No. 801,657. PATENTED OCT. 10, 1905.

J. FRANKE.

BUNG.

APPLICATION FILED OCT. 27, 1904.

3 SHEETS—SHEET 1.

Fig. 1

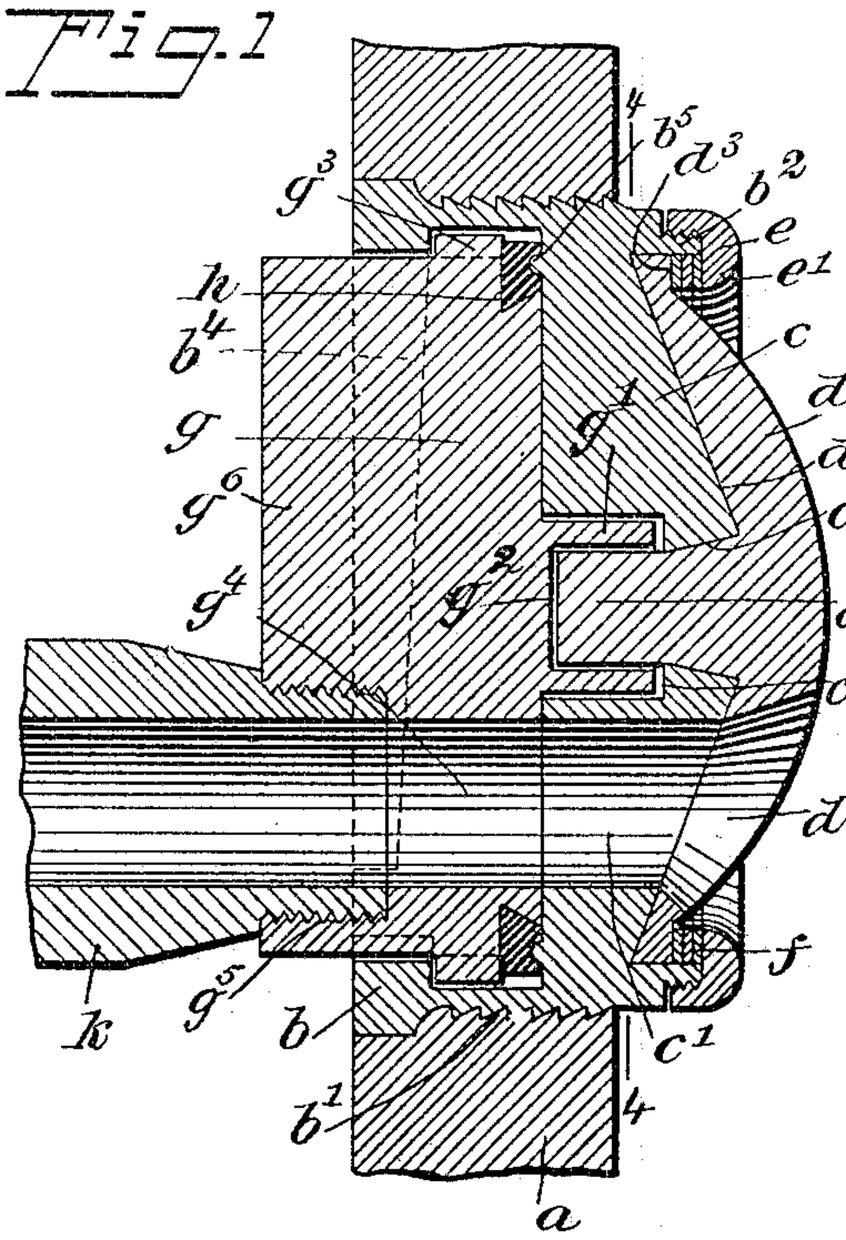


Fig. 2

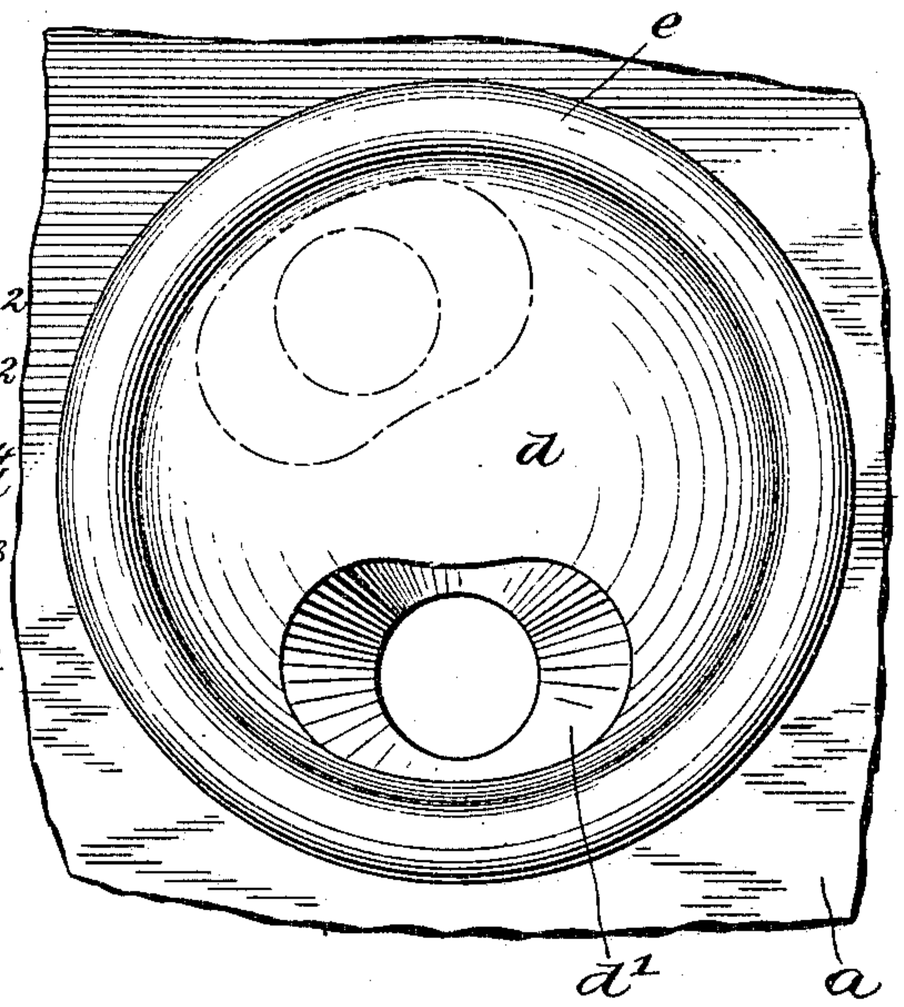


Fig. 3

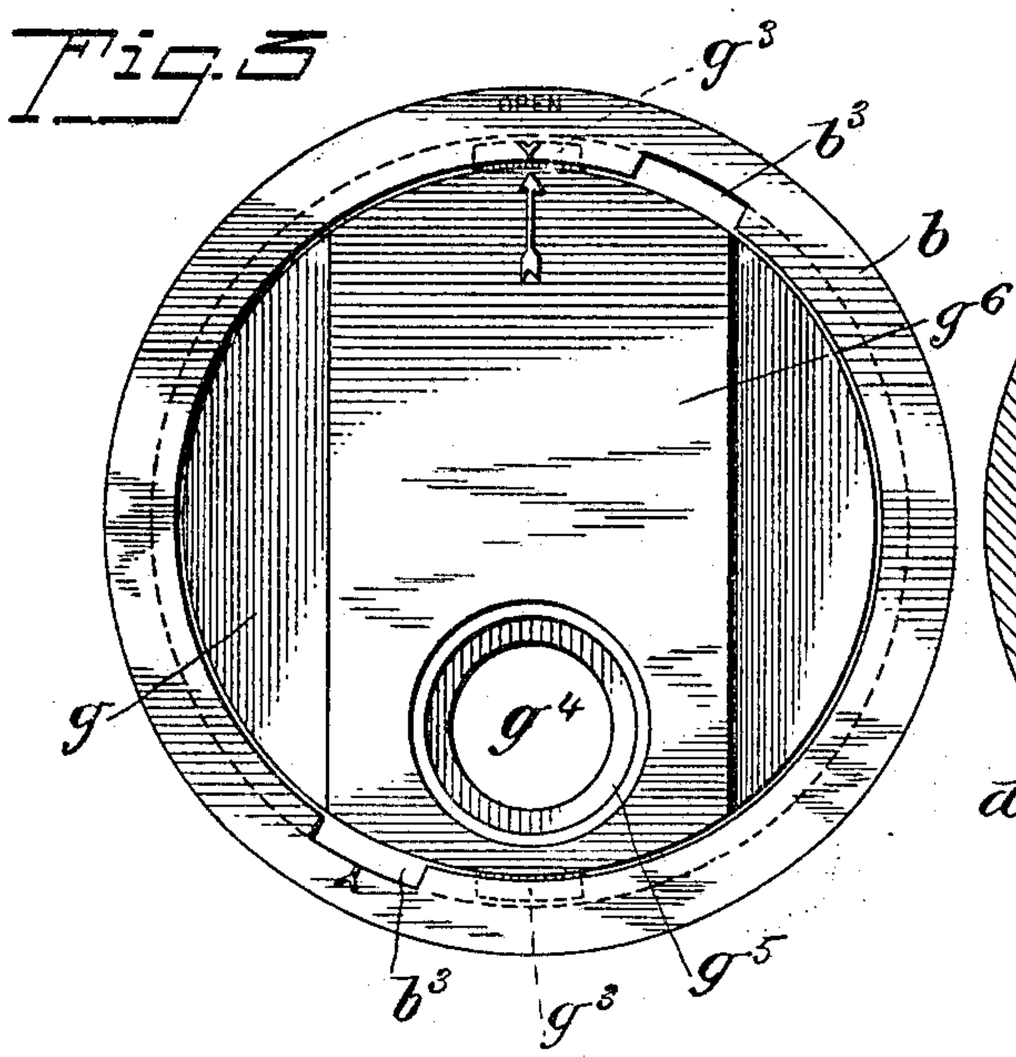
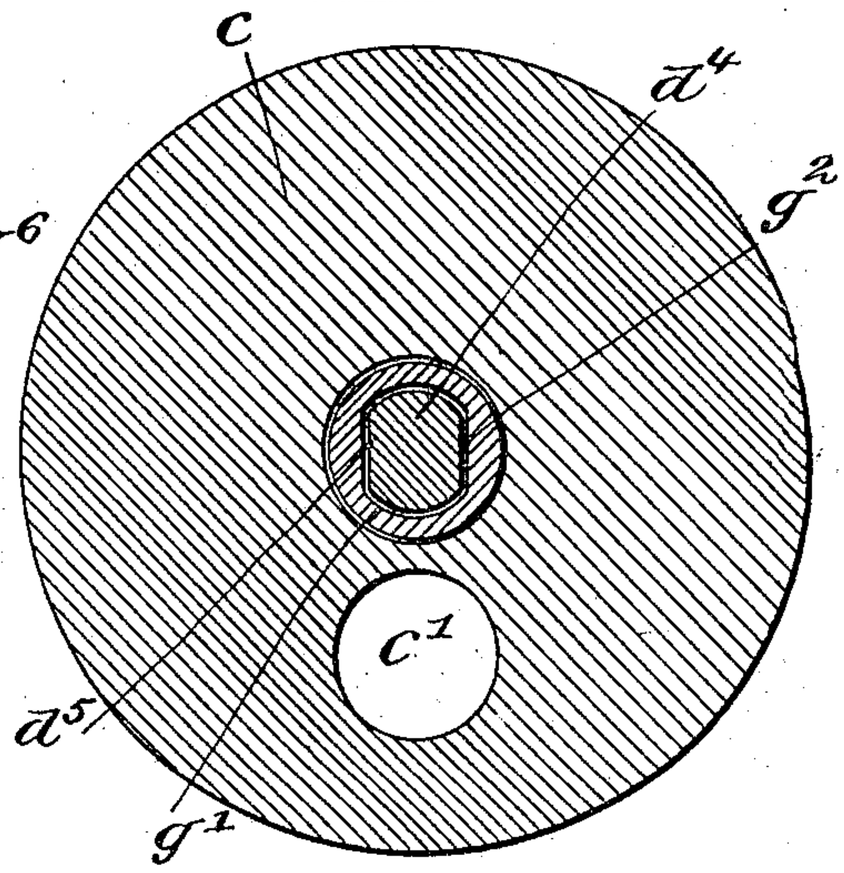


Fig. 4



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3 SHEETS—SHEET 2.

Fig. 5

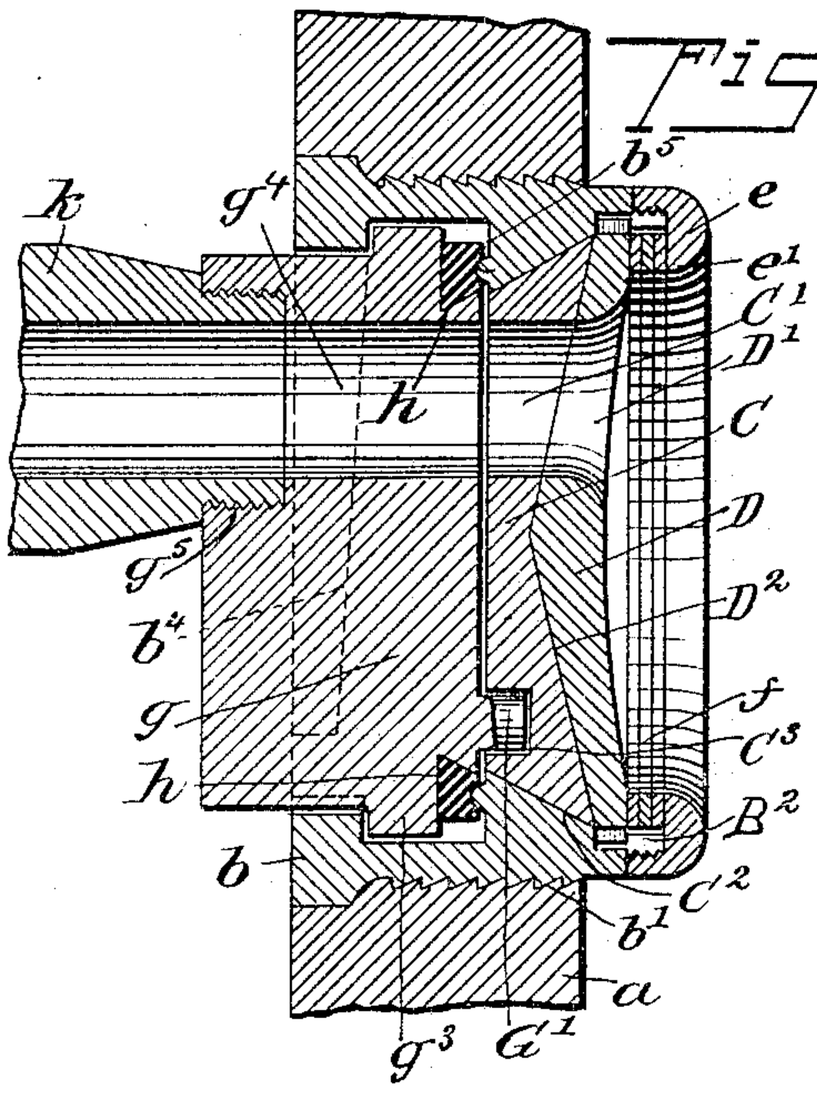


Fig. 6

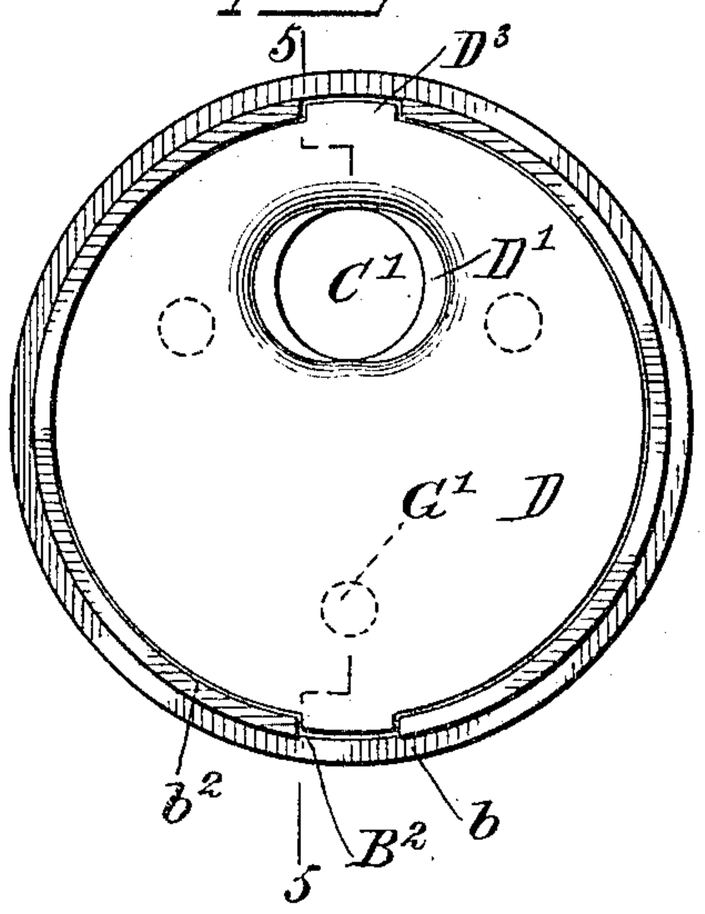


Fig. 7

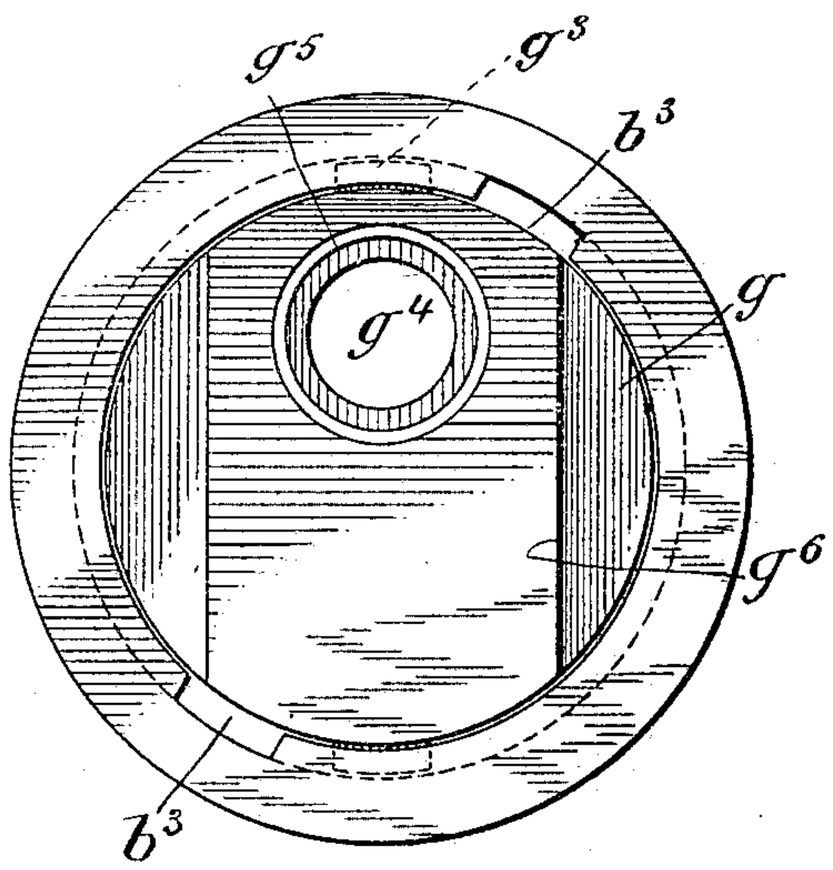
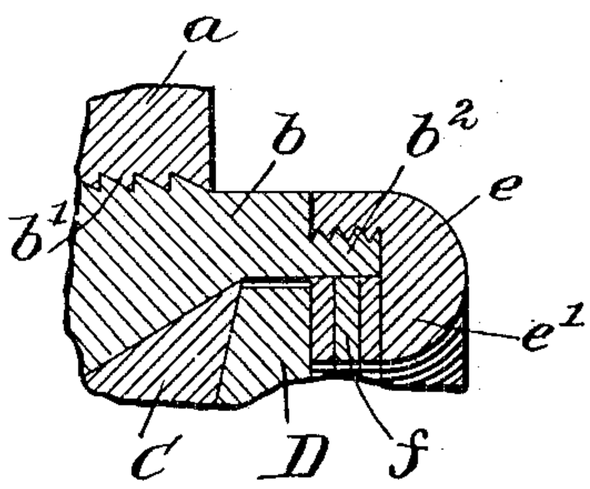


Fig. 8



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3 SHEETS—SHEET 3.

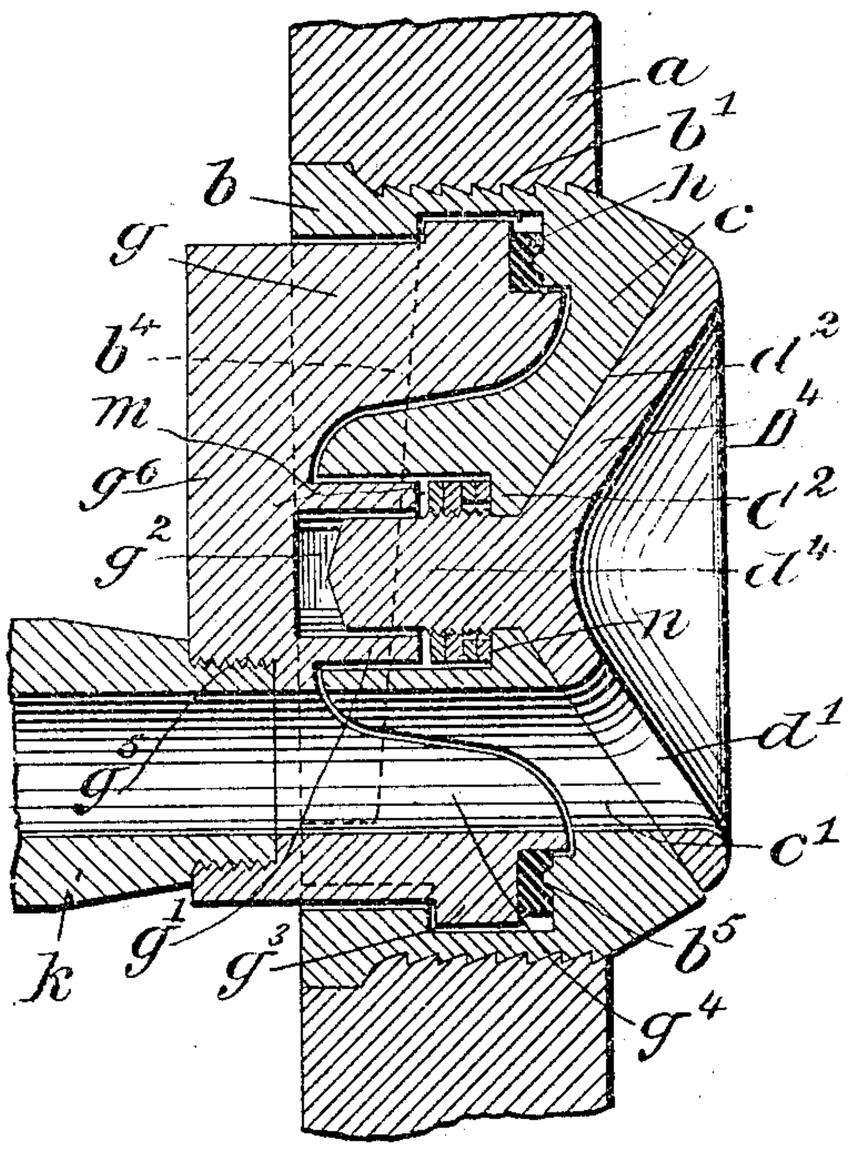

Fig. 8

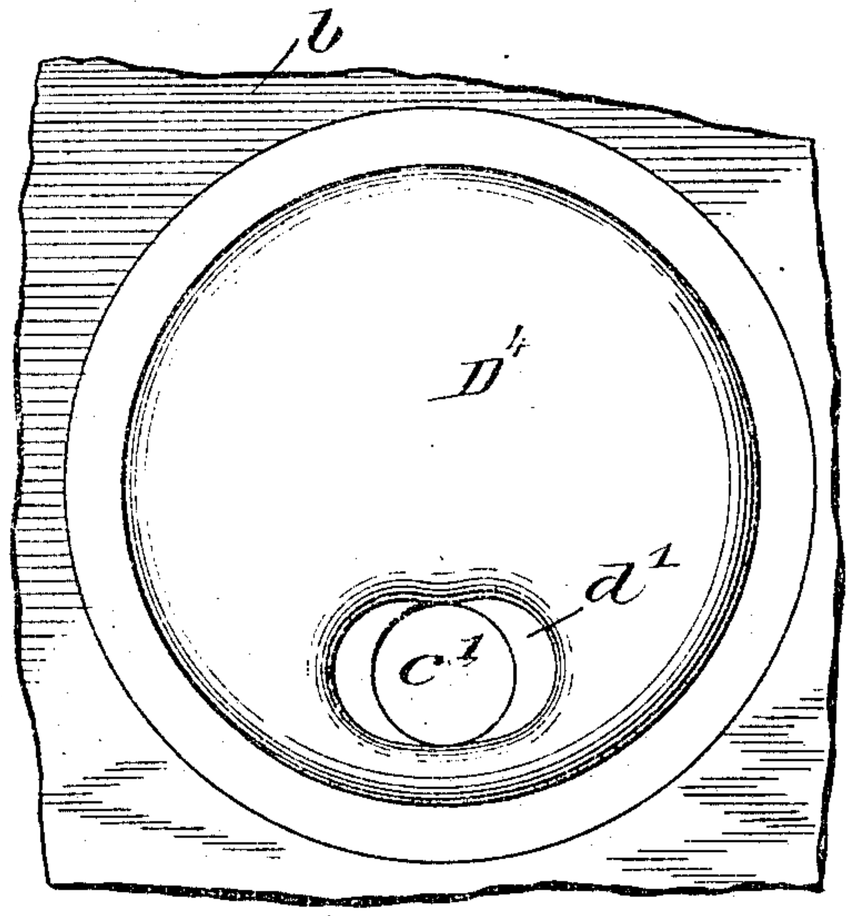

Fig. 10

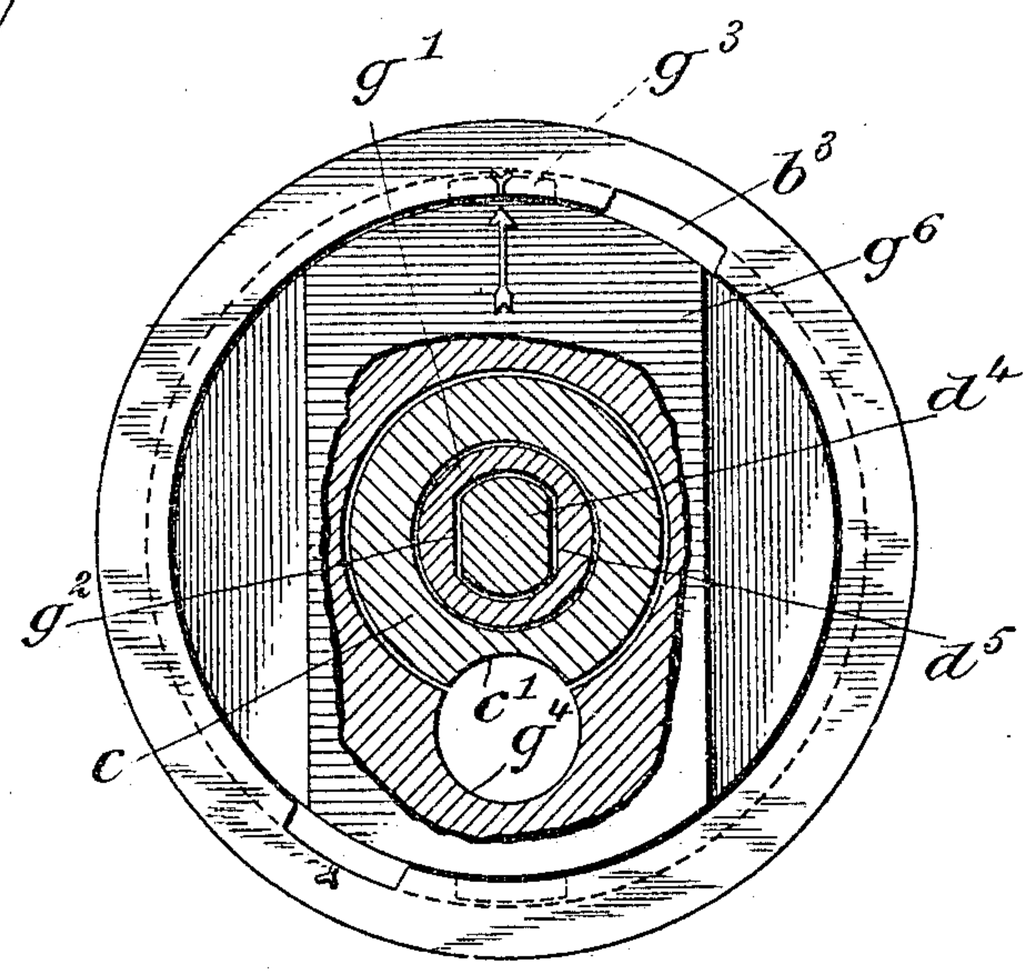

Fig. 11

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UNITED STATES PATENT OFFICE.

JULIUS FRANKE, OF NEW YORK, N. Y.

BUNG.

No. 801,657. Specification of Letters Patent. Patented Oct. 10, 1905.

Application filed October 27, 1904. Serial No. 230,272.

To all whom it may concern:

Be it known that I, JULIUS FRANKE, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Bung, of which the following is a full, clear, and exact description.

My invention relates to a bung which is capable of many uses, but is especially adapted to be applied to beer and ale barrels.

The main object of the invention is to provide means whereby a tube such as those commonly used for drawing liquids of this character can be inserted in a key applied to the bung and the key turned in such a manner as to permit the tube to be forced entirely through the bung into the barrel without obstruction.

Further objects of the invention largely dependent upon and auxiliary to the main object will appear in the course of the subjoined description.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a central sectional view showing one embodiment of the invention. Fig. 2 is an inside elevation thereof. Fig. 3 is an outside elevation. Fig. 4 is a sectional view on the line 4 4 of Fig. 1. Fig. 5 is a sectional view on the line 5 5 of Fig. 6, showing another form in which my invention may be embodied. Fig. 6 is an inside elevation of the same with a certain portion thereof removed. Fig. 7 is an outside elevation of the modification shown in Fig. 5. Fig. 8 is a fragmentary sectional view, on an enlarged scale, of features shown in Fig. 5. Fig. 9 is a central sectional view of another form of the invention. Fig. 10 is an inside elevation of the same, and Fig. 11 is an outside elevation of the same with a part broken away.

Referring to Figs. 1, 2, 3, and 4, a represents the wall of a barrel or other receptacle, and b a bung attached thereto by means of screw-threads b' or in any other desired manner. Rigidly mounted with respect to the bung and in the form shown in these figures integrally connected therewith is a stationary partition c. This partition is provided with a perforation c'. An oscillatable element d, constituting a cap for the whole device and provided with a perforation d', is shown mounted on the inside of the partition c. A ground joint d^2 separates the two parts c and d and prevents the passage of liquid between them. The cap is secured to the bung in any desired or convenient manner, this being represented in these figures by a projection b^2 upon the bung, which is provided with exterior screw-threads, and a ring e, having screw-threaded engagement with the projection b^2. Spring-washers f are provided between the inwardly-projecting ridge e' of the ring e and a shoulder d^3 upon the cap. It will be readily understood that by screwing the ring e up against the washers f a tight joint at d^2 may be produced, and the ground surfaces of the joint will effectually prevent the passage of liquid. The cap is also provided with a projection d^4, which passes through a perforation c^2 in the stationary element c and projects into a recess c^3 therein. This projection is provided with flat sides d^5, by means of which the oscillatable element d is designed to be turned when a key g is applied to the device. This key is provided with a projection g', having a cavity g^2 therein fitting the the projection d^4. It will be readily understood that when this key is turned the oscillatable element will also be turned. The key is provided with projections g^3, which are designed to enter slots b^3 in the bung, and it is also provided with a perforation g^4. These last-mentioned parts are so located with respect to each other that when the lugs g^3 register with or enter the slots b^3 the perforation g^4 will be out of alinement with the perforation c'. Also at this point the passage g^2 in the projection g' on the key will register with the projection d^4 and fit thereon, so that as the key is inserted in the bung the parts will be in the position in which the opening c' is closed; but the key is ready to turn the rotatable member. The bung is provided with inclined tracks b^4, upon which the lugs g^3 are adapted to ride and which when the key is turned from the position in which the lugs enter the slots b^3 will force the key inwardly against a compressible washer h, preferably made of rubber, which bears upon a seat b^5 in the bung. When the key is inserted with the lugs entering the slots b^3, the cavity g^2 will of course register with the projection d^4, and as the key is turned into the position indicated in Fig. 3 the oscillatable element d will move with the key, the perforation d' in the oscillatable element being directly opposite the perforation g^4 through the key. When the parts reach the open posi-

tion, (shown in Fig. 3,) these two perforations will register with the perforations c', and a tube, such as that ordinarily employed for use with certain kinds of bungs, may be passed through the perforations into the interior of the receptacle and through a sleeve k. In order to provide for turning the key, a projection g^6 is made thereon. The sleeve is attached by screw-threads g^5.

Figs. 5, 6, 7, and 8 illustrate another form in which my invention can be embodied. In these figures the letters a, b, b', b^2, b^3, b^4, b^5, e, e', f, g, g^3, g^4, g^5, g^6, h, and k represent elements similar to those represented by the same letters in the other figures. While changes in form may be illustrated in some instances, they commonly perform the same functions and operate in the same way. In this modification, however, instead of having a cap d, which is oscillatable, a cap D is provided, and this cap is fixed with respect to the bung b by means of the clamping-ring e. In order to hold the cap from turning, it is provided with lugs D^3, and the projection b^2 is provided with slots B^2, in which these lugs rest. The form of this cap is also quite different from that shown in the other figures. Instead of being convex it is concave, and it is provided with a ground joint D^2, separating it from an oscillatable member C. This ground joint prevents the entrance of liquid between these two elements. The cap D performs the function of a stationary partition, and it is provided with a perforation D', which is designed to register with a perforation C' in the oscillatable member when it is desired to open the bung. The oscillatable member C is provided with a joint C^2 between it and the bung b. This joint is also ground, so as to provide for an additional protection against the passage of liquid. The rotatable element C is also provided with a series of depressions C^3 for receiving projections G' on the key. The operation of this modification will be readily understood. The key is inserted in the manner which is described above, and the projections G', entering the depressions C^3, secure the key with respect to the oscillatable element C. The perforations C' and g^4 are consequently always in registration with each other, and they are out of registration with the perforation D' when the key is inserted; but upon turning the key, with the member C, to the position shown in Fig. 7 the perforations will come into registration with each other and a way will be provided through them for the insertion of the tube as before.

Referring now to the form shown in Figs. 9, 10, and 11, the letters a, b, b', b^3, b^5, c, c', d', d^2, d^4, d^5, g, g', g^2, g^3, g^4, g^5, g^6, h, and k refer to elements similar to those represented by the same letters in the first four figures, and they need not be further described. The cap or oscillatable member D^4 is secured to the bung in an entirely different manner, however. Its projection d^4 has a screw-threaded portion on which are threaded one or more spring washers or nuts m, which preferably bear against common washers n. These in turn bear on a shoulder C^2 on the partition c. The cap D^2 can therefore be easily secured to the partition c before the bushing is inserted. In order to provide for this construction, the surfaces between the partition c and key g will be made somewhat conical instead of flat; but obviously this is a matter that can be varied at will. The operation of this form will be readily understood without a detailed description.

In all of these forms the opening provided for the tube is eccentric to the bung, and all of the passages are the same distance from the center. The several ground joints can be made concave, convex, or flat, as desired.

While I have illustrated and described three particular forms in which my invention may be embodied, it will be readily understood that these are not the only forms which it is capable of assuming and that many modifications may be made without departing from the spirit of the invention. It will also be seen that by constructing the bung upon the principle set forth above the tube may be readily inserted clear through the bung at one side thereof into the barrel without the interposition of any spring-operated valve such as has been heretofore used, that the bung will be secure against leakage of the liquid, that when the key is removed it cannot be tampered with without the use of a key of similar construction, that before the key can be removed the opening is necessarily entirely closed, and that when the key is turned so as to provide an opening for the tube the compressible washer h is forced to a more perfect seat and effectually prevents the passage of any liquid that might otherwise have reached that point.

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

1. The combination with a bung, of a partition fixed with respect thereto and provided with a perforation, an oscillatable cap on the inside of said partition and having a perforation, and a key having means for engaging with the oscillatable member and temporarily securing it to the key, said key also being provided with a perforation all of said perforations being eccentric with respect to the bung.

2. The combination with a bung, of a partition fixed with respect thereto and provided with a perforation, an oscillatable member on the inside of the partition having a perforation, and a key having means for engaging with the oscillatable member and temporarily securing it to the key, said key also being provided with a perforation in line with the perforation in the oscillatable member when the key is in operative engagement with said oscillatable member.

3. The combination with a bung, of a partition fixed with respect thereto and provided with a perforation, an oscillatable member on the inside of the partition having a perforation, and a key having means for engaging with the oscillatable member and temporarily securing it to the key; said key also being provided with a perforation in line with the perforation in the oscillatable member when the key is in operative engagement with said oscillatable member, and means for guiding the key to a position in which all three perforations will be in alinement.

4. The combination with a bung, of a partition fixed with respect thereto and provided with a perforation, an oscillatable member having a perforation and mounted on the inside of the partition, and a key having means for engaging with the oscillatable member and temporarily securing it to the key, said key also being provided with a perforation and having lugs, and said bung having an inclined track for said lugs, and slots for the admission of the lugs to the track.

5. The combination with a bung, of a partition fixed with respect thereto and provided with a perforation, an oscillatable member having a perforation and mounted on the inside of the partition, and a key having means for engaging with the oscillatable member and temporarily securing it to the key, said key also being provided with a perforation and having lugs, and said bung having an inclined track for said lugs, and slots for the admission of the lugs to the track; said slots being so located that when the key is placed with its lugs in the slots the perforation in the key will be out of alinement with the perforation in the partition.

6. The combination with a bung, of a partition fixed with respect thereto and provided with a perforation, an oscillatable member having a perforation and located on the inside of said partition, and a key having means for engaging with the oscillatable member and temporarily securing it to the key, said key also being provided with a perforation in line with the perforation in the oscillatable member when the key is in operative engagement with said oscillatable member, and means for guiding the key to a position in which all three perforations will be in alinement; said key having lugs, and said bushing having an inclined track for said lugs, and slots located adjacent to said track for the admission of the lugs to operative engagement with the track, said slots being so located that when the key is placed with its lugs in the slots the perforation in the key will be out of alinement with the perforation in the partition.

7. The combination with a bung having a partition integrally mounted thereon and provided with an outwardly-projecting conical surface on its inner side, and also provided with a perforation at the apex of said surface and with another perforation eccentric thereto, of a cap located on said inner surface of the partition and provided with a conical surface to fit said inner surface, said cap being provided with a projection extending through the central perforation of said partition, said cap being provided with an eccentric perforation, means for securing the cap to the partition, and a key having means for turning said cap and provided with a perforation adapted to register with the eccentric perforations in the partition and cap in certain positions.

8. The combination with a bung having an integral partition extending across its inner face, and provided with two perforations, one in the center and one between its center and edge, said partition also having a concave conical inner surface, of a cap having a conical outer surface adapted to fit said inner surface and provided with a perforation adapted to register with the eccentric perforation of the partition and with a projection adapted to pass through the central perforation of the partition and provided with a flat surface on the outer side of said partition, means on said projection for securing the cap rotatably to said partition, and a key having a perforation adapted to register with the eccentric perforations of the partition and cap and provided with means for engaging the flat surface on said projection whereby the projection and cap will be turned upon the turning of the key, said bung being provided with means for preventing the insertion or withdrawal of the key in a position in which its perforation will register with the perforation of the partition.

9. The combination with a bung having an integral portion extending across its inner face, and provided with two perforations, one in the center and one between its center and edge, of a cap provided with a perforation adapted to register with the eccentric perforation of the partition, and with a projection adapted to pass through the central perforation of the partition and provided with a flat surface on the outer side of said partition, means on said projection for securing the cap rotatably to said partition, and a key having a perforation adapted to register with the eccentric perforations of the partition and cap and provided with means for engaging the flat surface on said projection, whereby the projection and cap will be turned upon the turning of the key, said bung being provided with means for preventing the insertion or withdrawal of the key in a position in which its perforation will register with the perforation of the partition.

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

JULIUS FRANKE.

Witnesses:
JNO. M. RITTER,
ALBERT E. FAY.