

C. SCHRAUDENBACH.
CAP FOR SHIPPING CYLINDERS.
APPLICATION FILED MAY 13, 1909.

938,793.

Patented Nov. 2, 1909.

2 SHEETS—SHEET 1.

Fig. I.

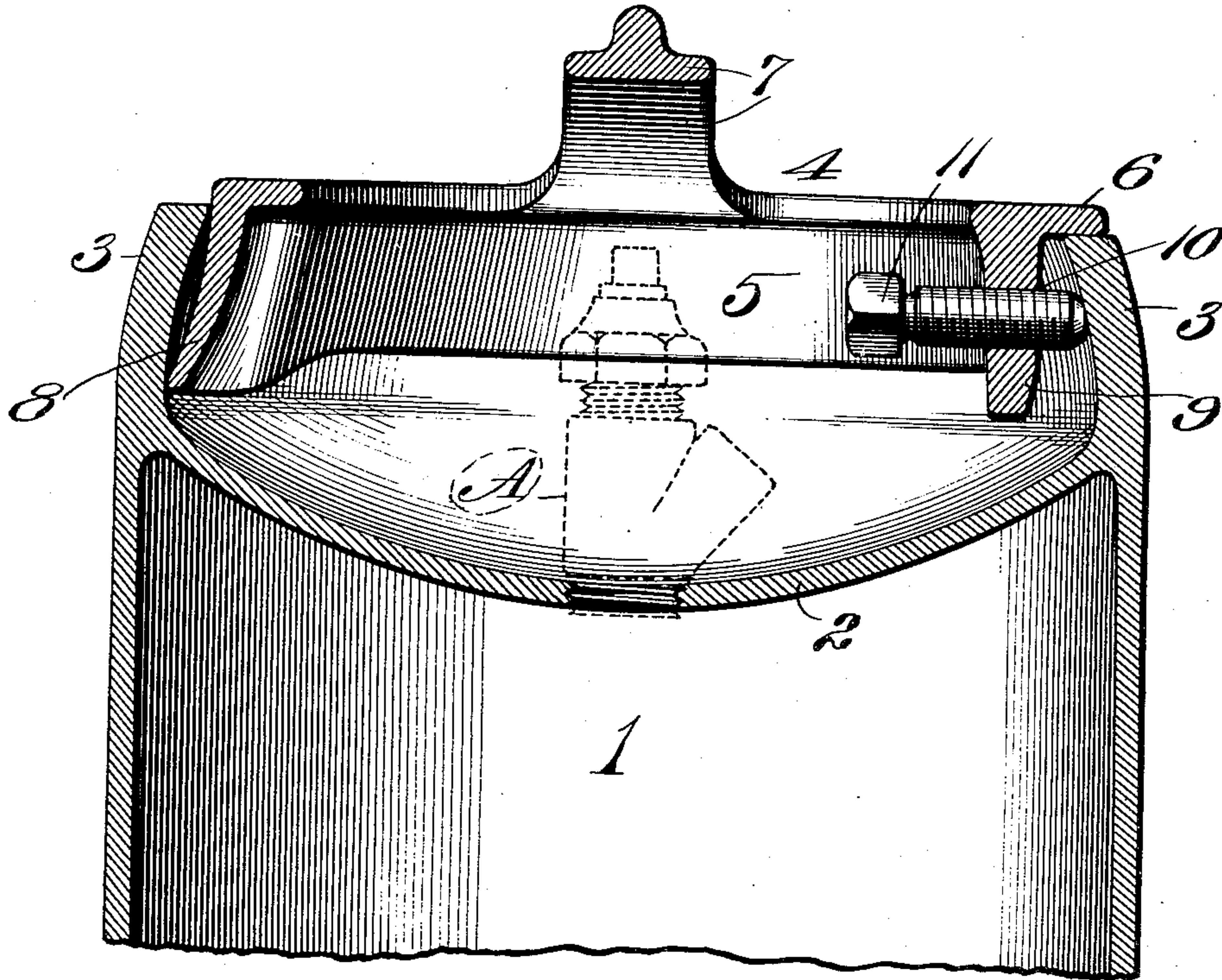
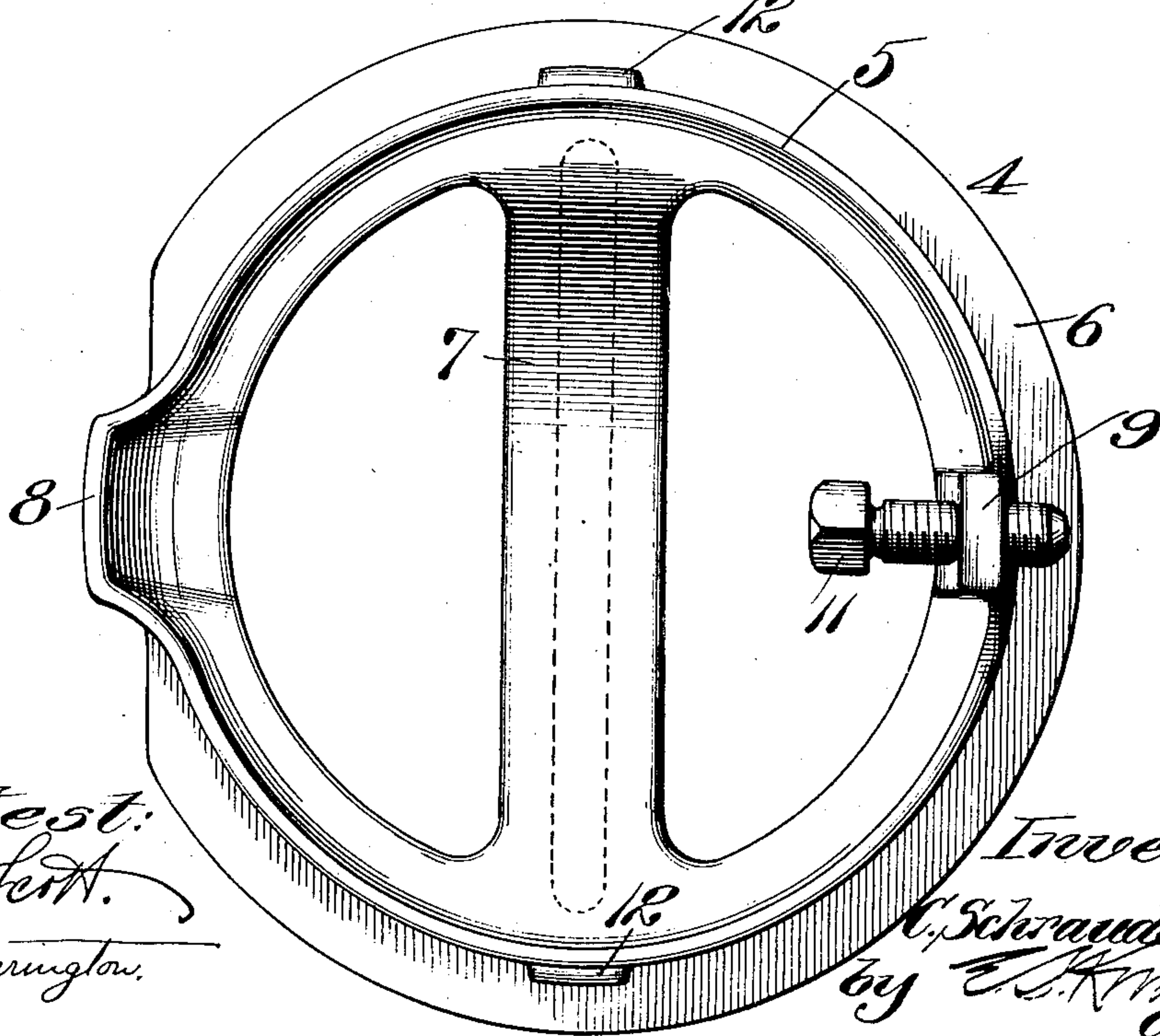


Fig. II.



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Fig. III.

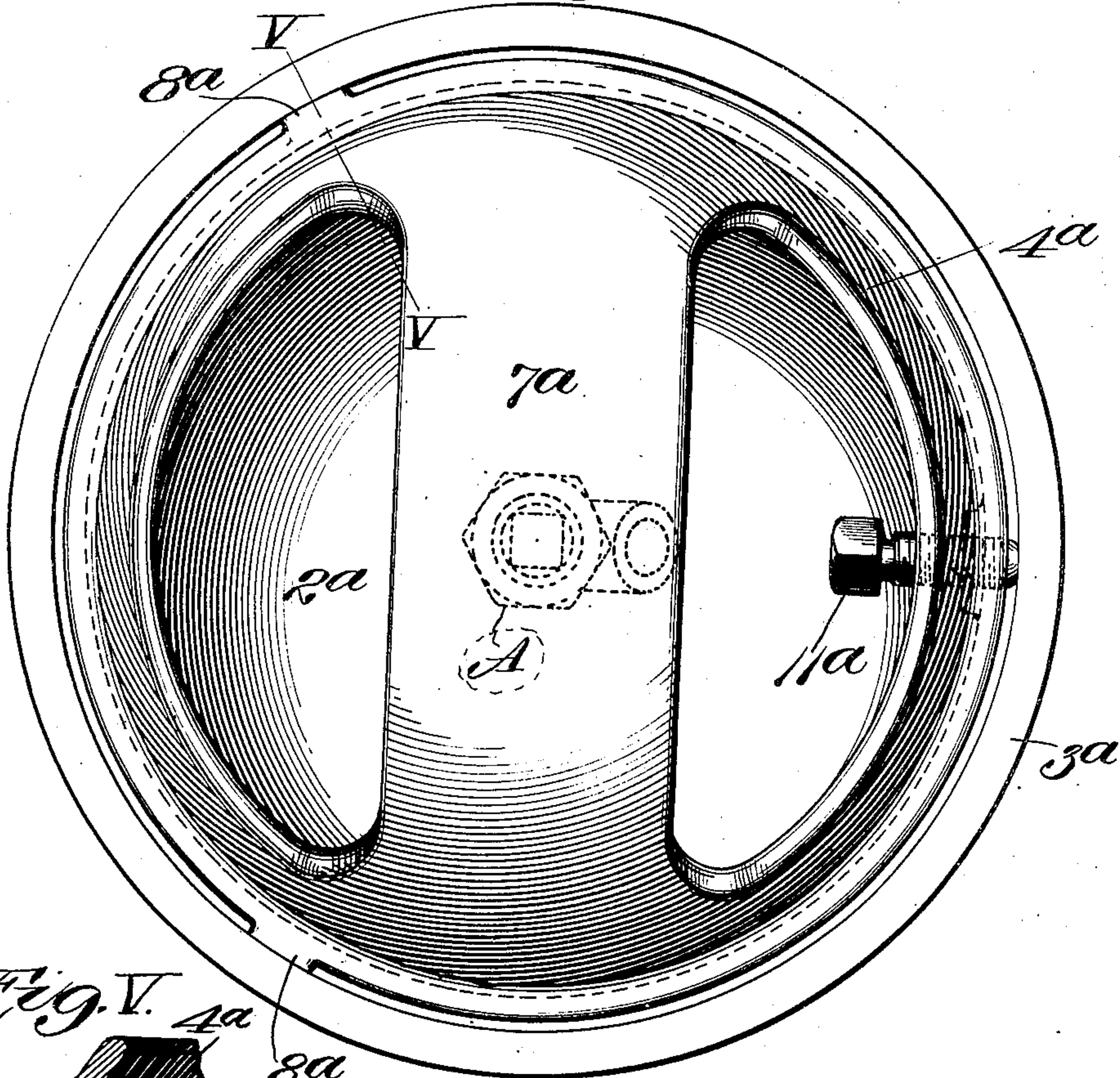


Fig. V.

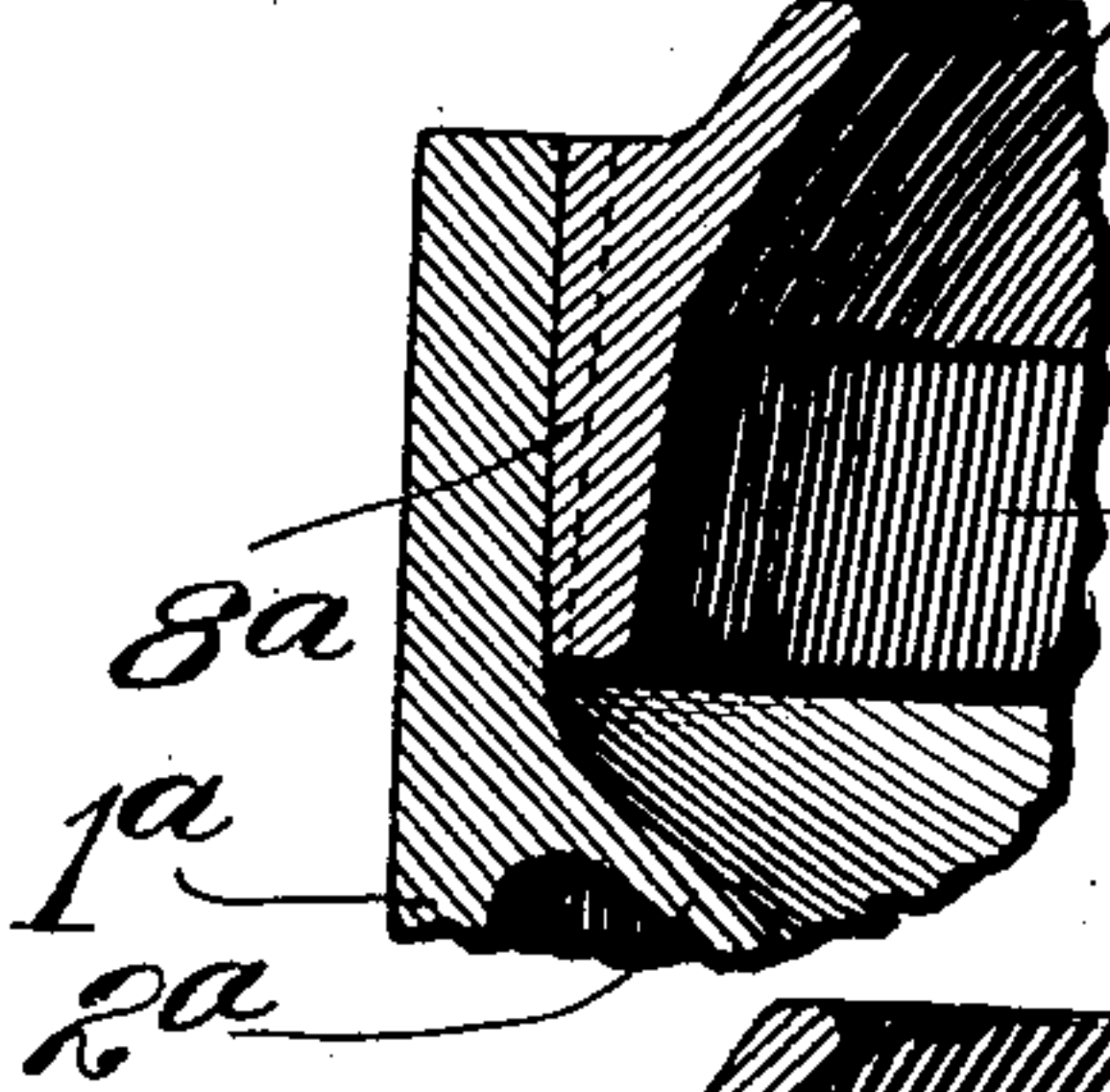
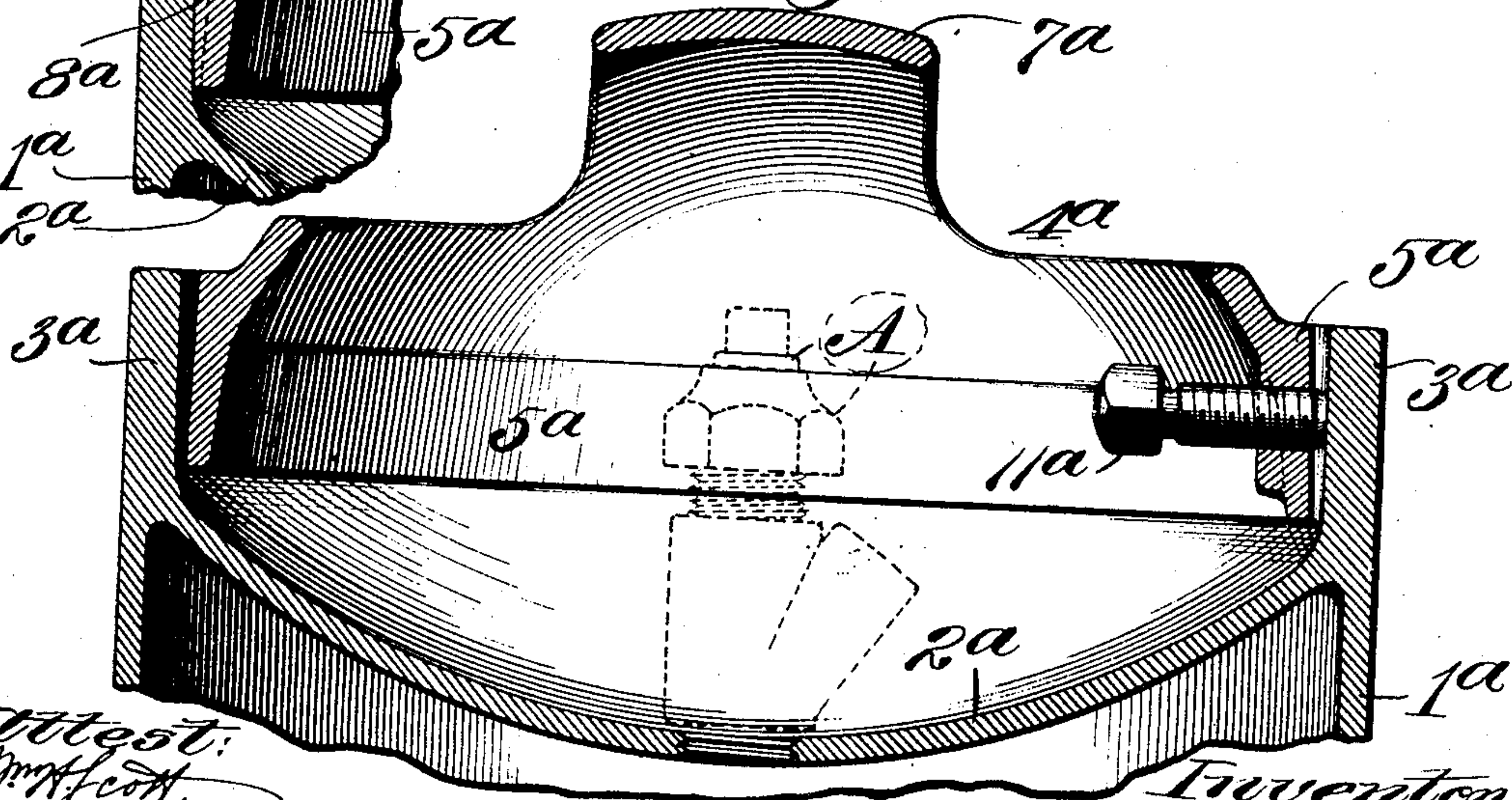


Fig. IV.



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UNITED STATES PATENT OFFICE.

CHARLES SCHRAUDENBACH, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE NATIONAL AMMONIA COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION.

CAP FOR SHIPPING-CYLINDERS.

938,793.

Specification of Letters Patent.

Patented Nov. 2, 1909.

Application filed May 13, 1909. Serial No. 495,806.

To all whom it may concern:

Be it known that I, CHARLES SCHRAUDENBACH, a citizen of the United States of America, residing at the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Caps for Shipping-Cylinders, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to an improved cap and fastening device for use upon cylinders in which commodities are shipped, and more particularly to caps for those cylinders in which anhydrous ammonia is shipped. Anhydrous ammonia is commonly placed in cylinders having heads at their ends which are disposed inwardly relative to the ends of the cylinder shell, and have fitted to them valves, which it is the object of my present improvement to protect by the production of an efficient, inexpensive and simple cap to close the end of a cylinder of the kind named, the cap including means for screwing it to the cylinder shell.

Figure I is a longitudinal section taken through an end of a shipping cylinder and my cap in position therein. Fig. II is a back view of my cap. Fig. III is a top or plan view of an end elevation of a cylinder of different form from that illustrated in Fig. I, and with a modified construction of cap positioned in the cylinder. Fig. IV is a longitudinal section taken through the cylinder and cap shown in Fig. III. Fig. V is a section taken on line V—V, Fig. III.

In the accompanying drawings, and referring first to Figs. I and II: 1 designates the shell of a shipping cylinder, within which, at a distance from its end, is a head 2, while beyond said head is a portion of the cylinder shell which I will term an end rim 3. The end rim, as seen in Fig. I, is curved inwardly. It will be noted that due to the head 2 being located inwardly at a distance from the end of the cylinder shell, or in other words, from the termination of the end rim 3, there is ample space afforded between the head and the end of the shell for a valve A, which it is the object of my present improvement to provide protection for. 4 designates a skeleton cap which comprises an annular rim member 5, having at its outer edge a horizontal flange 6, and an arched handle 7 extending diametrically across said

annular rim member. 8 is a hook-piece or curved lug extending out of the circle of the annular rim member 5 at the back of the cap, and which is adapted to seat within the end rim 3 of the shell of the shipping cylinder when the cap is put in place in the cylinder for service. The annular rim member 5 of the cap is provided at a point diametrically opposite the hook-piece 8 with an inwardly projecting lug 9 containing a screw-threaded aperture 10. 11 is a radially arranged binding screw mounted in the lug aperture 10 and extending transversely therethrough so that when the cap 4 is in position within the shipping cylinder and said binding screw is manipulated, its point, which is opposite to the inner face of the rim of the cylinder shell, will impinge against the shell rim transversely thereof. It will, therefore, be seen that when the cap is put in place within the end of the cylinder shell 1 and the binding screw 11 is operated to move it forwardly from the lug 9, the cap will be affected by the binding screw to the extent of causing its hook-piece 8 to become tightly wedged against the inner face of the cylinder shell rim, while the point of the screw by bearing against the cylinder shell rim at the diametrically opposite point serves to prevent dislodgment of the cap from the position in which it has been seated. It will be observed that the annular rim members 5 of the cap is wholly within its end rim 3 except for the spanning of the open space in the cap by the handle piece 7. This handle piece extends directly across the valve set into the head of the cylinder, and there is ample protection therefor while, the cap being of an open nature within its end rim affords excellent opportunity for the introduction of a wrench or other implement utilized to operate the binding screw 11 either in screwing the cap in place, or providing for its removal. 12 are centering bosses upon the outer face of the annular rim member 5 of the cap, intermediate of the points at which the hook-piece 8 and the lug 9 are located. These centering bosses serve to properly direct the annular rim member of the cap into place into the end rim of the cylinder shell when the cap is inserted for service.

In Figs. III to V, inclusive, I have shown as a modification, a cap which is suitable for use in a cylinder shell 1^a having a head 2^a,

similar in shape to the shape of the corresponding members illustrated in Fig. II, while the end rim 3^a of the cylinder shell is of a straight form as distinguished from the curved end rim with which the previously described cylinder shell is provided. In view of the difference in the shape of the cylinder shell rim, it is desirable to provide a valve protecting cap of slightly different construction in order that said cap may be properly seated and retained within the end rim of the cylinder shell 1^a. 4^a designates a cap illustrated in Figs. III to V, and which is provided with an annular rim member 5^a and an arched handle 7^a. The annular rim member 5^a is, instead of being provided with a single hook-piece or covered lug 8, as in the previously described construction, provided with two hooks or pieces 8^a projecting from the outer face to the annular rim member, and distanced apart from each other so that they may contact with the end rim of the cylinder shell at widely distanced points when the cap is in place within the end rim. 11^a is a horizontal binding screw which extends through the annular rim member 5^a at a point approximately equi-distant from either of the hooks 8^a, and which, therefore, when manipulated into impingement against the end rim after the cap has been put in place within the end rim, causes the end rim to be impinged by the two lugs 8^a and the point of the screw whereby the cap is firmly held from displacement.

I claim:—

1. The combination, with a cylinder shell

having an inwardly curved end rim; of a skeleton cap having an annular rim member and fitting within said end rim, and a radially arranged binding screw passing transversely through said annular rim member and impinging against the end rim of said shell, whereby said skeleton cap is retained within said end rim; access to the binding screw being gained through the skeleton cap.

2. The combination, with the shell of a shipping cylinder having an inwardly curved end rim; of a skeleton cap having an annular rim member located within said end rim and provided with an inwardly projecting lug, and a radially arranged binding screw extending transversely through said lug and impinging against the end rim of said shell whereby said skeleton cap is retained within said end rim to prevent dislodgment of said skeleton cap; access to the binding screw being gained through the skeleton cap.

3. The combination, with a shipping cylinder shell having an inwardly curved end rim, of a skeleton cap having an annular rim member at its back provided with a lug or hook-piece, and a radially arranged binding screw extending transversely through the annular rim member of said skeleton cap and impinging against the end rim of said cylinder shell at the inner face thereof; access to the binding screw being gained through the skeleton cap.

CHARLES SCHRAUDENBACH.

In the presence of—

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