

A. T. WANNENWETSCH.
BOTTLE AND STOPPER.
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952,287.

Patented Mar. 15, 1910.

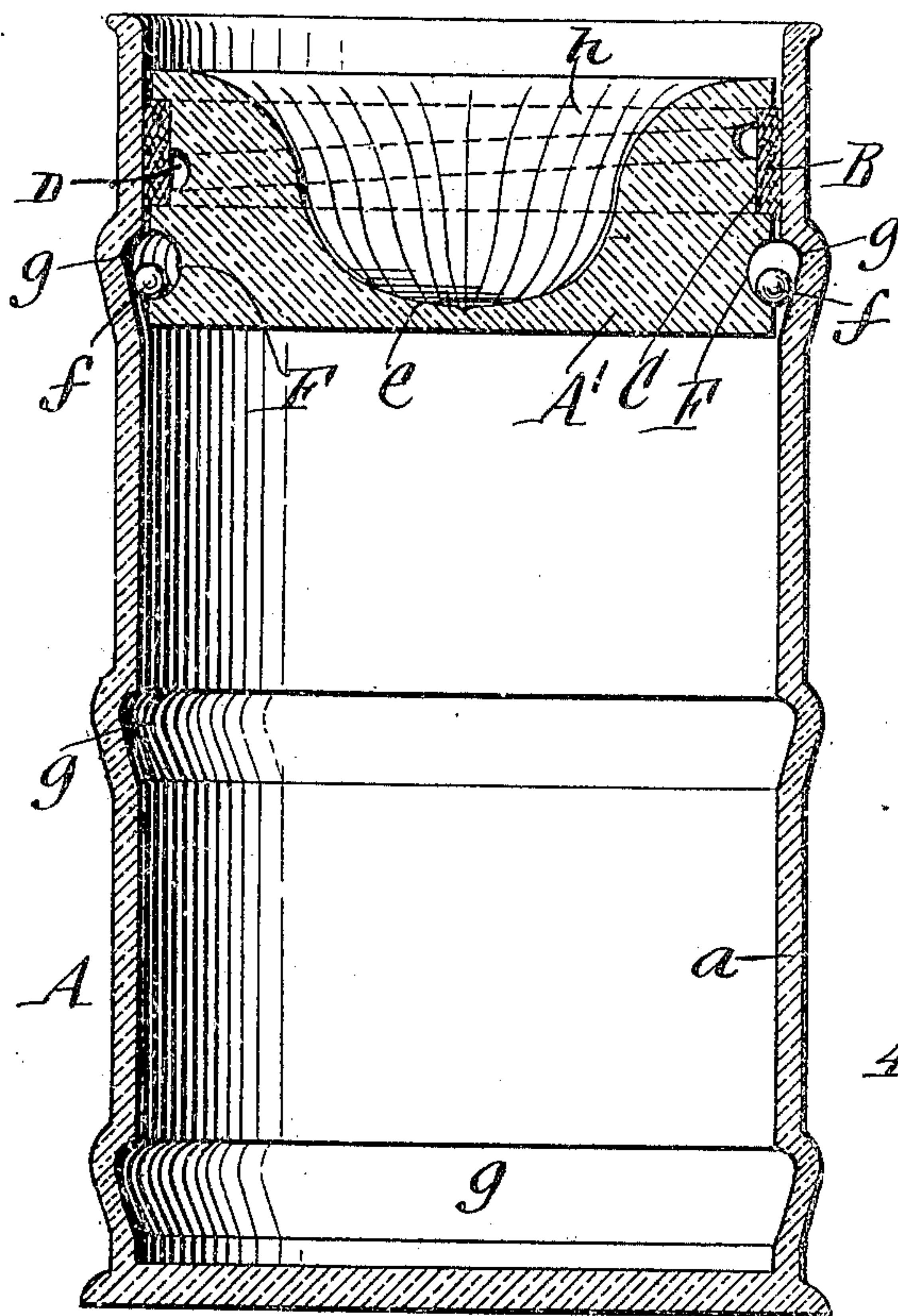


FIG. 1.

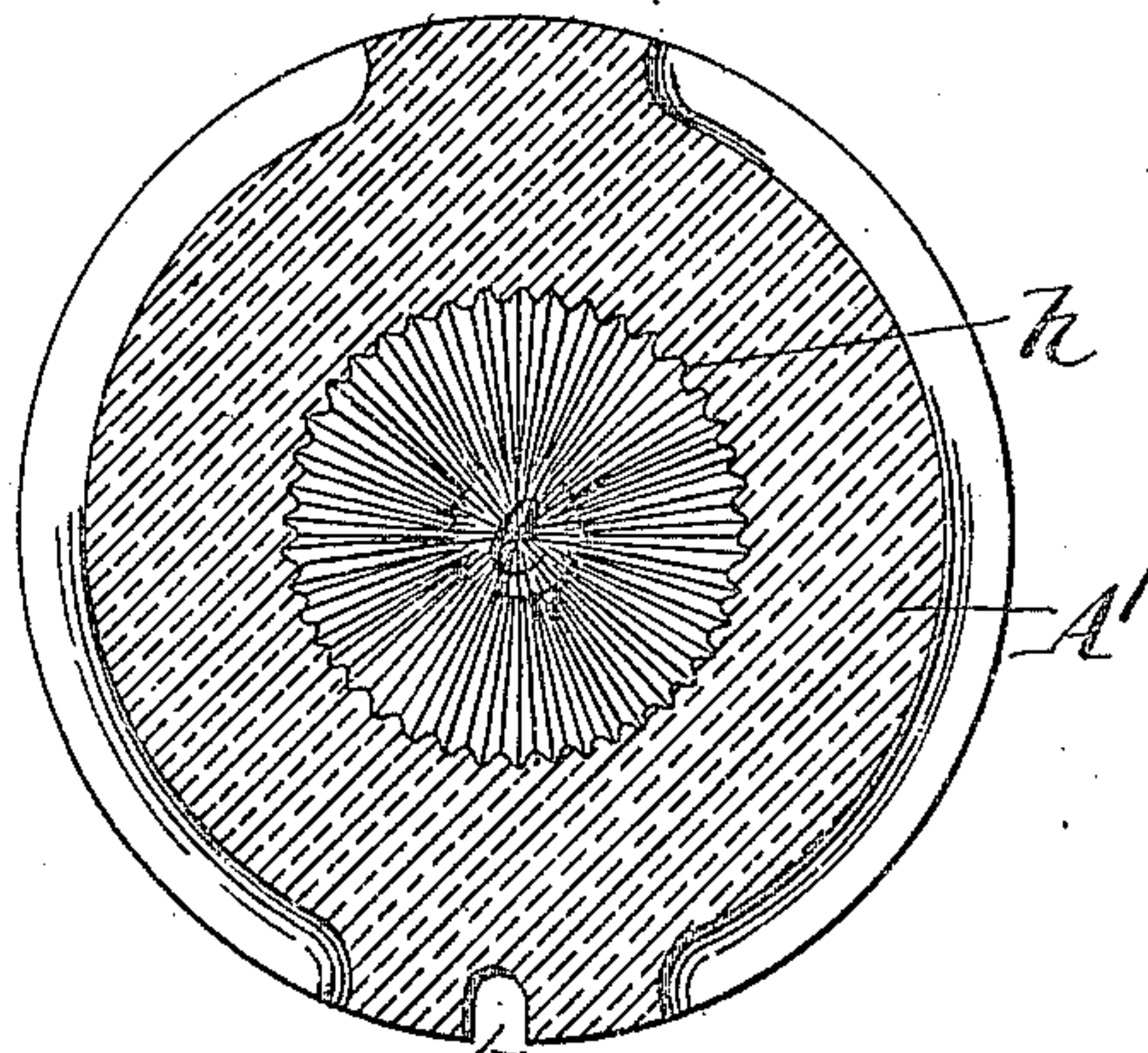


FIG. 4.

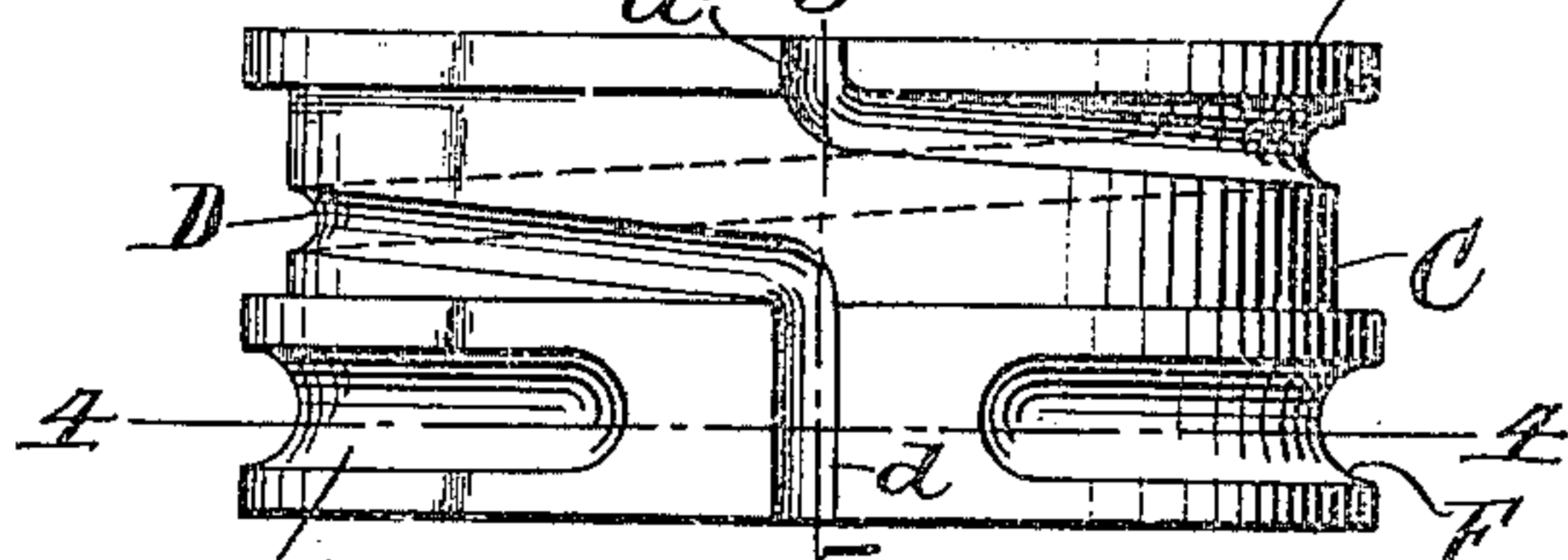


FIG. 3.

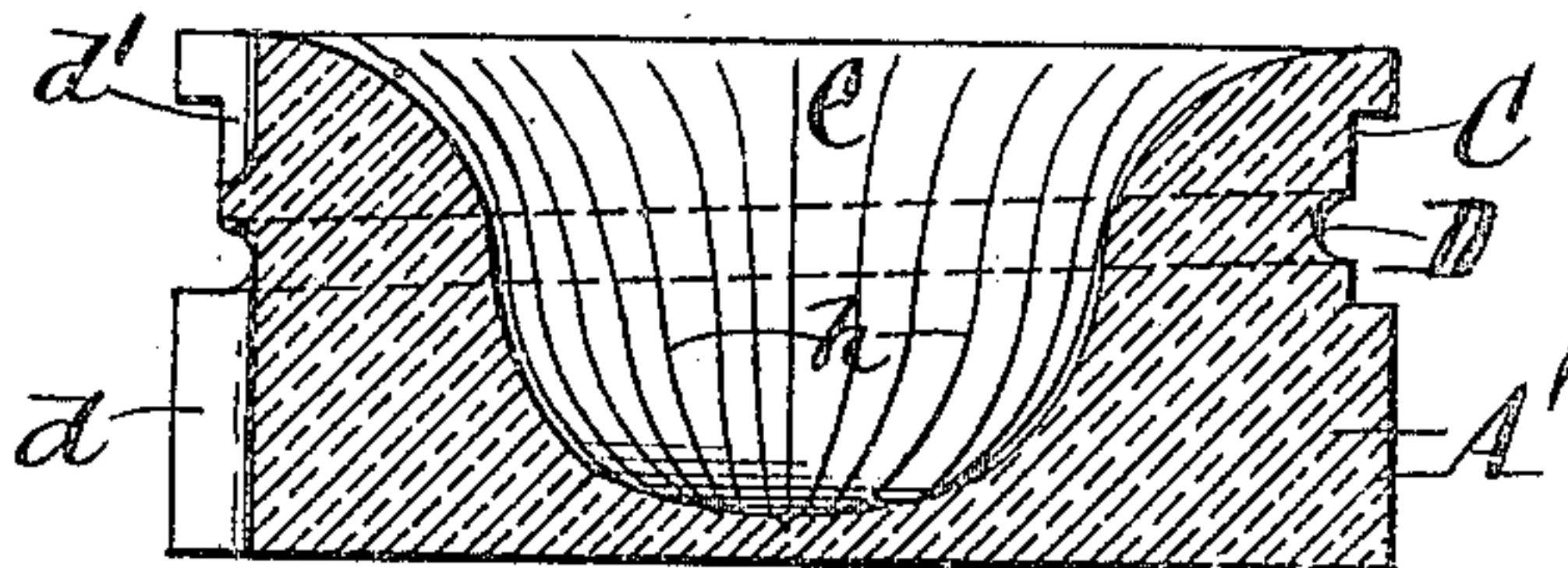


FIG. 5.

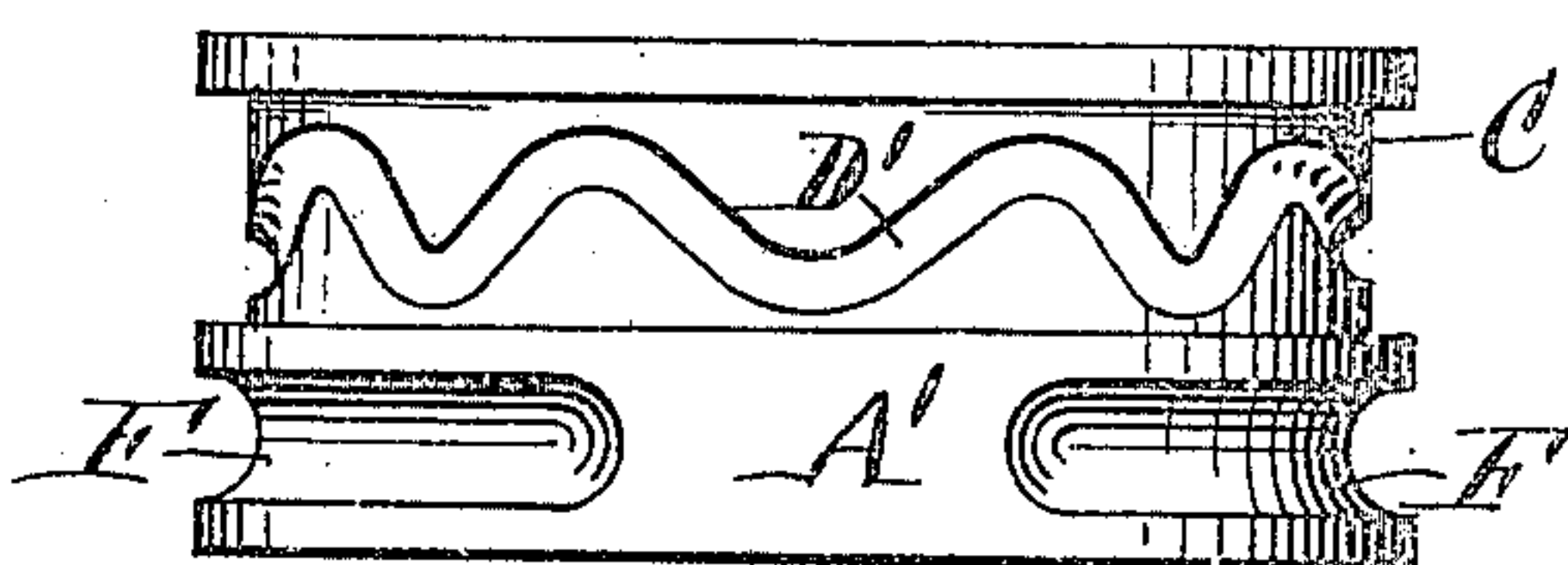


FIG. 7.

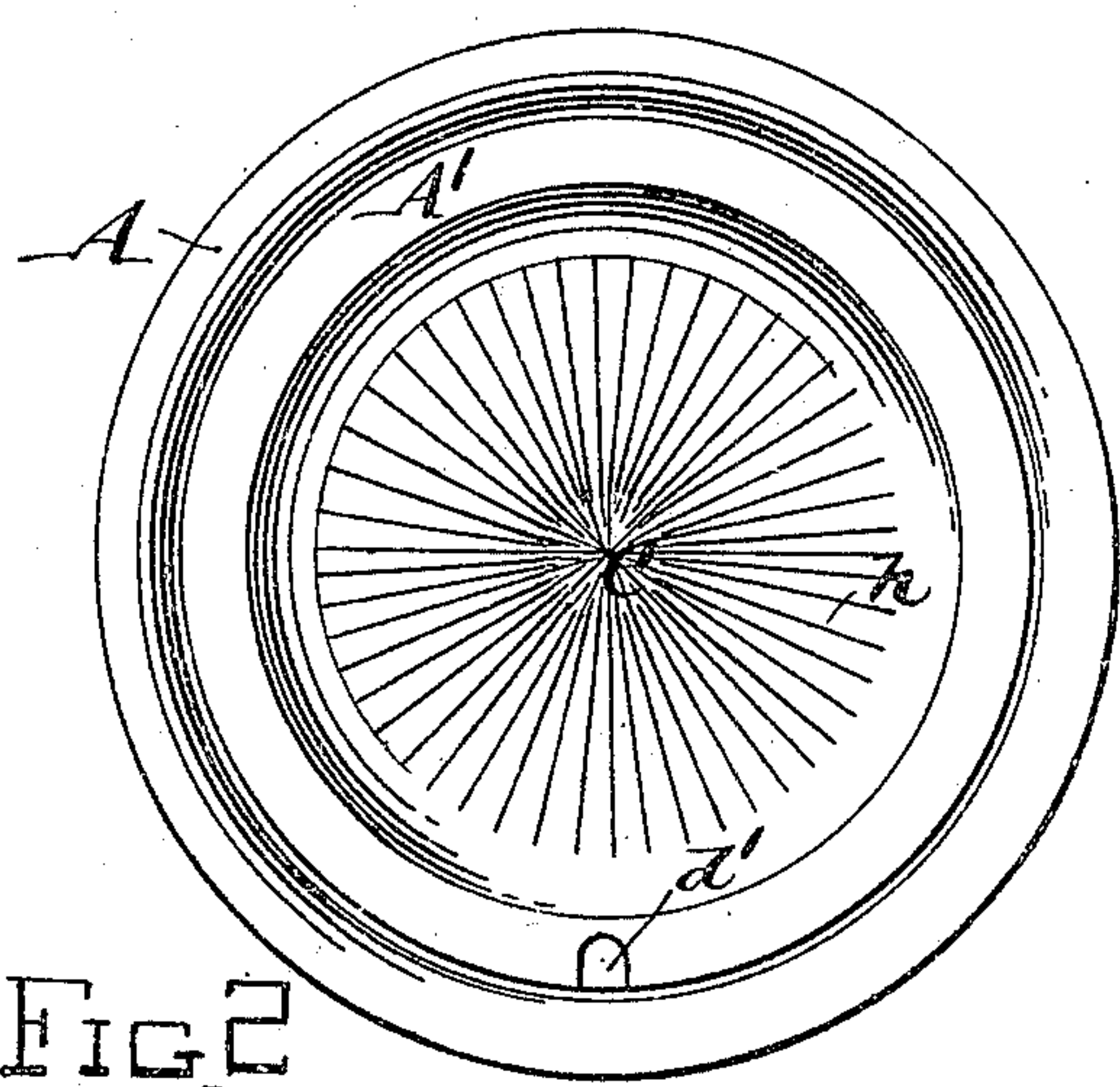


FIG. 2.

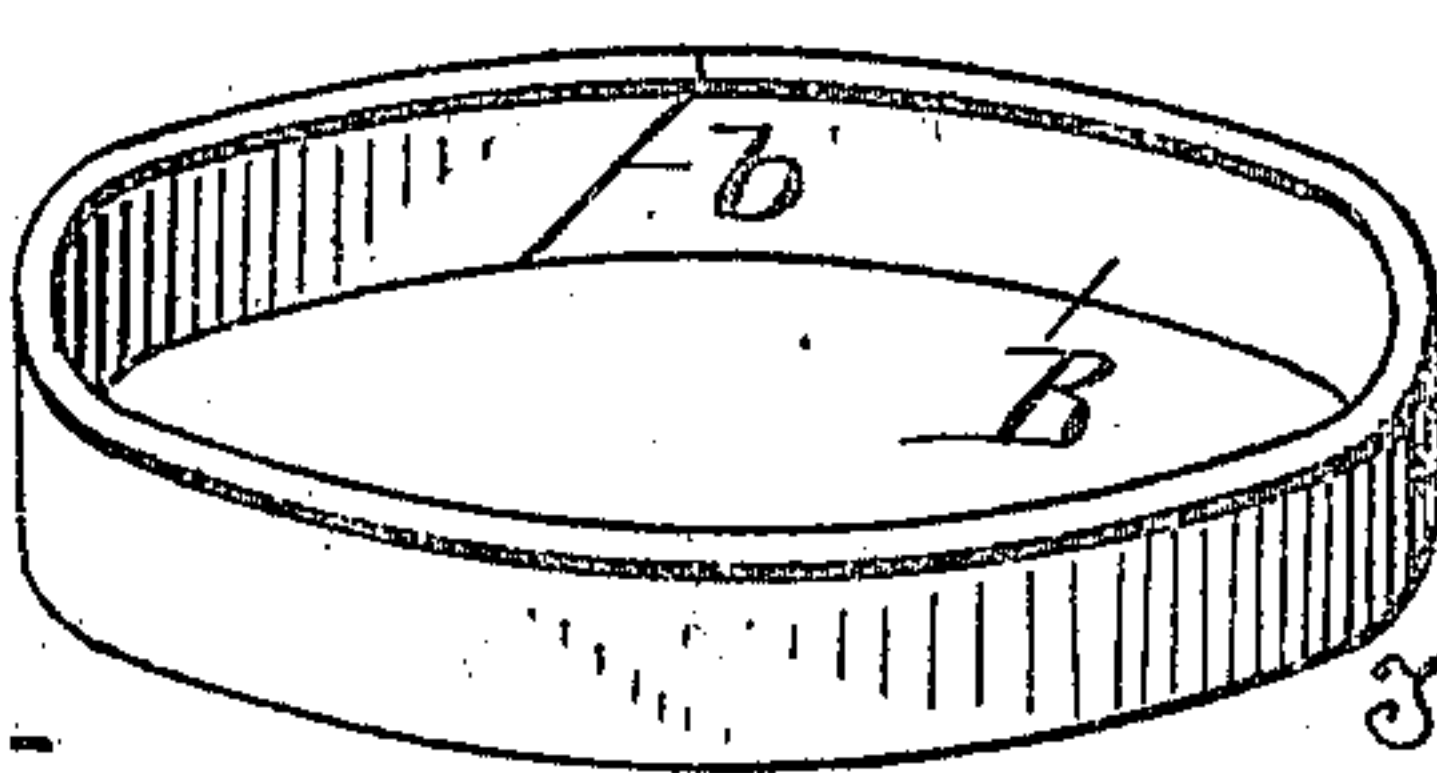


FIG. 6.

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BOTTLE AND STOPPER.

952,287.

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To all whom it may concern:

Be it known that I, ANDREW T. WANNENWETSCH, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Bottles and Stoppers, of which the following is a specification.

This invention relates to an improved bottle and stopper which are so constructed that the same cannot be again filled when the contents of the bottle has been partly or wholly removed, which permits of being used as a cup for drinking the liquid discharged from the bottle below the stopper; and which can be produced at such cost that the same is commercially practical.

In the accompanying drawings: Figure 1 is a vertical cross section of my improved bottle and stopper. Fig. 2 is a top plan view of the same. Fig. 3 is a side elevation of the stopper. Fig. 4 is a horizontal section in line 4—4, Fig. 3. Fig. 5 is a vertical section of the stopper taken in line 5—5, Fig. 3. Fig. 6 is a perspective view of the packing ring whereby a tight joint is produced between the stopper and bottle. Fig. 7 is a side elevation of the stopper showing a modified form of the discharge passage.

Similar letters of reference indicate corresponding parts throughout the several views.

Referring to Figs. 1—5, A represents the bottle which has a cylindrical wall *a* and is of substantially the same diameter from top to bottom instead of being provided at its upper end with a contracted neck like bottles in common use. Within the bore of this bottle is arranged a circular stopper *A*¹ which covers or closes the bottle immediately above the liquid therein. A tight joint is produced between this stopper and the bottle by means of a packing ring B of cork or other suitable material which is seated in an annular groove C formed on the periphery of the stopper and engages with the bore of the bottle, as shown in Fig. 1. This packing ring is preferably made from a single strip the ends of which are scarfed, as shown at *b* Fig. 6, and engage each other.

The liquid is discharged from the bottle through a passage the main portion D of

which is formed by means of a circumferential groove arranged on the periphery of the stopper within the bore of the packing while its inlet *d* extends lengthwise of the periphery of the stopper to the inner side thereof and its outlet *d*¹ extends lengthwise of the periphery of the stopper to the outer side thereof. The main or central part D of the discharge passage is arranged to form one complete spiral and the inlet *d* and outlet *d*¹ thereof are arranged lengthwise in line or adjacent to each other on the same side of the stopper, as shown in Figs. 3 and 5. By this arrangement of the discharge passage it is impossible to pour the liquid out of the bottle regardless of the position into which it is tilted because no air can enter the bottle and consequently no liquid will escape therefrom. The only way in which the liquid can be withdrawn from the bottle is by pressing the stopper downwardly which causes the liquid to be displaced from the bottle below the stopper and flow outwardly through the discharge passage in the stopper into the space within the bottle above the stopper. This upper space of the bottle thus serves as a cup, glass or vessel which permits of drinking the liquid expelled from the bottle below the stopper without requiring a separate cup or glass for this purpose, thereby rendering the same absolutely sanitary and avoiding the danger of contagion to which persons are exposed while drinking from cups, glasses or vessels in public places. To further increase the capacity of the upper part of the bottle, the upper side of the stopper is recessed, dished or hollowed out in the central part, as shown at *e*, Figs. 1, 2, 4 and 5.

If desired the main or central part of the discharge passage may be made of serpentine form, as shown at *D*¹, Fig. 7.

By constructing the discharge passage either in the form shown in Fig. 3 or the form shown in Fig. 7, it renders it impossible to insert a tube through the same into the bottle for withdrawing the liquid therefrom.

For the purpose of preventing the stopper from being moved outwardly after the same has been pushed downwardly more or less and thus foil any attempt to refill the bottle,

a detent device is provided which preferably consists of two balls *f*, *f* which are arranged in circumferential recesses, grooves or pockets *F*, *F* of curved form in cross section and arranged on the periphery of the stopper below the packing groove and which are adapted to move outwardly in said grooves and engage part way with one or the other of a series of annular circumferential grooves *g* arranged one above the other in the bore of the bottle. The lower side of each of the bottle grooves is inclined while its upper side is abrupt, as shown in Fig. 1, which causes the detent balls as the stopper is pushed downwardly to be retracted by engaging the lower side of a ball groove, thereby permitting unrestricted descent of the stopper for emptying the bottle but when an attempt is made to pull the stopper outwardly the balls engage with the abrupt side of a bottle groove and lock the stopper against movement in this direction. As many of the bottle grooves as desired may be employed but the same are preferably so spaced that the distance from one to another corresponds relatively to the displacement of one glass or charge of liquid such as is ordinarily withdrawn at one time from the bottle. The ball grooves or seats in the stopper are preferably separated from each other and are arranged on opposite sides of the inlet of the discharge passage, so that the balls cannot run from one to the other, thereby preventing both balls from being arranged close together when the bottle is tilted and insuring locking the stopper at several points against withdrawal.

The outer side of the stopper, preferably within its dished surface is roughened or provided with corrugations, as shown at *h* in Figs. 1, 2, 3 and 5 which prevents a pneumatic suction cup from taking a hold of the outer side of the stopper and pulling the same outwardly while shaking the balls to loosen their grip on the bottle.

To prevent the contents of the bottle or package from fermenting or becoming otherwise affected by exposure to air the bottle may be sealed or completely closed by inserting a large cork in outer end of the bottle over the piston stopper *A*¹ or if desired this may be effected by inserting a small cork in the outlet *d*¹ of the piston stopper.

My improved bottle and stopper can be made very cheaply of glass or similar material by the means commonly employed in glass works at comparatively small cost, thereby rendering the same particularly desirable for dispensing or packing liquids without materially increasing the cost of marketing the same.

I claim as my invention:

1. The combination of a bottle, and a

stopper adapted to be pushed from the outer to the inner end of the bottle and to displace the liquid in the latter and provided with an outlet passage a part of which extends circumferentially around the periphery of the stopper.

2. The combination of a bottle, and a stopper adapted to be pushed from the outer to the inner end of the bottle and having a discharge passage which extends circumferentially around its periphery and which has its outlet and inlet arranged adjacent to each other on the same side of the stopper.

3. The combination of a bottle, a stopper movable lengthwise in the bottle and provided on its periphery with a discharge passage part of which extends circumferentially around the stopper, and a packing extending over the circumferential part of said passage and forming the outer wall thereof.

4. The combination of a bottle, a stopper movable lengthwise in the bottle and provided on its periphery with a groove, and a discharge passage having a main part extending circumferentially around the stopper at the bottom of said groove and having an inlet and an outlet extending lengthwise from opposite ends of the circumferential part to the inner and outer sides of the stopper, and a packing ring arranged in said groove and covering the circumferential part of said passage and engaging with the bore of the bottle.

5. The combination of a bottle, a stopper arranged in the bottle and having a roughened outer side and a discharge passage.

6. The combination of a bottle having the bore of its wall provided with annular grooves each of which has an abrupt upper side and an inclined lower side, a stopper arranged in the bottle and provided with peripheral recesses and a discharge passage, and balls arranged in the recesses of the stopper and adapted to engage with the grooves of the bottle.

7. The combination of a bottle having the bore of its wall provided with annular grooves each of which has an abrupt upper side and an inclined lower side, a stopper arranged in the bottle and provided with peripheral recesses and a discharge passage, and balls arranged in the recesses of the stopper and adapted to engage with the grooves of the bottle, the recesses of the stopper being separated from each other.

8. The combination of a bottle having the bore of its wall provided with annular grooves each of which has an abrupt upper side and an inclined lower side, a stopper arranged in the bottle and having a discharge passage which extends around its periphery and has an inlet and an outlet

extending to the front and rear sides of the
stopper and the latter also having circum-
ferential recesses on its periphery which
are spaced apart and arranged on opposite
5 sides of said inlet, and detent balls arranged
in said recesses and adapted to engage said
grooves.

Witness my hand this 25th day of May,
1909.

ANDREW T. WANNENWETSCH.

Witnesses:

THEO. L. POPP,
ANNA HEIGIS.