

No. 655,056.

Patented July 31, 1900.

T. J. BUTLER.
BOTTLE STOPPER.

(Application filed Sept. 28, 1899.)

(No Model.)

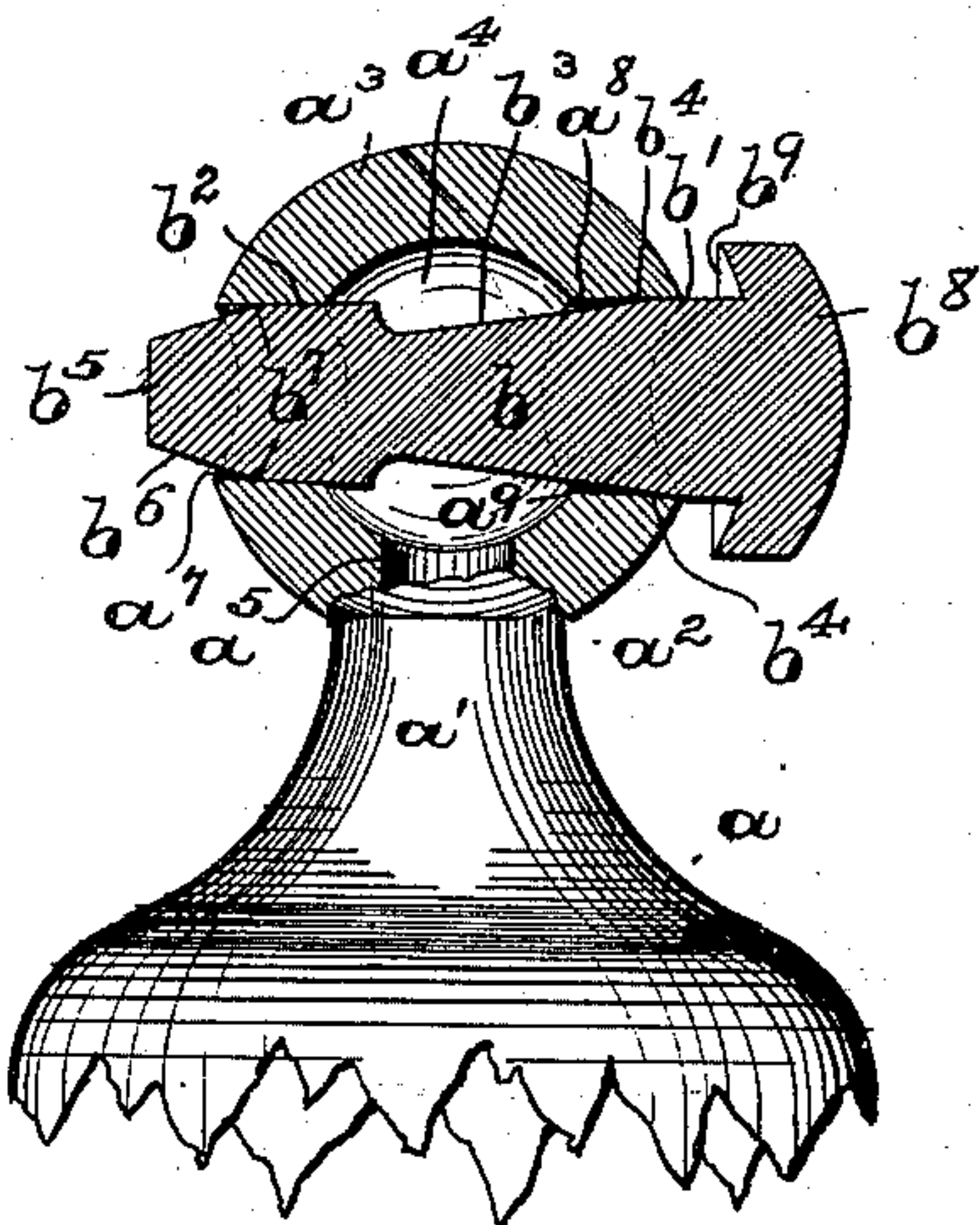


FIG. 1

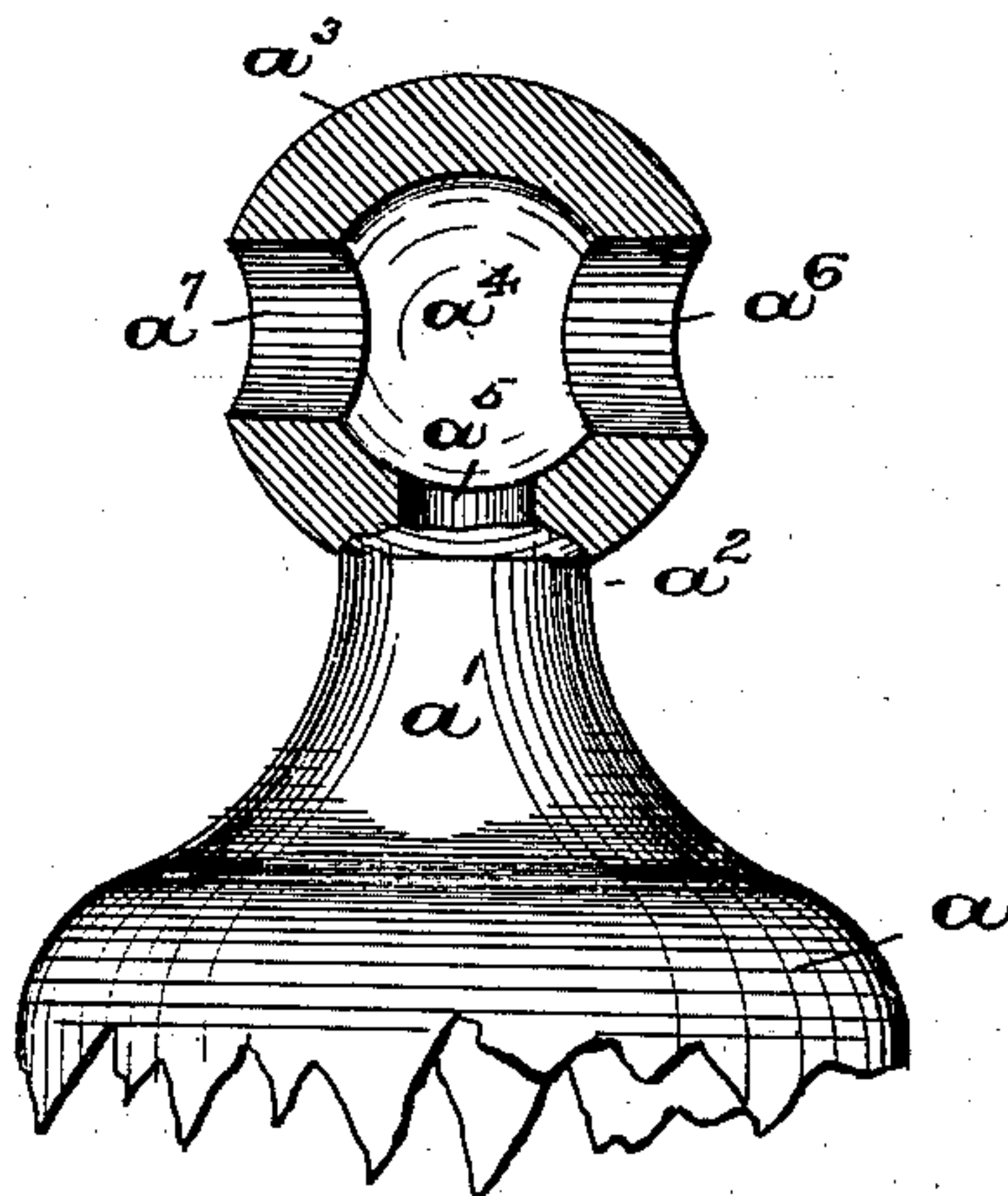


FIG. 2

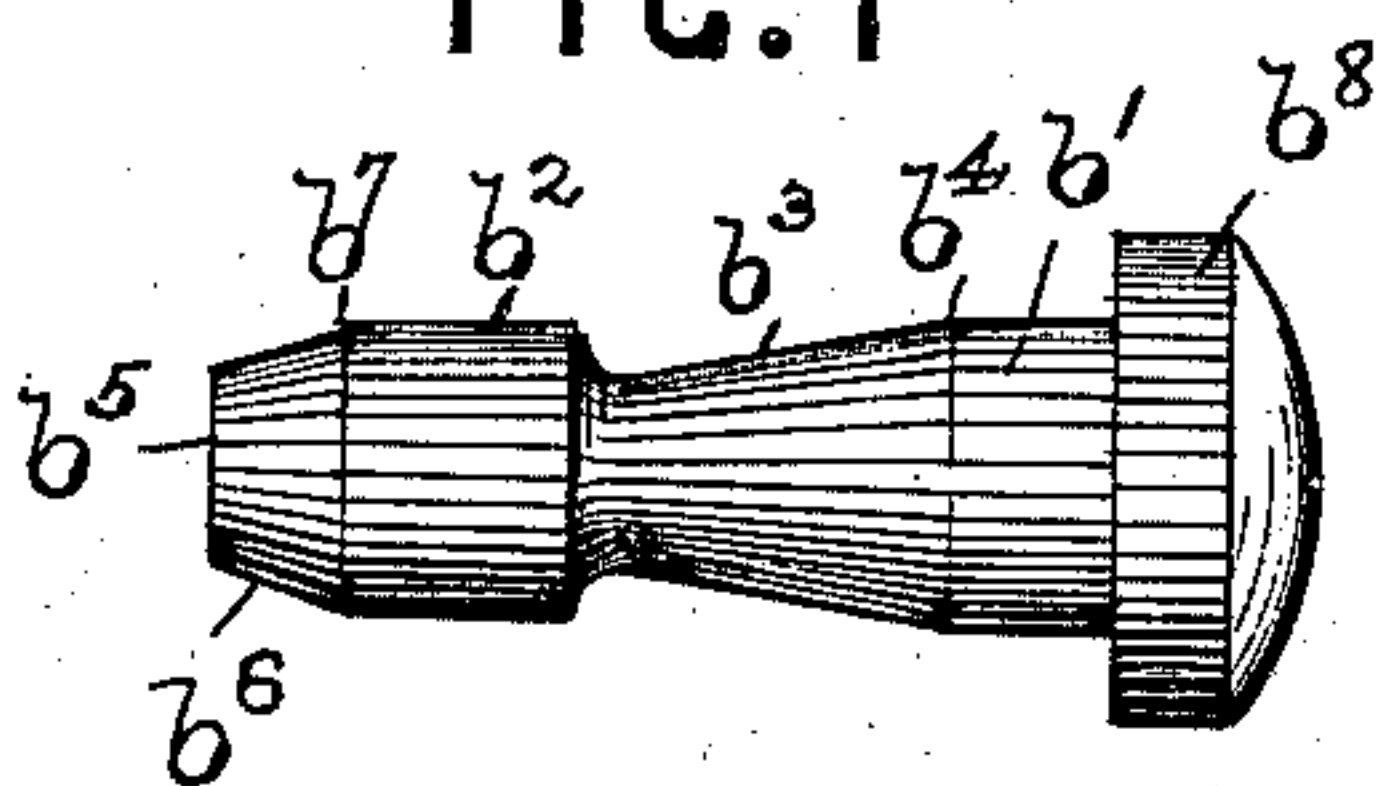


FIG. 4

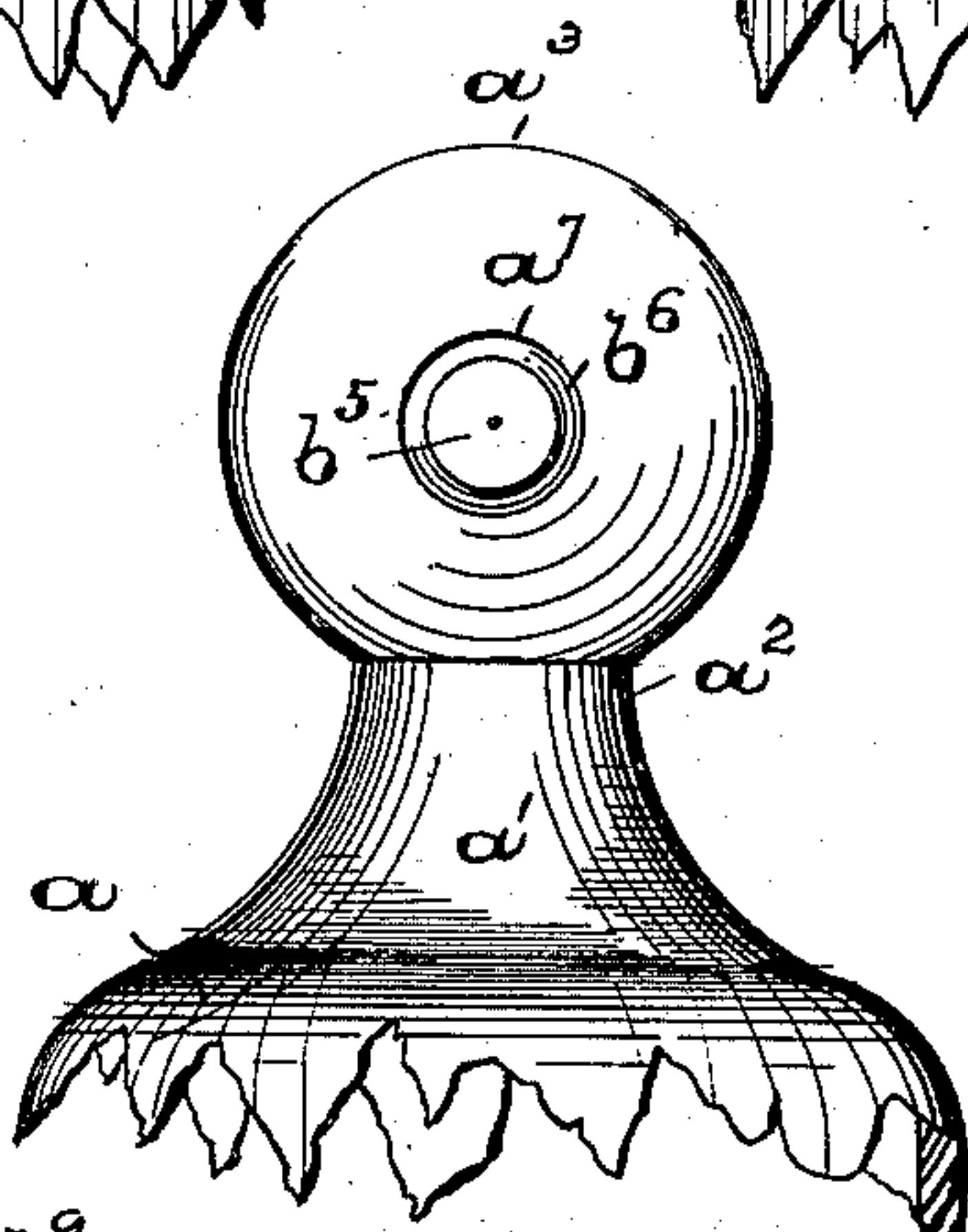


FIG. 5

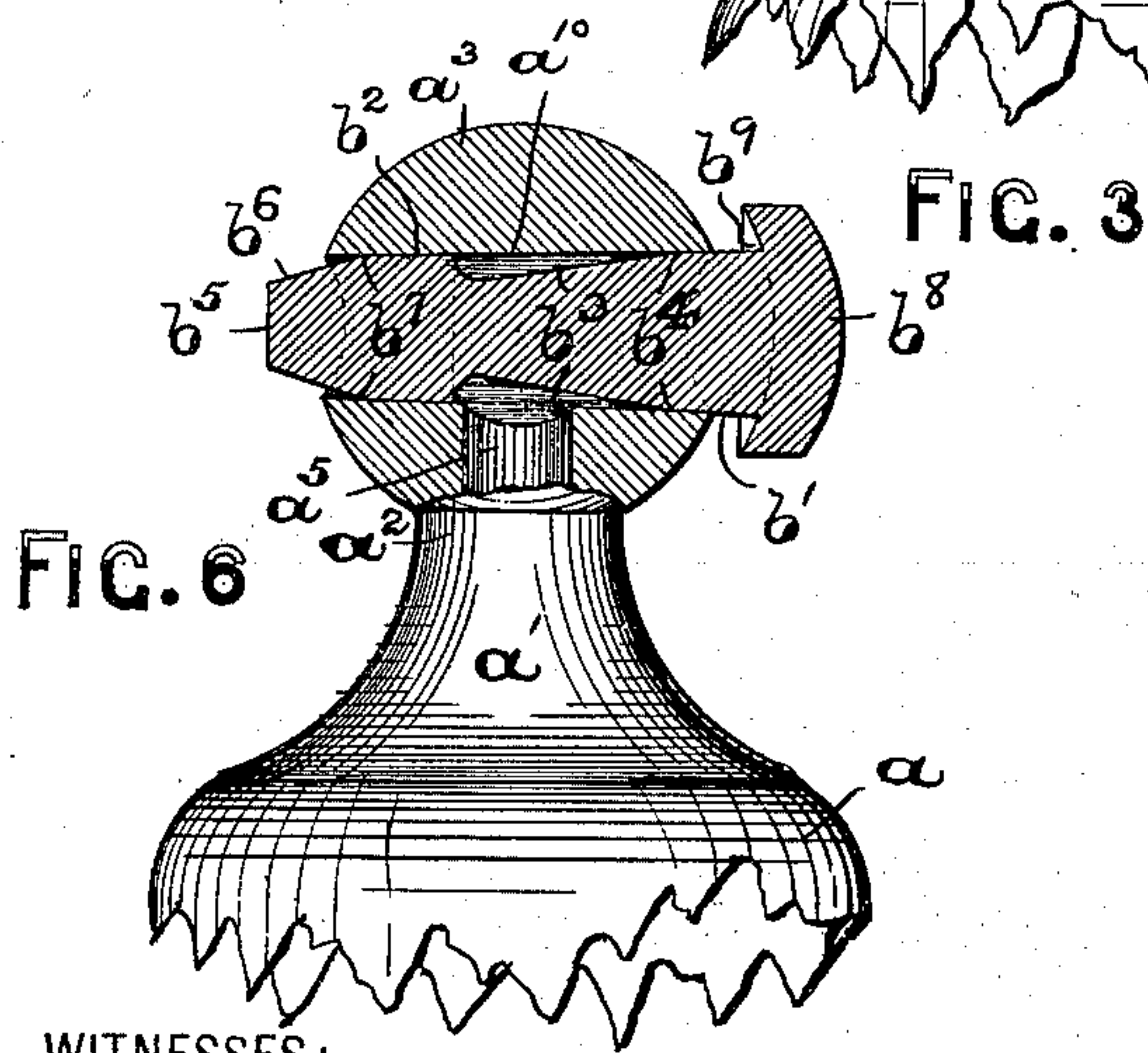


FIG. 6

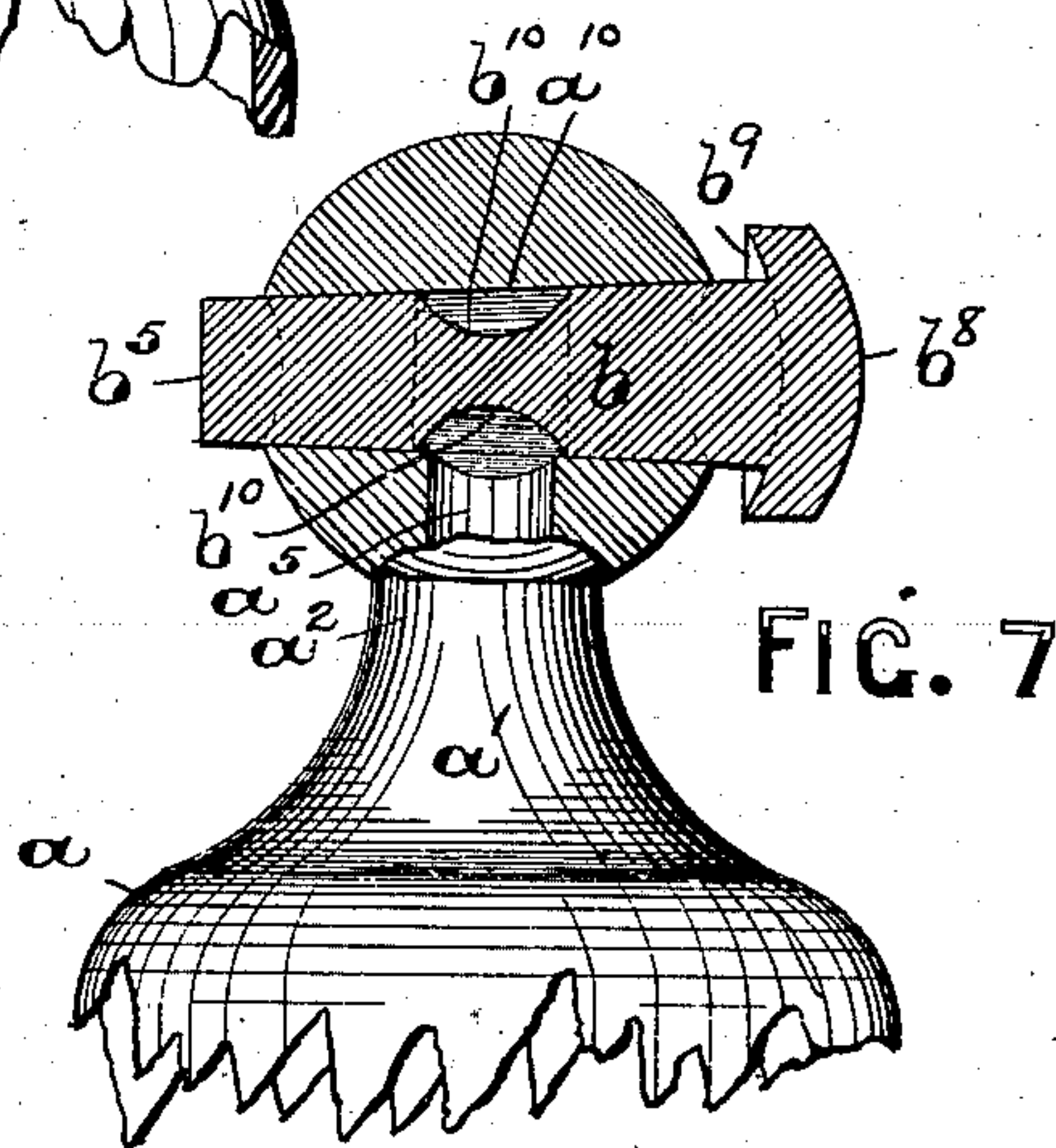


FIG. 7

WITNESSES:

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THOMAS J. BUTLER, OF KEARNY, NEW JERSEY.

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 655,056, dated July 31, 1900.

Application filed September 28, 1899. Serial No. 731,934. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. BUTLER, a citizen of the United States, residing at Kearny, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Bottle-Stoppers; 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.

My invention has reference to improvements in bottle-stoppers; and the invention has for its primary object to provide a simple, cheap, and novel construction of bottle-stopper in which the stopper portion can be readily affixed in the pouring-duct of the bottle, directly above the mouth of the neck of the bottle, without the employment of wire fastenings or other mechanism for retaining the stopper in position irrespective of any gas-pressure contained in the bottle due to the liquid therein.

A further object of this invention is to provide a bottle-stopper which is part of the bottle itself and which is provided with a stopper portion of such construction that it can be easily and quickly secured in its closing relation with the mouth of the bottle to prevent pouring therefrom and can just as readily be displaced without the necessity of a corkscrew or other objectionable mechanism for withdrawing the stopper, which mechanism in many instances is very hard to manipulate.

My invention therefore consists in the novel construction of bottle-stopper to be hereinafter more fully set forth and also in the several novel arrangements and combination of parts and the various details of the construction thereof, all of which will be hereinafter fully set forth and finally embodied in the claims.

The invention is clearly illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the upper part of a bottle with the stopper portion embodying the principles of this invention represented in longitudinal vertical section. Fig. 2 is a similar view of the parts repre-

sented in said Fig. 1, but with the stopper removed; and Fig. 3 is an end view of the several parts illustrated in said Fig. 1. Figs. 4 and 5 are a side and an end view, respectively, of the stopper. Figs. 6 and 7 are two views similar to that in Fig. 1 of modified forms of bottle-stoppers, but still embodying the principal features of my invention.

Similar letters of reference are employed in all of the said above-described views to indicate corresponding parts.

In said drawings, a indicates a portion of any one of the well-known forms or bodies of a glass or other bottle, and a' represents the neck of the bottle, which is made tapering or narrow, as at a^2 and as will be seen from the several figures of the drawings. Formed integral with said tapering or narrow portion a^2 of the neck is a head or an enlargement a^3 , preferably of a spherical or ball shape, as indicated, and which forms part of the bottle-stopper proper; but it may be of the general outline found in bottles as now generally made. Said portion or enlargement is made hollow to form a chamber a^4 and is provided with a duct a^5 , which communicates with the mouth of the neck of the bottle. In the opposite sides of said enlargement there are the holes a and a^7 , which are preferably made tapering, the taper of the surrounding surface of the hole a^7 being a continuation of the taper of the surrounding surface of the hole a^6 . Removably arranged in the said holes a^6 and a^7 is a stopper b , which is preferably made of wood or other similar material to greatly reduce the cost of the manufacture of the bottle-stopper. The said stopper is provided with the surfaces b' and b^2 , which are of the same taper as the taper of the respective holes a^6 and a^7 , the said surfaces b' and b^2 being joined with the surface b^3 , which is of a different taper from the taper of said surfaces b' and b^2 . The taper of the surface b^3 extends into the hole a^6 and meets the tapering surface of said hole at a point b^4 , thereby forming an angular space a^8 , as shown in Fig. 1, to prevent, if the wooden stopper should swell or expand due to moisture, an annular shoulder on said stopper contiguous to the annular edge a^9 of the hole a^6 , which would prevent the withdrawal of said stopper b from the enlargement a^3 , as will be clearly evident. At the opposite end

b^5 said stopper is likewise provided with another tapering surface b^6 , which meets the tapering surface b^2 at a point b^7 in the hole a^7 , to also prevent the formation of an annular shoulder on this portion of the stopper should the latter expand or swell.

The stopper b may be provided with a suitable head b^8 for forcing the stopper into the holes a^6 and a^7 by a slight tap on said head, the said head being preferably cupped, as at b^9 , to receive any splash of the liquor or liquid from within the bottle while removing the stopper. Should the stopper b become firmly wedged in the holes a^6 and a^7 it can be readily removed from the enlargement a^3 by a slight tap on the end b^5 of the stopper.

From an inspection of Fig. 1 it will be evident that when the stopper b has been arranged in the enlargement a^3 of the bottle the gas from the liquid in the bottle will entirely surround that portion of the stopper extending directly across the chamber in said enlargement a^3 and will therefore have no effect upon the stopper, and hence the latter cannot be forced by the gas from its position in the said enlargement a^3 .

From the above description it will be seen that I have devised a simple and cheap as well as an operative bottle-stopper, the stopper b of which can be readily arranged in place to effectively close the mouth of the bottle and to be easily removed when necessary. Furthermore, the stopper b can be easily kept clean and when lost can be replaced with but a very slight expense.

In Fig. 6 I have illustrated the enlargement a^3 provided with a tapered and tubular duct a^{10} in place of the chamber a^4 , said duct a^{10} being in communication with the duct a^5 and the stopper b being arranged in said duct a^{10} , substantially as illustrated in said Fig. 6.

Another serviceable construction of bottle-stopper made according to my invention is represented in Fig. 7. In this construction the enlargement a^3 has a duct a^{10} similar to that represented in said Fig. 6, but the stopper b is provided with an annular groove b^{10} , arranged in a position approximately above the duct a^5 to permit the gas from the body of the bottle to surround a portion of the stopper, and thereby permit its withdrawal from said duct a^{10} when necessary.

I am aware that changes may be made in the several arrangements and combinations of parts, as well as in the details of the construction thereof. Hence I do not limit my invention to the exact arrangements and combinations of the parts as herein described and illustrated, nor do I confine myself to the exact details of the construction of such parts.

Having thus described my invention, what I claim is—

1. The combination, with the tubular neck of a bottle, of a head on said neck, provided with a laterally-extending duct or opening

and a downwardly-extending duct or opening in communication with the tubular neck, and a stopper removably arranged in said lateral duct or opening, the inner portion of said head, and the stopper, being constructed to permit the gas from the liquid in the bottle to entirely surround the portion of the stopper directly across the opening of the neck, and provide an equal pressure on the surrounding surface of the stopper, substantially as and for the purposes set forth.

2. The combination, with the tubular neck of a bottle, of a head on said neck, provided with a laterally-extending duct or opening and a downwardly-extending duct or opening in communication with the tubular neck, a stopper removably arranged in said lateral duct or opening, and a head on said stopper having a cupped surface on its under side, the inner portion of said head, and the stopper, being constructed to permit the gas from the liquid in the bottle to entirely surround the portion of the stopper directly across the opening of the neck, and provide an equal pressure on the surrounding surface of the stopper, substantially as and for the purposes set forth.

3. The combination, with the tubular neck of a bottle, of a head on said neck, provided with a laterally-extending and tapering duct or opening and a downwardly-extending duct or opening in communication with the tubular neck, and a tapered stopper removably arranged in said lateral duct or opening, the inner portion of said head, and the stopper, being constructed to permit the gas from the liquid in the bottle to entirely surround the portion of the stopper directly across the opening of the neck, and provide an equal pressure on the surrounding surface of the stopper, substantially as and for the purposes set forth.

4. The combination, with the tubular neck of a bottle, of a head on said neck, provided with a laterally-extending and tapering duct or opening and a downwardly-extending duct or opening in communication with the tubular neck, a tapered stopper removably arranged in said lateral duct or opening, and a head on said stopper having a cupped surface on its under side, the inner portion of said head, and the stopper, being constructed to permit the gas from the liquid in the bottle to entirely surround the portion of the stopper directly across the opening of the neck, and provide an equal pressure on the surrounding surface of the stopper, substantially as and for the purposes set forth.

5. The combination, with the tubular neck of a bottle, of a head on said neck, formed with a chamber, a pair of laterally-extending ducts or openings, a downwardly-extending duct or opening in communication with the tubular neck, and a stopper removably arranged in said laterally-extending ducts or openings, the inner portion of said head, and

the stopper, being constructed to permit the gas from the liquid in the bottle to entirely surround the portion of the stopper directly across the opening of the neck, and provide
 5 an equal pressure on the surrounding surface of the stopper, substantially as and for the purposes set forth.

6. The combination, with the tubular neck of a bottle, of a head on said neck, formed
 10 with a chamber, a pair of laterally-extending ducts or openings, a downwardly-extending duct or opening in communication with the tubular neck, a stopper removably arranged in said laterally-extending ducts or openings,
 15 and a head on said stopper having a cupped surface on its under side, the inner portion of said head, and the stopper, being constructed to permit the gas from the liquid in the bottle to entirely surround the portion of
 20 the stopper directly across the opening of the neck, and provide an equal pressure on the surrounding surface of the stopper, substantially as and for the purposes set forth.

7. The herein-described bottle-stopper, consisting, essentially, of an enlargement a^3 on
 25 the neck of a bottle, provided with an inner chamber a^4 , a pair of laterally-extending open-

ings a^6 and a^7 having tapering surfaces, a means of communication from said chamber a^4 with the mouth of the neck of the bottle, 30 and a balanced stopper b removably arranged in said openings a^6 and a^7 , having tapering surfaces b^1 and b^3 , b^2 and b^6 , all arranged, substantially as and for the purposes set forth.

8. The herein-described bottle-stopper, consisting, essentially, of an enlargement a^3 on
 35 the neck of a bottle, provided with an inner chamber a^4 , a pair of laterally-extending openings a^6 and a^7 having tapering surfaces, a means of communication from said chamber a^4 with the mouth of the neck of the bottle, a stopper b removably arranged in said open-
 40 ings a^6 and a^7 , having tapering surfaces b^1 and b^3 , b^2 and b^6 , all arranged, as set forth, and a head b^8 on said stopper having a cupped surface b^9 , substantially as and for the purposes set forth. 45

In testimony that I claim the invention set forth above I have hereunto set my hand this 26th day of September, 1899.

THOMAS J. BUTLER.

Witnesses:

THOMAS J. BUTLER, Sr.,
 FRED. C. FRAENTZEL.