

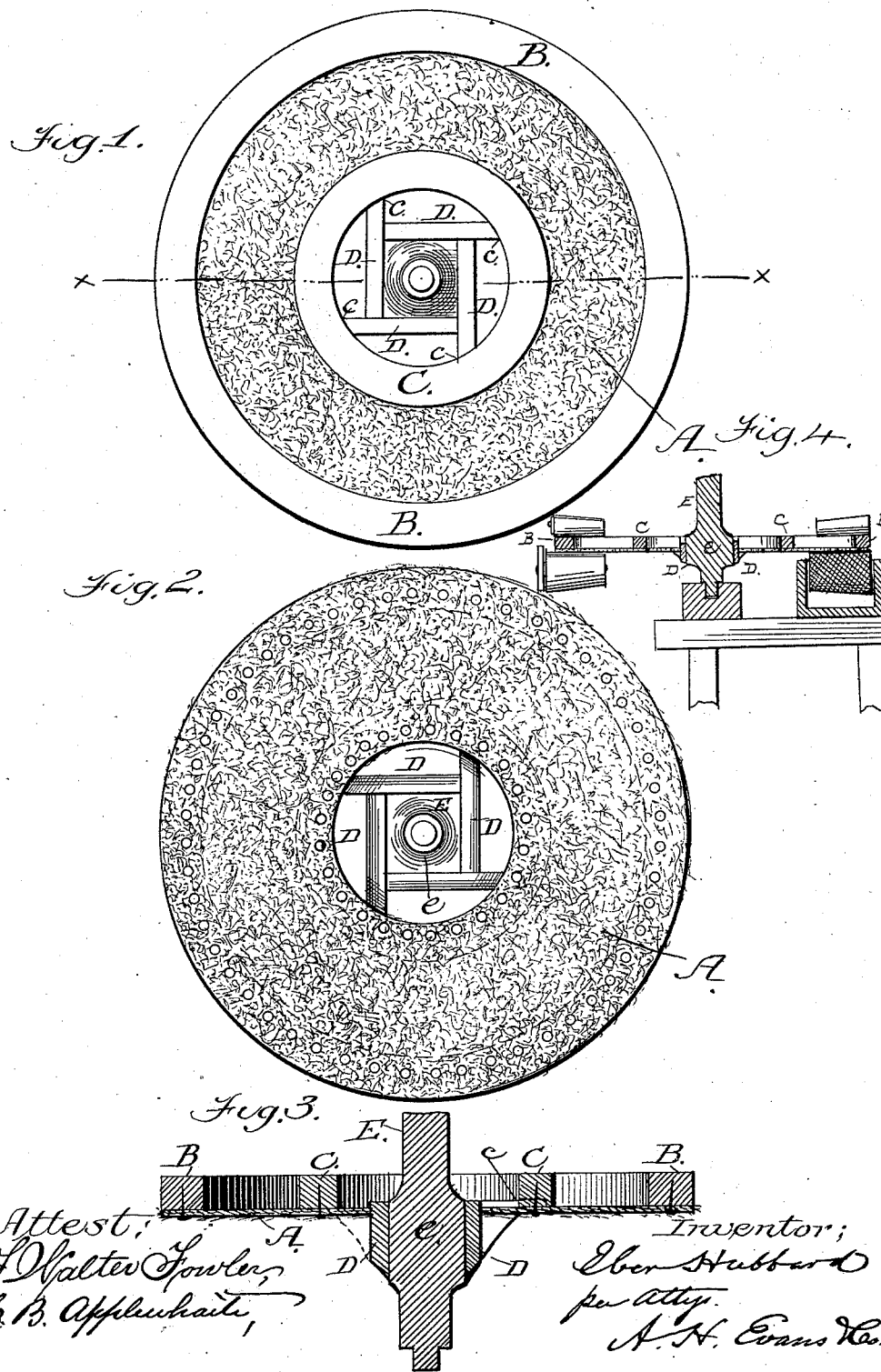
(No Model.)

E. HUBBARD.

APPARATUS FOR MAKING PAPER VESSELS.

No. 302,491.

Patented July 22, 1884.



# UNITED STATES PATENT OFFICE.

EBER HUBBARD, OF ELKHART, INDIANA.

## APPARATUS FOR MAKING PAPER VESSELS.

SPECIFICATION forming part of Letters Patent No. 302,491, dated July 22, 1884.

Application filed April 2, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, EBER HUBBARD, a citizen of the United States, residing at Elkhart, in the county of Elkhart and State of Indiana, have invented certain new and useful Improvements in Apparatus for Making Paper Vessels; and I do hereby declare the following to be a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view of a circular felt with my improvements attached. Fig. 2 is a bottom plan view of the same. Fig. 3 is a vertical sectional view on the line *x x* of Fig. 1. Fig. 4 is a section illustrating how my device may be applied.

My invention relates to an apparatus for forming tapering or conical bodies, such as pails, tubs, &c.; and it consists in the novel arrangement, construction, and combination of devices, as will be hereinafter more fully set forth, and specifically pointed out in the claim.

To enable others skilled in the art to make and use my invention, I will now proceed to describe the exact manner in which I have carried it out.

Referring to the drawings, A represents a circular felt of suitable size, its inner and outer edges secured by any of the well-known means to the under surface of two rings, as will be hereinafter more fully set forth.

B C represent the inner and outer rings, the diameter of the ring C being considerably less than the diameter of ring B, and on the under surface of the said ring C is formed openings *e*, in which are secured the outer ends of a series of projecting arms, D, as shown in Fig. 1. The ends of the arms D are so formed that when they are secured in the openings *e* their lower faces will be on a line or will lay flush

with the under surface of the annular ring C. To these arms D and the ring C is secured the circular felt A, as shown in Fig. 2, and around the outer circumference of the circular felt is secured and supported the ring B in a manner substantially as shown in the drawings.

E represents a central shaft arranged at right angles to the line of travel of the circular felt A, and has an enlarged squared portion, *e*, formed thereon, and so arranged that the inner ends of the arms D may be secured to and revolve with the shaft E, thereby uniting all the parts together and permitting the device to revolve on its own axis by reason of the shaft E being journaled in a suitable frame in the manner commonly employed in devices of this kind. The pulp is taken from a suitable tank and transferred through the medium of a perforated roll or cylinder to the circular felt, and is then carried to an ordinary forming-cylinder located at some desired place on the frame.

I am aware it is not new to make a circular felt diaphragm revolving upon its own axis and having an iron band on its outer periphery, and such I do not claim as my invention; but

What I do claim, and desire to secure by Letters Patent, is—

In a machine for the manufacture of paper vessels, the circular felt A, having an open center, in combination with the rings B and C, secured to the inner and outer edges of said felt, the vertical shaft E, provided with a squared portion, *e*, and arms D, all constructed to operate substantially as herein set forth.

EBER HUBBARD.

Witnesses:

GORDON BEACH,  
GEO. T. BARMY.