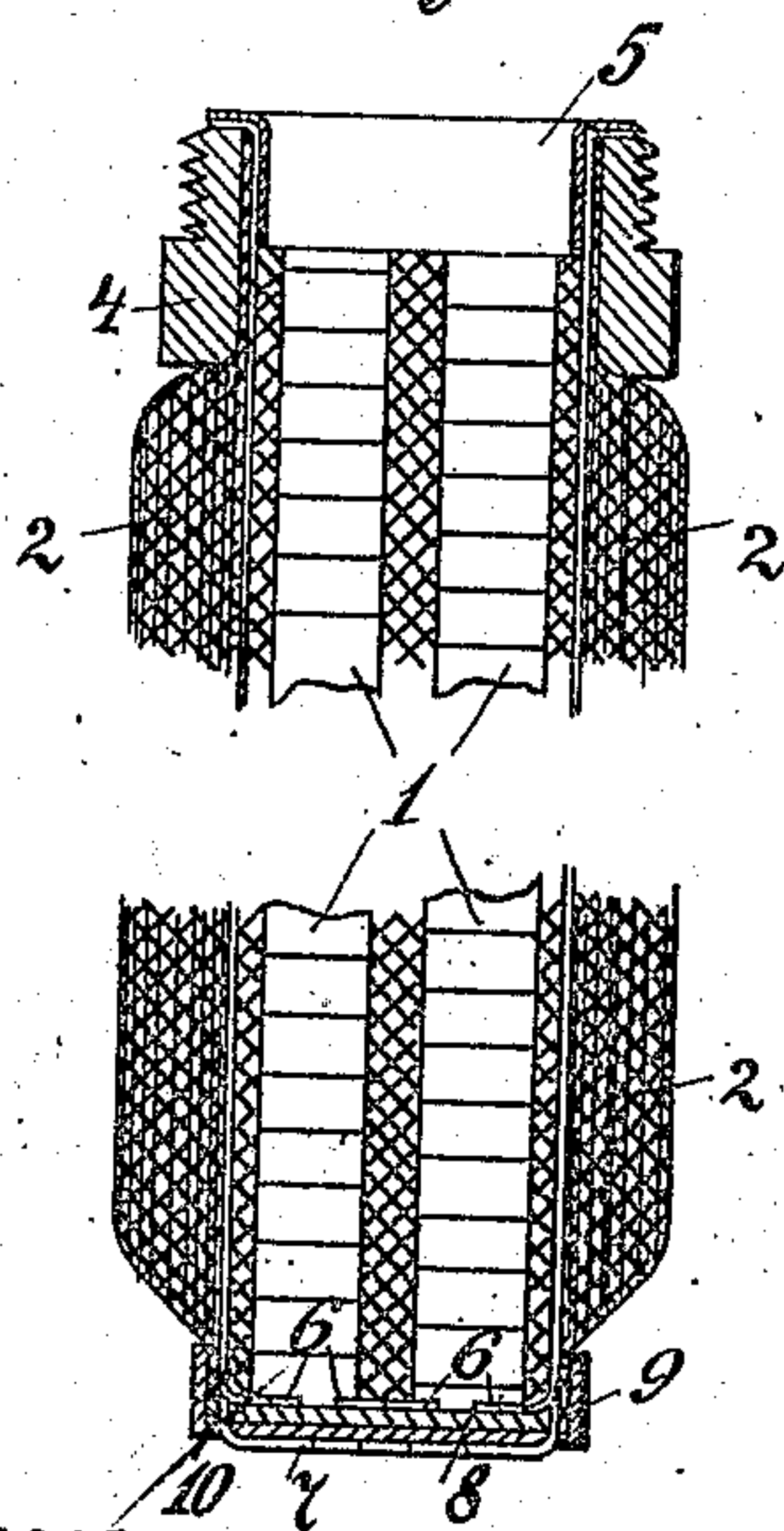
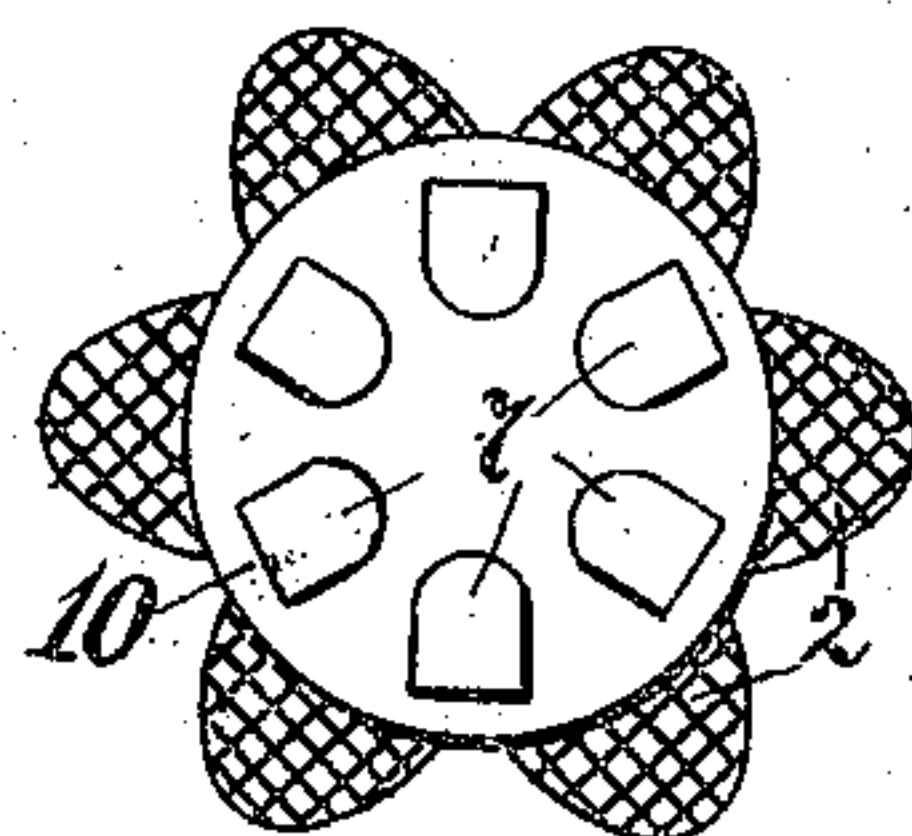


Fig. 4.



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UNITED STATES PATENT OFFICE.

LUDWIG SCHÖN, OF VIENNA, AUSTRIA-HUNGARY.

SAFETY DEVICE FOR THE MOUTHS OF VESSELS CONTAINING VOLATILE COMBUSTIBLE LIQUIDS.

No. 899,911.

Specification of Letters Patent.

Patented Sept. 29, 1908.

Application filed January 23, 1907. Serial No. 353,750.

To all whom it may concern:

Be it known that I, LUDWIG SCHÖN, a subject of the King of Hungary, residing at Vienna, in the Province of Lower Austria and Empire of Austria-Hungary, have invented new and useful Improvements in Safety Devices for the Mouths of Vessels Containing Volatile Combustible Liquids, of which the following is a specification.

The wire fabric cylinders, by which flames are prevented from flashing into vessels containing volatile combustible liquids, are usually protected against being damaged by introduced funnels and the like, by means of an inner lining made of perforate sheet metal. In order to keep the requisite stiffness, this sheet metal lining can only have a limited number of perforations, and in order to effectually protect the wire fabric the perforations must be of small diameter. In this manner the free passage area for the liquid is too small so that the filling of the vessel becomes a tedious operation. In order to do away with this drawback, the safety device is, according to my invention, made in the shape of a sheet metal cylinder or prism having longitudinal slots, closed at the outside by hollow ribs made of wire fabric. The best method of making these hollow sheet metal bodies provided with longitudinal slots and hollow wire fabric ribs, by which these slots are closed, consists in shaping them of a wire fabric, the weft of which is at equidistant points replaced by sheet metal strips.

For facilitating the escaping of the air while the vessel is being filled—without impairing the safety provided by the device referred to—the wall of the bushing which is adapted to be secured in an opening in the vessel has a narrow annular passage formed in it, and from different points of this passage, narrow bores alternately lead to the inner hollow space of the vessel and to the open air.

In order that my invention may be better understood, I will describe it with reference to the accompanying drawings, in which

Figure 1 is a sectional elevation of the safety device constructed according to my invention. Fig. 2 is a cross-section on the line 2—2 in Fig. 1. Fig. 3 is a cross section of the chamber arranged below the bushing and having its sides formed of a wire-gauze, the weft of which is, at intervals, replaced

by sheet-metal strips. Fig. 4 is a bottom view of this chamber or hollow body. Fig. 5 is a view similar to Fig. 1, but showing the hollow body in side elevation and another arrangement of the annular passage in the bushing. Fig. 6 is a similar view showing another construction of the said annular passage. Fig. 7 is a sectional elevation of the hollow sheet-metal and wire-gauze body, at 90° to the view Fig. 1, and showing the construction of the upper and lower ends. Fig. 8 is a perspective diagram of one half of the bushing, showing the positions of the air passages. Fig. 9 shows a piece of wire fabric, the weft of which is, in certain equidistant places, replaced by sheet metal strips. Fig. 10 is a cross section of a material, of which the safety device may be made, and which consists of strips of wire gauze and strips of sheet-metal riveted together.

For making the sheet metal cylinder or prism having longitudinal slots closed by hollow wire gauze ribs, I use by preference the wire gauze represented by Fig. 9, in which the weft is, at equidistant points, replaced by sheet metal strips 1. Of this wire-gauze, a length comprising four or more sheet metal strips 1 is so rolled up that the two marginal sheet metal strips 1 double together, whereupon they are connected by means of rivets 3. The lower end of each sheet metal strip 1 is divided into three flaps, of which the two outer ones 6 are bent inwards at right angles, in order to have placed below them the polygonal bottom plate 8, after having previously curved the wire-gauze portions 2 into the requisite shape of hollow ribs and flattened their lower ends. Finally a sheet metal cap 10, having an upturned flange 9 and provided with slots for the passage of the flaps 7 is stuck upon the lower end of the hollow body, and the said flaps are folded inward against the bottom of the cap. Thus it will be seen that the bottom plate 8 is held between the flaps 6 and 7. At the top of the prismatic hollow sheet metal body thus formed, the sheet metal strips 1 and the flattened ends of the hollow wire gauze ribs 2 are inserted into a ferrule 4 adapted to be screwed into the bushing 12 of the vessel. The ends of the sheet metal strips 1 having been pressed into the seats provided for them in the upper end face of the ferrule 4, as

shown in Fig. 7, a short tube 5 is inserted into the ferrule and the upper end of this tube has an out-turned flange which is clamped between a shoulder on the bushing 5 and the end of the ferrule 4. It is obvious that the connection of the neck of the vessel with the hollow sheet metal body may be performed in any other way, instead of screwing these two parts together.

10 For facilitating the escapement of the air displaced by the liquid, while the vessel is being filled, a narrow groove 13 is cut in the inside of the bushing 12, as clearly visible in Figs. 1 and 8, and by screwing in the clamping ring 14 for the upper wire gauze diaphragm 11, an annular passage is formed of the said groove. Into this annular passage open several narrow bores 15 passing through the side or wall of the bushing 12 from above, and other narrow bores 16 pass downwardly from said annular passage. As will be seen from Fig. 5 part of said annular passage 13 is formed by an annular projection 17 on the lower face of the clamping ring 14. Fig. 6 shows the clamping ring 14 having thicker sides which form an annular passage by means of a shoulder 17 and being pierced by the bores 15.

30 Besides the main purpose of considerably increasing the free passage area for the liquid poured into the vessel, the described construction of safety attachment serves the

purposes of more than doubling—with a given diameter of the attachment—the cooling surfaces upon which depends the effect 35 of Davy nets, of avoiding any soldering in the structure, and of preventing the clogging of the device by impurities, as often takes place in the known safety attachments comprising a wire gauze pipe and sheet metal 40 lining.

What I claim and desire to secure by Letters Patent of the United States is:

In a safety device for vessels to contain inflammable liquids, the combination of a bushing adapted to be secured in an opening in the vessel, and a tubular member attached to the lower end of said bushing, said tubular member consisting of a piece of wire gauze fabric in which the web in part consists of sheet metal strips, said piece of fabric being so folded as to form a tubular part with walls composed of the metal strips and folds of wire-gauze between such metal strips, there being narrow slots between such metal 55 strips forming passage-ways from said tubular part into said folds.

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

LUDWIG SCHÖN

Witnesses:

VICTOR HIRSCH,
ALFREDO S. HORTON.