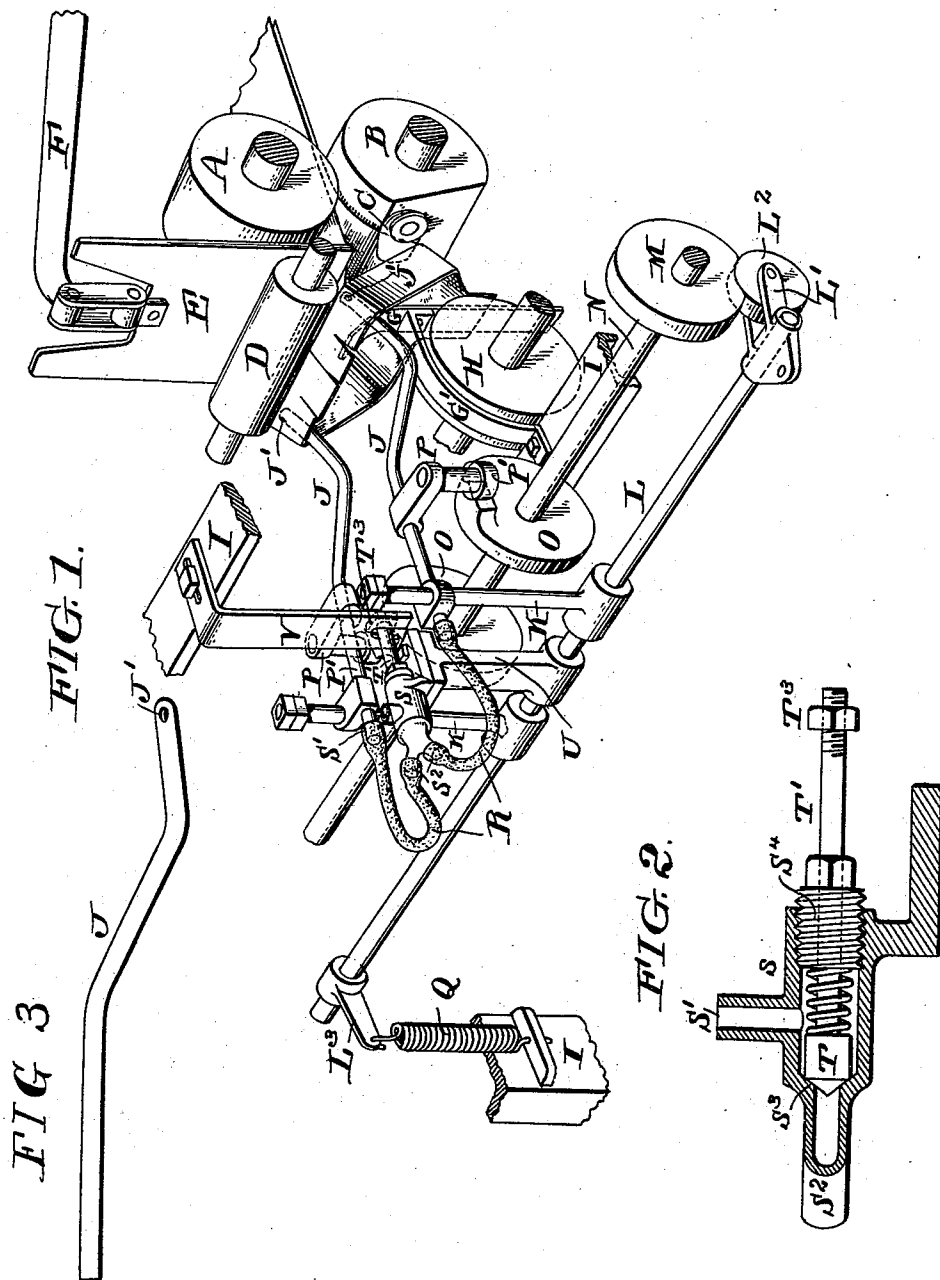


(No Model.)

C. B. STILWELL.
PAPER BAG MACHINE.

No. 508,060.

Patented Nov. 7, 1893.



WITNESSES:
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UNITED STATES PATENT OFFICE.

CHARLES B. STILWELL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
THE UNION PAPER BAG MACHINE COMPANY, OF SAME PLACE.

PAPER-BAG MACHINE.

SPECIFICATION forming part of Letters Patent No. 508,060, dated November 7, 1893.

Application filed April 17, 1893. Serial No. 470,623. (No model.)

To all whom it may concern:

Be it known that I, CHARLES B. STILWELL, of the city and county of Philadelphia, State of Pennsylvania, have invented a certain new and useful Improvement in Paper-Bag Machines, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part hereof.

My invention relates to machinery for making what is known as bellows-folded satchel bottom bags, and particularly to that kind of machine for making said bags described in my prior patents, No. 407,794, of July 30, 1889, and No. 417,346, of December 17, 1889, my present invention being an improvement upon said machines and consisting essentially in making the fingers which act upon the inside of the bag blank hollow and with a perforation at or near their working ends so that a blast of air can be made to issue from the end of the finger to assist in the formation of the corners of the bag bottom. Preferably also I so construct the apparatus as to make the blast through the perforations of the fingers intermittent.

Reference is now had to the drawings which illustrate my invention and in which—

Figure 1 is a perspective view of a part of a paper bag machine embodying my improved construction; Fig. 2 a longitudinal section through a valve casing forming part of the air conduit leading to the fingers; and Fig. 3 a detached view of one of the fingers.

The parts marked I indicate portions of the frame of the bag machine.

A and B are feed rollers through which the bellows-folded blanks are fed to the mechanism for forming a diamond fold upon them; C indicating grippers upon the face of the lower roll B, the function of which is to engage the lower ply of the blank at the points where the corners of the bag bottom are to be formed therein.

D is a roller situated in front of the rollers A and B and under which the upper ply of the blank is fed.

E is a tucker acting between the rollers A and B and operated through a lever arm F by mechanism such as is described in my former patents.

G is a guide finger supported on a bracket arm G' and employed to direct the front tab of the lower ply in a proper path, said finger lying to the rear of a feed roller H which operates in connection with an opposing feed roller as shown in my former patents.

J J are the internally-acting fingers which, in my new construction, I make hollow and with perforations J' at or near their extreme ends pointing toward the corners which it is the function of the fingers to form on the upper ply of the bag blank. These fingers are secured to uprights K K; in turn secured upon a rock shaft L.

L' indicates the lever arm extending out from the rock shaft and having in its end a cam roller L² which rests against a cam M secured to a shaft N.

L² is another lever arm extending out from the rock shaft L and connected with a spring Q, the action of which is to keep the cam roller L² in contact with the cam M. The operation of the rock shaft upon the fingers is to give them a motion in a vertical plane and the fingers are given a motion to and from each other by means of cams O secured to the shaft N and acting upon cam rollers P' attached to arms P connected in turn with the fingers J.

In all of the above-described detail, with the exception of the hollow formation of the fingers, the machine shown is substantially identical with that described in my former patents and need not be further described.

R R indicate air tubes leading to the fingers J J from the two nozzles S² S³ of a valve casing S forming part of an air conduit S' which connects in turn with some source of compressed air not shown in the drawings.

T is a valve normally held against a seat S³ in the valve casing S and having a spindle T' extending through a cap or plug S⁴ in the end of the casing; T³ indicating an adjustable nut on the end of the spindle T'. As shown, the casing S is secured to a lever arm U attached in turn to the shaft L and moving backward and forward with the arms K K which support the fingers J.

V is a finger extending down from the frame of the machine in such a way as to lie in the path of the nut T³ on the valve spindle.

It will be seen that as the rock shaft moves

backward the valve casing will be carried backward also, the valve T remaining seated however until the nut T³ comes in contact with the finger V and arrests the backward motion of the valve. In consequence of which a further backward motion of the casing lifts the valve from its seat and permits air to escape into the fingers J and through the perforations J' at their ends. The point of air admission to the fingers can be regulated by adjusting the nut, and should be timed to occur shortly before the fingers attain their extreme upward position. By this device it is not necessary that the fingers should come into actual contact with the corners of the bag or at least should follow the corners to the extreme position, the blast of air serving to bring the corners to proper form without any risk of tearing the paper.

20 Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a paper bag machine substantially as described, the combination with means as grippers C adapted to engage corners of a bellows-folded blank on one side, of internally-acting fingers J adapted to engage the corresponding corners of the other side, said fingers consisting of hollow tubes having perforations J' directed toward the bag corners and mechanism arranged to force air through said fingers.

2. In a paper bag machine substantially as

described, the combination with means as grippers C adapted to engage corners of a bellows-folded blank on one side, of internally-acting fingers J adapted to engage the corresponding corners of the other side, said fingers consisting of hollow tubes having perforations J' directed toward the bag corners and mechanism arranged to force air through said fingers in intermittent jets.

3. In a paper bag machine substantially as described, the combination with the hollow fingers J J having perforations J' in their ends, of a valve casing J forming part of an air conduit leading to each finger, a valve T arranged to normally close said conduit, and means for lifting said valve from its seat at determined intervals.

4. In a paper bag machine substantially as described, the combination with a rock shaft L of the hollow fingers J J having perforations J' in their ends, a valve casing S also connected to and moving with the rock shaft and forming part of an air conduit leading to the fingers J, a valve T normally closing said conduit and having a stem F', and a finger V arranged to engage the valve stem and open the valve as the rock shaft moves back to throw the fingers upward.

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Witnesses:

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