

J. P. PULTZ.
PAPER PULP BAG.

No. 175,163.

Patented March 21, 1876.

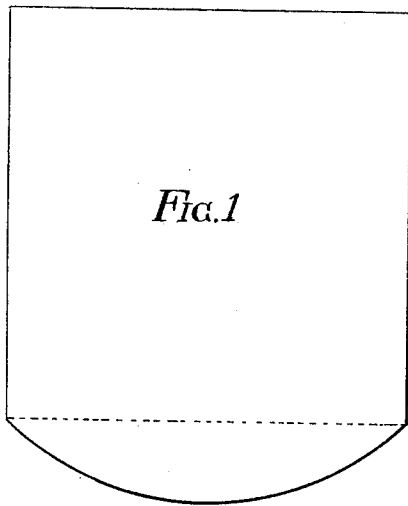


Fig. 2

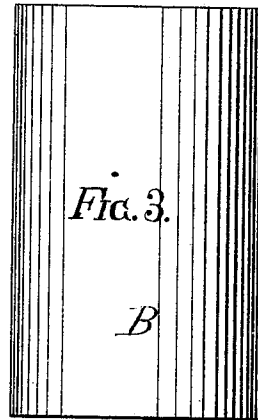
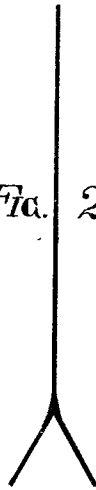


Fig. 3.

B

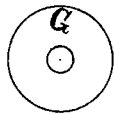


Fig. 4.

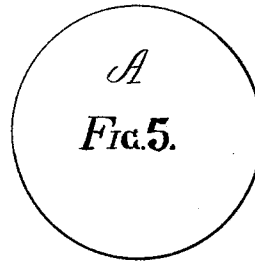
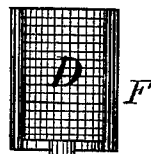
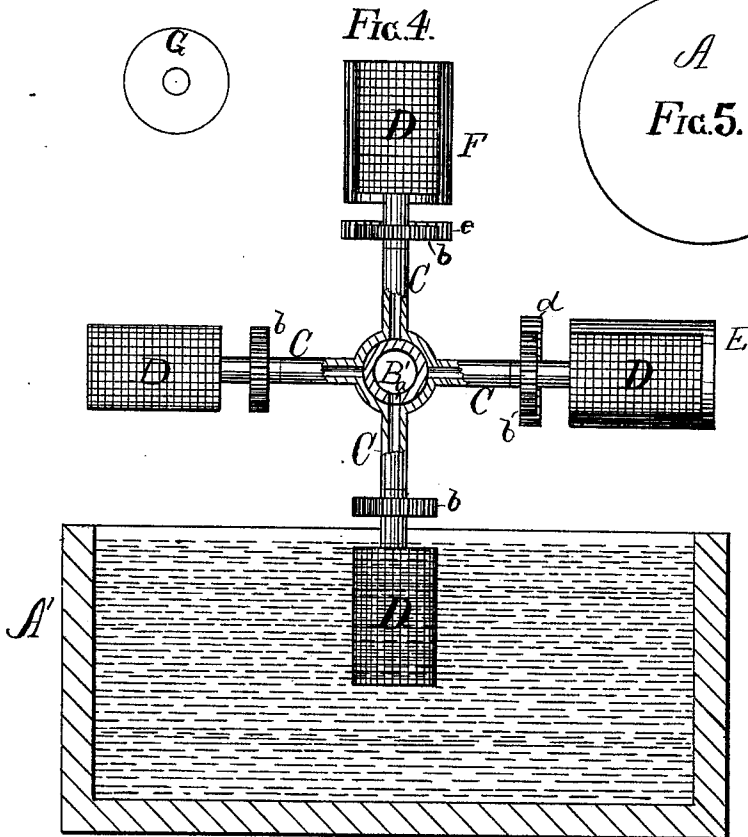


Fig. 5.



Witnesses.
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UNITED STATES PATENT OFFICE.

JOHN P. PULTZ, OF PLANTSVILLE, ASSIGNOR TO HIMSELF AND CHAUNCEY E. ADAMS, OF UNIONVILLE, CONNECTICUT.

IMPROVEMENT IN PAPER-PULP BAGS.

Specification forming part of Letters Patent No. 175,163, dated March 21, 1876; application filed January 12, 1876.

To all whom it may concern:

Be it known that I, JOHN P. PULTZ, of Plantsville, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Paper-Pulp Bags, of which the following is a specification:

My invention consists in the new article of manufacture, to wit, a seamless and flexible paper bag, of cylindrical form when filled.

In the accompanying drawings, Figure 1 is a side elevation of a paper bag which embodies my invention, the same being represented as folded for transportation or packing. Fig. 2 is an edge view of the same. Fig. 3 is a side elevation of the same, represented as expanded. Fig. 4 represents a part of the mechanism employed in the production of the said paper bag, and Fig. 5 is a plan view of the bottom of said bag.

I form the bag with a disk-shaped bottom, A, Fig. 5, and cylindrical sides B, all of paper pulp without seams. For packing into less space the bag is folded flat, as shown in Figs. 1 and 2. The main feature of the invention is a seamless paper bag, and it is of course evident that they may be of other forms besides cylindrical without departing from this feature of the invention.

In order to enable others skilled in the art to produce the said seamless paper bag, I will describe one mode by which the same can be economically produced, reference being had to Fig. 4 of the drawing.

Over a vat, A', that contains paper pulp of any ordinary and suitable kind I place a stationary pipe, B', which pipe is connected with a suction-pump. (Not shown.) In the under side of said pipe I form an orifice, a, and surrounding the pipe B' at this point there is a revolving sleeve or collar carrying four or other desired number of hollow arms, C C C C. Upon the outer end of these arms there is a rotating cylindrical former, D, of wire-cloth, and connected thereto so as to rotate with it there is a gear, b. Not only the sides of the formers D are of wire-cloth, but also the outer ends. These arms and formers are caused to revolve with an intermittent motion, and are

so placed relatively to the vat that, when they reach their lowest point, they will be submerged in the paper pulp within the vat.

If desired, the vat might be arranged by means of cams or other mechanism, so as to automatically raise the vat at the time each former comes to its lowest point, and then drop the vat just before the next forward movement of the formers. When the formers come directly underneath the pipe B', the orifice a is directly opposite the end of the hollow arms C and communicates therewith, so that the suction of the pump draws the water in the pulp up through the wire-cloth formers, hollow arms, and pipe B', proper conductors (not shown) being arranged to convey all the fluid so pumped up directly back into the vat. The water thus flowing from the pulp through the formers carries with it a body of pulp, which is deposited on the wire-cloth former, so that they are soon coated with pulp. The next movement of the formers carries the former first submerged one-quarter of a revolution, (in case four formers are used,) when it stops by the side of a revolving presser-roller, E, and its gear d, which engages with the gear b and causes the former D and presser-roller E to revolve together one revolution, which will press the water out of the paper pulp so deposited on the former. Meanwhile a coating of paper is being formed in the vat upon the succeeding former, as before described.

At the next movement of the formers this former passes from the presser-roller E to the drying-roller F and its gear e, when the drying-roller (heated in any proper manner) and the former revolve together, and the sides of the bag are dried. In passing farther on, the end of the former comes in contact with another drying-roller, G, (set in a frame, not shown, so as to yield,) which dries the bottom of the bag, after which the paper is slipped off the former and is a seamless paper bag, ready for folding and trimming the top by hand or machinery, as may be desired. In the same manner a bag is formed on each succeeding former.

Bags of any desired thickness may be made, but I prefer in all cases to make them of paper so flexible that they may be readily folded into a small space for transportation.

One great advantage of my seamless bag over others is that it is absolutely tight, which is very desirable for flour-bags, and for other material which will readily find its way through the small crevices almost always present in a pasted bag. The bag is also of such shape as to form, when filled, a better-shaped package than other bags, and it can be produced at less cost than a folded and pasted bag.

The machinery and process of making are herein set forth only to disclose one way by

which the article may be produced, and not as a basis for a claim. It is my intention, however, to claim the process and machinery in a subsequent application.

I claim as my invention—

1. As a new article of manufacture, a seamless paper bag, substantially as described.

2. A flexible paper bag having a disk-shaped bottom and cylindrical body, substantially as described.

JOHN P. PULTZ.

Witnesses:

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