

No. 607,842.

Patented July 26, 1898.

F. FLEISCHMANN.

STOPPERING DEVICE FOR BOTTLES, JARS, &c.

(Application filed Nov. 8, 1897.)

(No Model.)

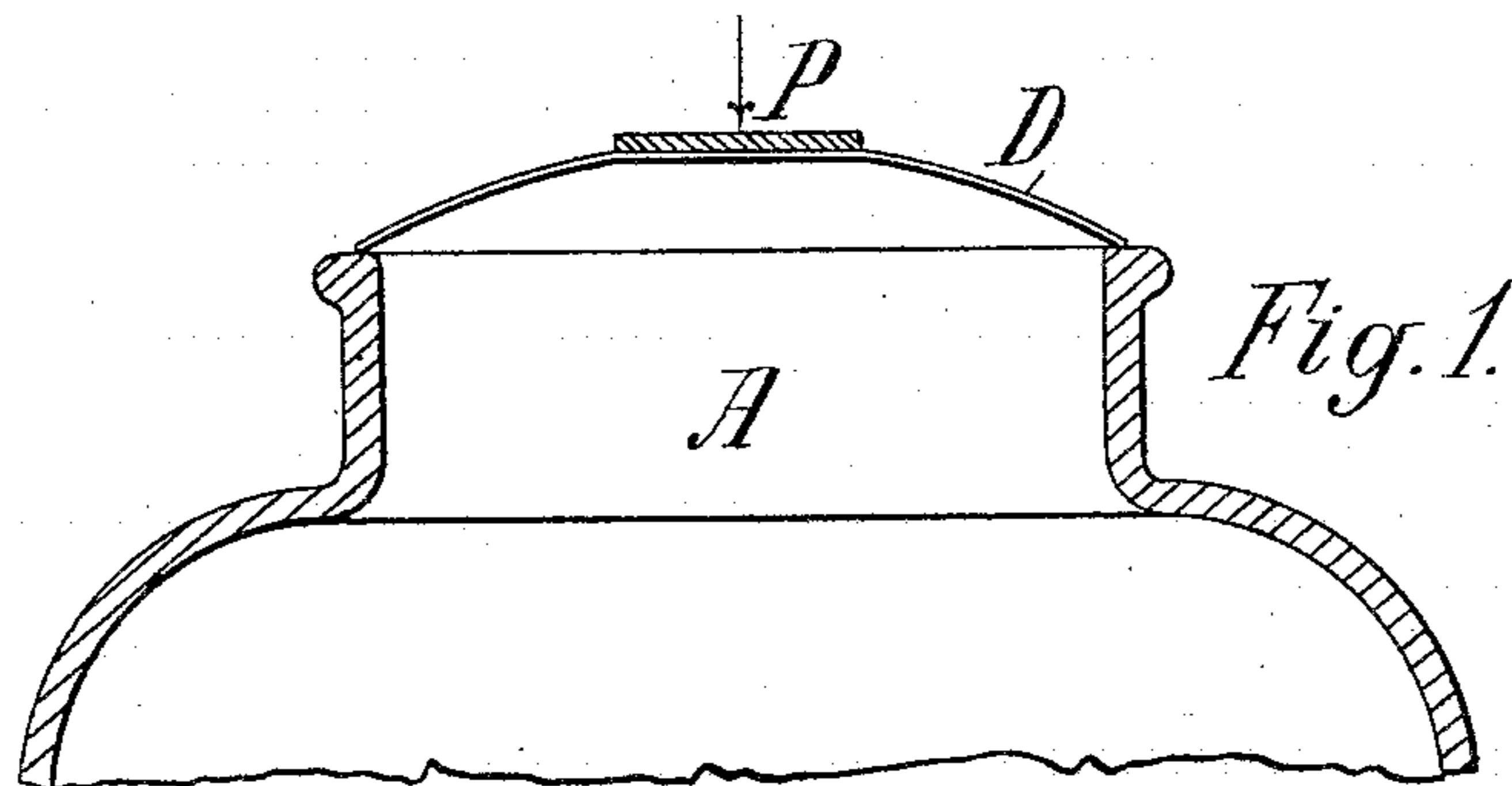


Fig. 1.

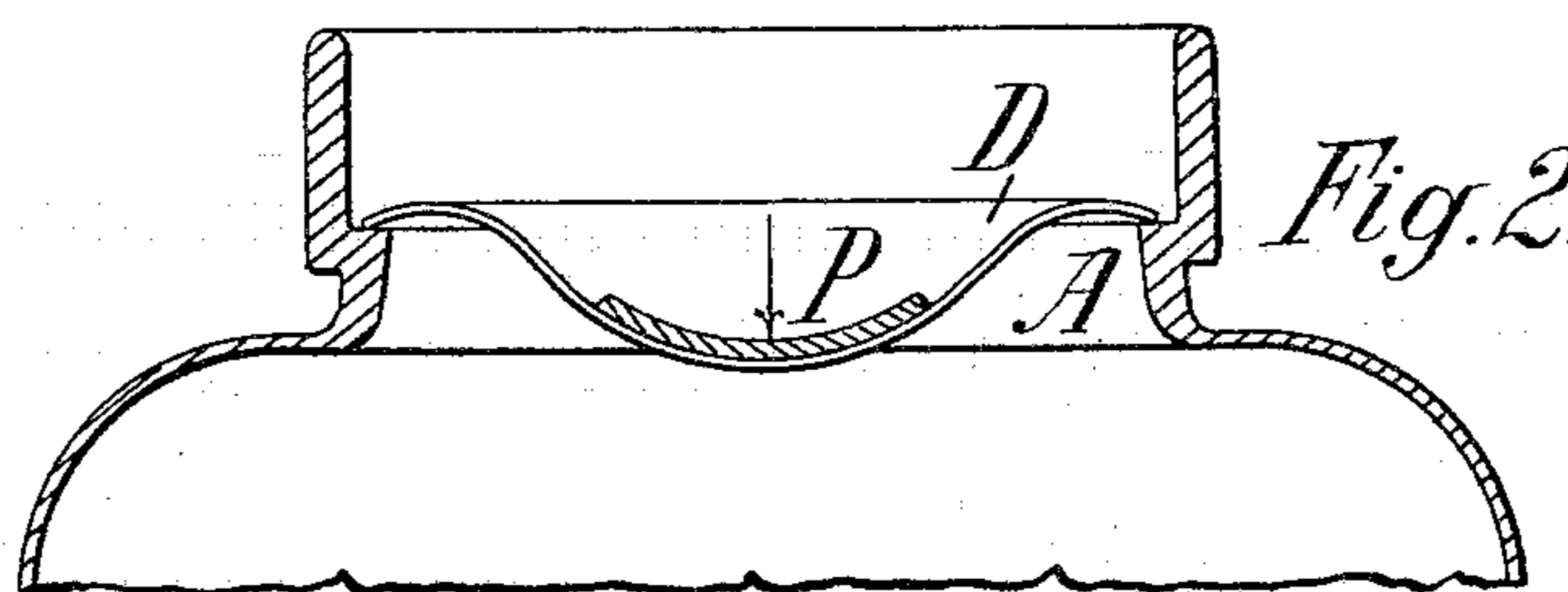


Fig. 2.

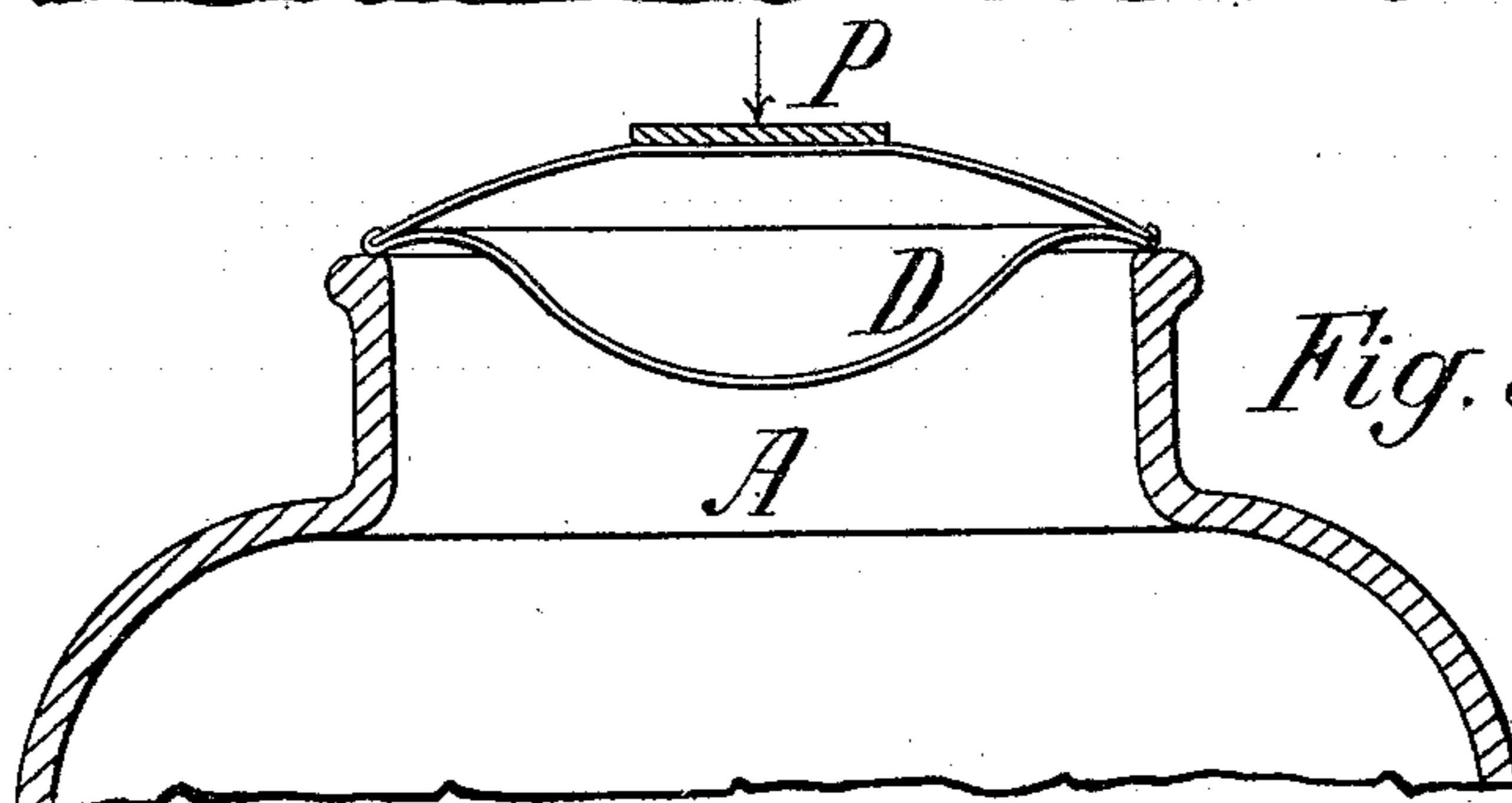


Fig. 3.

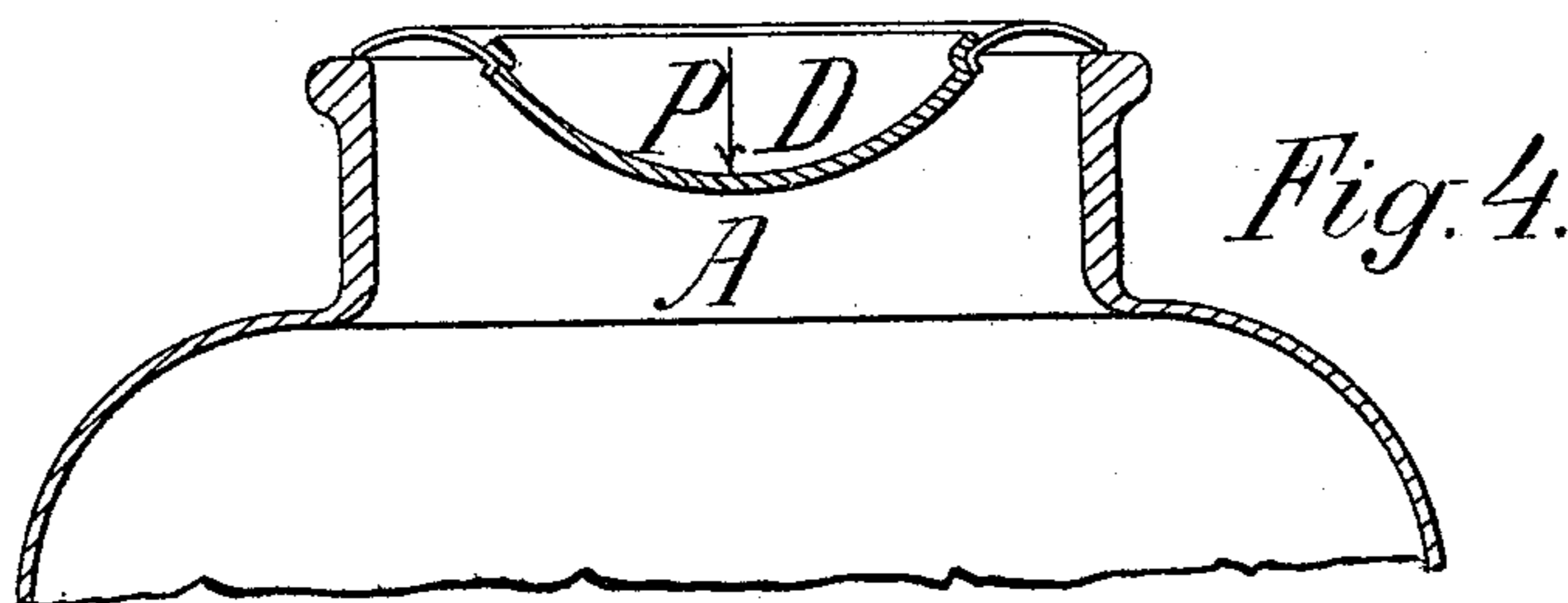


Fig. 4.

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UNITED STATES PATENT OFFICE.

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STOPPERING DEVICE FOR BOTTLES, JARS, &c.

SPECIFICATION forming part of Letters Patent No. 607,842, dated July 26, 1898.

Application filed November 8, 1897. Serial No. 657,835. (No model.) Patented in Germany November 22, 1895, No. 93,246; in Austria April 2, 1896, No. 46/1,364; in Hungary August 8, 1896, No. 7,104; in Switzerland January 18, 1897, No. 13,593; in France January 18, 1897, No. 263,178; in Belgium January 18, 1897, No. 125,786; in England January 18, 1897, No. 1,356; in Norway January 18, 1897, No. 5,523, and in Italy March 31, 1897, XXXII, 43,645, and LXXXV, 257.

To all whom it may concern:

Be it known that I, FERDINAND FLEISCHMANN, a subject of the Emperor of Austria-Hungary, residing at Mödling, in the Province of Lower Austria, in the Empire of Austria-Hungary, have invented certain new and useful Improvements in Stoppering Devices for Bottles, Jars, and the Like, (for which Letters Patent have been obtained in Austria, dated April 2, 1896, Vol. 46, Fol. 1,364; in Germany, dated November 22, 1895, No. 93,246; in Hungary, dated August 8, 1896, No. 7,104; in Switzerland, dated January 18, 1897, No. 13,593; in France, dated January 18, 1897, No. 263,178; in Belgium, dated January 18, 1897, No. 125,786; in Italy, dated March 31, 1897, Reg. Gen., Vol. XXXII, No. 43,645, Reg. Att., Vol. LXXXV, No. 257; in Great Britain, dated January 18, 1897, No. 1,356, and in Norway, dated January 18, 1897, No. 5,523;) and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

A device for stoppering vessels according to this invention is designed to be used in substitution for the corks and other elastic closing devices heretofore generally employed and to act also as a safety-valve that comes into action on the occurrence of excessive pressure of gas or steam within the vessel.

The device consists of a suitably-constructed lid or cover composed of a rigid portion and a more or less elastic encompassing flange or rim which is provided with a bearing or contact surface, which when pressed onto or against a flat or more or less convex seating-surface at or about the mouth or open end of a vessel will form a mere line-contact with said seat, as is the case, for instance, in the contact of a more or less convex surface with a plane or more or less convex surface, so that in consequence of the elasticity of the extreme or line-bearing edge of the cover a closure is produced which will conform to

any not too great unevenness or small alterations that may exist or take place in the bearing-surface, and it thus fulfils its purpose even under difficult conditions. On account of the automatic fitting of one part to the other such a metallic closing device can be made much lighter and cheaper than the metal closing devices having two rigid surfaces ground together heretofore employed.

My closing device not only affords a perfectly-tight closure of the contents of the vessel as regards the outside, but also constitutes a safety-valve, because in the case of the occurrence of pressure inside the vessel the elastic edge of the cover will rise from its seat without thereby producing an alteration in the position of the mechanism that presses down the cover.

The drawings illustrate various constructions of such devices for closing vessels and for acting as safety-valves. The mechanism for applying the pressure to the closing lid or cover is not shown, because it may be of any known construction—such as, for instance, a screw, eccentric, lever, or wedge.

Figures 1 to 4 are fragmentary sectional views of a jar and my improved cover, illustrating its application to the mouth of the vessel in Fig. 1, within the mouth of the vessel in Fig. 2, while Fig. 3 shows a concavo-convex hollow cover applied to the mouth of a vessel, and Fig. 4 shows the cover, Fig. 2, applied also to the mouth of the vessel.

The cover shown in Fig. 1 consists of an outwardly-bulged or convex metal plate D, which is placed with its preferably inwardly-rounded edge upon the smooth edge of the mouth A of the vessel. When the cover is loose, its outer edge lies upon the edge of the vessel, and in that position the cover may not necessarily close accurately; but as soon as pressure is applied to the center of the cover (at P) the elastic force thus produced will cause the entire edge of the cover to press upon the edge of the vessel, as represented in the drawings.

The metal disk D constituting the closing part may, as shown in Fig. 2, be made in the form of an inwardly-bulged or convex cover

with reversely bent or curved border, the inwardly-rounded edge of which bears upon a smooth recessed surface provided in the neck A of the vessel and is wholly pressed upon the said surface so as to close the vessel when pressure is applied at P to the center of the cover.

Fig. 3 shows a closing device acting in exactly the same manner, which may be formed by the combination of the two closing devices shown in Figs. 1 and 2, the arrangement being such that the edge of the lower convex disk is beaded over the edge of the upper and inwardly concave disk and when pressure is applied to the latter is pressed by the elasticity of the two disks against the edge of the mouth of the vessel.

Instead of the metal disk there may be employed, as shown in Fig. 4, a cover of inelastic material, such as wood or metal, which is provided at its periphery with an elastic metal ring, the edge of which is by pressure applied to the body of the cover forced all round tightly upon a plane surface of the neck of the vessel.

In each case the device for closing the vessel acts at the same time as a safety-valve, because in the case of the occurrence in the vessel of gas or steam pressure greater than the pressure applied to the cover from outside by the closing mechanism the elastic edge of the cover will be raised off its seat and will close again on the cessation of the internal pressure.

The closing mechanism that serves to press

the cover upon its seat retains its position unaltered during the said operation, because only the edge of the cover is subjected to the action of the internal pressure.

The metal of which the cover or its edge is composed must be selected according to the contents of the vessel, so as to obviate any injurious action of such contents upon the metal and the consequent formation of veridigris, rust, &c. With this object metal parts may also be provided with a protective coating.

I claim—

1. The combination with a vessel, of a cover composed of a rigid portion and a more or less elastic encompassing rim or flange provided with a bearing or contact edge constructed to form a line-contact with a seating-surface on the vessel, said cover adapted to be held to its seat by pressure applied thereto, for the purpose set forth.

2. The combination with a vessel, of a concavo-convex hollow cover comprising a rigid portion and a more or less elastic encompassing rim or flange provided with a bearing or contact edge constructed to form a line-contact with a seating-surface on the vessel, said cover adapted to be held to its seat by pressure applied thereto, for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

FERDINAND FLEISCHMANN.

Witnesses:

HENRY C. CARPENTER,

CHAS. E. CARPENTER.