W. H. FULCHER.

APPARATUS FOR MAKING PAPER HOLLOW WARE.

APPLICATION FILED DEC. 14, 1914.

1,303,191. Patented May 6, 1919.

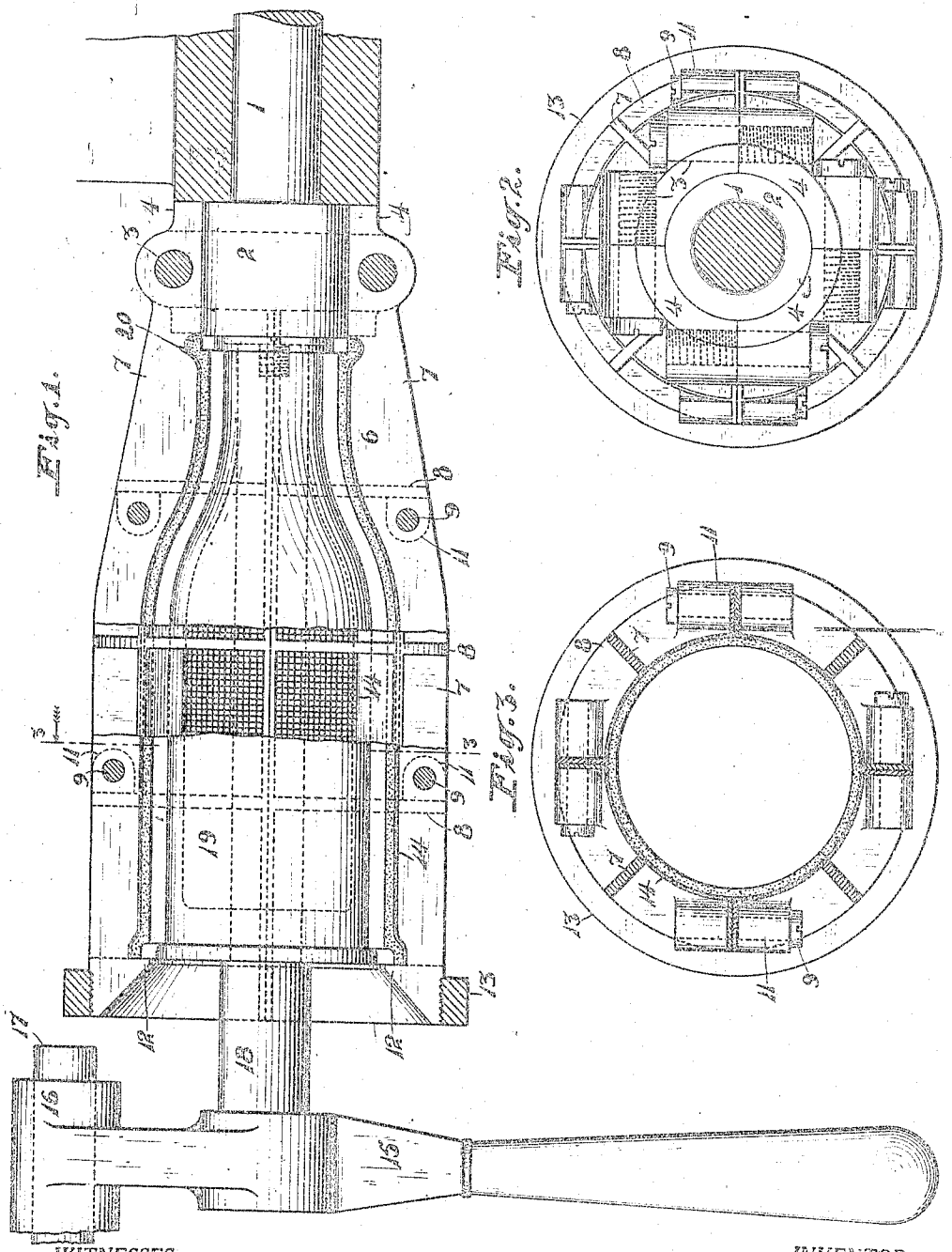


Fig. 1.

Fig. 2.

Fig. 3.

WITNESSES:

F. C. Fiedner

G. M. Ball

INVENTOR,
William H. Fulcher

BY Francis M. Wright,
ATTORNEY

UNITED STATES PATENT OFFICE.

WILLIAM H. FULCHER, OF OAKLAND, CALIFORNIA, ASSIGNOR TO FULCHER PULP BOTTLE COMPANY, OF OAKLAND, CALIFORNIA, A CORPORATION OF CALIFORNIA.

APPARATUS FOR MAKING PAPER HOLLOW WARE.

1,303,191. Specification of Letters Patent. Patented May 6, 1919.

Application filed December 14, 1914. Serial No. 877,000.

To all whom it may concern:

Be it known that I, WILLIAM H. FULCHER, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented new and useful Improvements in Apparatus for Making Paper Hollow Ware, of which the following is a specification.

This invention relates to an improved process of, and apparatus for, making paper hollow-ware, such as milk bottles, jars, vases, and the like. I have herein shown the apparatus as applied to the making of the body of a paper milk bottle, for which purpose it was originally devised.

One object of the invention is to provide an improved process and apparatus of this character by which paper hollow-ware, and especially the bodies of paper milk bottles, can be produced rapidly, economically, and of good quality and appearance.

A further object is to provide an improved process and apparatus by which paper hollow-ware can be made without seams.

In the accompanying drawing, Figure 1 is a longitudinal section of my improved apparatus; Fig. 2 is an end view; and Fig. 3 is a horizontal section on the line 3—3 of Fig. 1.

Referring to the drawing, 1 indicates a rotary shaft adapted to be rotated at a high speed by any suitable motive power, as, for instance, by an electric motor, said shaft terminating in a cylindrical head 2. Around said head are clamped, by means of screws 3, collar sections 4 on flask sections 6, of which there are here shown four in number, although this number may be varied as found convenient or desirable. Each flask section comprises ribs 7, extending in planes through the axis of the shaft 1, and ribs 8 extending in planes transverse to said axis. The flask sections are secured together, not only by the screws 3, but also by screws 9 through lugs 11 extending from the transverse ribs 8. Also, at their ends remote from the screws 3, they are formed with transverse ring sections 12, which, when said flask sections are assembled, form a complete circle, and said ring sections are threaded on the outside, so that a clamping nut 13 can be screwed thereon to firmly secure all of said sections together. Each flask section has secured to the inner sides of the ribs, preferably by brazing, a woven wire sheet 14, said sheets forming a practically continuous surface of revolution, when the flask sections are assembled.

The flask sections having been assembled, the shaft is set in motion and is rotated at a high speed, about 2,000 revolutions a minute. Paper pulp is then fed into the interior of the flask, and, by the centrifugal motion of the flask, is distributed in a thin layer over the inner surfaces of the woven wire sheets, the water escaping through the interstices of said sheets. When a layer of sufficient thickness has been distributed over said sheets, the supply of pulp is discontinued, and force is applied, by hand or by suitable machinery to a lever 15 pivoted at 16 on any suitable support 17 adjacent to the flask, and carrying, at right angles thereto, a shaft 18 rotatably supporting a core or former 19 of the same general shape as the interior of the flask, although of smaller diameter. The former or core is thus pressed against one side of the inner surface of the pulp in the flask while the flask is still rotating, rotation being then imparted to the former by the friction with the paper rotating with the flask. By this means the inner surface of the paper is rendered smooth. The flask and former are made of such shape as to form the bead 20 at the top of the bottle and the recess therein to receive the paper cap now ordinarily used to close milk bottles.

The flask sections are now removed, leaving the body of the milk bottle supported upon the core. The body of the milk bottle having been thus produced by my improved process and apparatus, a bottom is secured to said body by any suitable means, or, if desired, it may spin therewith in the form of a poke bottom.

I claim:—

1. An apparatus for making paper hollow ware comprising a sectional flask having numerous perforations therethrough to permit the escape of water, means for supporting said flask in a position to be rotated about its axis, and a former within the flask rotatable about an axis parallel with that of the flask for impanding pressure to the inner surface of the pulp in the interior of said flask.

2. An apparatus for making paper hollow-ware comprising a sectional flask having cir-

merous perforations therethrough to permit the escape of water, means for supporting said flask in a position to be rotated about its axis, and a former transversely movable within the flask for imparting pressure to the inner surface of the pulp in the interior of said flask.

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

WILLIAM H. FULCHER.

Witnesses:
FRANCIS M. WRIGHT,
D. B. RICHARDS.