

C. NOYES.
PAD FOR BOTTLE CAPS.
APPLICATION FILED DEC. 4, 1907.

Patented Sept. 22, 1908.

899,429.

Fig. 1.

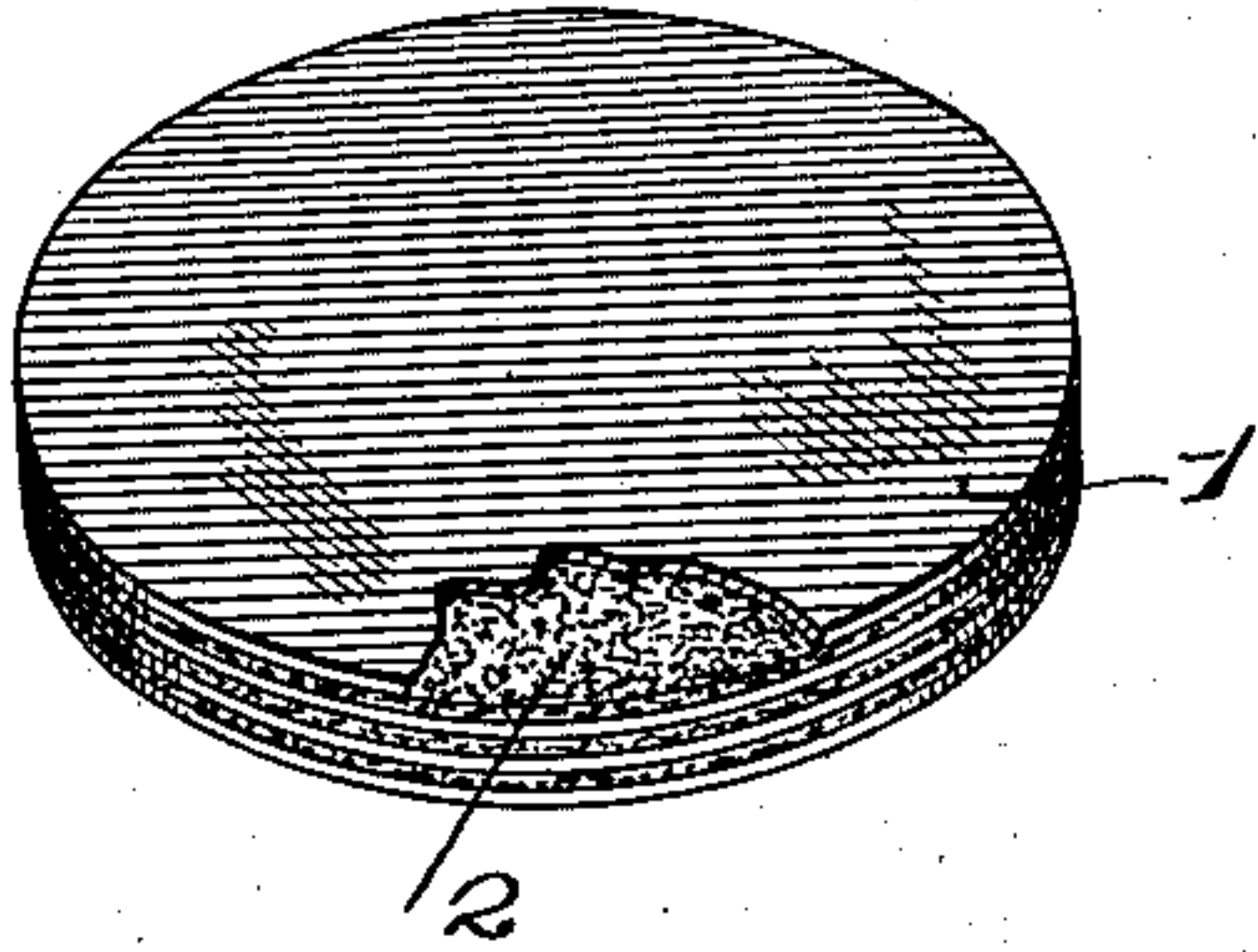


Fig. 2.

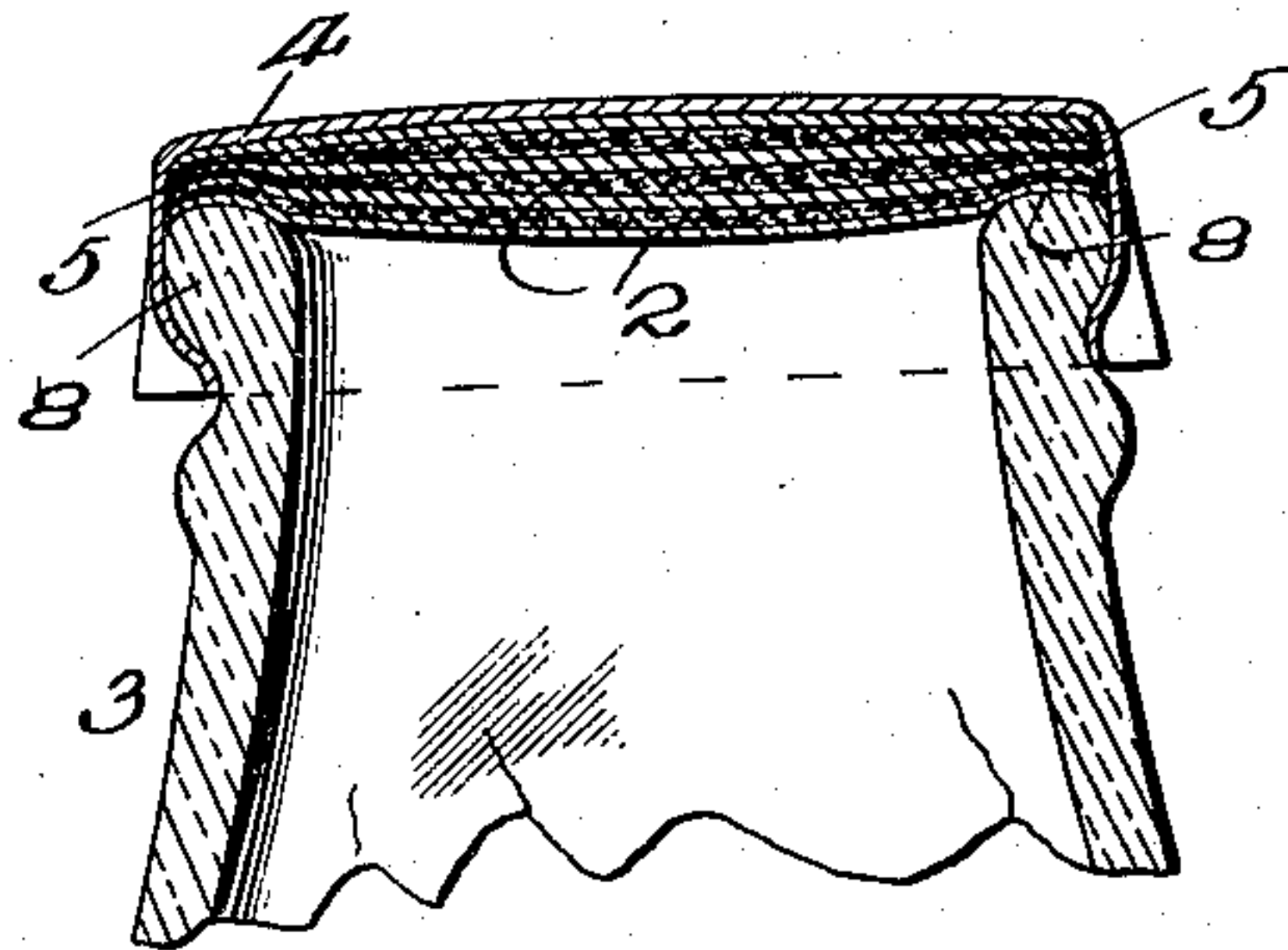


Fig. 3.

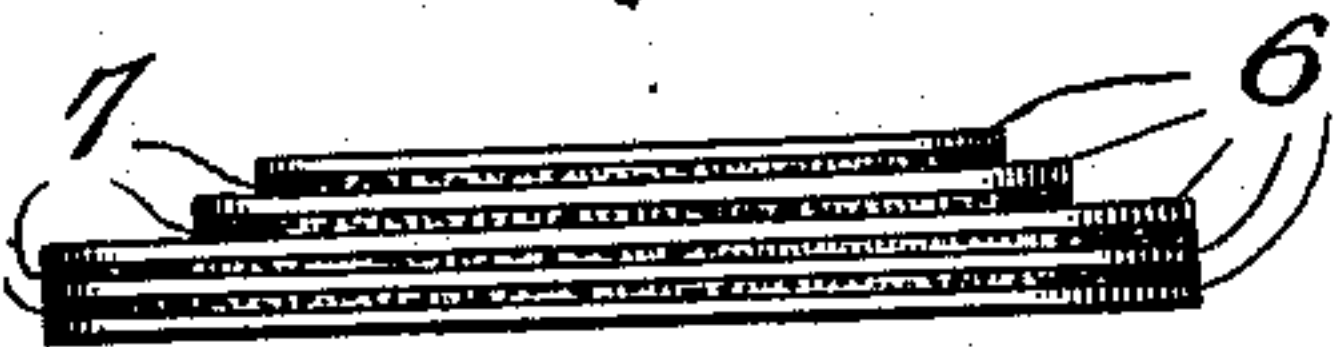


Fig. 4.

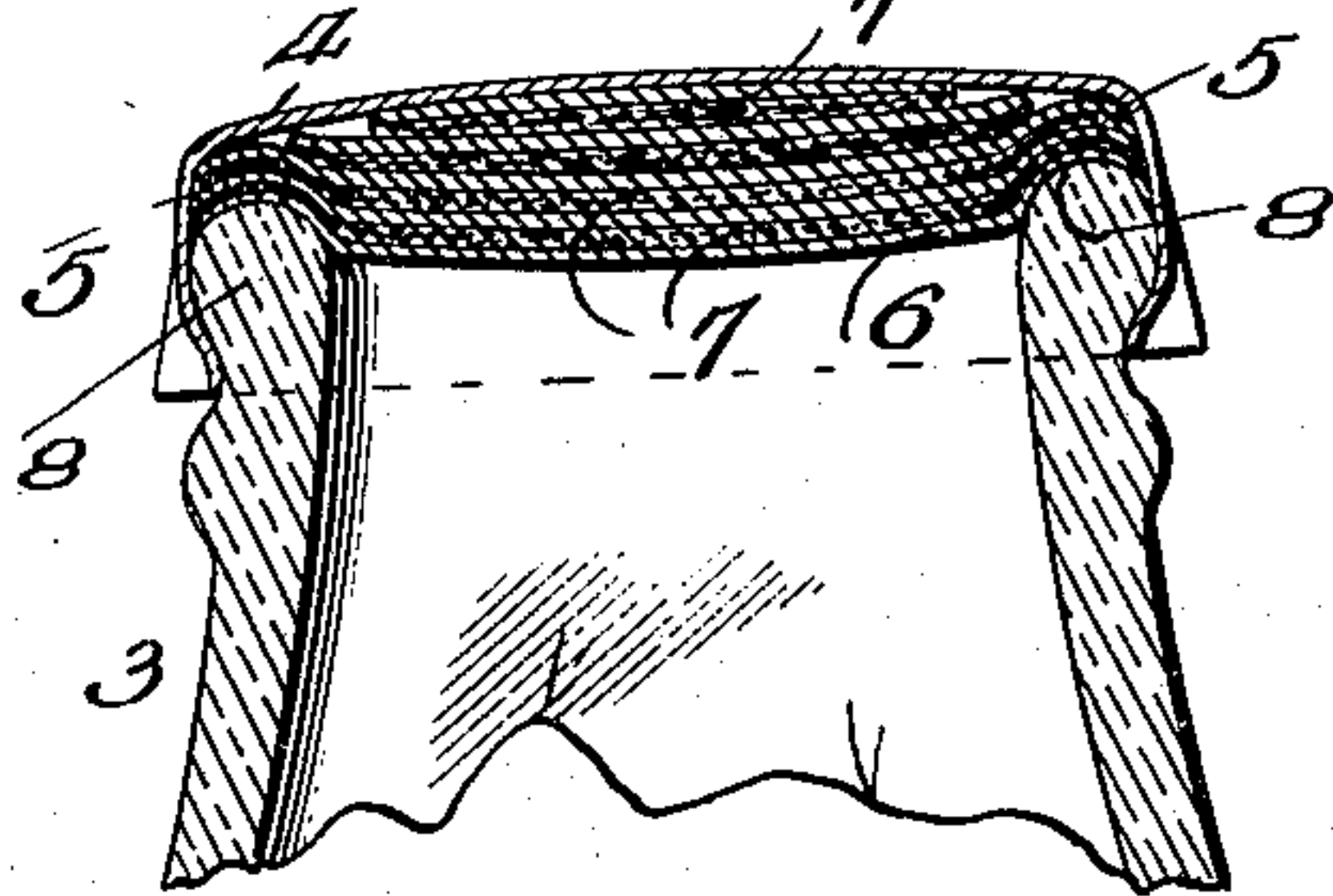
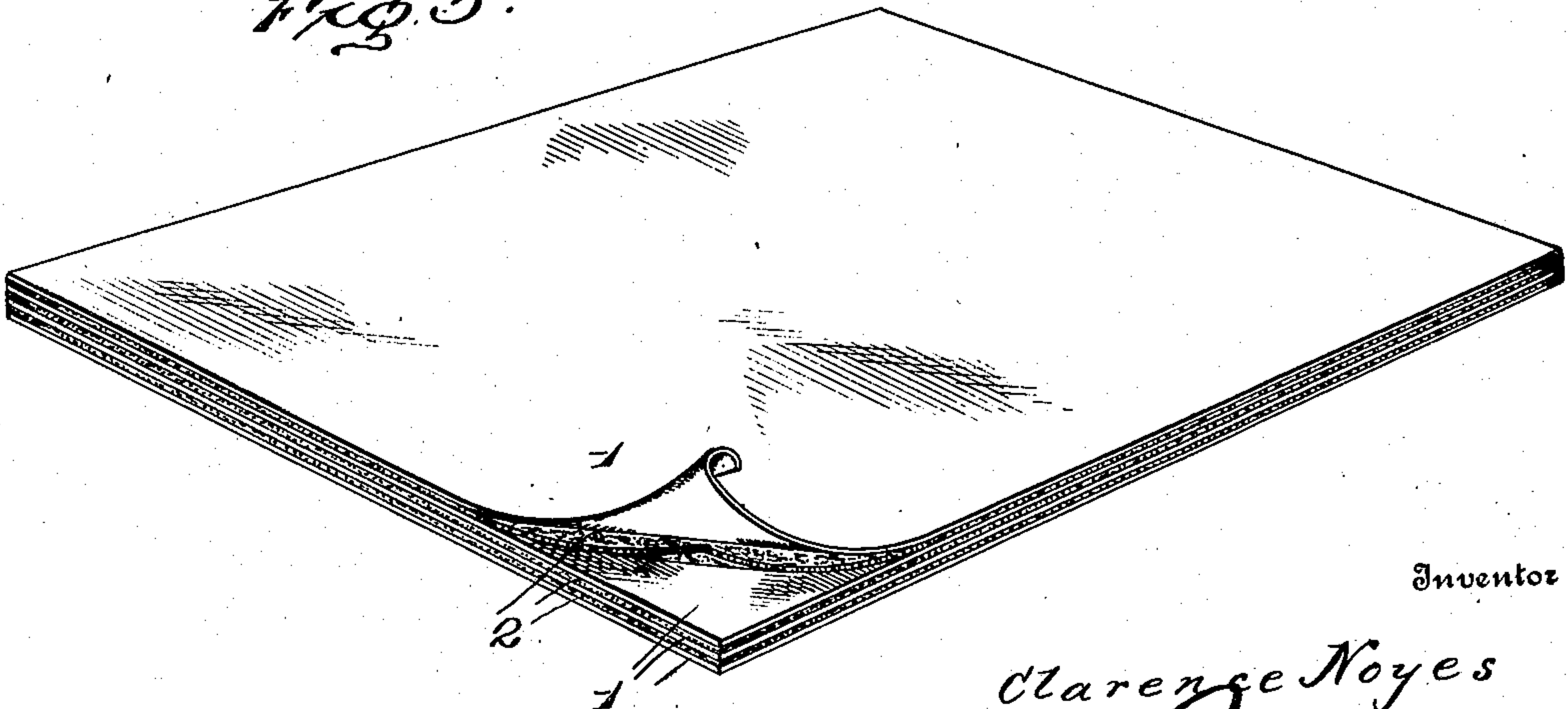


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

CLARENCE NOYES, OF WASHINGTON, DISTRICT OF COLUMBIA.

PAD FOR BOTTLE-CAPS.

No. 899,429.

Specification of Letters Patent.

Patented Sept. 22, 1908.

Application filed December 4, 1907. Serial No. 405,084.

To all whom it may concern:

Be it known that I, CLARENCE NOYES, a citizen of the United States, residing at 236 Second street northeast, in the city of Washington and District of Columbia, have invented certain new and useful Improvements in Pads for Bottle-Caps, of which the following is a specification.

This invention relates to improvements in and the method of making pads to be used as a substitute for cork in capped bottles.

It is customary to use cork in connection with metal caps for bottles, but this material is not only defective because it cracks and allows air to pass to the contents, but is also extremely expensive.

According to my invention I propose treating paper in a solution to toughen it, and interpose between the treated layers cotton or other fibrous material. By practical experience I find that when the paper or like material is treated in a solution of rosin and vaseline of proper proportions, dissolved in gasoline and then heated the fibers of the paper become toughened. While it is true the paper becomes tough, the composition is of such nature as to preserve the necessary elasticity, permitting of the pad effectually sealing the bottle or jar to which it may be applied. The rosin adds strength to the paper, while the vaseline neutralizes the rosin, to prevent it cracking, and the gasoline is employed solely to dissolve the rosin to reduce it to cause it to be of the proper nature to pass into the fibers of the paper.

The interposed layer of cotton or other fiber adheres to the treated paper, and even if while applying a cap, should a slight crack of the paper occur, the cotton prevents air passing to the bottle.

The invention possesses all the necessary characteristics of cork, and more, several other important advantages result.

Other objects and advantages will be hereinafter referred to and particularly pointed out in the claims.

In the drawings: Figure 1 is a perspective view on an enlarged scale, of a pad previous to applying same to a bottle, parts being broken away. Fig. 2 is a section illustrating the application of my invention. Fig. 3

is a sectional view of a slightly different arrangement of the various layers forming the pad to produce a pyramidal form. Fig. 4 is a sectional view of the pyramidal form of pad applied to a bottle. Fig. 5 is a view of a sheet of composite material from which the pads are cut.

In carrying out my invention I first prepare a solution composed of rosin and vaseline, dissolved in gasoline, and boiled. These ingredients are proportioned to produce the necessary toughening of the paper, and at the same time preserve sufficient elasticity to produce a cushion effect when the cap is applied. The rosin when dissolved impregnates the paper and when cooled strengthens it and at the same time preserves its component parts, which is quite essential when considering the characteristics of paper as necessary to produce the sealing effect when applied to a bottle in pad form. The vaseline, while proportionally small in quantity when mixed with the rosin, also impregnates the fibers of the paper, and serves to retain the elasticity, or in other words it neutralizes the rosin. Were it not for the vaseline or equivalent agent, the rosin when cooled would crack the paper and thereby destroy its usefulness as an element for a bottle pad. I boil the mixture of rosin, vaseline and gasoline for two purposes, to wit: dissolve the rosin and vaseline; and to cause a thorough mixing of the ingredients. Paper thus treated, is tough, water proof, and will not crack, the essential features of which must be present to produce a practical and commercially economical pad for the purpose specified. After the paper has been treated, I then place over its surface, a thin layer of cotton, or other fibrous material, then another treated sheet, and so on until the desired thickness is made. The fine fibers of cotton adhere to the paper when pressure is applied, producing a composite material, which when compressed in a bottle makes it absolutely air tight.

The composite material is cut into disks of the desired size, and may be composed of as many layers of paper and cotton as found most desirable.

In the drawing 1, represents the treated

paper, and 2, the layers of interposed cotton. The bottle is indicated at 3, and the bottle cap at 4.

When the pad is used as shown in Fig. 2, it is inserted in the cap 4, and the latter is applied to the bottle in the usual manner. When pressure on the edges of the cap immediately over the upper edge of the bottle neck, the layers 1, and 2, of the pad are compressed into a practically homogeneous mass, as indicated at 5. The compression at this point serves to further wad the cotton, and the fibers of the paper, and absolutely prevents the admission of air to the bottle, when the cap is properly applied. When the edges of the pad are compressed there will necessarily be a slight inward bulge toward the center, which is crowded against the inner edge of the bottle neck and further packs the composite material around the bottle opening. Notwithstanding the high pressure necessary to apply the cap, the treated paper will not crack, but on the contrary gives sufficiently to accommodate itself to any irregularities in the bottle neck.

In the form of the invention illustrated in Figs. 3, and 4, 6, indicates the paper disks, which are cut, one layer smaller than the other, with interposed layers of cotton 7. The assembled form of the pad in this instance is for the purpose of causing a pronounced bulge or enlargement on the inside of the mouth of the bottle when the cap is applied, which crowds the pad in close and compact form against the edge of the bottle. As the cap is pressed downwardly, the central portion of the pad is pressed also, and the edges at 8, are forced outwardly against the inside edge of the bottle, and produces a tight and effective seal. The upper surface of the top sheet, and the lower surface of the lowermost sheet forming the pad, are not treated with the solution, as it has been found unnecessary.

A pad thus constructed, is effective as a sealing medium, and will not dry out and crack. The nature and the proportion of the component parts of the solution are such as will not interfere with the liquid in the sealed bottle or jar. This is particularly true when it is considered that the lowermost face of the pad is free from the treatment of the preserving agent.

I do not desire to limit myself to the exact ingredients mentioned, as other elements may be used for this purpose.

What I claim is:

1. As a new article of manufacture, a pad for the purpose described comprising alternate layers of paper and fibrous material.
2. As a new article of manufacture, a pad for the purpose described comprising layers of paper and interposed layers of cotton.
3. As a new article of manufacture, a pad

for the purpose described comprising chemically treated paper and interposed layers of fibrous material.

4. As a new article of manufacture, a pad for the purpose specified comprising composite layers, certain of said layers being chemically treated.

5. As a new article of manufacture, a pad for the purpose specified comprising layers of paper and layers of fibrous material.

6. As a new article of manufacture, a pad for the purpose specified, comprising layers of paper of different diameters and layers of fibrous material.

7. As a new article of manufacture, a pad for the purpose specified comprising layers of chemically treated papers of different diameters, the smaller layers of paper being toward the top, and interposed layers of fibrous material.

8. As a new article of manufacture, a pad for the purpose specified, comprising layers of paper treated with a solution of neutralized rosin and interposed layers of fibrous material.

9. As a new article of manufacture, a pad for the purpose specified, comprising layers of paper treated with a solution of rosin and vaseline, and interposed layers of fibrous material.

10. As a new article of manufacture, a pad for the purpose specified, comprising layers of paper treated in a solution composed of ingredients to toughen the paper, and to preserve the elasticity and interposed layers of fibrous material.

11. As a new article of manufacture, a pad for the purpose specified, comprising layers of paper treated in a heated solution of rosin, vaseline and gasoline, and interposed layers of fibrous material.

12. As a new article of manufacture, a pad for the purpose specified, comprising layers of toughened material and a sealing medium interposed between said layers.

13. As a new article of manufacture, a pad for the purpose specified, comprising layers of paper and interposed layers of sealing material.

14. As a new article of manufacture, a pad for the purpose specified comprising layers of paper chemically treated, the lowermost layer being treated only on the upper side, and interposed layers of fibrous material.

15. The herein described method of making pads for the purpose specified, consisting in chemically treating layers of material, and interposing fiber between the layers of chemically treated material, the chemical causing the fiber to adhere to the adjacent layers of material.

16. As a new article of manufacture, a pad for the purpose specified, comprising layers of chemically treated paper and layers of

cotton fiber, the fibers of the cotton adhering to the chemically treated paper.

17. As a new article of manufacture, a pad for the purpose specified, comprising layers of chemically treated paper and cotton fiber pressed together the fibers of the cotton adhering to the chemically treated paper.

In testimony whereof I affix my signature in presence of two witnesses.

CLARENCE NOYES.

Witnesses:

MILTON T. NOYES,

RICHARD H. WAINWRIGHT.