

(No Model.)

H. P. BARNHART.
MILK JAR AND CLOSING DEVICE THEREFOR.

No. 474,436.

Patented May 10, 1892.

FIG. 1.

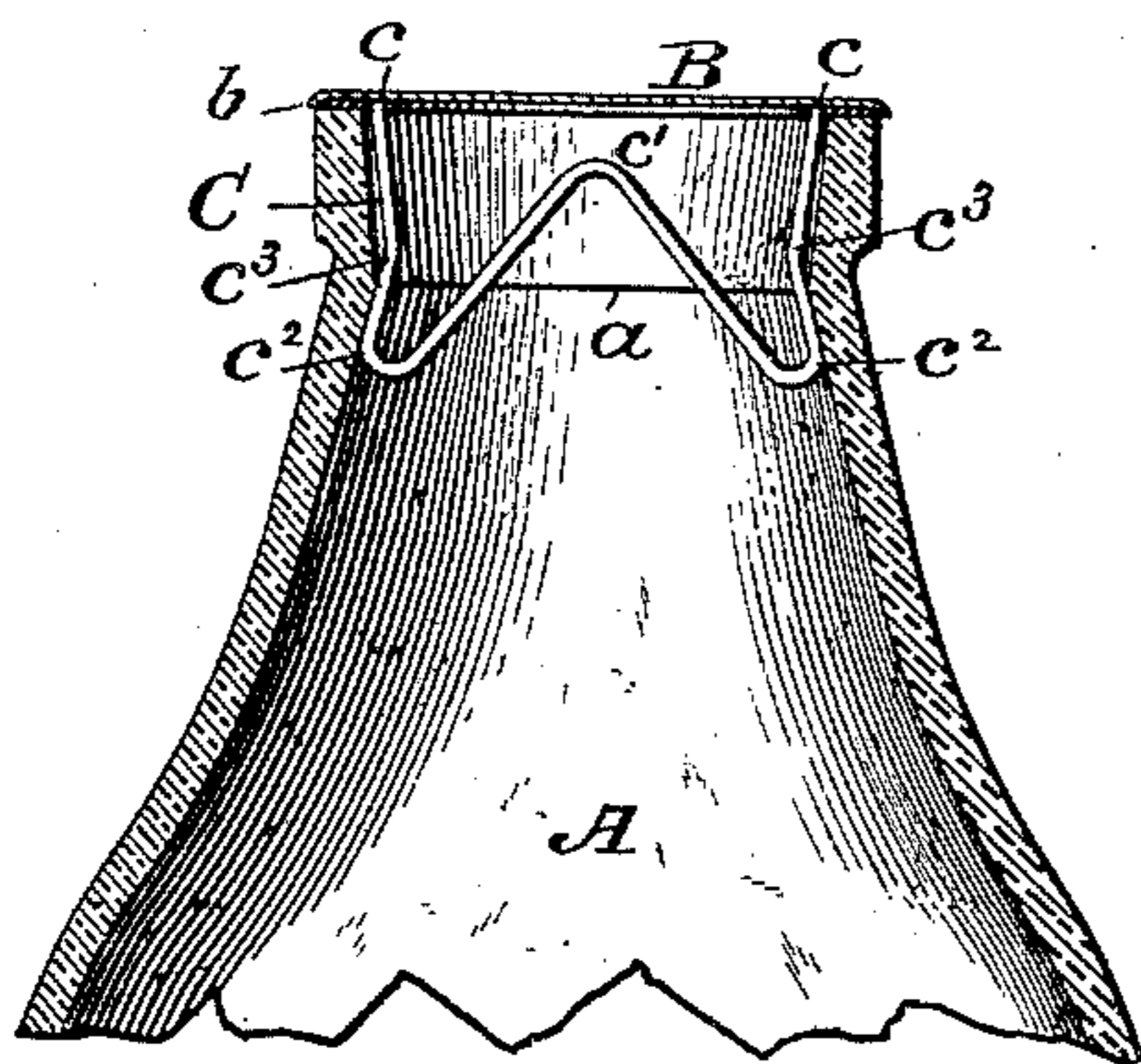


FIG. 2.

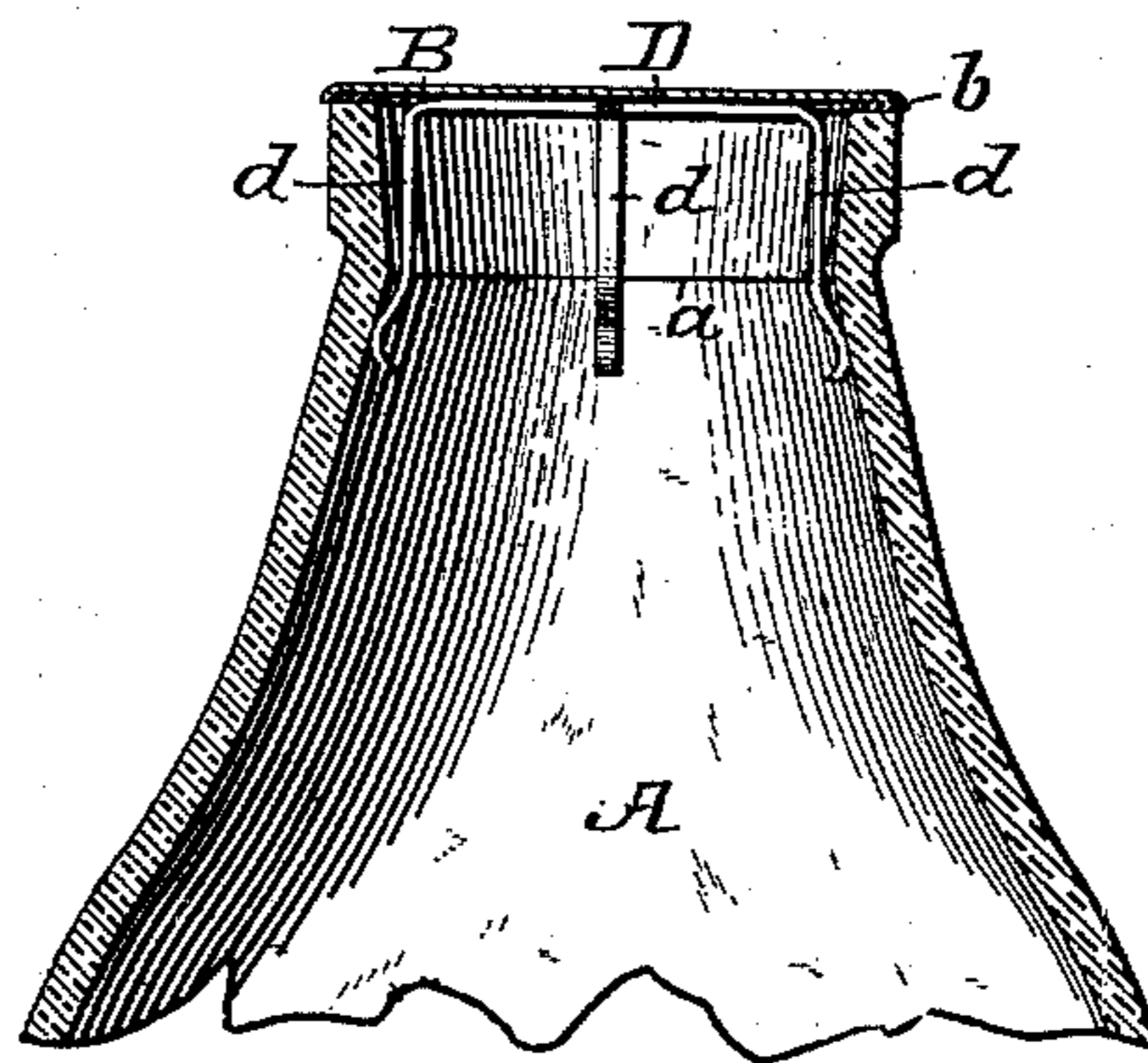


FIG. 5.

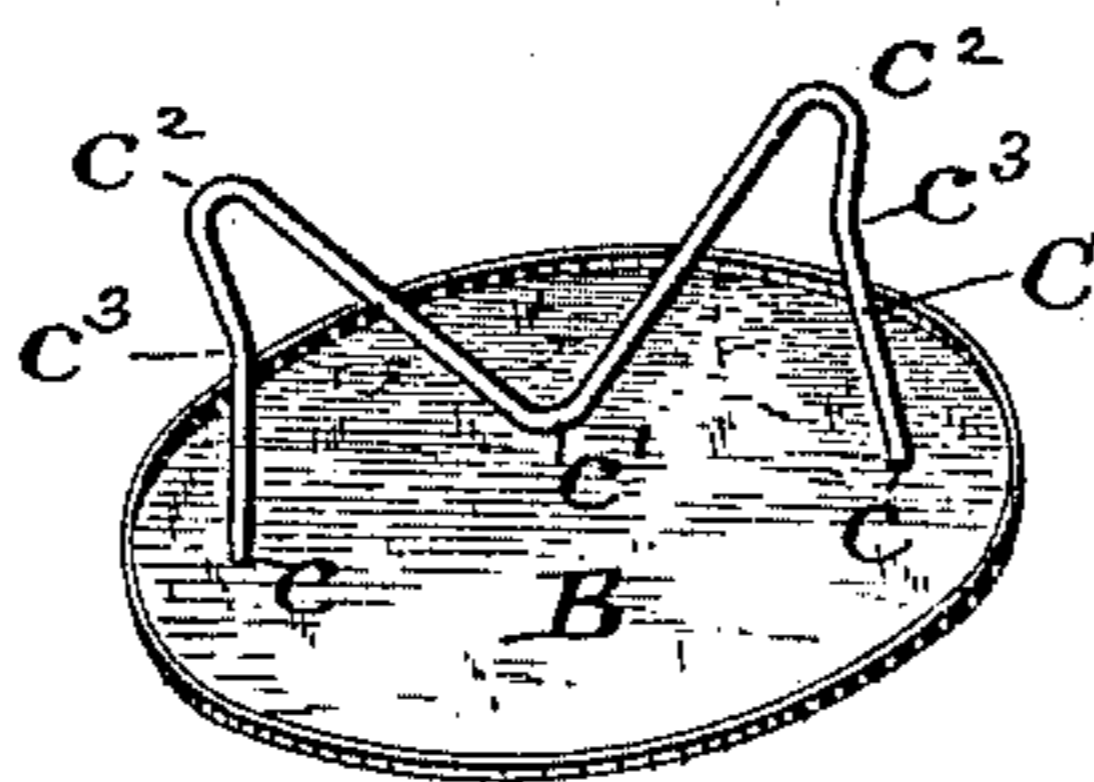


FIG. 3.

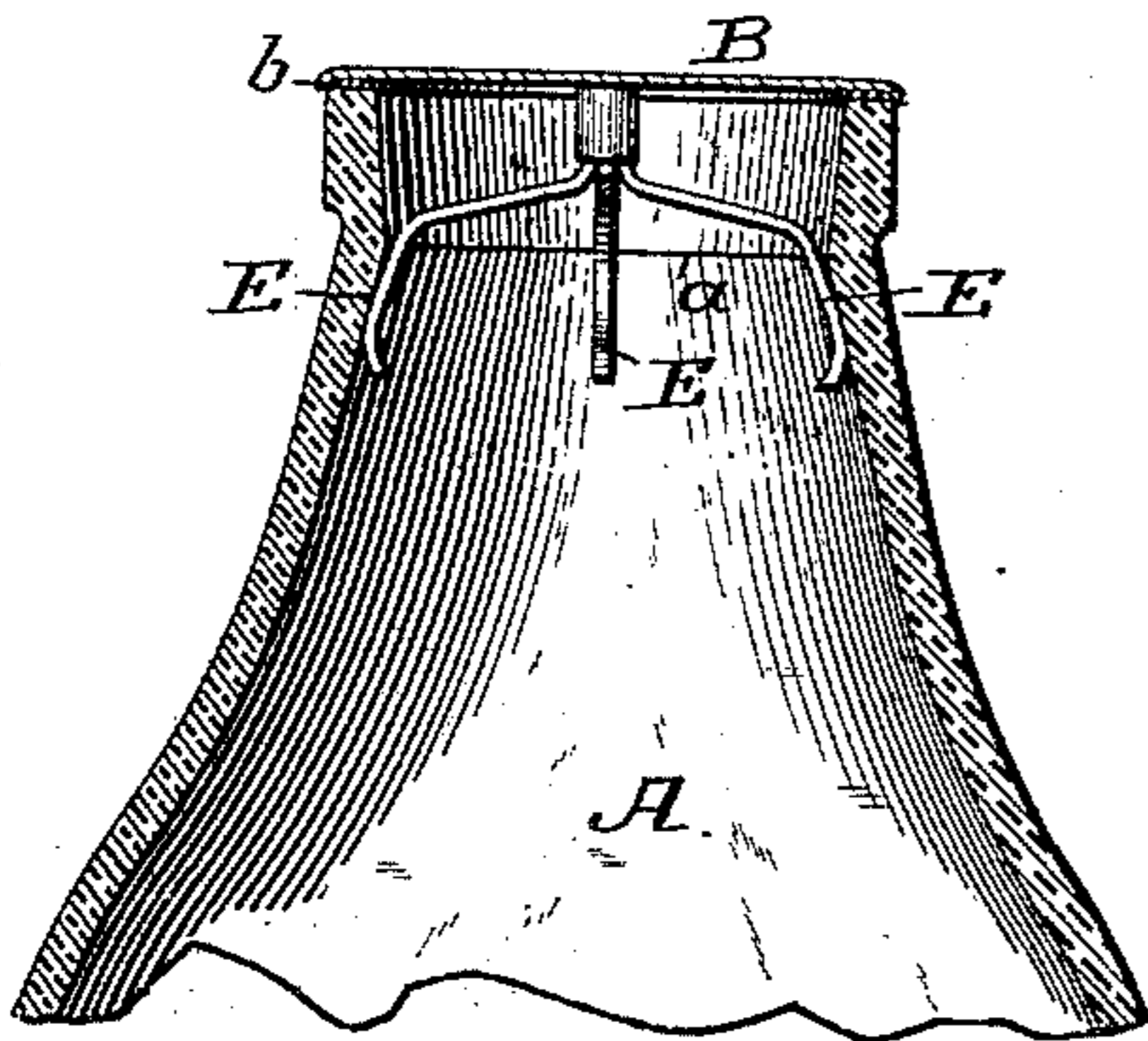
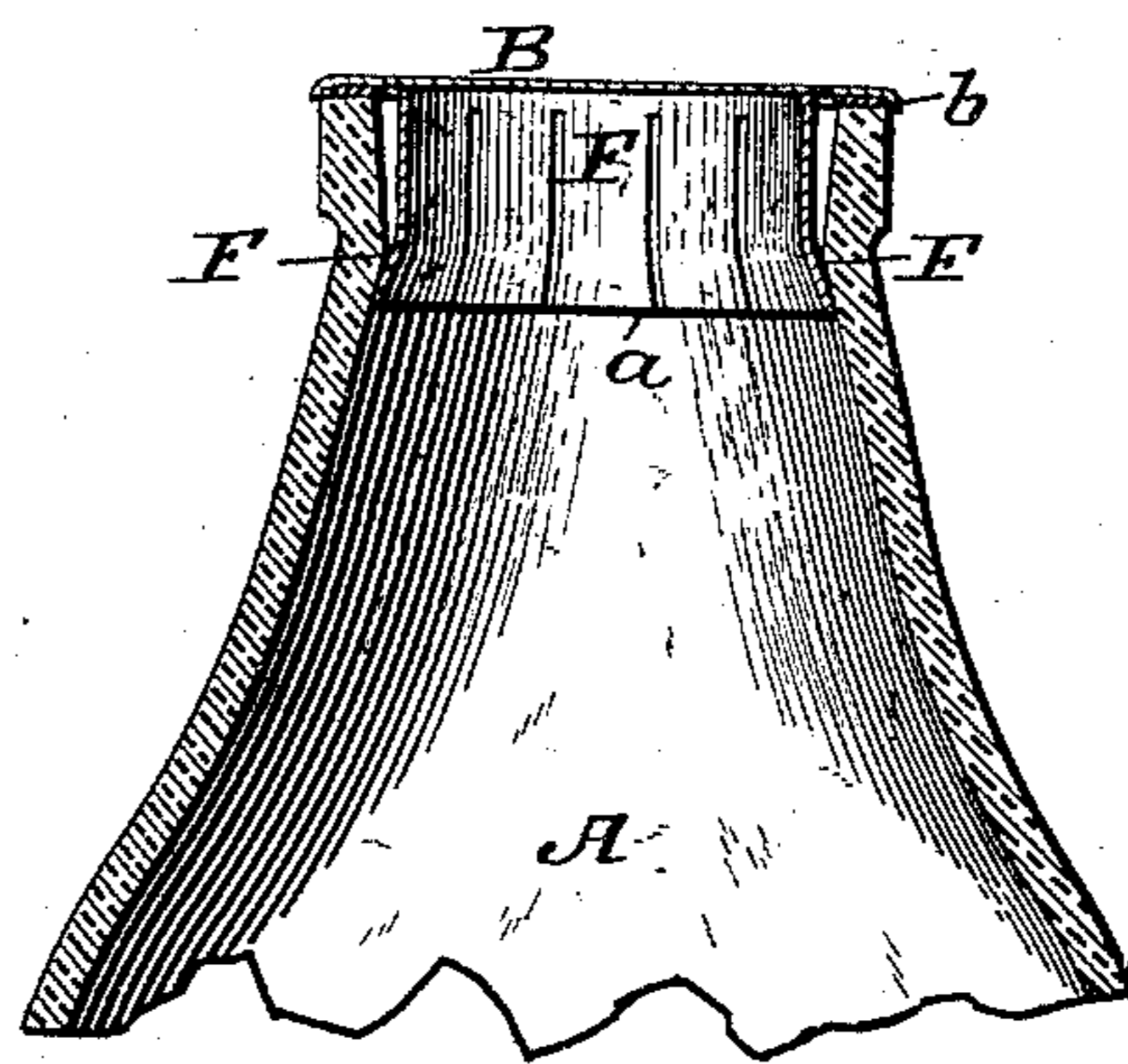


FIG. 4.



ATTEST.

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HARVEY PATTEN BARNHART, OF POTSDAM, NEW YORK, ASSIGNOR TO THE THATCHER MANUFACTURING COMPANY, OF SAME PLACE.

MILK-JAR AND CLOSING DEVICE THEREFOR.

SPECIFICATION forming part of Letters Patent No. 474,436, dated May 10, 1892.

Application filed February 12, 1892. Serial No. 421,242. (No model.)

To all whom it may concern:

Be it known that I, HARVEY PATTEN BARNHART, a citizen of the United States, residing at Potsdam, in the county of St. Lawrence and State of New York, have invented a new and useful Improvement in Milk-Jars and Closing Devices Therefor, of which the following is a specification.

It is the object of my invention to produce a glass milk-jar having the following ends in view: first, a jar that is simple in design, whereby it may be constructed without complicated apparatus and without the employment of other than ordinary skilled labor; second, a jar that is provided with a broad smooth-surfaced open mouth and throat, whereby it may be easily and rapidly but effectually washed and cleansed; third, a jar provided with a cover the fastening of which is wholly within the jar, is interchangeable with any jar of its kind, is cheaply made, is adapted to be easily and perfectly washed and to be quickly and simply adjusted, is of such stability as to securely preserve the contents of the jar during transportation and exclude all odors and foreign matter, but at the same time is capable of self-displacement by the expansion of the contents from freezing or other cause without injury to the jar.

To this end my invention consists in the jar and closing device therefor, as hereinafter more particularly described and claimed.

In the accompanying drawings, each of Figures 1, 2, 3, and 4 shows a vertical section of the neck or upper part of a milk-jar, the remainder thereof being broken away, with the closing device in place upon the mouth of the jar. In each of the figures named the neck of the jar is the same; but the particular fastening devices, while involving the same principle of operation, are specifically different in construction. Fig. 5 is a perspective view of the under face of the cover shown in cross-section in Fig. 1.

To obtain the several ends hereinbefore set forth I have designed a bottle A, having a mouth circular in outline and open at the top, which contracts inwardly or funnelwise from its upper margin to a convenient distance downward. At this line of smallest contraction a the neck sharply enlarges uniformly in

every direction as it passes farther downward, expanding to the formation of the enlarged or body portion of the jar. This simple construction provides a choked throat or sharply-defined ring a in the circular meeting-line wherein the two funnelwise contractions meet and terminate.

Fitting upon the upper margin of the mouth is the circular cover B, a washer b of ordinary construction being interposed between the cover and the mouth of the jar. This cover is provided on its lower surface with a rigidly-fixed spring-actuated securing member so conformed in outline to the above-described throat of the jar that when the same is pressed into the open mouth its lower extremity is contracted or compressed by the narrowing neck until the same has passed the contracted ring a , whereupon the body of the said member instantly expands, and by the act of expansion against the lower outwardly-flaring wall of the neck not only draws the cover snugly down upon its seat upon the mouth of the jar and holds the same firmly in place, but continues to act with constantly-increasing force after the cover is seated. In Fig. 1 this securing member is a single spring-wire C, centrally disposed upon the lower surface of the cover and secured thereto at opposite points $c c$ near the periphery thereof, having an inward return-bend c' to give resiliency to the oppositely-set engaging or grasping projections $c^2 c^2$. Each of these projections is made to flare outwardly from an inward bend $c^3 c^3$ at the same angle as that of the neck of the jar below the ring a therein. The inward bend $c^3 c^3$ is located at the same distance from the under surface of the cover as is the measure of the distance of the ring a from the upper margin of the mouth of the jar. It will thus be seen that the operation of closing the jar is quickly and effectually accomplished, and that, furthermore, any after movement to which the closed jar may be subjected will only tend by the continued action of the expanding spring to follow the outward taper of the throat to draw the cover more and more firmly down upon its packing and hold it tightly upon its seat. In practice, for convenience in removing the circular cover, I make the same

of a size slightly in excess of the mouth of the jar, so that the periphery of the cover has a convenient projection for the hand of the operator to lay hold of.

5 In Fig. 2 the securing member comprises two spring-wires D, brazed or otherwise secured to the lower face of the cover at a right angle to each other, terminating in four oppositely-disposed downwardly-depending outwardly-
10 flaring grasping projections *d*. These projections are normally set so as to be compressed when forced into the funnel taper of the throat until they pass the contracted ring *a*, whereupon, the compression being removed,
15 their expansion at once following the outward taper of the neck draws the cover firmly down upon its seat, as before described.

In Fig. 3 the securing member comprises a plurality of grasping projections E, springing
20 from a common central source on the under face of the cover. Each of these grasping projections is also normally set, so as to be operated as in the case of each of the devices above described.

25 Still another form of cover-fastening having the same principle of operation is shown in Fig. 4, wherein the plurality of spring-actuated grasping projections comprises a series of flaring limbs or flat blades conformed to
30 the neck of the jar, as above described. These blades depend from the cover in a substantially circular path, being secured thereto at a short distance from its edge. Being practically continuous, their action in holding the
35 cover to its seat permits of their production from thinner material and of greater resiliency. I have thus, it will be apparent, provided a jar-closure which has manifest advantages. All outside appliances for securing the cover
40 to the mouth are dispensed with, the prevalent use of which in milk-delivery jars has been heretofore the source of much annoyance, interfering with the ability of the dealer to pack his jars to advantage in his ship-
45 ments. Furthermore, such outside fastenings, generally more or less complex, are the invariable cause of uncleanness, providing as they do ever-ready traps for the lodgment of dirt and foreign matter highly deleterious
50 to the purity and wholesome character of the milk contained within. In my closure, on the contrary, security of fastening, economy of production, simplicity of operation, and cleanliness in use are reliably assured. An
55 important advantage, furthermore, resides in

the ready means provided for the expansion of the contents, whether from freezing or other cause, without fracturing the jar.

While I contemplate making the throat of the jar taper uniformly from the mouth to the contracted ring *a* and expand outwardly and downwardly with substantially an equal taper away from said contracted ring, it is manifest that the upper or converging taper is not absolutely necessary. Its sole use being for the purpose of contracting and guiding the elastic arms into engagement with the lower surface of the contracted neck, other means for securing this end—such, for example, as the hand of the operator—might be employed. The essential feature of my improvement, therefore, is the outward and downward expansion of the neck from the choked throat, whereby the grasping-arms rigidly projecting from the under surface of the cover shall positively engage with the said expanding wall and draw the same down firmly upon its seat and continue to operate with constant force after such seating.

Having now, therefore, fully described the nature of my invention, its character, and the use for which it is intended, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In combination with a jar the throat of which is provided with a contracted continuous ring and which expands outwardly and downwardly therefrom with a uniform flare, and a closure therefor, comprising a disk provided upon its lower surface with a plurality of elastic oppositely-disposed arms normally conforming to the flare below the said continuous ring, whereby the cover is adapted to be drawn tightly upon its seat by the action of the arms upon the flaring surface of the throat of the jar and continue to operate with constant force after being seated, as set forth.

2. The cover herein described, consisting of the disk B, provided upon its lower surface with the spring-wire C, having the inward return-bend *c'* and the outwardly-flaring grasping projections *c² c²*, as specified.

In witness whereof I have hereunto subscribed my name, this 6th day of February, 1892, in the presence of two witnesses.

HARVEY PATTEN BARNHART.

Witnesses:

C. E. SANFORD,
FRANK L. BELL.