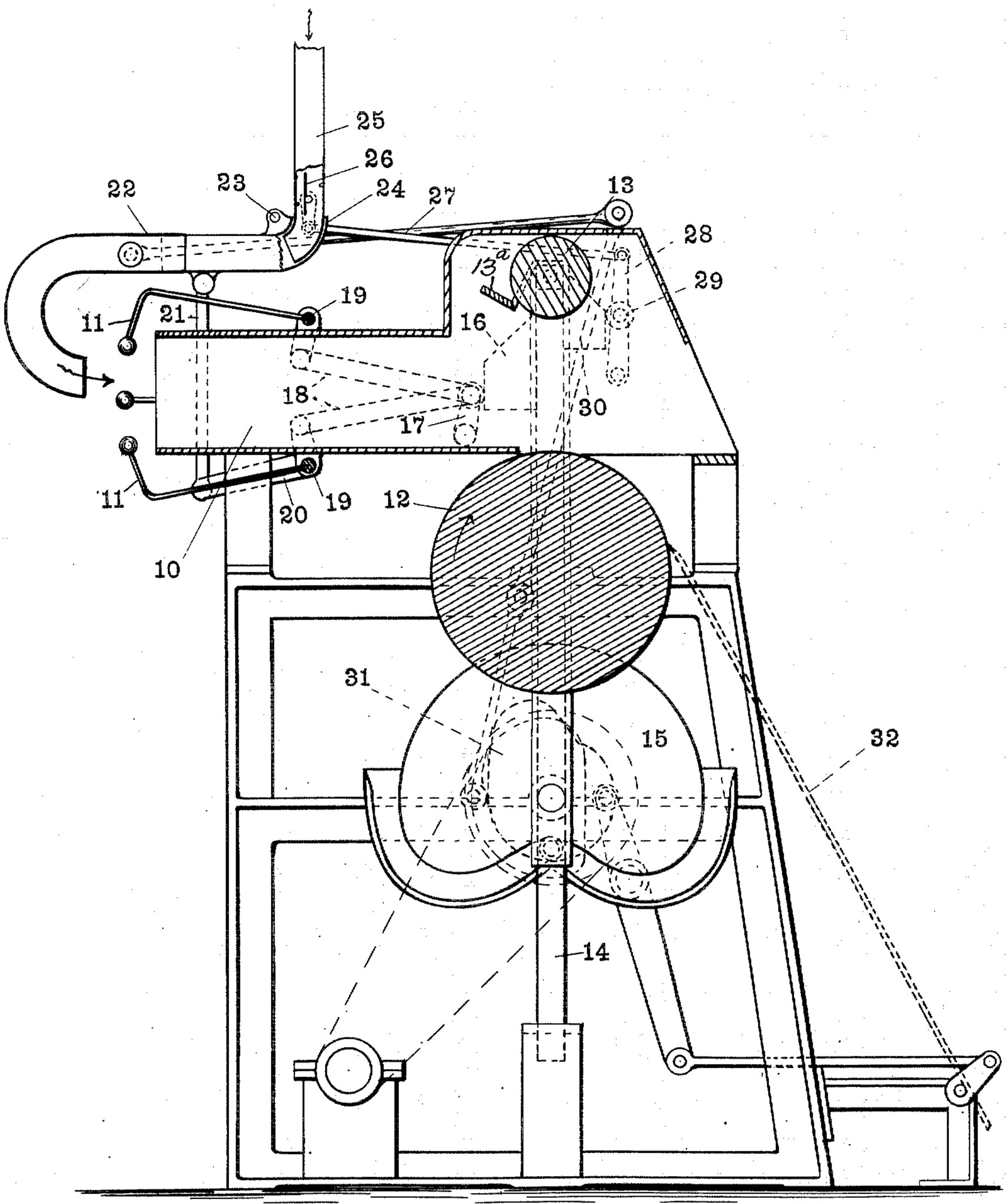
No. 775,975. PATENTED NOV. 29, 1904.

J. IVERSON.

PNEUMATIC BAG TURNING MACHINE.

APPLICATION FILED SEPT. 21, 1903.

NO MODEL.



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UNITED STATES PATENT OFFICE.

JOACHIM IVERSON, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO BEMIS BRO. BAG CO., OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

PNEUMATIC BAG-TURNING MACHINE.

SPECIFICATION forming part of Letters Patent No. 775,975, dated November 29, 1904.

Application filed September 21, 1903. Serial No. 174,040. (No model.)

To all whom it may concern:

Be it known that I, JOACHIM IVERSON, a subject of the King of Sweden and Norway, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Pneumatic Bag-Turning Machines, of which the following is a specification.

The object of my invention is to provide an improvement in means for pneumatically turning bags by an air-blast instead of an air-suction, as has heretofore been customary.

The accompanying drawing, which is a central vertical section of a machine embodying my invention, clearly illustrates the same.

The machine consists of an air chute or casing 10, at the mouth of which are arranged suitable bag opening and supporting fingers 11, over which the mouth of the bag is to be placed. At the rear or discharge end of the casing 10 is a roller 12, which is continuously rotated in the direction indicated by the arrow by any suitable means. Arranged above roller 12 is a coacting roller 13, which is journaled on the upper ends of sliding arms 14, which may be moved up and down by means of a cam 15, so that roller 13 may be moved from and toward roller 12, for a purpose which will appear. The arms 14 carry a cam 16, adapted to engage an arm 17, connected by links 18 with shafts 19, each of which carries one of the mouth-opening arms 11. One of the shafts 19 is provided with an arm 20, connected by a link 21 with a blast-spout 22, hinged at 23. Spout 22 at its discharge end is arranged to direct a blast of air into the receiving end of casing 10, and at its rear end said spout is provided with an elbow 24, into which is sleeved the lower end of a suitable supply blast-pipe 25, the arrangement being such that the spout 22 may be swung upon its pivot without disconnecting it from tube 25. Mounted in pipe 25 is a suitable valve 26, which is arranged to be automatically operated by a link 27 and an arm 28, the arm 28 carrying a roller 29, which is engaged intermittently by a cam 30, carried by arms 14. The shaft which carries cam 15 also carries a cam 31, which is adapted to operate a suitable delivering-fly 32 in a well-known manner.

In operation the normal position of the parts is that in which roller 13 is down against roller 12, fingers 11 are thrown inward toward the medial line of the receiving end of casing 10, and spout 22 is thrown upward away from said receiving end. With the parts in these positions the operator places the mouth of a bag over fingers 11, and a rotation of the cam 15 by its shaft throws roller 13 up to the position shown in the drawing, spreads fingers 11, drops spout 22 to the position shown, where it may deliver a blast of air onto the bag and into the casing 10, and opens valve 26 so as to allow such blast of air to pass through pipe 22, the several movements taking place in the order named. The blast of air coming from spout 22 strikes the outer side of one wall of the bag and turns the bag and blows the same into casing 10, whereupon roller 13 begins to move toward roller 12, and valve 26 is closed. The further movement of roller 13 downward withdraws cam 16 from arm 17, so that fingers 11 return to normal position, spout 22 is thrown away from casing 10, and the bag is grasped between the two rollers 12 and 13 at or near the closed end or bottom and by them delivered to the fly 32, whereupon the operation is repeated.

It may be desirable under some circumstances to cause the blast-tube to follow the turning bag, so that the blast may be more directly applied at the point of turning. For that purpose the discharge end of the tube 22 is sleeved upon the rear end and connected by a link 33 with a lever 34, engaged by a properly-timed cam 34, so that the discharge end of the blast-tube will follow the turning bag into the casing.

The method of turning bags pneumatically, which may be effected by the use of the above-described machine or by hand, is embodied in a companion application, Serial No. 174,041, filed September 21, 1903.

The guard 13[a] is located in front of the

roller 13 and parallel therewith and serves to guide the rear end of the turned bag to pass between the rollers 12 and 13.

I claim—

1. In a bag-turning machine, the combination, with a receiving-casing against the mouth of which a bag may be supported, of a blast-tube mounted to discharge a blast of air into the mouth of said casing, for the purpose set forth.

2. In a bag-turning machine, the combination, with means for supporting the mouth of a bag, of a blast-tube arranged to direct a blast of air upon one side of said bag toward and through the mouth thereof.

3. In a bag-turning machine, the combination, with a receiving-casing having an opening adjacent which the mouth of the bag may be supported, of a blast-tube arranged to direct a blast of air into said opening, for the purpose set forth.

4. In a bag-turning machine, the combination, with a receiving-casing having an opening adjacent which the mouth of the bag may be supported, of a blast-tube arranged to direct a blast of air into said opening, and means for discharging the turned bag from the end opposite said opening.

5. In a bag-turning machine, the combination, with means for holding a bag-mouth distended, of a blast-tube arranged to direct a blast of air upon one side of said bag toward and through the distended mouth thereof from the closed end of the unturned bag, and means for moving said tube in the direction of turning at the time of turning.

6. In a bag-turning machine, the combination, with means for supporting and distending the mouth of a bag, of a blast-tube arranged to direct a blast of air upon one side of said bag toward and through the mouth thereof.

7. In a bag-turning machine, the combination with a receiving-casing, of means for supporting and distending the mouth of a bag against the mouth of the casing, and a blast-tube mounted to discharge a blast of air into the mouth of said casing, for the purpose set forth.

8. In a bag-turning machine, the combination with a receiving-casing having an opening adjacent which the mouth of the bag may be supported and distended, of means for supporting and distending the mouth of a bag adjacent the mouth of the casing, and a blast-tube arranged to direct a blast of air into said opening, for the purpose set forth.

9. In a bag-turning machine, the combination with a receiving-casing having an opening adjacent which the mouth of the bag may be supported and distended, of means for supporting and distending the mouth of a bag adjacent the mouth of the casing and a blast-tube arranged to direct a blast of air into said opening, and means for discharging the turned bag from the end opposite said opening.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 10th day of September, A. D. 1903.

JOACHIM IVERSON. [L. S.]

Witnesses:

C. A. TRIPP,

ADAH J. JOHNSTON.