

E. HUBBARD.  
Machine for Making Paper-Pails.

No. 226,752.

Patented April 20, 1880.

Fig. 1.

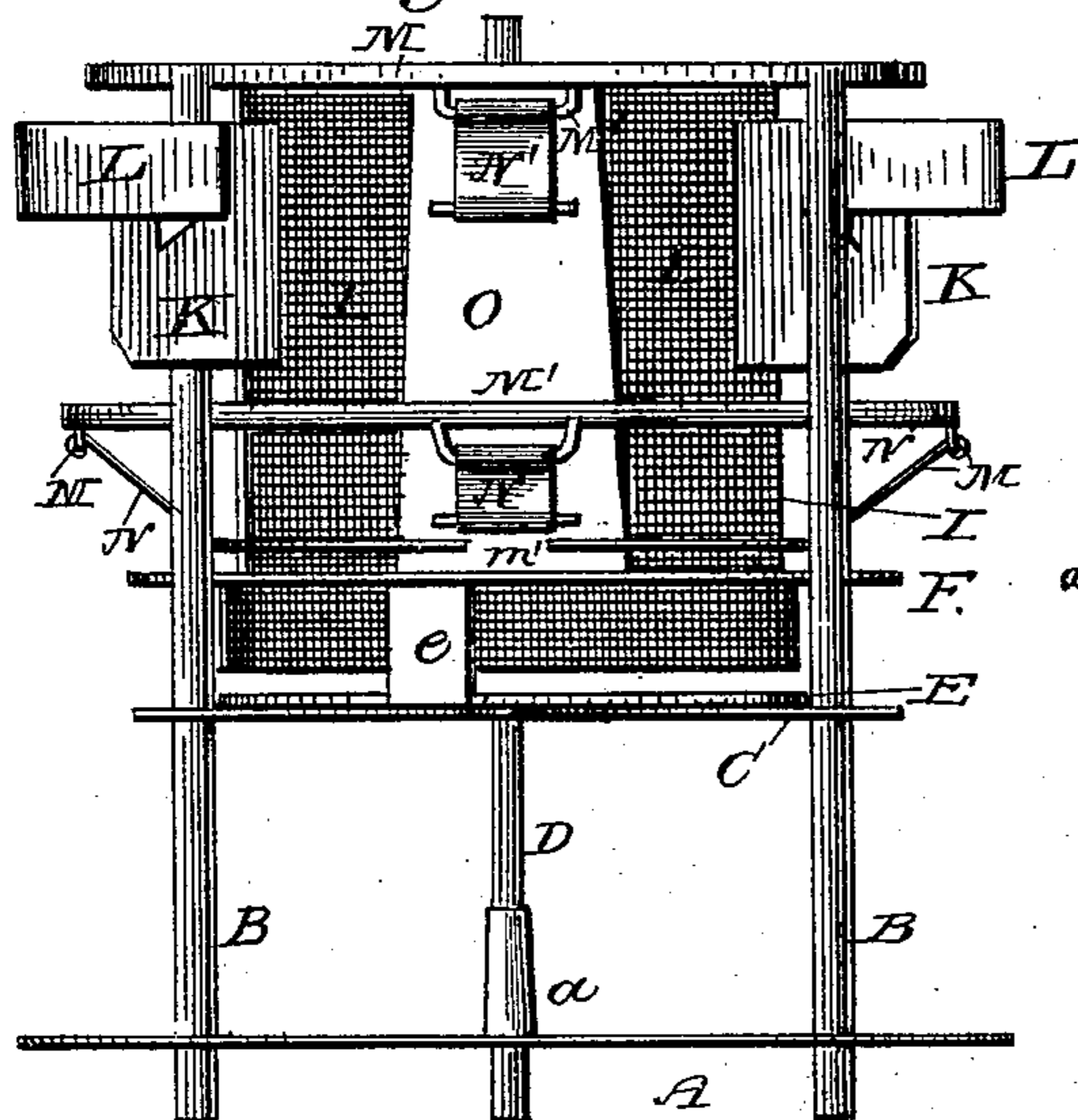


Fig. 2.

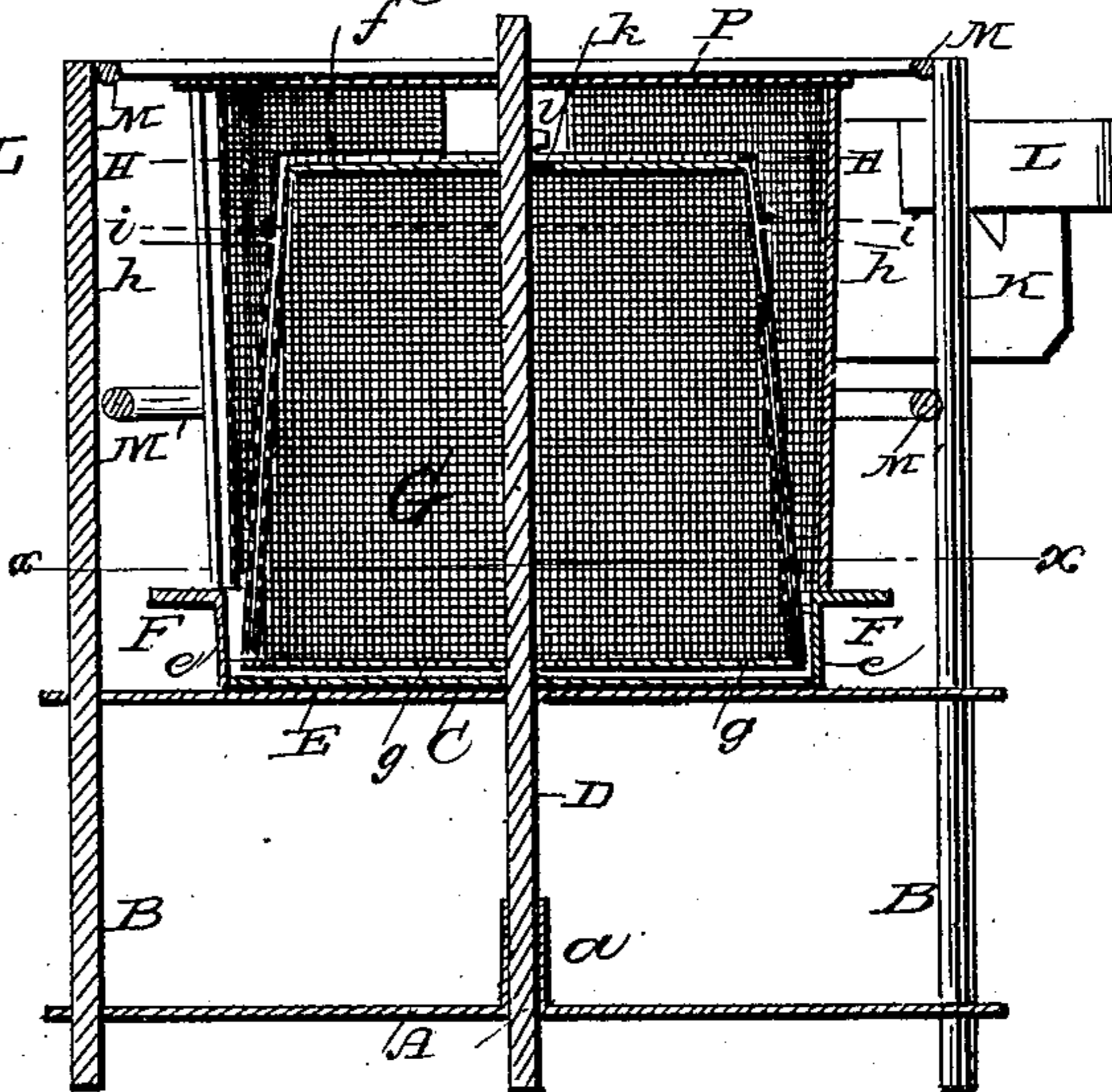


Fig. 3.

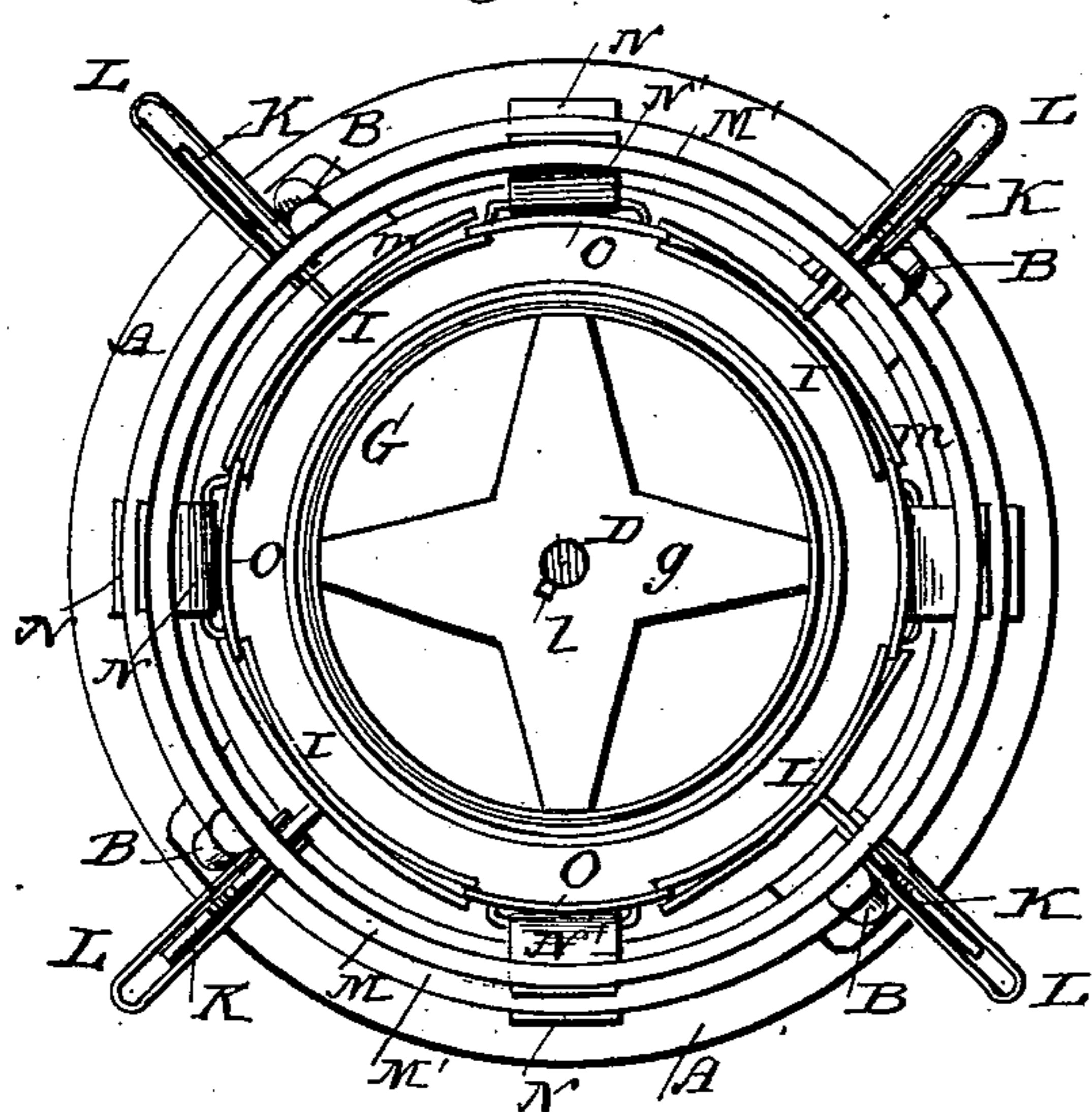
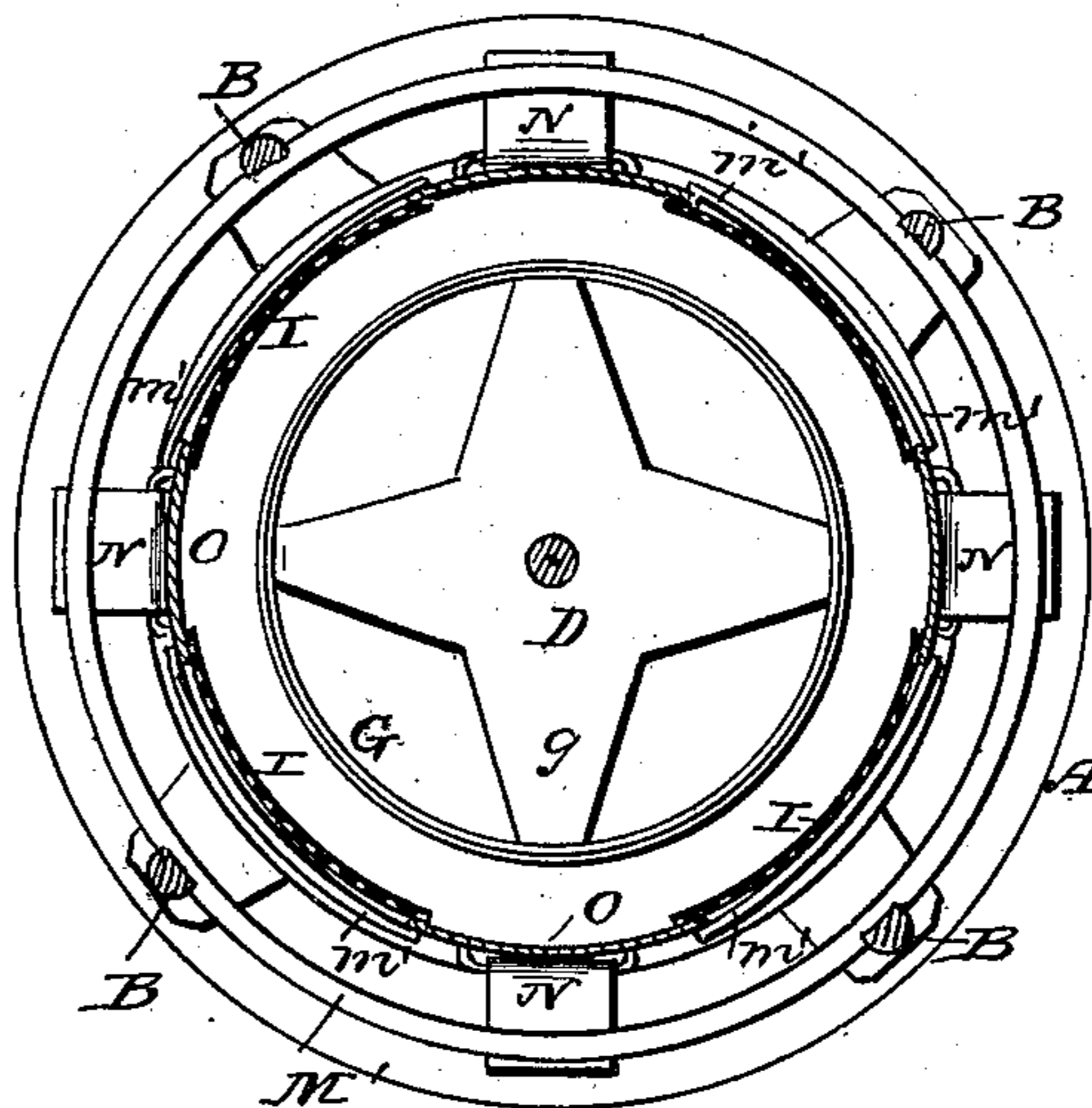


Fig. 4.



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# UNITED STATES PATENT OFFICE.

EBER HUBBARD, OF MEDINA, NEW YORK.

## MACHINE FOR MAKING PAPER PAILS.

SPECIFICATION forming part of Letters Patent No. 226,752, dated April 20, 1880.

Application filed February 20, 1880.

*To all whom it may concern:*

Be it known that I, EBER HUBBARD, of Medina, in the county of Orleans and State of New York, have invented certain new and useful Improvements in Machines for Making Paper Pails; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side elevation. Fig. 2 is a vertical axial section. Fig. 3 is a plan or top view, and Fig. 4 is a horizontal section taken through line *x x* in Fig. 2.

Similar letters of reference indicate corresponding parts in all the figures.

This invention has relation to machines for the manufacture of pails, tubs, and kindred articles from paper-pulp; and it consists in the improvements hereinafter described, and particularly pointed out in the claims.

In the drawings, A is a platform, (preferably circular in shape,) which is secured at the lower end of uprights B B. C is a cross or spider, secured upon the standards B B above and parallel to the lower platform, A. This spider is perforated centrally to admit of the insertion of a vertical sliding rod, D, the lower end of which works in a sleeve, *a*, in the center of platform A.

Upon the rod D, above the spider C, is permanently secured a circular disk, E, which is connected with an upper annular plate, F, by vertical steps or plates *e e*. This annular plate F, which is concentric with rod D, constitutes the table which supports the flaring rim of the pulp pail after this has been shaped in the press.

The press or mold proper consists of a central cone, G, made of perforated sheet metal, with an open top and bottom provided with spiders *f g*, which are perforated centrally to admit of the insertion of the rod D. This cone is for the greater part made of two thicknesses of sheet metal, perforated, the outer thickness being cut away at or stopping short of the upper inclined rim of the cone, so as to form an annular depression, *h*, upon which is

fitted a ring, H, of perforated sheet metal, which is provided with a rib or bead, *i*, as shown more clearly in Fig. 2 of the drawings. The ring H, with its bead *i*, is cut open on one side, so that it will fit firmly upon the recessed top part of the cone G by its spring or elasticity. The upper spider, *f*, of the said cone has a small slot, *k*, projecting from its central perforation, and the cone may be turned upon its central rod, D, so as to cause this slot to register with a lug or pin, *l*, secured upon rod D. During the process of pressing or molding the pail the cone is suspended upon rod D by means of this pin or lug *l*.

I I are the outer "formers" or segments, which are constructed of perforated sheet metal and provided each with a projecting guide, K, which slides in slotted arms L L, projecting outwardly from the upper ends of the standards B. The said standards are connected by parallel circles or hoops M M', upon which are hinged short link-plates N N', connecting with the presser-plates O O, which are so arranged exterior to the perforated formers or segments I as to break joints with and overlap the meeting edges of these.

The intermediate formers are provided with arms or fingers *m m'*, which overlap the edges of the adjacent presser-plates and slide freely thereon in working the machine; the operation of which is as follows: The upper circular disk or cover, P, having been removed, the central former or cone, G, is arranged with its upper spider, *f*, riding upon lug *l* of the central rod, D. This rod is then pushed down as far as it will go into sleeve *a*, or until its lower disk, E, to which the annular table F is rigidly connected, rests upon the lower cross or spider, C. When in this position a hollow conical flaring space is formed between the central depressed cone, G, and the outer segments, I, into which the pulp is run, after which the cover P is again placed in position, and rod D is pulled up, (by hand or by any suitable machinery or arrangement of levers,) which causes the table F to bear against and elevate the lower ends of the outer formers or segments, I, and their presser-plates O, the oblique-hinged plates or links N N' of which will force them inwardly against the central cone or

former, G, carrying the segments I I before them, so as to compress and shape the pulp evenly on all sides around the cone. The pail having been molded, rod D is again depressed, which releases the outer segments, I I, from the compressed pulp, cover P is removed, and the inner cone is turned by its spider *f*, so as to allow the lug or pin *l*, upon rod D, to slip through slot *k*, when cone G will, by its own gravity, release itself from the inner side of the newly-molded pulp pail and drop down upon disk E below the annular table F, slipping out of ring H, which is held in the pulp by the ring or bead *i*, that is embedded in it, (the pulp.) But after the cone is in this manner withdrawn from the ring this will spring together, and thus release itself from the pulp, in which the rib or bead *i* has formed a croze to receive the periphery of the pail-bottom. The pail (minus bottom) may now readily be withdrawn from the mold, after which the several parts are again arranged in operating position to receive a new charge of pulp and form a new pail by a repetition of the operation, as described.

I claim and desire to secure by Letters Patent of the United States—

1. In a machine for making pails or analogous articles from paper-pulp, the combination, with a series of exterior formers arranged in sections operating simultaneously,

and with an inner cone or former, of a detachable spring-ring provided with an annular bead or rib and placed upon the upper inclined end of the inner cone or former, so that when the pulp is compressed around this in operating the machine the bead or rib of said detachable ring shall form a groove or croze near the bottom end of the pail for the insertion of a bottom, substantially as and for the purpose herein shown and set forth.

2. In a machine for making pails or analogous articles from paper-pulp, an inner cone or former provided with a detachable annular rib or bead so arranged that during the process of compressing the pulp around said inner cone to mold the pail the said rib or bead will form a groove or croze near the bottom end of the pail and on the inside thereof, and, upon releasing the inner cone or former from its pulp casing, it (the rib or bead) will automatically contract and detach itself from the pulp, substantially as and for the purpose herein shown and described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

EBER HUBBARD.

Witnesses:

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J. C. THURSTON.