

(No Model.)

P. H. HOLMES.
STOPPER FOR BOTTLES, JARS, &c.

No. 512,705.

Patented Jan. 16, 1894.

Fig. 1.

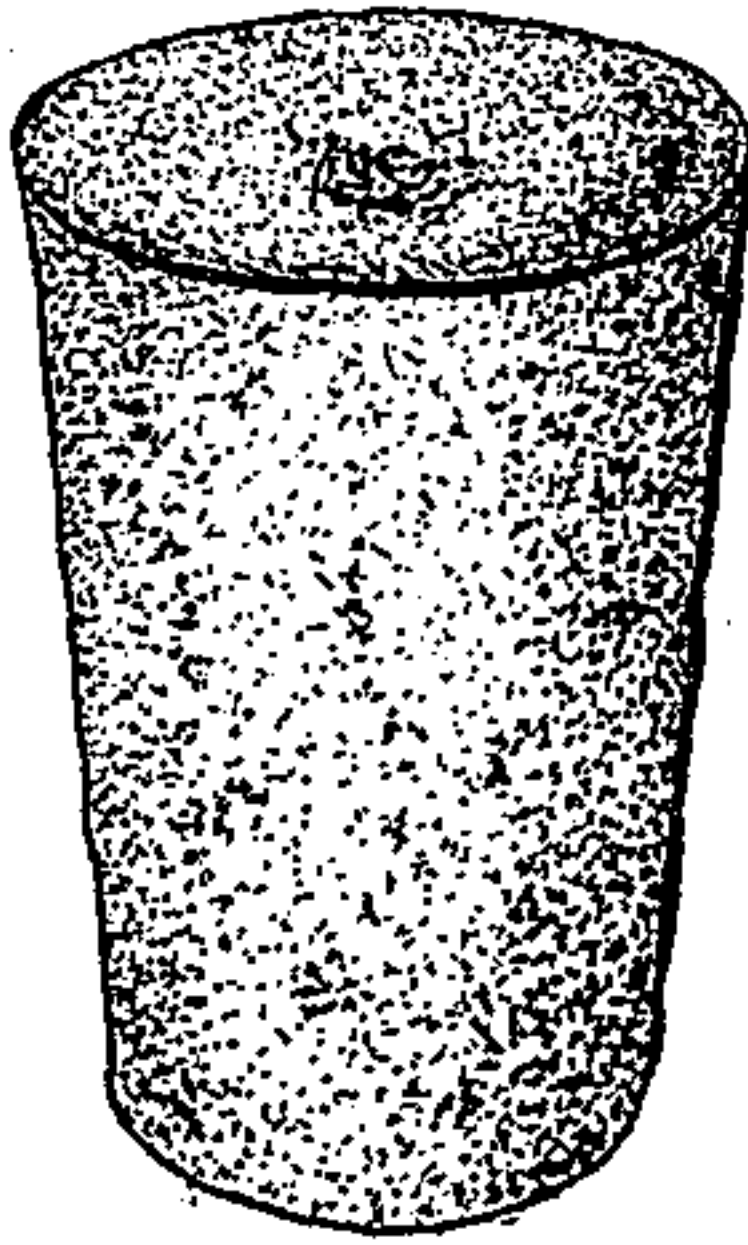


Fig. 2.

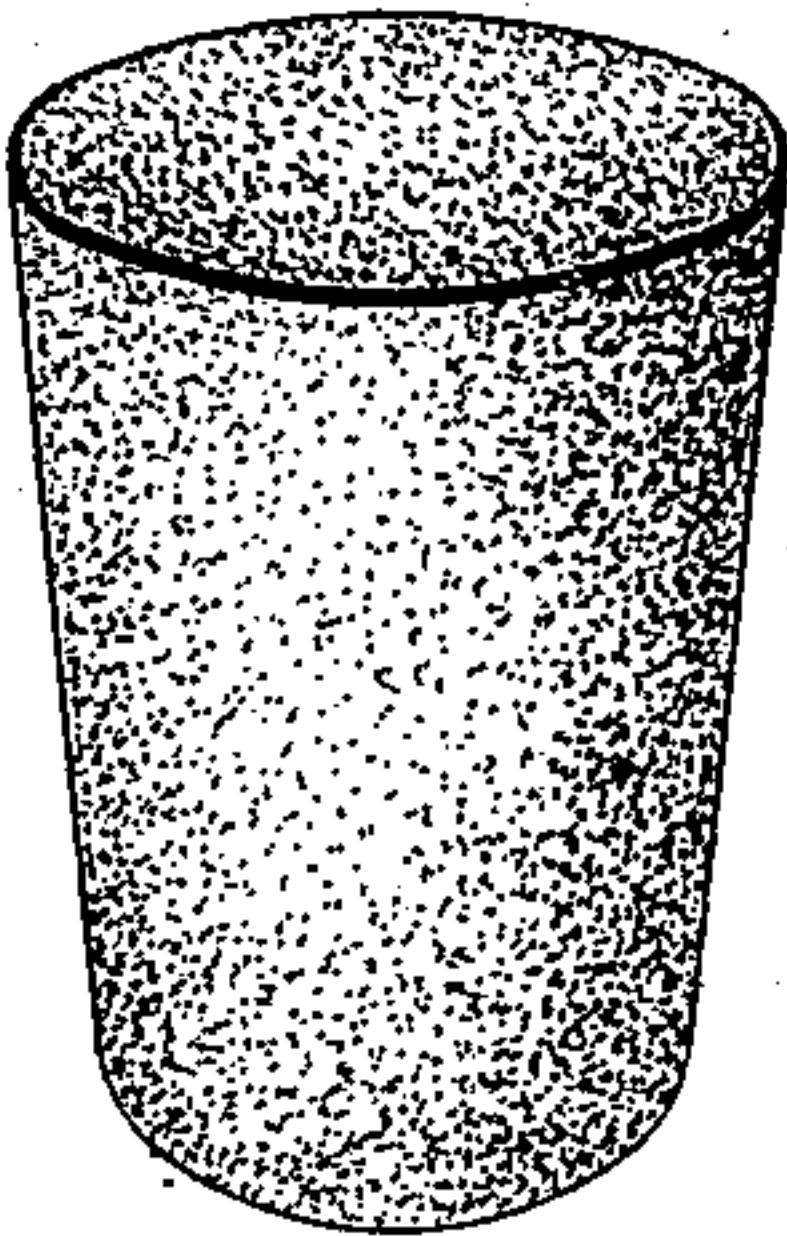


Fig. 3.

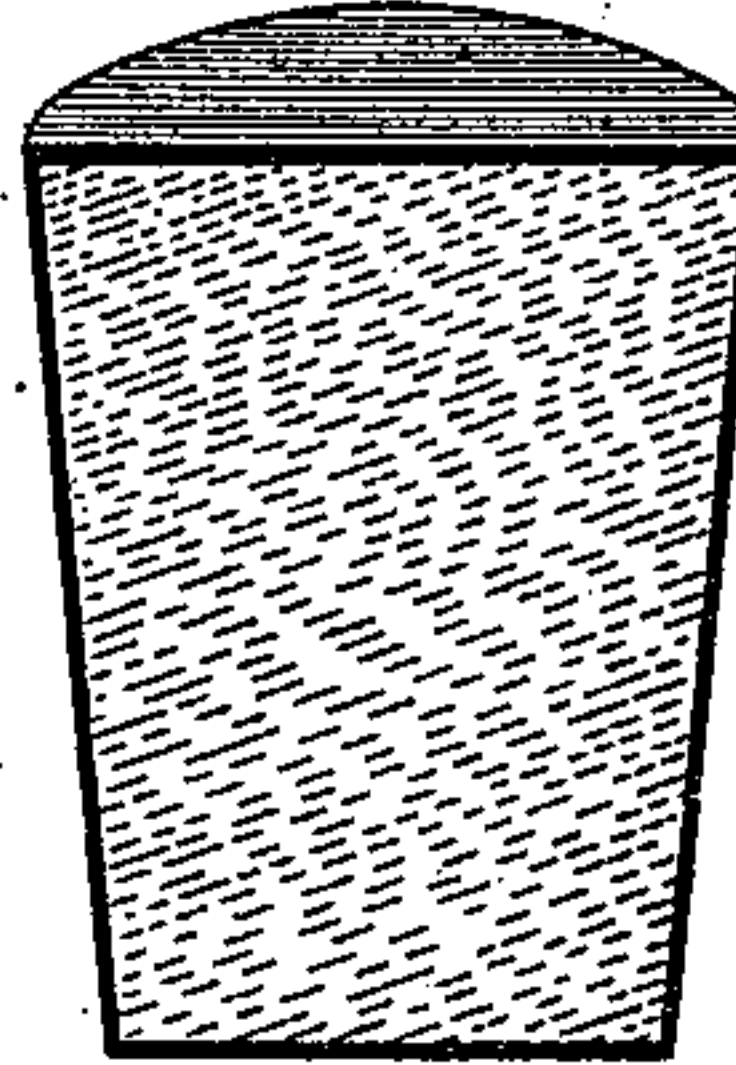
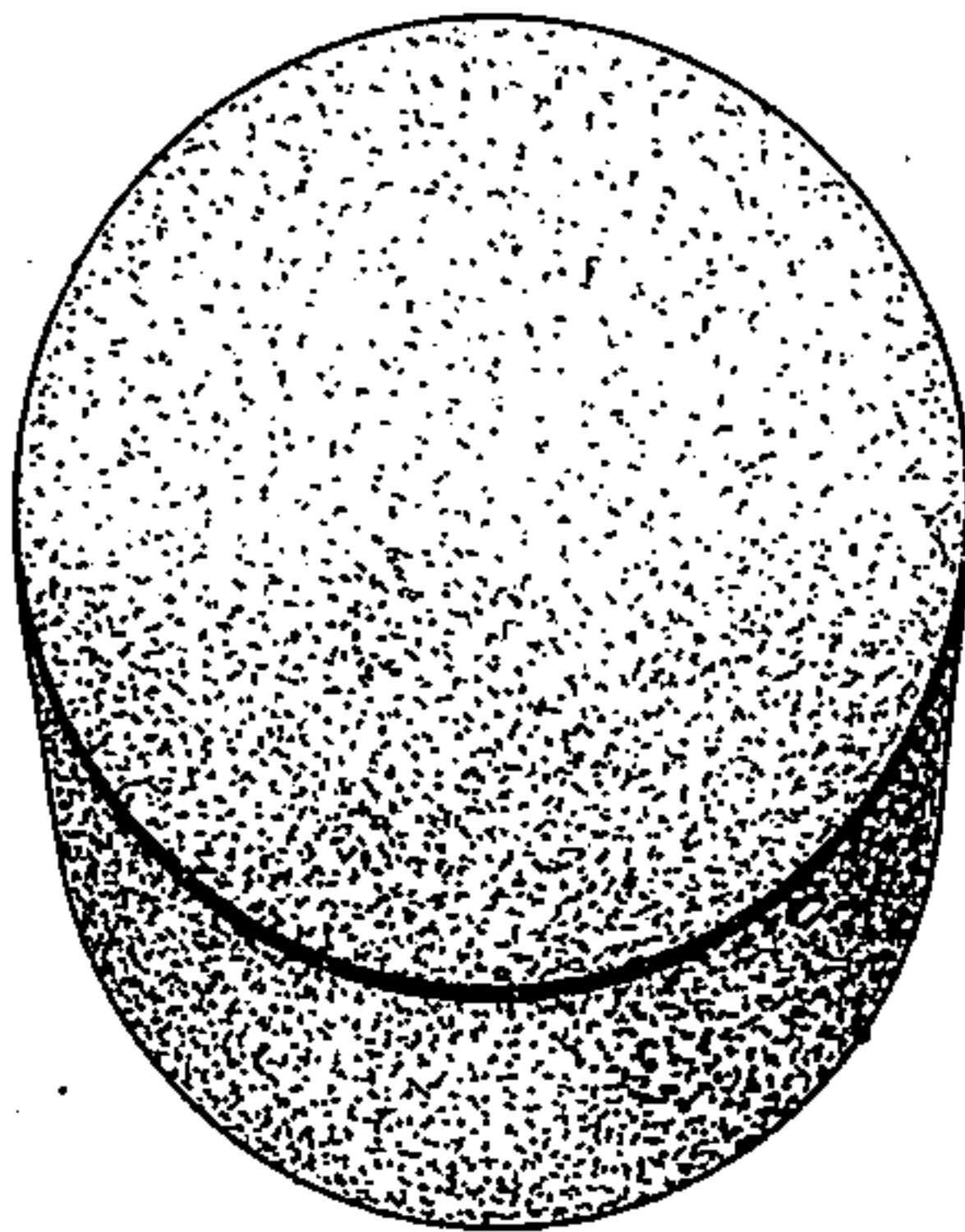


Fig. 4.



Witnesses

C. J. Nottingham
H. B. Ames

Inventor

P. H. Holmes.
B. H. Symmon.
Attorney

UNITED STATES PATENT OFFICE.

PHILIP HENRY HOLMES, OF GARDINER, MAINE.

STOPPER FOR BOTTLES, JARS, &c.

SPECIFICATION forming part of Letters Patent No. 512,705, dated January 16, 1894.

Application filed February 24, 1892. Serial No. 422,667. (No model.)

To all whom it may concern:

Be it known that I, PHILIP HENRY HOLMES, a citizen of Gardiner, in the county of Kennebec and State of Maine, have invented certain new and useful Improvements in Stoppers and Methods of Making the Same; 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.

My invention relates to an improvement in stoppers for bottles, jars, &c., and the object of the invention being to produce stoppers which can be produced at a cost much less than corks, and which shall be equally as effectual in the performance of their functions.

With this end in view my invention consists in a stopper made of fibrous pulp and compressed into shape and permeated by a liquid and acid proof material.

In the accompanying drawings: Figure 1 represents a stopper as it comes from the mold. Fig. 2 is a view of a stopper after it is properly dressed and shaped. Fig. 3 is a view of a stopper made in accordance with my invention, capable of withstanding the action of acids and fluids. Fig. 4 is a view of a jar stopper made in accordance with my invention.

In the manufacture of my improved stoppers I take fiber of any suitable kind and while beating it, I inject steam to soften the pulp. The pulp thus prepared is colored with any desired and suitable coloring material and then pressed into proper form in suitable molds. A stopper thus made is capable of use for various purposes where the appearance of the stopper is not taken into consideration, but to render the stopper more presentable in appearance I prefer to dress or finish it until it assumes the form shown in Fig. 2. This may be accomplished by means of knives in a machine made for the purpose or by means of sand wheels in lieu of the knives.

Instead of molding the stoppers separately, the material may be molded in the form of blocks and afterward cut off in proper sizes.

The stopper, made as thus far described, is capable only for stopping bottles or other vessels containing dry material.

In order to render the stoppers water and acid proof I dip them in melted paraffine wax preferably having gutta-percha added thereto, which latter has the effect of making the stoppers strong. The stopper may, for many purposes, be used in this condition, but in order to render it softer and more like cork I place it in an oven, heated to some 250° or 300° Fahrenheit, and let it stay for twenty or thirty hours, or until it becomes soft.

Stoppers made in accordance with my invention are much cheaper than corks, and when very large corks are considered, the difference in the expense is very considerable. In cork stoppers sixty per cent. of the stock is wasted as they are first sawed square and then turned round. My improved stoppers are pressed in a round form (in cross section) and may be so pressed that they will be capable of use without further treatment.

Stoppers can be made from fiber without the use of steam, but I prefer to use steam as it renders the pulp more soft.

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

1. As a new article of manufacture a bottle stopper made of fibrous pulp, molded and compressed into shape and permeated by a liquid and acid proof material, substantially as set forth.

2. The herein described process of making bottle stoppers consisting in molding and compressing wet pulp into the desired shape, coating said article with a liquid proof coating and finally baking same, substantially as set forth.

3. The herein described process of making a stopper, consisting of pressing fiber pulp into the form of a stopper, dipping the stopper in material capable of withstanding liquids and baking said stopper, substantially as set forth.

4. The herein described process of making a stopper of fiber, consisting in treating the

fiber pulp with steam, pressing the pulp in
the form of a stopper, dressing or finishing
the stopper, dipping it in a solution of paraf-
fine wax and gutta-percha, and finally bak-
5 ing the stopper under pressure, substantially
as set forth.

In testimony whereof I have signed this

specification in the presence of two subscrib-
ing witnesses.

PHILIP HENRY HOLMES.

Witnesses:

N. I. JORDAN,

S. N. MAXEY.