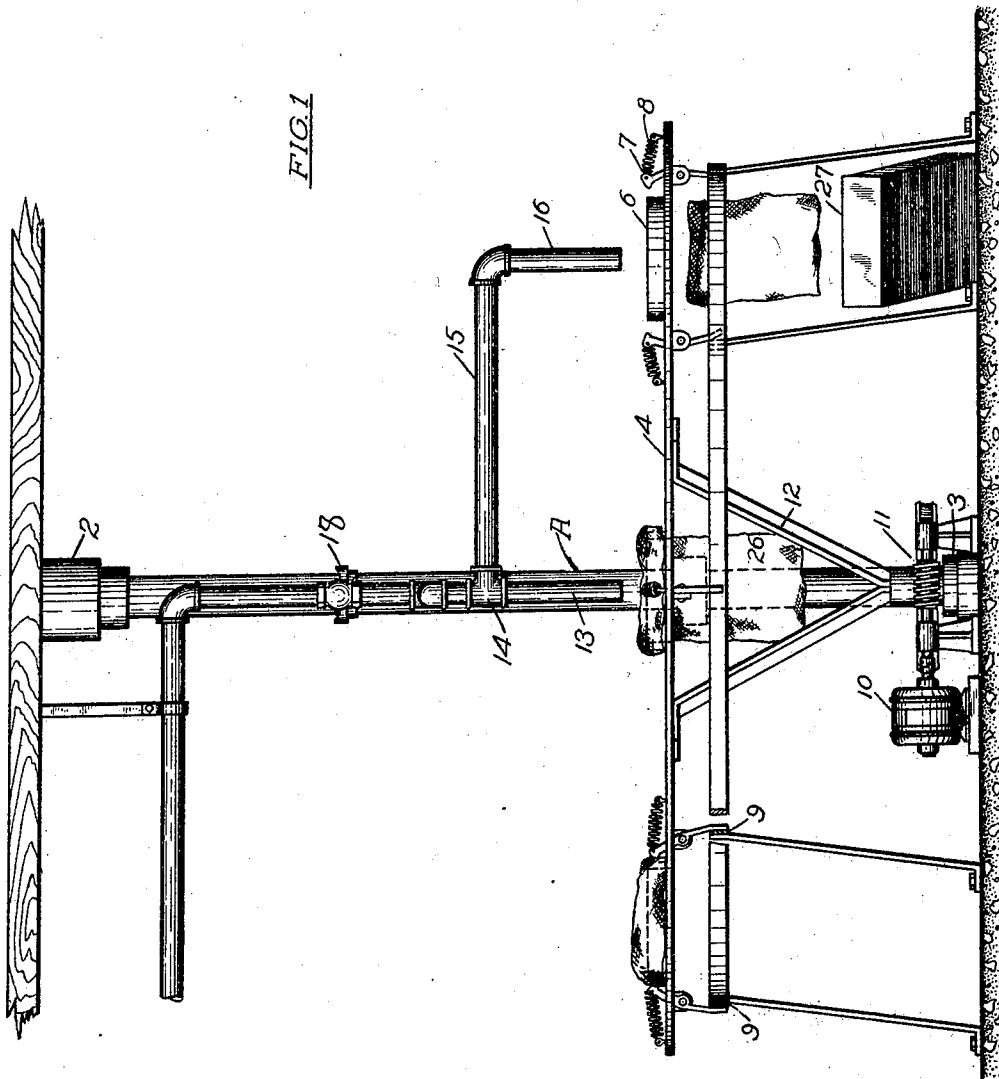


C. C. REESE AND C. C. BROWN.
BAG TURNING MACHINE.
APPLICATION FILED MAR. 25, 1920.

1,405,330.

Patented Jan. 31, 1922.
2 SHEETS—SHEET 1.

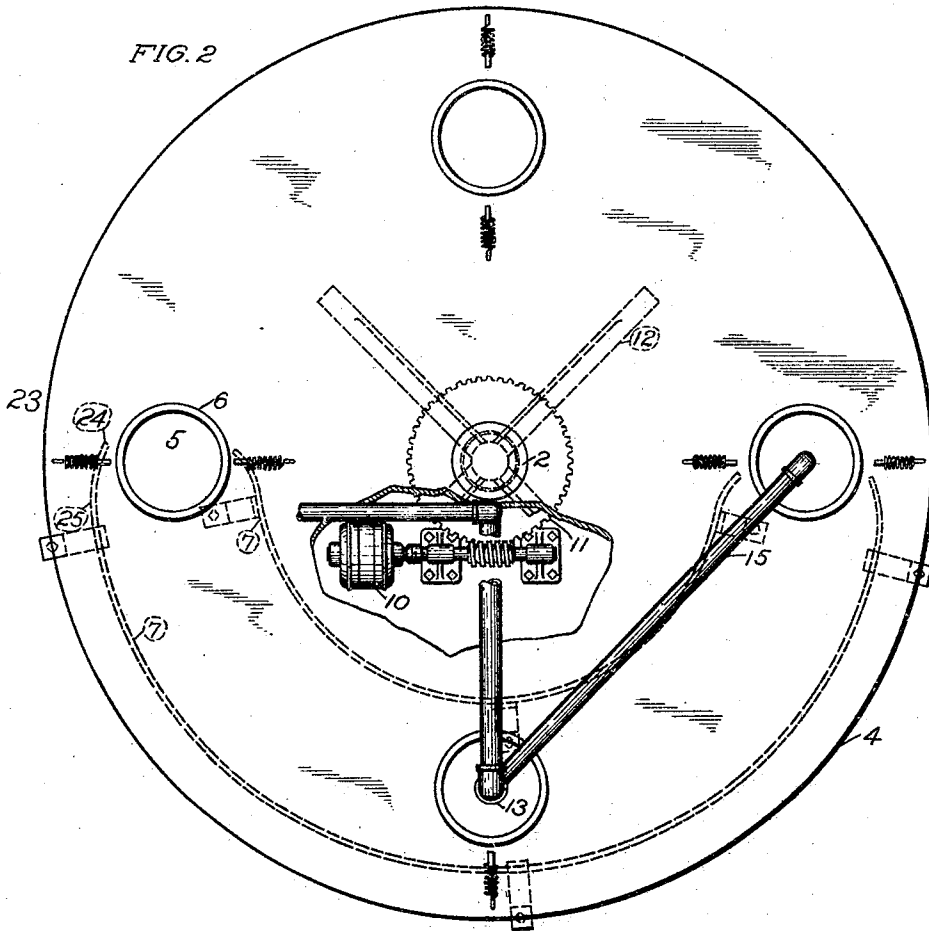
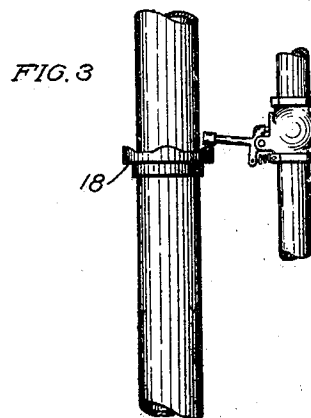


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BY
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UNITED STATES PATENT OFFICE.

CHARLES C. REESE AND CLAUDE C. BROWN, OF CROCKETT, CALIFORNIA.

BAG-TURNING MACHINE.

1,405,330.

Specification of Letters Patent.

Patented Jan. 31, 1922.

Application filed March 25, 1920. Serial No. 368,768.

To all whom it may concern:

Be it known that we, CHARLES C. REESE and CLAUDE C. BROWN, citizens of the United States, residing at Crockett, in the county of Contra Costa and State of California, have invented a new and useful Improvement in Bag-Turning Machines, of which the following is a specification.

This invention relates to a bag turning machine and especially to a machine of the air blast or pneumatic type.

One of the objects of the present invention is to provide a simple, substantial continuously operating machine whereby sacks and similar articles may be rapidly turned, and particularly to provide means whereby the sacks are successively subjected to an air blast and thereby inverted or turned.

Another object of the invention is to provide a continuously rotating machine with means mounted thereon for receiving and securing the sacks; further to provide means cooperating therewith for subjecting each sack during the rotation of the machine to an air blast having sufficient force to turn the sacks.

Another object of the invention is to provide means for automatically securing the sacks when received and for automatically releasing and discharging the same when turned.

Further objects will hereinafter appear.

The invention consists of the parts and the construction, combination and arrangement of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Fig. 1 is a side elevation of the machine.

Fig. 2 is a plan view of the same.

Fig. 3 is a detail view of the cam mechanism whereby the air valve is intermittently opened and closed during the rotation of the machine.

Referring to the drawings in detail, A indicates a vertically disposed shaft, in this instance supported in upper and lower journal members 2 and 3. Suitably secured on the shaft is a circular table 4, and formed in the surface of the table and extending there-through is a plurality of evenly spaced circular openings 5. Surrounding each opening is an annular collar 6, and pivotally supported on the opposite side of each collar member is a pair of securing latches 7. These latches are normally held in retracted position with relation to their respective

collars by means of springs 8, and they are automatically projected or swung into engagement with their respective collar members by a pair of cam tracks 9. These cam tracks are disposed below the table and they are suitably supported as shown, their function being that of automatically securing the sacks when received, and similarly automatically releasing the same when turned. This feature or function of the machine will however later be described.

The table 4 is adapted to be continuously rotated and power is transmitted thereto by an electric motor 10 and a worm gear reduction drive such as indicated at 11. This drive transmits a continuous rotary movement to the shaft A and consequently to the table 4 as this is secured to the shaft and rotates in unison with the same, the table being braced with relation to the shaft by radially disposed arms 12.

Disposed above the table 4 and at a point where it will register with the circular openings 5 formed in the table is an air blast pipe 13. This pipe is connected with a suitable source of air supply, such as a compressor, blower or similar device, not here shown. Connected with the pipe by means of a T-fitting 14 is a branch pipe 15 which terminates in a goose-neck 16. The end of this neck also registers with the circular openings 5 during the rotation of the table and its function is that of discharging the sacks when turned. Mounted on the pipe 13, above the branch connection 15, is a valve 17 of suitable construction. (See Figs. 1 and 3.) Secured on the shaft A is a cam member 18 and pivotally mounted on the valve, as at 19, is a lever extension 20 by which the valve is intermittently opened and closed. The inner end of the lever is provided with a roller 21 and this rides or engages the annular cam member 18. This cam member is provided with as many rises or projections as there are openings 6 in the table; for instance in this case four, and the valve is therefore automatically opened and closed four times during one revolution of the shaft A and the table 4 supported thereby.

The operation of the machine will be as follows: The sacks to be turned are delivered to the machine by an operator standing on one side thereof, for instance at the point indicated at 23. This position is just in advance of the cam tracks 9, or at a point

where the securing latches 7 are held in open position. The operator in feeding or delivering the sacks to the machine slips the opened end of a sack over an annular collar projecting 6 and then releases it to deliver the next sack. The rotation of the table will bring the securing latches into engagement with the cam tracks 9. The latches are therefore swung into locking engagement with the collar and thereby secures the sack just delivered. The cam tracks 9 extend from the point indicated at 24 to the point indicated at 25 and the sack is thus secured against removal, while the latches are in engagement with the cam tracks. As the table continues to rotate, it will be obvious that a collar member, to which the sack is delivered, will move into register with the pipe 13, similarly that a cam projection 22 will align with the valve lever 20 and thereby raise the same and open the valve 7. The sack will therefore be subjected to a discharge or blast of air from the pipe 13 and the force thereof is sufficient to force the sack downwardly through the cam and the opening 5 formed in the table, the sack when turned assuming the position shown at 26. (See Fig. 1.) The air blast to which the sack is submitted is only momentary and only takes place while the sack is in register with the pipe 13. Waste of air is in this manner reduced to a minimum as no air is permitted to discharge except when a sack is in alignment with the same. A continued rotation of the table finally brings the sack to a point where the latches are released by the cam tracks 9. The springs 8 connected therewith will therefore retract the latches, release the sack, and the sack will simultaneously come into alignment with the branch pipe 15 or the goose-neck 16 in which it terminates. The sack is again subjected to an air blast and as the retaining latches are already released, it can readily be seen that the edge of the sack will slip off the collar member 6 and will then discharge through the central opening 5 and enter a receiving chute such as indicated at 27. The valve 17 controls the air blast both through the pipe 13 and the goose-neck 16. This is due to the fact that it is possible to turn one sack and to discharge another at the same time and one opening of the valve 17 therefore serves two functions: first, that of inverting or turning a sack, and secondly that of discharging a sack already turned. The securing latches remain open during the remaining period of rotation and it is during this period that the sacks to be turned are delivered to the table. One or two feeders or operators may therefore be employed as considerable space is left around the edge of the table when it is considered that sacks may be delivered thereto at any point intermediate the position of the goose-neck 16

and the head end of the cam tracks 9. This leaves a large feeding or sack delivering space and therefore permits the use of several operators. This is of importance as it permits speeding up of the machine and consequently the number and quality of sacks handled per minute.

The entire operation of the machine is automatic to the extent that the sacks are automatically secured when delivered, automatically turned, automatically released, and finally automatically discharged. The mechanism employed is exceedingly simple both in construction and operation and failure or delay due to breakdowns or otherwise may therefore be considered practically eliminated.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. A device of the character described comprising a rotatable table, means for rotating said table, a plurality of sack receiving members carried by the table, means for automatically securing and releasing sacks delivered thereto, and pneumatic means for automatically turning the sacks during the rotation of the table.

2. A device of the character described comprising a rotatable table, means for rotating said table, a plurality of sack receiving members carried by the table, means for automatically securing and releasing sacks delivered thereto, and means for subjecting each sack to an air blast to turn the same during the rotation of the table.

3. A device of the character described comprising a rotatable table, means for continuously rotating said table, a plurality of sack receiving members carried by the table, means for automatically securing sacks delivered thereto, a pipe mounted above the table at a point where the sack receiving members will pass beneath the same during the rotation of the table, said pipe connected with a source of air supply under pressure, a valve on the pipe, means for automatically opening the valve whenever a sack receiving member aligns with the pipe, and means for releasing and discharging the sacks.

4. A sack turning machine comprising a table, means for transmitting a rotary movement thereto, a plurality of openings formed in the table and extending therethrough, a collar member surrounding each opening, a pair of latches mounted adjacent each collar member, automatic actuating means for holding the latches in engagement with the table during a portion of each revolution of the table, means for automatically moving the latches out of engagement with the collar member during a portion of the revolution of the table, and automatic actuated means for subjecting each opening in the table to an air blast.

5. A sack turning machine comprising a table, means for transmitting a rotary movement thereto, a plurality of openings formed in the table and extending therethrough, a collar member surrounding each opening, a pair of latches mounted adjacent each collar member, automatic actuated means for holding the latches in engagement with the table during a portion of each revolution of the table, means for automatically moving the latches out of engagement with the collar member during a portion of the revolution of the table, a pipe connected with a source of air supply positioned above the table and at a point where the opening formed in the table will pass beneath the same during the rotation of the table, a valve on said pipe adapted to open and close a flow of air therethrough, and means actuated by the rotating movement of the table for intermittently opening and closing said valve.

6. A sack turning machine comprising a table, means for transmitting a rotary movement thereto, a plurality of openings formed in the table and extending therethrough, a collar member surrounding each opening, a pair of latches mounted adjacent each collar member, automatic actuated means for holding the latches in engagement with the table during a portion of each revolution of the table, means for automatically moving the latches out of engagement with the collar member during a portion of the revolution of the table, a pipe connected with a source of air supply positioned above the table and at a point where the opening formed in the table will pass beneath the same during the rotation of the table, a valve on said pipe adapted to open and close a flow of air therethrough, a shaft upon which the table is supported rotating in unison with the table, a plurality of cam members secured on the shaft, one in alignment with each

opening in the table, and a lever on the valve and connected therewith, said lever adapted to be engaged by the cams and thereby intermittently open and close the valve.

7. A sack turning machine comprising a table, means for transmitting a rotary movement thereto, a plurality of openings formed in the table and extending therethrough, a collar member surrounding each opening, a pair of latches mounted adjacent each collar member, automatic actuated means for holding the latches in engagement with the table during a portion of each revolution of the table, means for automatically moving the latches out of engagement with the collar member during a portion of the revolution of the table, a pipe connected with a source of air supply positioned above the table and at a point where the opening formed in the table will pass beneath the same during the rotation of the table, a valve on said pipe adapted to open and close a flow of air therethrough, a shaft upon which the table is supported rotating in unison with the table, a plurality of cam members secured on the shaft, one in alignment with each opening in the table, a lever on the valve and connected therewith, said lever adapted to be engaged by the cams and thereby intermittently open and close the valve, and a branch pipe connected with the main air supplying pipe, said pipe terminating at a point above the table where the openings therein will pass beneath the same, said pipe connected with the main pipe at a point below the controlling valve.

In testimony whereof we have hereunto set our hands in the presence of a subscribing witness.

CHAS. C. REESE.
CLAUDE C. BROWN.

Witness:

VALERIE DE REMER.