

(No Model.)

J. C. De La VERGNE.
Bottle Stopper.

No. 232,468.

Patented Sept. 21, 1880.

Fig. 1.

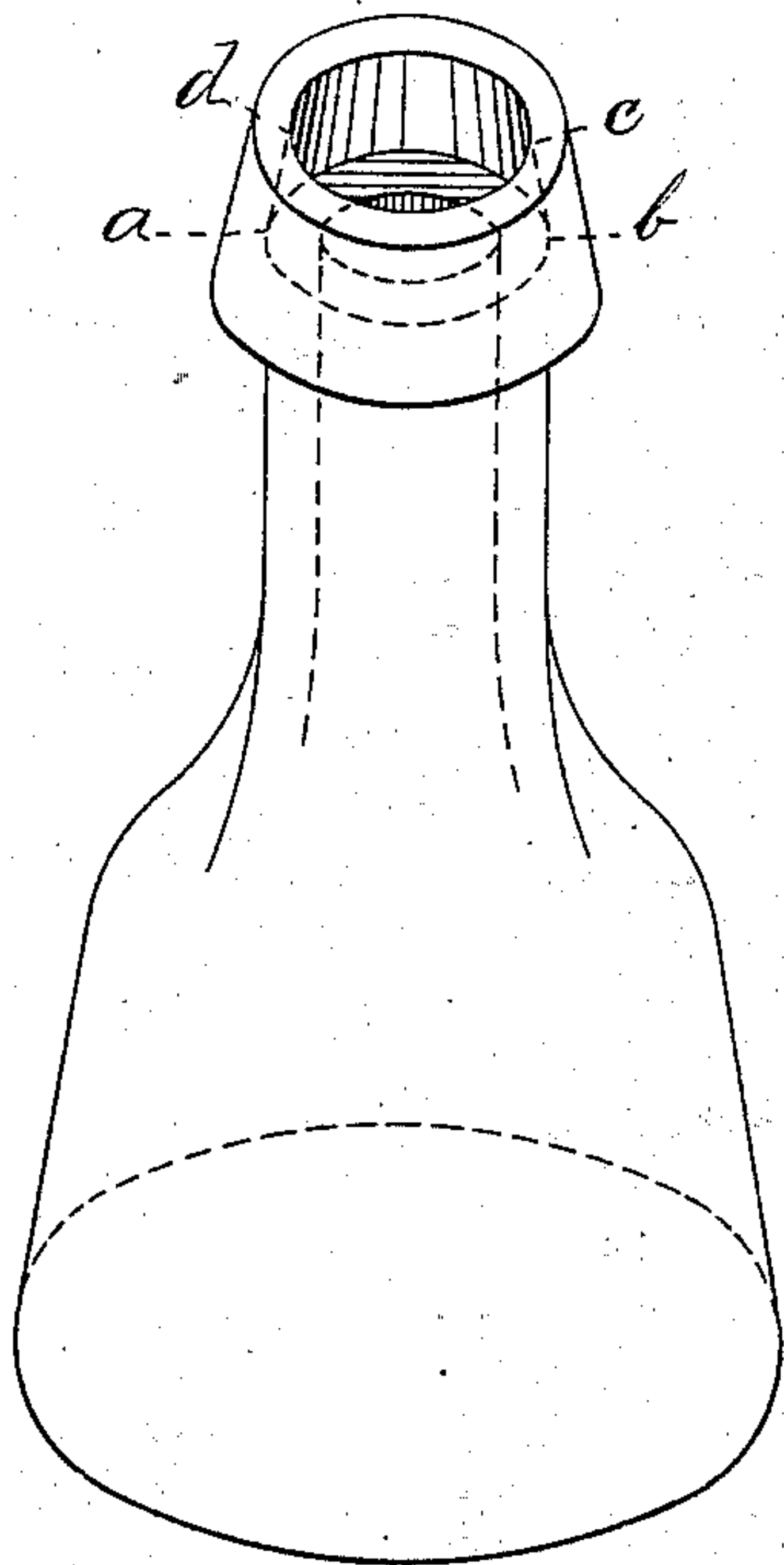


Fig. 2.

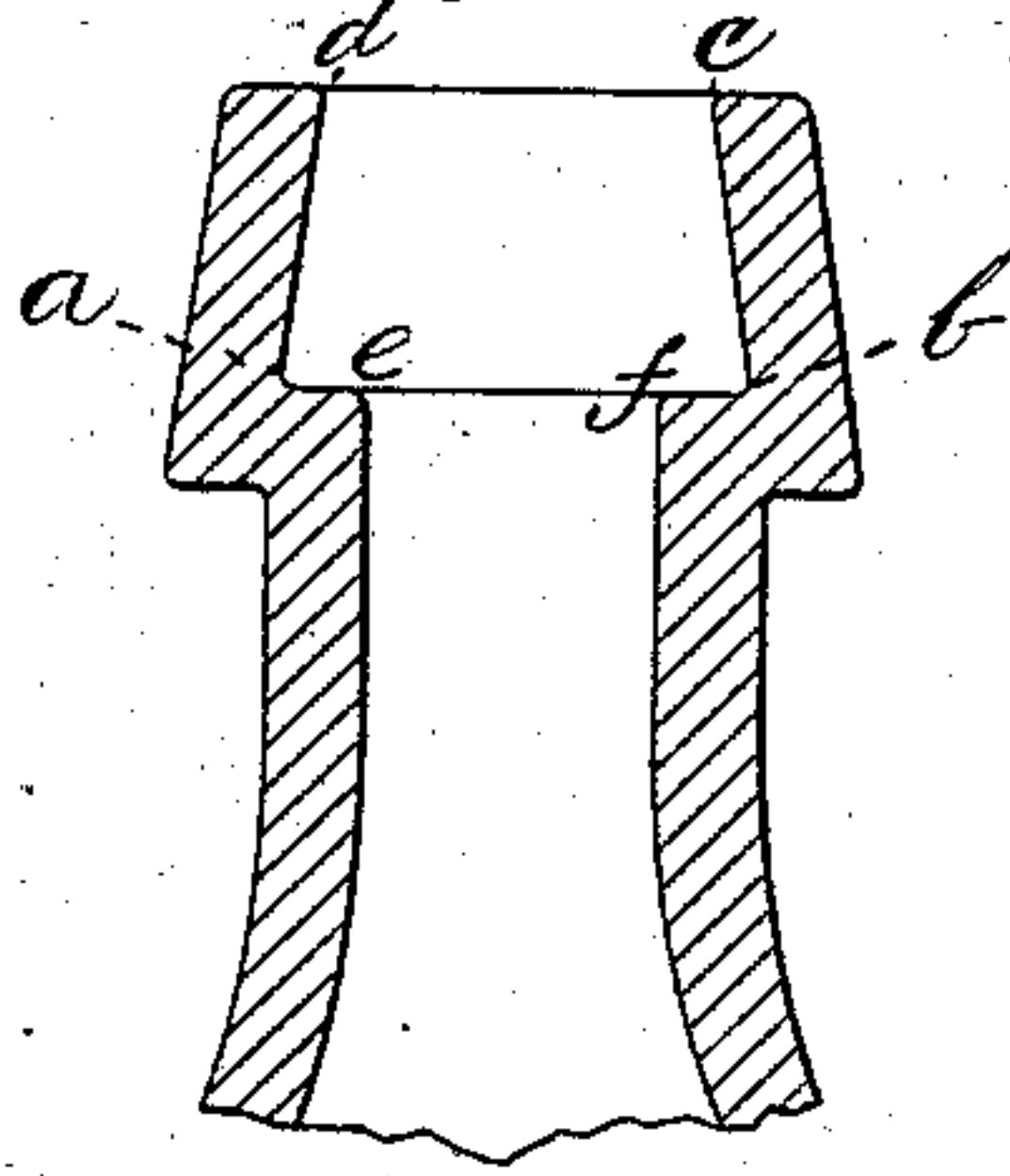


Fig. 4.

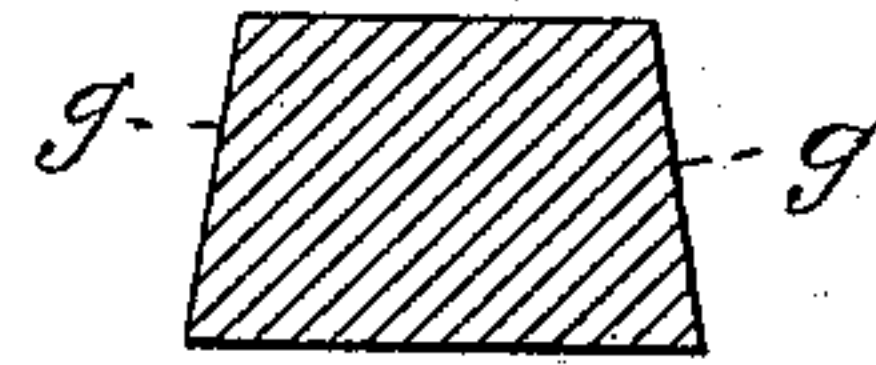


Fig. 3.

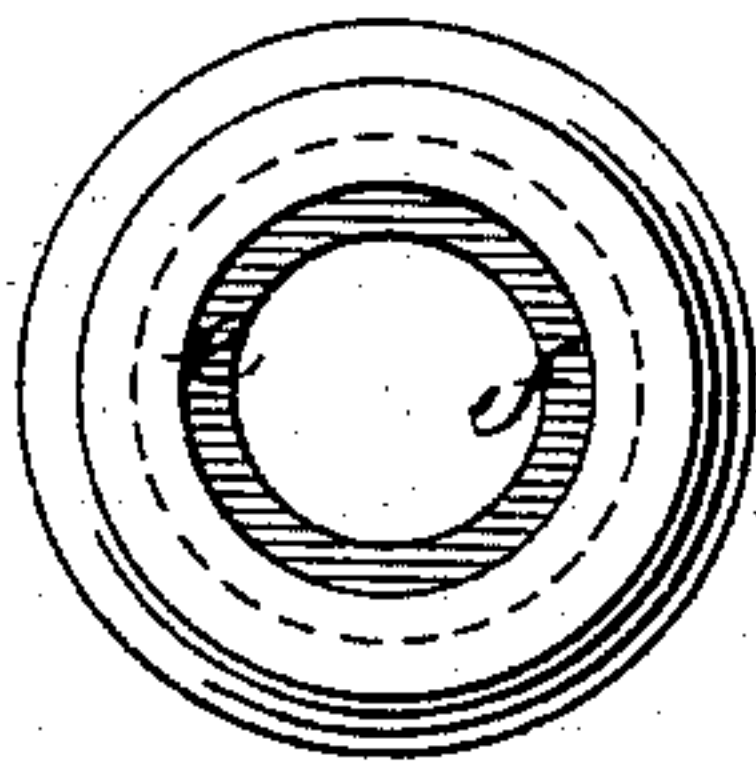


Fig. 5.

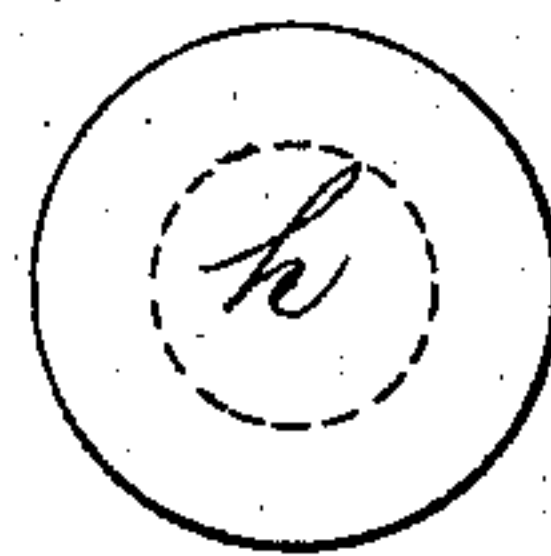


Fig. 6.

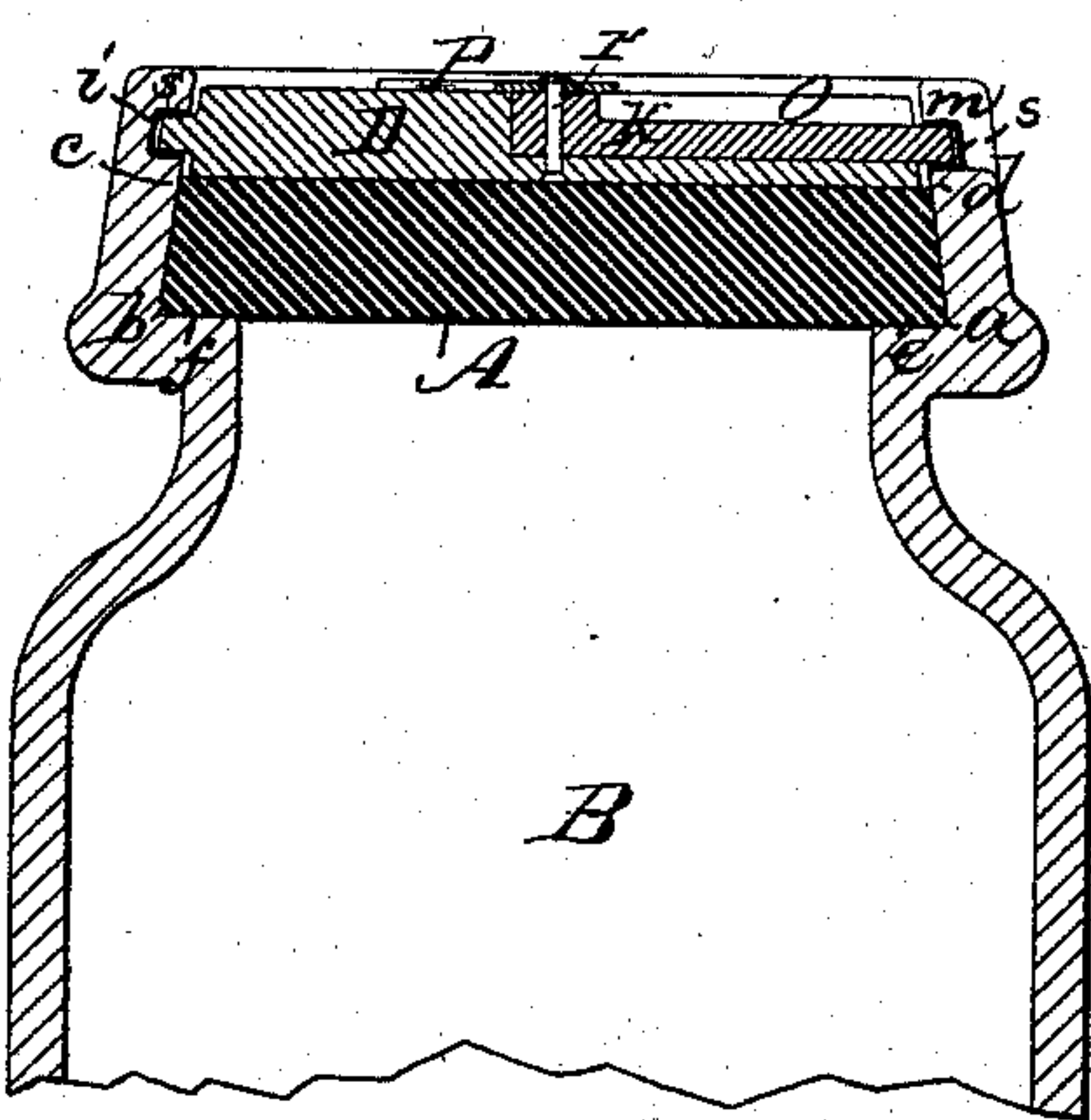
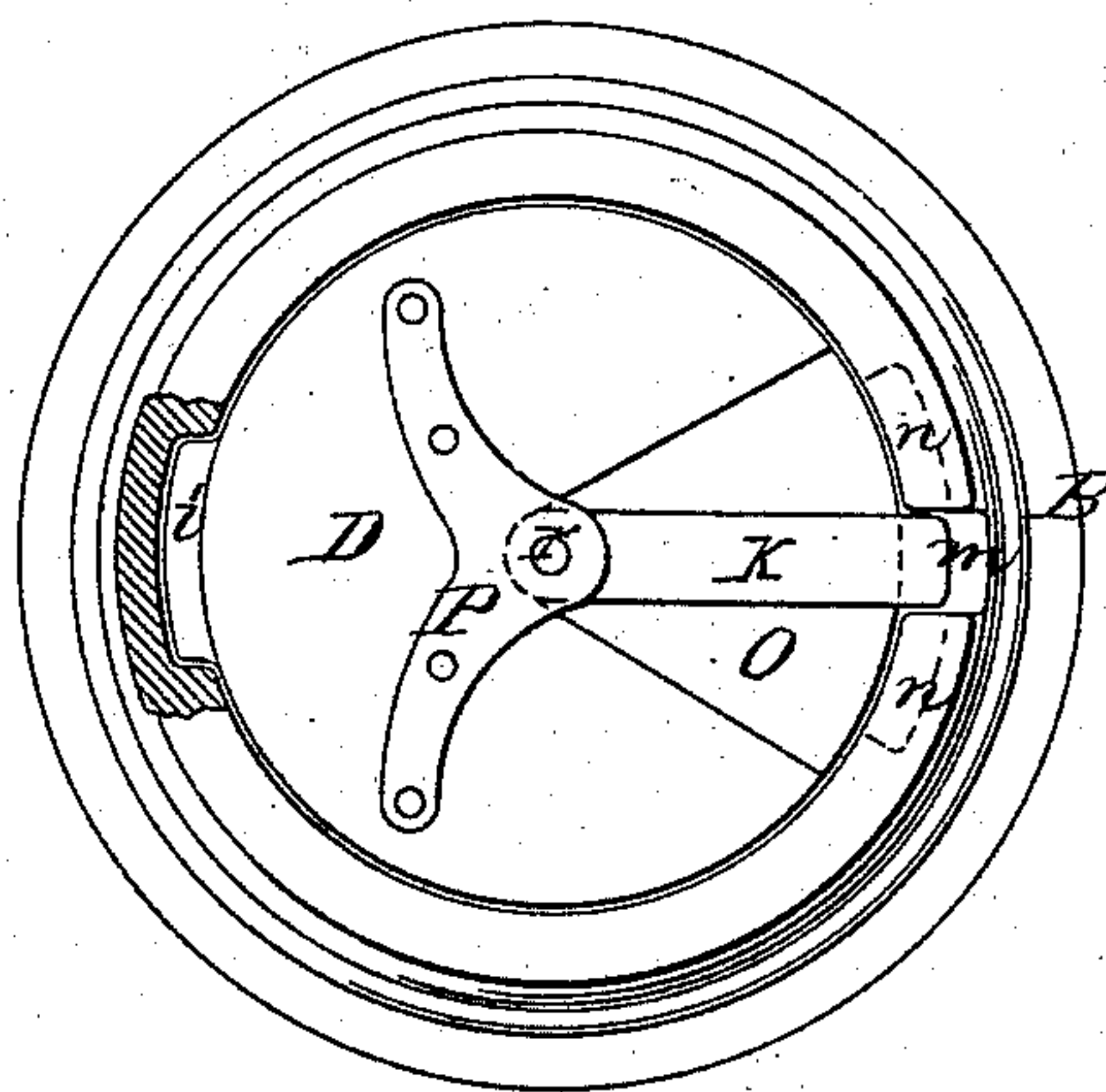


Fig. 7.



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JOHN C. DE LA VERGNE, OF NEW YORK, N. Y.

BOTTLE AND STOPPER.

SPECIFICATION forming part of Letters Patent No. 232,468, dated September 21, 1880.

Application filed April 6, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. DE LA VERGNE, of the city, county, and State of New York, have invented certain new and useful Improvements in Bottles and Stoppers, which are fully set forth in the following specification and accompanying drawings.

The said invention is applicable for the bottling of all kinds of liquids, but especially so for malt, fermented, and such other liquids as have latterly been bottled under pressure and subjected to extreme heats and outward pressures for the purpose of destroying the germs of life or coagulating the albuminous constituents of the ferments contained within the bottle.

The cork must be free from complex combinations, must be readily inserted, and not likely to be injured by the extreme heat or pressure to which it will be subjected. It is also very desirable to have one in such form as to obviate the necessity of any outside appliances to hold it in position, as they would materially retard the operation of corking; and, again, it is a well-known fact that even corks made of rubber, if compressed, in time lose their power of expansion, which would permit the inclosed gas to escape and the ingress of atmospheric air, together with a fresh supply of germs, which would soon decompose the inclosed material.

This invention consists in a bottle or jar having a receptacle for the cork or stopper made in the form of a truncated cone, with its base or larger diameter innermost, and having an annular ring or shoulder at the bottom of said receptacle, to prevent the cork from being driven into the bottle by outside pressure, and in combination therewith a solid cork or stopper, of rubber or other elastic material, made to fit tightly in said receptacle and press with force against its converging sides. The said cork or stopper is made larger than the receptacle which holds it, and is compressed and inserted to its seat, where it expands with the elastic force due to compression in an oblique and upward direction, all of which will be apparent, reference being made to the drawings, wherein—

Figure 1 is a perspective of a bottle, showing the form of the receptacle for the cork by the dotted lines *ab*, *bc*, *cd*, and *da*. Fig. 2 is a

cross-section, showing the outline of the cork-receptacle with a cork placed therein, as at *a b c d*, and at the base of said receptacle an annular ring or shoulder, *ef*. Fig. 3 is a top view of the bottle-neck, wherein is plainly shown the annular ring or shoulder *ef*, which prevents the cork from being driven into the bottle. Fig. 4 is a cross-section of the cork. Fig. 5 is a view of the bottom of the cork which presses against the shoulder *ef*, showing by the dotted line *h* that part of the cork against which a pressure of the compressed air or gas is exerted. Fig. 6 is a cross-section of a jar, showing a solid cork inserted in a receptacle of the form described, and above it a plate which may be used to aid in holding a cork in place should it be thought desirable to make the cork in two parts as a matter of economy. Fig. 7 is a top or plan view of said plate.

By reference to Figs. 1, 4, and 6 it will be observed that when the cork is inserted in a bottle or jar the base or greater diameter of the cone-shaped cork is innermost, and forms a wedge or dovetail, and, having been compressed, the converging sides *g g* press with force against the sides of the cork-receptacle.

Heat being applied to the bottles after the cork is inserted, the rubber of the cork firmly adheres in spots to the surface of the bottle, and with such tenacity as to require a considerable force to separate it therefrom. By this means, in addition to the resistance of the compressed cork against the converging sides of the bottle-neck, the tendency of the compressed air or gas within the bottle to eject the cork therefrom is entirely overcome, thus obviating the necessity of using outside fastenings, which would render it difficult to obtain an equable gaseous pressure within the bottles.

It will also be observed that in case the rubber should lose its power of expansion, as it often does after a lapse of time, and cease to press with force against the sides of the cork-receptacle, the inclosed gas could escape between that part of the cork not attached to the glass of the bottle and the side of the bottle-neck. In this invention this difficulty is overcome by the cork being pushed forward by the pressure of the compressed air or gas and tightly wedged, that part of the rubber

cork which is attached to the glass stretching. In this manner bottled liquids may be retained hermetically sealed for any reasonable length of time.

5 That part of the corking apparatus which appertains exclusively to the insertion of the cork consists of a stationary tapering metal tube, beneath which the bottle or jar is placed, and which will admit of the introduction of
10 the wet cork or stopper by hand, and which is compressed by being forced through the smaller end of said tapering tube by a plunger into the aperture or cork-receptacle of the bottle by the application of force.

15 At Fig. 6 is shown a jar, B, having a cork, A, and a cork-receptacle of the form described, as at *a b*, *b c*, *c d*, and *d a*.

e f is the annular ring or shoulder, which prevents the cork or stopper from being driven
20 into the bottle. In this case a solid cork is used; but it is evident that some cheaper material, such as pottery clay or cheap metal, might be inserted in the central part of said cork to lessen its cost. In such a case a plate,
25 D, might be used to hold the cork in place. The said plate is a circular disk of cheap metal, a little smaller than the neck of the jar, having a segment of a circle cut out, as at O, Fig. 7, to a depth of two-thirds of its thickness, as
30 shown in Fig. 6, to permit the movable arm K, which is secured to the plate D by means of the plate P and rivet *r*, to move in a horizontal direction. The movable arm K extends beyond the periphery of the plate D, for the purpose of extending into an inclined recess, *n*,
35 of the jar B, and which serves as a locking-bar when the plate D is inserted in its place,

with the extension *i* on one side of said plate also inserted in the recess *n*, Fig. 7. Before inserting said plate D in position a thin strip 40 of tin or other metal, S, Fig. 6, corresponding in form to the groove *n*, is placed in said groove *n*, to prevent the arm K from chipping out the edges of the glass. The plate D is then introduced by holding it in an angular 45 position, inserting the extension *i* into the groove *n*, (shown at Fig. 7,) when the plate D can be forced down to its seat by allowing the end of the locking-bar K to pass through the notch *m* in the jar B, Fig. 7, and be firmly se- 50 cured to the jar by forcing the arm K to either side of the notch *m* in the inclined recessed groove *n*.

Having described my invention, what I claim as new, and desire to secure by Letters 55 Patent of the United States, is—

A bottle or jar having a receptacle for a cork made in the form of a truncated cone, with its base or larger diameter innermost, and formed with an annular ring or shoulder 60 at its bottom, in combination with a solid cork of rubber or other elastic and compressible material, made to fit tightly therein and press with force against the converging sides of said receptacle, substantially as and for the pur- 65 poses set forth.

In testimony whereof I have hereto set my hand and seal in the presence of two subscribing witnesses.

JOHN C. DE LA VERGNE. [L. S.]

Witnesses:

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JOSIAH H. MACY.