L. C. COULTER.

BAG TURNING MACHINE.

APPLICATION FILED AUG. 2, 1918.

1,301,393.

Patented Apr. 22, 1919.

2 SHEETS—SHEET 1.

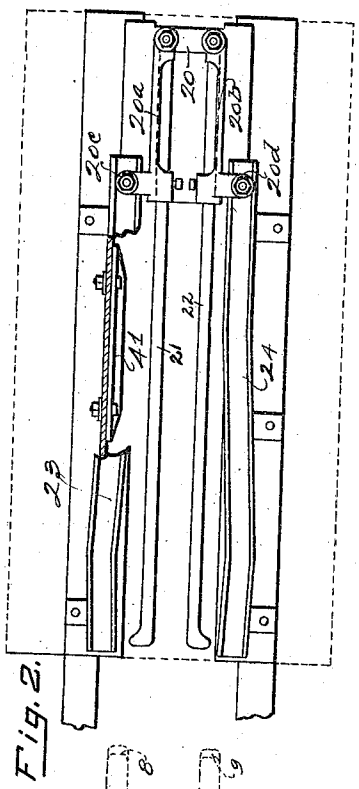


Fig. 2.

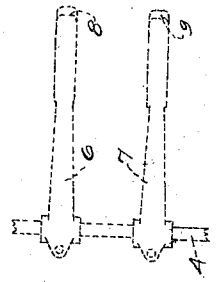
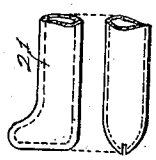


Fig. 3.



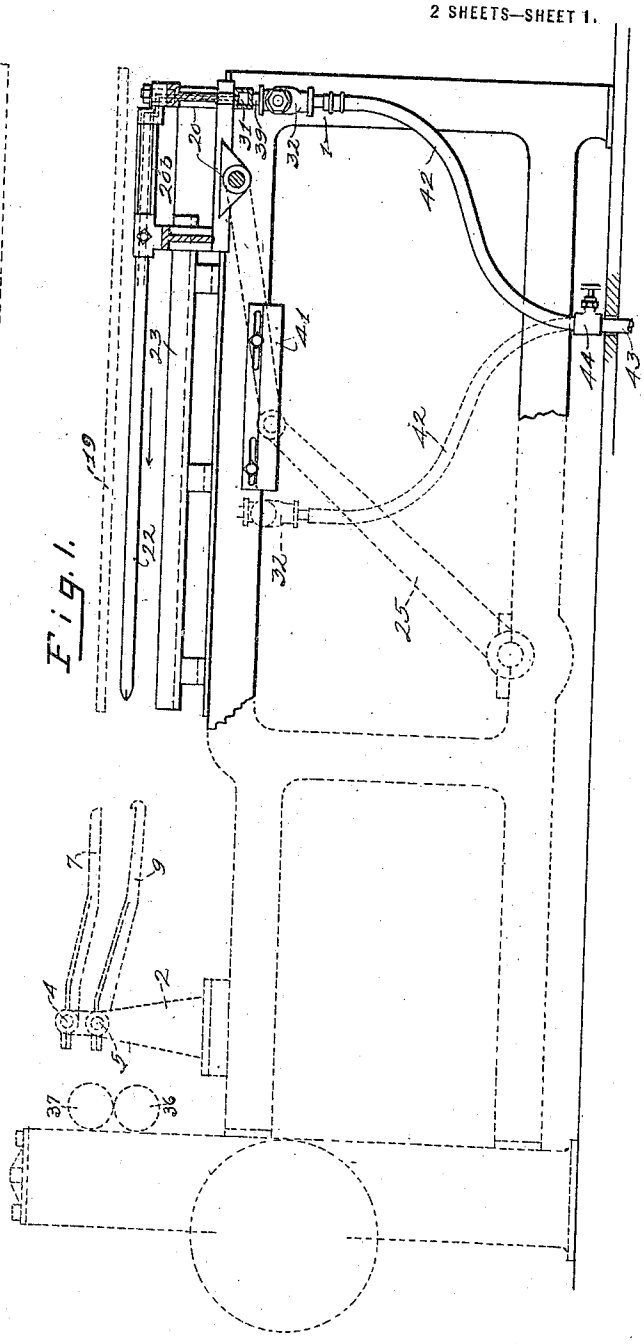


Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 4.

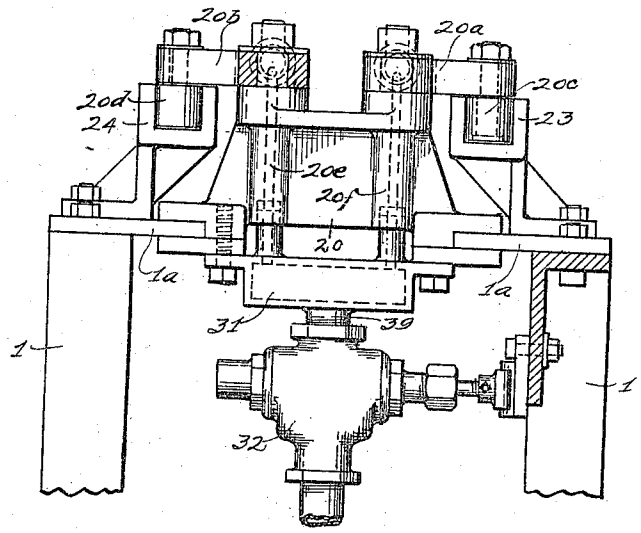
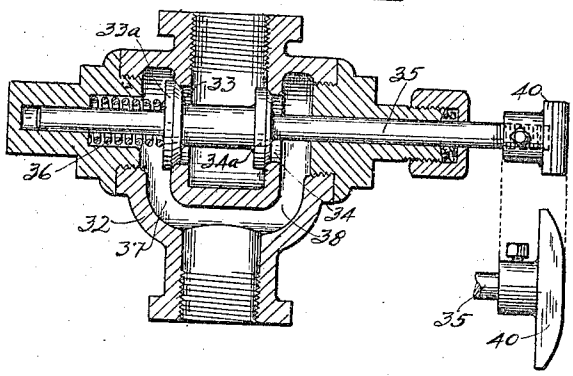


Fig. 5.



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UNITED STATES PATENT OFFICE.

LOUIS C. COULTER, OF PORTLAND, OREGON.

BAG-TURNING MACHINE.

1,301,393. Specification of Letters Patent. Patented Apr. 22, 1919.

Application filed August 2, 1918. Serial No. 248,816.

To all whom it may concern:

Be it known that I, LOUIS C. COULTER, a citizen of the United States, residing in the city of Portland, county of Multnomah, and State of Oregon, have invented certain new and useful Improvements in Bag-Turning Machines, of which the following is a specification.

My invention relates to certain important improvements in bag turning machines of the character shown and described in Letters Patent No. 1,046,561, issued to me and to F. Powell, December 10, 1912, and to which reference is hereby made for the principal part of the machine and the operating mechanism. In the invention as shown and described in said Letters Patent, in addition to the receiving and distending arms, or fingers, to receive and hold the bags to be turned, and the reciprocating pusher arms for turning the bags, there is shown a blower with a blast pipe extended to a position to coöperate with the pusher arms in turning the bag.

In the present invention, I have done away with a separate blast pipe and have provided a pair of combination pusher members and blow pipes which not only engage and push the bottom and sides of the bag through its mouth in the turning operation, but combine with such pushing action, a blowing action from the ends of said pusher members, whereby the operation of turning the bag is greatly facilitated and the danger of injury to the bag is reduced to a minimum.

I have illustrated my present invention on the accompanying two sheets of drawings, in which,—

Figure 1 shows a side elevation thereof, partly in section, with the main part of the machine shown in outline;

Fig. 2 is a top plan view of the present invention with the bag receiving and distending fingers indicated in dotted lines;

Fig. 3 shows top and edge views of the end of a pusher member;

Fig. 4 is an enlarged rear view of the invention showing a controlling valve for controlling the admission of air to the pusher members; and

Fig. 5 is a sectional view through said valve.

Referring more in detail to the drawings, the main machine as outlined in dotted lines is the same as shown in the patent referred to and comprises the main frame, 1, 1, having mounted thereon a bag receiving and distending mechanism comprising a frame or standard 2, carrying upper and lower cross bars or shafts, 4 and 5. Mounted upon the upper shaft 4 and spaced apart, are two receiving and distending arms or fingers 6 and 7. Mounted on the lower shaft 5, are two lower receiving and distending arms or fingers 8 and 9. The lower arms or fingers 8 and 9 register with the ends of the upper arms 6 and 7, and have their ends made to hook around the ends of the upper arms 6 and 7, in the manner indicated. The bags to be turned are taken from a receiving table, 19, and are placed by hand upon these receiving and distending arms, which are operated in a manner described in the patent referred to, and as they are not a part of the present improvement, need not be here described in detail.

Mounted to reciprocate under the table 19, is a cross head 20, carrying two pusher members 21 and 22. Said pusher members are of pipe construction and are provided with foot-like pusher and air discharge ends, as clearly shown in Figs. 2 and 3. At their rear ends said pusher members are connected with two pivoted parts 20^a and 20^b of a slide head 20, which pivoted parts are provided with operating rollers 20^c and 20^d, positioned to travel in guide ways 23 and 24, mounted upon the main frame 1, 1, said guide ways being formed to cause said pusher members 21 and 22 to be moved from and toward each other as they are moved longitudinally along said guideways, whereby as the ends of said pusher members push the bottom and sides of the bag through its mouth, in the turning operation thereof, they also move apart and stretch out the bag as it is turned and delivered to the discharge rollers 36 and 37. Said slide head and said pusher members are reciprocated by means of a crank arm 25, connected therewith, as shown. The operating mechanism therefor is also old.

Referring now particularly to Figs. 4 and 5, said slide head 20, is provided with two

tubular portions 20^e and 20^f, having air passageways therethrough which are connected at their upper ends, respectively, to the attached ends of the tubular pusher members 21 and 22, for supplying air to said pusher members. At their lower ends, the passageways in said slide head are connected with an air box, 31, connected to and moving with said slide head, as clearly shown in Fig. 4. Said slide head is supported by and slides on slide plates 1^a, 1^a, on the top of the main frame. Connected with said air box 31, is an air control valve 32, shown in section in Fig. 5. Said air control valve has two valve seats therein, designated 33 and 34, in which seat two valves 33^a and 34^a, mounted on a valve rod 35, normally held in closed position by means of a coiled spring 36. Said valves are, therefore, moved together to open communication from the bottom of said valve casing, through two passageways 37 and 38 therein, to the connection at 39, with said air box 31. Mounted on the outer end of the valve rod 35, is an operating cam block or shoe 40, adapted as said slide head and said valve casing are reciprocated back and forth on said main frame, to engage and be operated by a cam bracket 41, whereby to push said valve rod inwardly against the tension of the spring 36, for the purpose of opening the communication through the valve casing and the air box 31. Connected with the lower end of the valve casing is an air supply pipe or tube, 42, connected at its lower end with a source of air supply, 43, with a control valve 44. The position of the cam bracket 41, is such that the air control valves 33^a and 34^a will be opened to admit air to said pusher members 21 and 22, during the time the ends of said pusher members 21 and 22 are moving into and turning the bag, thus facilitating the turning movement of the bag without injury to the material of which the bag is made. In other words, I have provided pusher members which not only push, but at the same time direct a blast of air therethrough against the bag material as it is being pushed and blown through the mouth of the bag in the turning operation. This prevents the folds of the material from catching on the ends of the pusher members and makes possible a quick and continuous turning and spreading of the bag as the ends of the pusher members move against the body of the bag and push and blow it through the mouth thereof. The air is thus automatically turned on and off during the reciprocation of the cross head and the pusher members for the purpose of discharging air against the bag material at the proper time during the turning operation. To this end the cam bracket 41 is adjustably mounted on the frame, as will be clear from Fig. 1.

I do not limit the invention to the details here shown and described for purposes of illustration, except as I may be limited by the hereto appended claims.

What I do claim is,—

1. In a bag turning machine, in combination, holding means for holding a bag mouth distended, pusher members for pushing the body of the bag through its mouth, said pusher members being hollow to conduct air therethrough, and means for supplying air under pressure to said pusher members.

2. In a bag turning machine, in combination, holding means for holding a bag mouth distended, pusher members for pushing the body of the bag through its mouth, means moving with said pusher members for discharging air under pressure adjacent the ends of said pusher members as they move against the bag material, whereby to push and blow at the same time said bag material through said distended mouth.

3. In a bag turning machine, combination pusher and blowing means mounted to move together against the body of the bag, for pushing it through the mouth of the bag.

4. In a bag turning machine, hollow pusher members and means for supplying air under pressure to the interior of said hollow members, whereby to push and blow the body of the bag through its mouth in turning the same.

5. In a bag turning machine, combination pushing and blowing members for pushing and blowing the body of the bag through its mouth, means for moving said members longitudinally, and means for moving said members from and toward each other, substantially as described.

6. In a bag turning machine, combination pushing and blowing means adapted to move together in and out of a bag, means for moving the same, means for supplying air under pressure thereto, and means for moving said pushing and blowing means laterally during the turning operation.

7. In a bag turning machine, combination pusher and blower members adapted to push and blow the body of a bag through its mouth, means for moving the same together, means for supplying air under pressure thereto, and means for automatically controlling the admission of the air to said members during the turning operation.

8. In a bag turning machine, hollow pusher members, means for reciprocating the same, means for moving them toward and from each other during their reciprocating movement, means for supplying air under pressure thereto, and means for automatically controlling the admission of said air to said members during their operation.

9. In a bag turning machine, combination pusher and blower members mounted to be moved together through a bag mouth, means for spreading said members as they move

therethrough, means for supplying air under pressure thereto, a valve for controlling the flow of air to said pusher and blower members, and means for automatically operating said valve during the operation of said pusher and blower members.

10. In a bag turning machine, combination pusher and blower members having combination pusher and discharge ends adapted to push and blow against the material of the bag, means for supplying air under pressure thereto, and means for operating the same in turning bags.

Signed at Portland, Multnomah county, Oregon, this 8 day of July, 1918.

LOUIS C. COULTER.

In presence of—
O. A. NEAL,
D. DEVEREAUX.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."