L. S. BALL.

APPARATUS FOR FORMING EGG-CARRIERS.

No. 183,444. Patented Oct. 17, 1876.

Fig. 1.

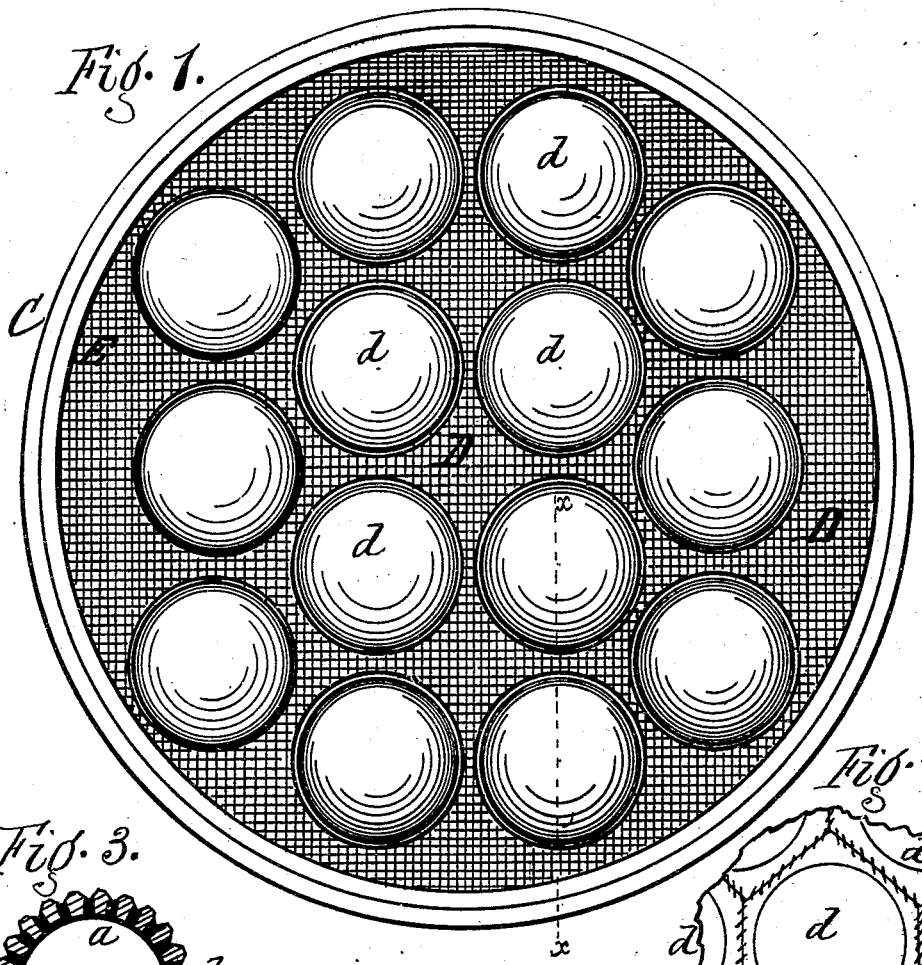


Fig. 4.

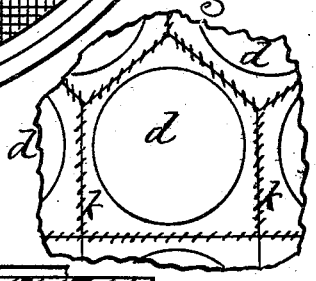


Fig. 3.

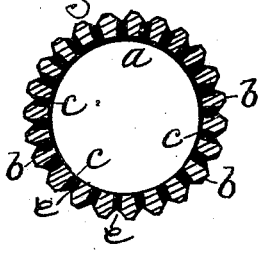
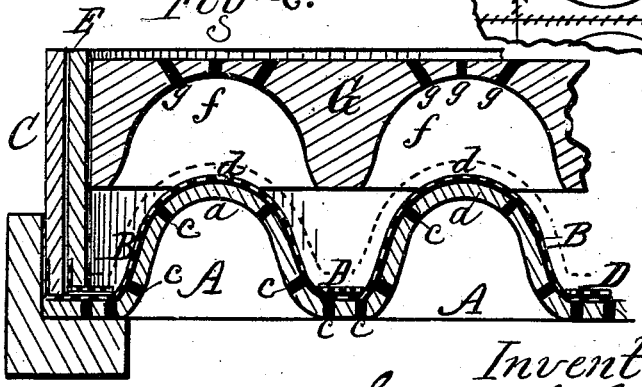


Fig. 2.



Witnesses.
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LUCIUS S. BALL, OF CANANDAIGUA, NEW YORK.

IMPROVEMENT IN APPARATUS FOR FORMING EGG-CARRIERS.

Specification forming part of Letters Patent No. **183,444**, dated October 17, 1876; application filed December 10, 1875.

To all whom it may concern:

Be it known that I, LUCIUS S. BALL, of Canandaigua, in the county of Ontario and State of New York, have invented a certain new and useful Improvement in Apparatus for Forming Egg-Carriers; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a plan with the follower removed from place. Fig. 2 is a vertical section in line *x x* of Fig. 1. Fig. 3 is a horizontal cross-section of one of the primary or forming cones through the line of the lower perforations *c c*. Fig. 4 is a bottom view of a portion of the wire-cloth covering-plates, showing more particularly the method of stitching the cones in place.

The object of this improvement is to form the sheets which contain the egg-cells from paper-pulp; and the invention consists of the apparatus for pressing the sheets, hereinafter more fully described.

The sheets containing the cells have heretofore been formed in a variety of ways—from pieces or strips of paper, from cloth, &c. I make them from paper pulp or stock. Such material is very cheap, strong, soft, and elastic, and the only difficulty has arisen in the manufacture of the sheets, the cells being much more difficult to press than a plane sheet. The article produced consists simply of a sheet of paste or straw board, of round, square, or other form, according to the shape of the receptacle in which it is placed, and filled with half cells or sockets, so that when two of the sheets are placed with the flat sides face to face, the eggs placed in the cells will be retained securely, and without danger of breakage under ordinary circumstances.

In the drawings, A represents the bed-plate, which is formed with a series of cones, *a a*, standing upward therefrom, and in shape similar to half of an egg. These cones are hollow or open on the under side, and the external upper surface is provided with ribs or corrugations *b b*, Fig. 3. The ribs extend from the apex vertically to the base, and in the channels *e e* are made perforations *c c*, which extend through to the open space beneath. The object of this arrangement is to allow the water to pass off under pressure. The water passes down the channels, and thence escapes through the perforations to the inside. The bed-plate A between the cones is likewise perforated, as shown at *c c*, for the same purpose. B is a wire-cloth covering-plate. It is formed with raised pieces *d d*, similar to those of the bed-plate. The covering-plate is attached to a hoop or curb, C, and is fitted over the bed-plate A, with the raised pieces *d d* resting closely over the solid cones *a a*, but leaving the channels *e e* unobstructed, so that water can easily flow after it has passed through the raised pieces *d d*. The water passes freely through the wire-cloth and enters the channels of the lower cones, as before described. As the raised pieces *d d* cannot all be formed from one piece of wire-cloth, owing to the difficulty of drawing the cloth in "striking up," I make each cone separate, and sew the edges together by a stitching, *k*, of wire after they have been inserted through holes cut in the full disk of wire-cloth plate B. This presents a smooth surface with unimpeded passage for water. D is a backing or filling plate of wire-cloth, attached to a hoop, E, of sufficient capacity to hold the required amount of pulp. It is cut with holes which fit exactly over the raised pieces *d d*. The backing thus fits down to the bottom of the covering-plate B, between the cones, leaving the raised pieces *d d* exposed, and forms the bed on which rests the web of the sheet between the cones. The special object of this backing-plate is to enable the pressed sheet to be removed when formed without breaking or tearing. This is done by simply lifting the plate D, which raises the sheet from the cones, after which it may be discharged by simply inverting the backing-plate. The green sheet sticking to the cones could not be removed without the backing-plate. G is the follower or die by which the sheet is pressed. It is simply a block cut with sockets *f f*, to correspond in form and position with the cones *a a* and raised pieces *d d*. As the follower is forced down these sockets close over the cones and form the sheet, which is indicated by

dotted lines in Fig. 2. The top of the sockets *f f* are cut with holes *g g*, which allow water to pass out through the follower.

By the means above described the sheets are expeditiously and easily formed direct from the pulp. They are very cheap, and have the advantage of being soft and yielding, so as not to break the eggs. They may be applied in a receptacle of any kind, such as a barrel or box, being suitably stayed and retained in place.

Instead of forming the sheets with the cones standing upward, it might be done with the cones reversed or standing downward. The effect would be the same.

What I claim as new is—

1. In an apparatus for forming egg-carrier plates, the combination of the bed-plate A, covering-plate B, backing-plate D, and follower G, the bed-plate being provided with cones, the covering-plate being shaped to fit over the same, and the backing-plate being provided with holes, whereby it will fit upon the raised portion of the follower-plate, as and for the purpose specified.

2. The combination, with the perforated cones or dies upon which the pulp is formed, of a backing-plate, D, fitting over the cones or dies, and serving as a base or support for lifting the pressed pulp sheet from the cones or dies, as herein shown and described.

3. The combination, with the covering-plate B and backing-plate D, of the hoops or curbs C E, forming a receptacle for the fluid pulp, as shown and described, and for the purpose specified.

4. The covering-plate B, constructed with separate raised pieces *d d*, inserted through sockets of the plate and stitched in place, as shown and described, and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

LUCIUS S. BALL.

Witnesses:
R. F. OSGOOD,
JACOB SPAHN.