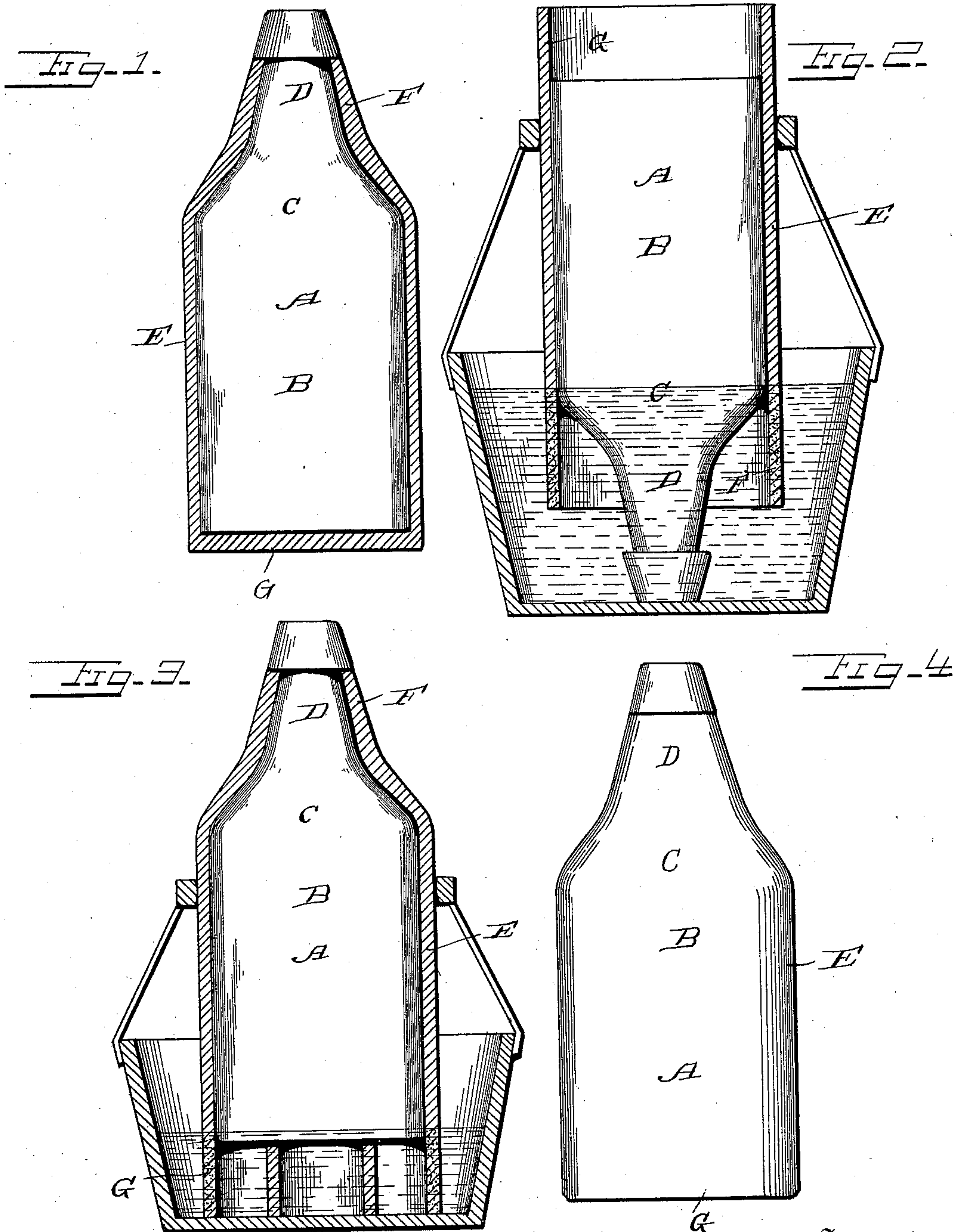


(No Model.)

U. HULL.
MANUFACTURE OF PAPER COVERED VESSELS.

No. 591,404.

Patented Oct. 12, 1897.



Witnesses
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UNITED STATES PATENT OFFICE.

UZAL HULL, OF NEWTON, NEW JERSEY.

MANUFACTURE OF PAPER-COVERED VESSELS.

SPECIFICATION forming part of Letters Patent No. 591,404, dated October 12, 1897.

Application filed October 12, 1896. Serial No. 608,632. (No model.)

To all whom it may concern:

Be it known that I, UZAL HULL, a citizen of the United States, and a resident of Newton, in the county of Sussex and State of New Jersey, have invented certain new and useful Improvements in the Manufacture of Paper-Covered Vessels; and I do 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.

Figure 1 of the drawings is a view of a vessel with the jacket in completed form and shown in vertical section. Figs. 2 and 3 are sectional views illustrating different steps in the practice of the invention, and Fig. 4 is a side elevation of the finished article.

This invention has relation to the exterior protection of vessels, and especially of shouldered and necked vessels of glass, earthenware, or metal; and it consists in the process of shrinking upon the body of the vessel a wet tube of fibrous paper-pulp, and, further, in forming such tube with an end extension or extensions to conform closely to the shoulder and neck or shoulder and neck and bottom of said vessel, drying the same thereon in seamless homogeneous form, and rendering the same waterproof, as hereinafter set forth.

The invention also consists in the novel article produced by such process.

In the accompanying drawings the letter A designates a vessel having a cylindrical body portion B, shoulder C, and neck D.

E represents a seamless tube of fibrous paper-pulp—such as is made from jute, linen, wood-pulp, or Manila stock—said tube being wet and of just sufficient size to be slipped readily upon the body portion B of the vessel. This moist pulp tube shrinks as it dries upon the body of the vessel, and its exterior becomes smooth and closely adherent to the surface of the vessel because of the stretching of the paper as it forms. An extension F, surrounding the shoulder and neck of a vessel, is provided, and the tube should also have, when the bottom of the vessel is to be covered, an extension G projecting around the bottom of the vessel. In order to cover

the shoulder and neck of the vessel properly, said vessel, with its tubular paper covering, is placed on end in a bath of water of sufficient height to immerse the neck and shoulder of the vessel and the tubular extension F, surrounding the same. In this bath it remains until said extension F becomes soft and pulp-like, and then the vessel is removed from the bath and the tubular portion F is worked up closely on the shoulder and neck of the vessel by hand without destroying the fibrous connection, so that it conforms to said shoulder and neck, covering the same with a homogeneous protection of paper having a strong flexible texture, which as its dries shrinks closely to the parts of the vessel. Sometimes I may use a compressor of suitable form to surround the shoulder and neck of the vessel after the paper has been pressed up thereto in order to express the water from the paper and thereby facilitate the drying out of the covering. This process prevents the separation of the covering in the drying, which is liable to occur when the fibrous connection is not maintained.

When the bottom of the vessel is to be covered with paper, the other extension G of the covering-tube is utilized, and after being softened by immersion in a bath of water is worked up closely to the bottom of the vessel, conforming thereto and drying in place thereon.

After the paper covering is dried in place on the vessel it is covered with waterproof material or otherwise treated to form an impervious coating, which is designed to prevent the paper covering from being softened and breaking down in consequence of any dripping thereon of the contents of the vessel. In the manufacture of the pulp sheet from which the covering-tubes are formed the operation is such as to cause largely a longitudinal disposition of the fibers therein, and the pressure employed is such as to fix this disposition of the fibers. In the tube these fibers are circumferentially disposed, and there is consequently very much less shrinkage of the tube in this direction than in the vertical direction or across the fibers. If the said tube did not extend inwardly over the bottom, shoulder, and neck portions of the vessel in the finished jacket, this shrinkage would

be an objectionable feature, inasmuch as the finished jacket would from such shrinkage become shorter than the body of the vessel and would leave the upper and lower portions thereof exposed. In the present invention, however, this shrinkage is utilized in an important way—viz., by molding the end extensions of the tube over the bottom and the shoulder and neck portions of the vessel the vertical shrinkage is confined largely between the bottom edge and the shoulder, and a tension is created which causes the jacket to draw tightly and solidly to the surface of the vessel, there being sufficient shrinkage also in a circumferential direction to properly assist in this result. I would state that, if desired, the bottom end extension of the tube may not be long enough to cover the entire bottom of the vessel, but only an annular portion thereof, when desired, leaving a central portion of the bottom uncovered to permit an inspection of the vessel, if of glass, to ascertain if the same is clean. The extension at the upper end of the tube is preferably somewhat less than the distance from the shoulder to the top of the neck (see Fig. 2) in order to avoid a too great thickness of the jacket around the neck when the tube is molded in around the same. Such extension being in a moist or plastic condition can be readily manipulated and drawn out to make up for this deficiency in length. The increase in the thickness of the jacket resulting from the contraction of the tube around the reduced neck and shoulder portions of the vessel is, however, in general an important feature of the process, since thereby the most exposed portions of the vessel are provided with a reinforced or thickened protection.

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

1. The process of covering necked and shouldered vessels with a seamless homogeneous covering of paper which consists in shrinking upon the body of the vessel, a wet pulp tube having an extension E around the neck and shoulder of the vessel, then softening said extension in a bath of water, and manipulating the same to conform closely to the neck and shoulder portions of the vessel, and thereby providing said portions with a thickened or reinforced covering or jacket expressing the water by compression, drying the same, and finally waterproofing the surface of the paper covering thus formed, substantially as specified.

2. The process of covering necked and

shouldered vessels with a seamless homogeneous covering of paper, which consists in providing an elongated wet tube of pulp shrinking the same upon the body of the vessel so that end extensions F and G thereof will project from each end of said body portion, softening said extensions to pulp-like condition by water, manipulating the same to conform closely to the neck and shoulder and to the bottom of said vessel, and drying the same, whereby said covering being held at the shoulder and bottom by the molded extensions, shrinks in a vertical direction and becomes closely fitted to the surface of the vessel, substantially as specified.

3. The process of covering necked and shouldered vessels with seamless homogeneous covering of paper, which consists in providing an elongated wet tube of pulp, shrinking the same upon the body of the vessel so that end extensions F and G thereof will project from each end of said body portion, softening said extensions to pulp-like condition by water, and manipulating the same to conform closely to the neck and shoulder and to the bottom of said vessel, expressing the water by compression, drying the same, and finally waterproofing the paper covering thus formed, substantially as specified.

4. The herein-described vessel having a jacket or covering shrunk thereon, and formed from a seamless homogeneous tube of paper pulp, one end portion of said tube being molded around the neck and shoulder portion of the vessel to provide a covering of greater thickness at such portions, and the opposite end portions being molded under and upon the bottom of the vessel, substantially as specified.

5. The method of covering a shouldered vessel which consists in surrounding the same with a wet elongated tubular jacket of fibrous material, having its fibers extending circumferentially thereof, shaping the end portions of said jacket to fit closely the shoulder and bottom portions of the vessel, and drying the same, whereby the jacket, being held at the shoulder and base, shrinks crosswise of the fibers, and thereby becomes closely fitted to the surface of the vessel, substantially as specified.

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

UZAL HULL.

Witnesses:

PHILIP C. MASI,
GEORGE H. PARMELEE.