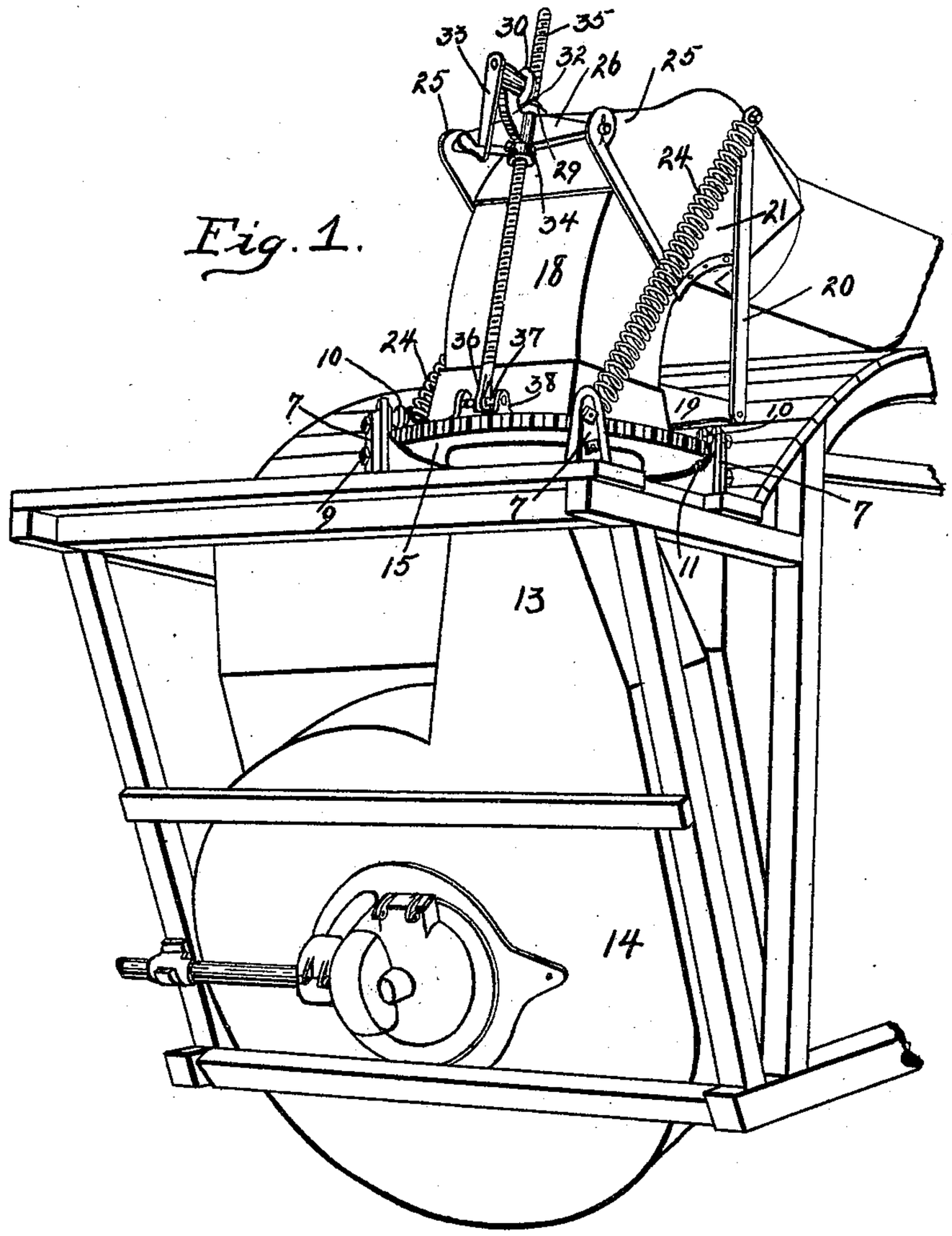
No. 621,428. Patented Mar. 21, 1899.

M. T. REEVES, J. N. KAILOR & H. C. CLAY.

PNEUMATIC STACKER.

(No Model.) (Application filed Jan. 21, 1898.) 2 Sheets—Sheet 1.

Fig. 1.



WITNESSES:
Frank A. Fahle
Samuel Ashby

INVENTORS
Marshal T. Reeves
John N. Kailor
Harry C. Clay
BY
Arthur M. Hood
ATTORNEY.

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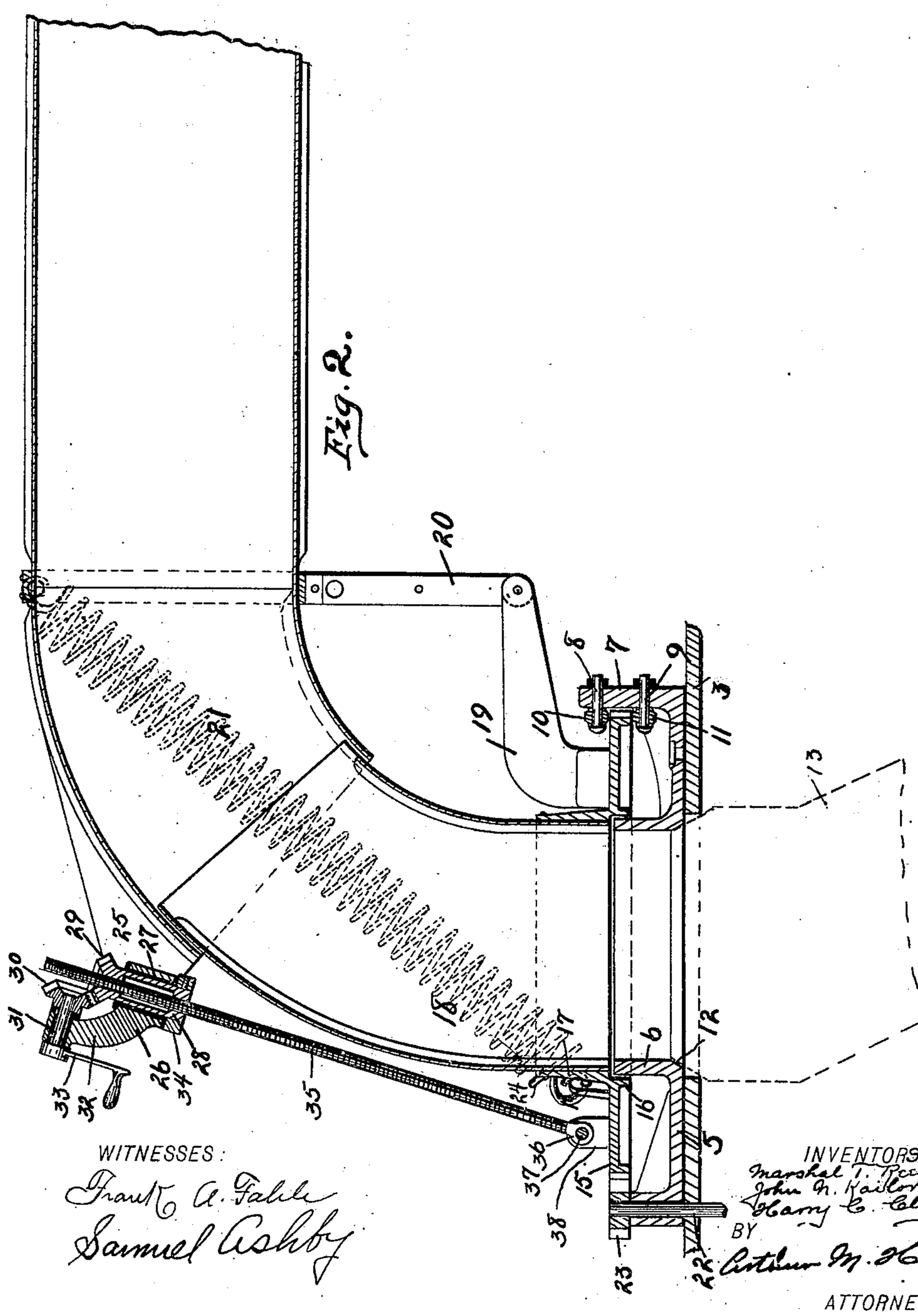
Fig. 2.



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UNITED STATES PATENT OFFICE.

MARSHAL T. REEVES, JOHN N. KAILOR, AND HARRY C. CLAY, OF COLUMBUS, INDIANA, ASSIGNORS TO REEVES & CO., OF SAME PLACE.

PNEUMATIC STACKER.

SPECIFICATION forming part of Letters Patent No. 621,428, dated March 21, 1899.

Application filed January 21, 1898. Serial No. 667,411. (No model.)

To all whom it may concern:

Be it known that we, MARSHAL T. REEVES, JOHN N. KAILOR, and HARRY C. CLAY, citizens of the United States, residing at Columbus, in the county of Bartholomew and State of Indiana, have invented a new and useful Pneumatic Stacker, of which the following is a specification.

Our invention relates to an improvement in pneumatic straw-stackers.

The objects of our invention are to produce an improved means for adjusting the vertical angle of the discharge-tube, to provide an improved base construction by means of which substantially wind-tight joints may be secured, and to provide such other improvements as shall be described and claimed.

The accompanying drawings illustrate our invention.

Figure 1 is a view in perspective showing the discharge-tube thrown around in the shipping position. Fig. 2 is a central vertical section of the discharge-tube and of the supporting-base.

In the drawings, 5 indicates the stationary base, provided with a central opening surrounded by an annular upwardly-extending flange 6 and also provided at its outer edges with a series of uprights 7, each of which supports a pair of stud-shafts 8 and 9, upon the inner ends of which are mounted the rollers 10 and 11, respectively. The base 5 is mounted upon the usual platform 3, which forms a part of the rear end of the separator-casing. The lower edge of the opening through the base is chamfered, as at 12, and into this is fitted the upper end of the discharge-spout 13 of the fan-casing 14.

Mounted between and supported by the rollers 10 and 11 is a rotating base-gear 15, provided on its lower side with a downwardly-extending flange 16, which fits over the upper end of the flange 6. Gear 15 is also provided on its upper side with an upwardly-extending flange 17, into which is secured the lower end of the arc-shaped spout 18. Secured to gear 15 are two arms 19, to the outer end of each of which is pivoted an arm 20, between the outer ends of which is secured the arc-shaped inner end 21 of the discharge-spout, the said end telescoping over the spout 18 in the usual manner.

Mounted in suitable bearings in base 5 is a shaft 22, upon the upper end of which is secured a pinion 23, which meshes with the gear 15. Shaft 22 is connected with any suitable source of power, preferably through the automatic reversing mechanism described and claimed in Letters Patent No. 608,223, issued to M. T. Reeves and J. N. Kailor.

It will be noticed in this construction that the gear 15 is supported by the rollers 10 and 11, and that the opening through the base 5 from the fan-casing to the discharge-tube is entirely unobstructed, and that the joint between the stationary base and the rotating base (gear 15) is one which leads downward in a direction opposite to that of the blast, so that there is no leakage at that point.

For the purpose of counterbalancing the weight of the outer end of the discharge-tube we provide a pair of springs 24, each of which is secured one end to the outer end of one of the arms 20 (or directly to the spout) and the other end to the gear 15. The gear 15 and spout 18 being rigidly secured together, the springs 24 may be secured, if desired, directly to the spout 18. For the purpose of adjusting the angle of the discharge-spout and for positively holding it in any desired position the following mechanism is provided: The sides of the inner end 21 of the discharge-tube are extended to form a pair of ears 25, and between these ears is pivotally mounted a cross-arm 26, provided at its middle with a bearing 27, which lies in a plane with the vertical axis of the tube. Mounted in bearing 27 is a nut 28, provided at its upper end with a bevel-gear 29, which meshes with a similar gear 30, carried upon the inner end of a shaft 31, supported in a bearing formed in the upper end of an arm 32, which forms a part of the cross-arm 26. Secured to the outer end of shaft 31 is a crank 33. The nut 28 extends through bearing 27 and is held therein by means of a collar 34. Passing through nut 28 is a threaded rod 35, the lower end of which is provided with an eye 36, through which is passed a pin 37, which is supported by a pair of ears 38, carried by the

gear 15, the arrangement being such that the said threaded rod is free to swing upon the pin as a pivot and is also free to move longitudinally thereon. By arranging for a transverse movement of the lower end of the rod 35 upon the pin 37 it is prevented from becoming cramped within the nut 28 owing to the unavoidable inequalities in the pivotal movement of the discharge-spout.

We claim as our invention—

1. In a pneumatic stacker, the combination with an arc-shaped tubular section, of a second section telescoping therewith, a spring secured so as to operate upon each of said sections, and means for positively moving and holding the second section independent of the spring, the arrangement being such that the spring supports a portion of the weight of the second section, substantially as described.

2. In a pneumatic stacker, the combination with a tubular section, of a second tubular section telescoping therewith, a cross-bar pivoted upon one of said sections, a nut carried by said cross-bar, a threaded rod connected with the other section and passing through said nut, means for causing a relative rotation between the nut and rod, and means for allowing a lateral movement of one end of said rod.

3. In a pneumatic stacker, the combination with a tubular section, of a second section telescoping therewith, a cross-bar pivoted upon one of said sections, a nut carried by said cross-bar, a threaded rod pivotally connected with the other section upon means allowing a lateral movement of the pivoted end of said rod, and means for causing a rotation of the nut.

4. In a pneumatic stacker, the combination with the arc-shaped tubular section, of a pivoted section telescoping therewith, a cross-bar carrying a nut and pivoted upon one of said sections upon an axis substantially at right angles to said section, a threaded rod, passing through said nut and pivotally connected with the other section upon an axis parallel with the axis of the cross-bar, means allowing a transverse movement of the pivoted end of the rod, and means for rotating the nut, substantially as described.

5. In a pneumatic stacker, the combination with the arc-shaped tubular section, of a pivoted section telescoping therewith, a spring or springs secured so as to operate upon each of said sections in position to support a portion of the weight of the pivoted section, a cross-bar carrying a nut and pivoted upon one of said sections upon an axis substantially at right angles to said section, a threaded rod, passing through said nut and connected with the other section, and means for causing a relative rotation between the nut and rod whereby the pivoted section may be swung about its pivot.

6. In a pneumatic stacker, the combination with the arc-shaped tubular section, of a pivoted section telescoping therewith, a spring or springs secured so as to operate upon each of said sections in position to support a portion of the weight of the pivoted section, a cross-bar carrying a nut and pivoted upon one of said sections upon an axis substantially at right angles to said section, a threaded rod, passing through said nut and pivotally connected with the other section upon an axis parallel with the axis of the cross-bar, and means for rotating the nut, substantially as described.

7. In a pneumatic stacker, the combination with the arc-shaped tubular section, of a pivoted section telescoping therewith, a spring or springs secured so as to operate upon each of said sections in position to support a portion of the weight of the pivoted section, a cross-bar carrying a nut and pivoted upon one of said sections upon an axis substantially at right angles to said section, a threaded rod, passing through said nut and pivotally connected with the other section on an axis allowing a transverse movement of the rod, and means for rotating the nut, substantially as described.

8. In a pneumatic stacker, the combination of a stationary base having an opening surrounded by an upwardly-extending annular flange and also having a series of standards each provided with a roller; and a rotating base, supported upon said rollers, the said rotating base being provided with an opening surrounded by a downwardly-extending annular flange adapted to fit over the flange of the stationary base, and also provided with means to which a discharge-tube may be secured.

9. In a pneumatic stacker, the combination of a stationary base having an opening surrounded by an upwardly-extending annular flange and also having a series of standards each provided with a roller, the said opening being arranged at its lower end to receive the end of a fan discharge-tube; and a rotating base supported upon said rollers, the said rotating base being provided with an opening surrounded by a downwardly-extending annular flange adapted to fit over the flange of the stationary base, and also provided with an upwardly-extending flange to which a discharge-tube may be secured.

MARSHAL T. REEVES.
JOHN N. KAILOR.
HARRY C. CLAY.

Witnesses:
ALLEN C. DENISON,
HARRY O. WAY.