M. E. HUBBARD.

Machine for Making Pails from Paper-Pulp.

No. 202,547. Patented April 16, 1878.

Fig. 1.

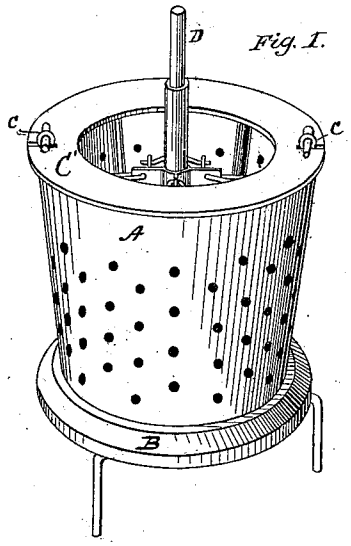


Fig. 2.

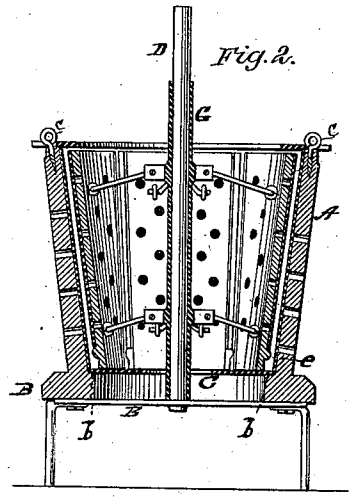


Fig. 3.

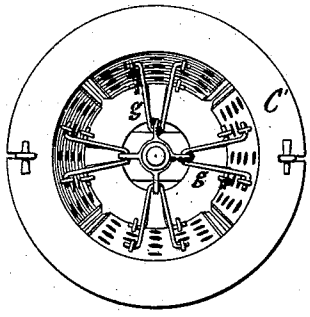
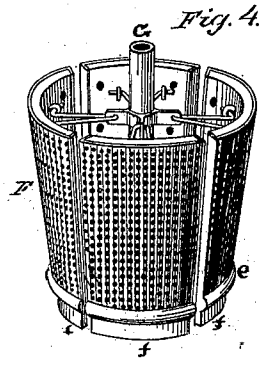


Fig. 4.



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MARSHALL E. HUBBARD, OF MEDINA, NEW YORK.

IMPROVEMENT IN MACHINES FOR MAKING PAILS FROM PAPER-PULP.

Specification forming part of Letters Patent No. **202,547**, dated April 16, 1878; application filed June 7, 1877.

To all whom it may concern:

Be it known that I, MARSHALL E. HUBBARD, of Medina, in the county of Orleans and State of New York, have invented certain new and useful Improvements in Machines for Making Pails from Paper-Pulp, of which the following is a clear, full, and exact description, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 is a perspective view of my improved machine. Fig. 2 is a vertical section of Fig. 1. Fig. 3 is a top or plan view. Fig. 4 is a perspective view of the inner sectional form.

My invention relates to improvements in machines for making pails from paper-pulp, and has for its object to simplify the construction of such machines; and the invention therefore consists of an outer perforated conical form, the inner walls of which are covered with suitable material to form a strainer, and in other details of construction, all as hereinafter fully described.

In the drawing, A represents an outer perforating conical form, made of metal or other suitable material, in a single piece, and of sufficient thickness to give the requisite strength, and it is secured to or forms a part of the support B. The inner walls of this form correspond in shape and size to the outside of the pail desired, and it is covered with any suitable percolating material to form a strainer. This form is provided with a removable flat ring, C, which rests loosely upon the ledge *b* formed upon the support B or lower edge of the conical form A, and upon this ring is formed the edge of the small end of the pail.

The ring is also used for the purpose of raising the pail when pressed in any suitable manner from below, thus raising the pressed pulp partly up and out of the form, so that it may be easily and readily removed. This outer form is also provided with a detachable ring or flange, resting on the top or large edge of the form C′, and projecting toward the center, against which the edge of the large end of the pail is formed, and is secured in position by the eyebolt *c* or other suitable devices. The form is further provided with the central vertical rod D, secured to the cross-bar E on the bottom of the support B.

F represents the inner perforated conical form, constructed of any suitable material, made in vertical sections *f*, and of which any desired number may be used, and arranged in such manner that the form may be expanded or contracted, and when properly expanded conforms to the size and shape of the inside of the pail desired. The sections of this form are covered upon their outer surfaces with any suitable perforated material to form a strainer. Each section is also provided, near its lower edge on the outer surface, with a narrow rib, *e*, running across it in such manner as when the inner form is expanded and comes in contact with the pulp the ribs will form a croze or groove for the reception of the edge of the pail-bottom; and also each section, from the rib to its lower end, is cut back from the general outside surface of the section, so as to form a shoulder for the support of the bottom of the pail, in addition to the croze or groove, and also make the chine thick and strong.

The sections *f* of the form are held in position and expanded and contracted by means of the arms *g*, fastened to their interior surfaces, so as to form a joint at their connection, and the other ends of the arms being secured in a similar manner to a central tube or sleeve, G, which passes over the central rod D of the outer form, thereby keeping the inner form in the center of the outer form. Raising the tube or sleeve with one end of the arms attached thereto contracts the inner form, and by forcing it downward expands it.

To prepare the material for my machine a flat press is used, made of any suitable material, the sides of which are made in the arc of a circle, and the radius of which corresponds with the large and small ends of the pail, should one be cut open on one side and laid out flat. The ends of the press are straight, and the bottom is perforated and covered with any suitable material to form a strainer.

The press is made of any desired depth, and the inner sides thereof are made vertical. The press is also provided with a cover or follower, which corresponds in shape therewith.

The following is a description of the method employed for making a pail: Fill the press above described with pulp; then place the cover or follower thereon, and bring sufficient pressure to expel the greater part of the water,

when the cover may be removed, and by commencing at one end of the press the pulp may be rolled up into a bundle. The inner form may then be contracted or removed and the pulp placed in the outer form by unrolling the bundle and letting the small end rest upon the loose ring C, and completely covering the inner walls of the form, and making a lap which, when pressed in its soft condition, readily becomes one solid and continuous mass. The removable ring C′ is then secured in position on top of the form. The inner sectional form is then introduced and the tube or sleeve forced downward, which expands said form, whereby great pressure is brought to bear upon the pulp with comparatively little force, the water therefrom being expelled through the perforations in both the inner and outer forms. As the inner form expands openings occur between the sections, which, however, are slight, and the pulp at these openings does not receive the requisite amount of pressure required. The form is then contracted and turned one-half the width of one of its sections, when it is again expanded, thereby smoothly packing the pulp both on the inner and outer sides thereof. The ring C′ is then removed, also the inner form, and the loose ring C at the bottom is forced upward, so that the pulp standing or resting on it is readily removed.

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

1. An outer conical perforated form in a single piece, having the inner walls covered with suitable perforated material to form a strainer, substantially as and for the purpose specified.

2. The combination of the outer perforated form, having the removable ring C′ and central vertical rod D, and the sectional inner conical form, constructed substantially as described, and having the jointed arms and central tube or sleeve, substantially as and for the purpose specified.

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Witnesses:
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