

No. 713,787.

Patented Nov. 18, 1902.

W. McKONE.
PNEUMATIC STACKER.

Application filed June 13, 1902.

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

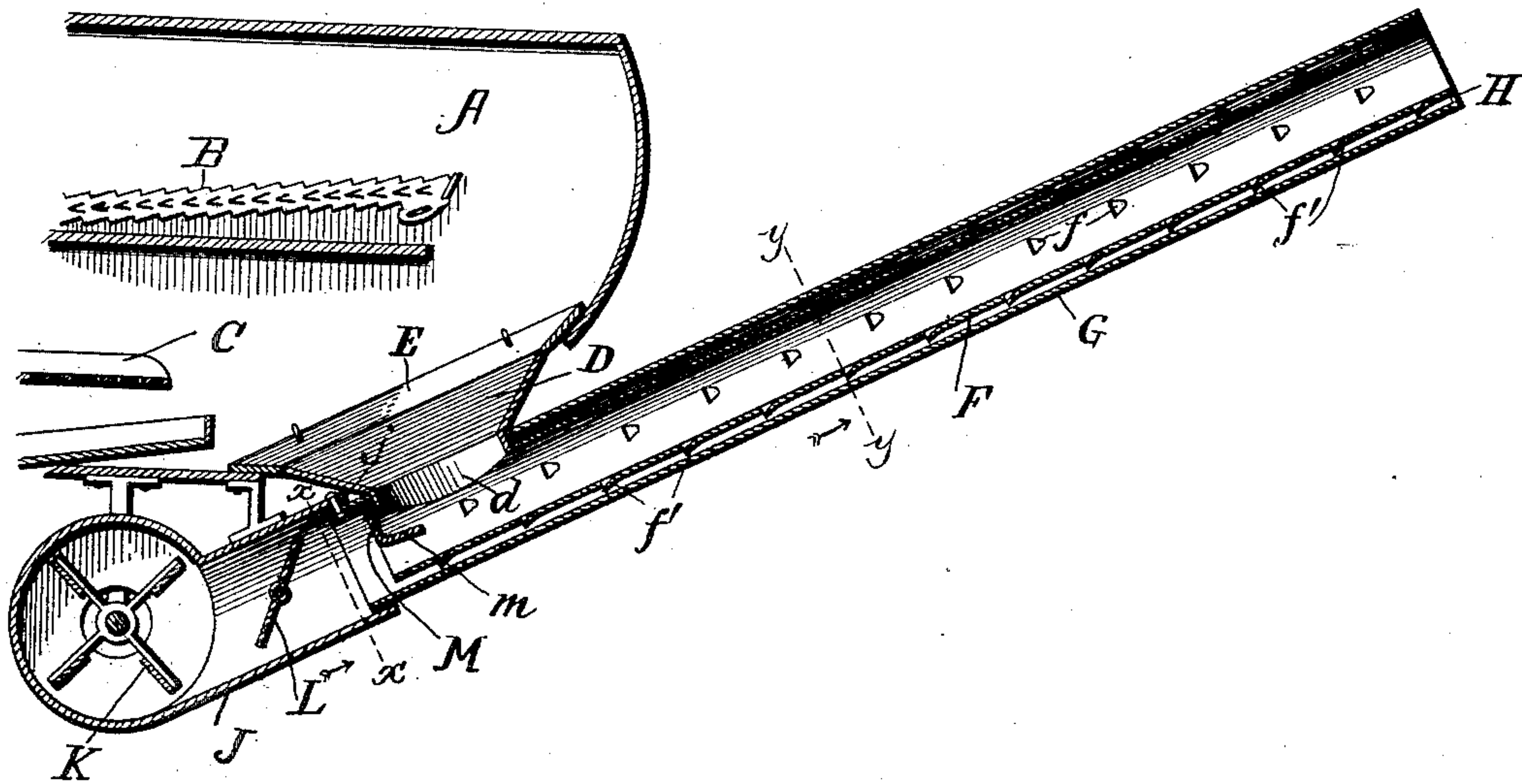
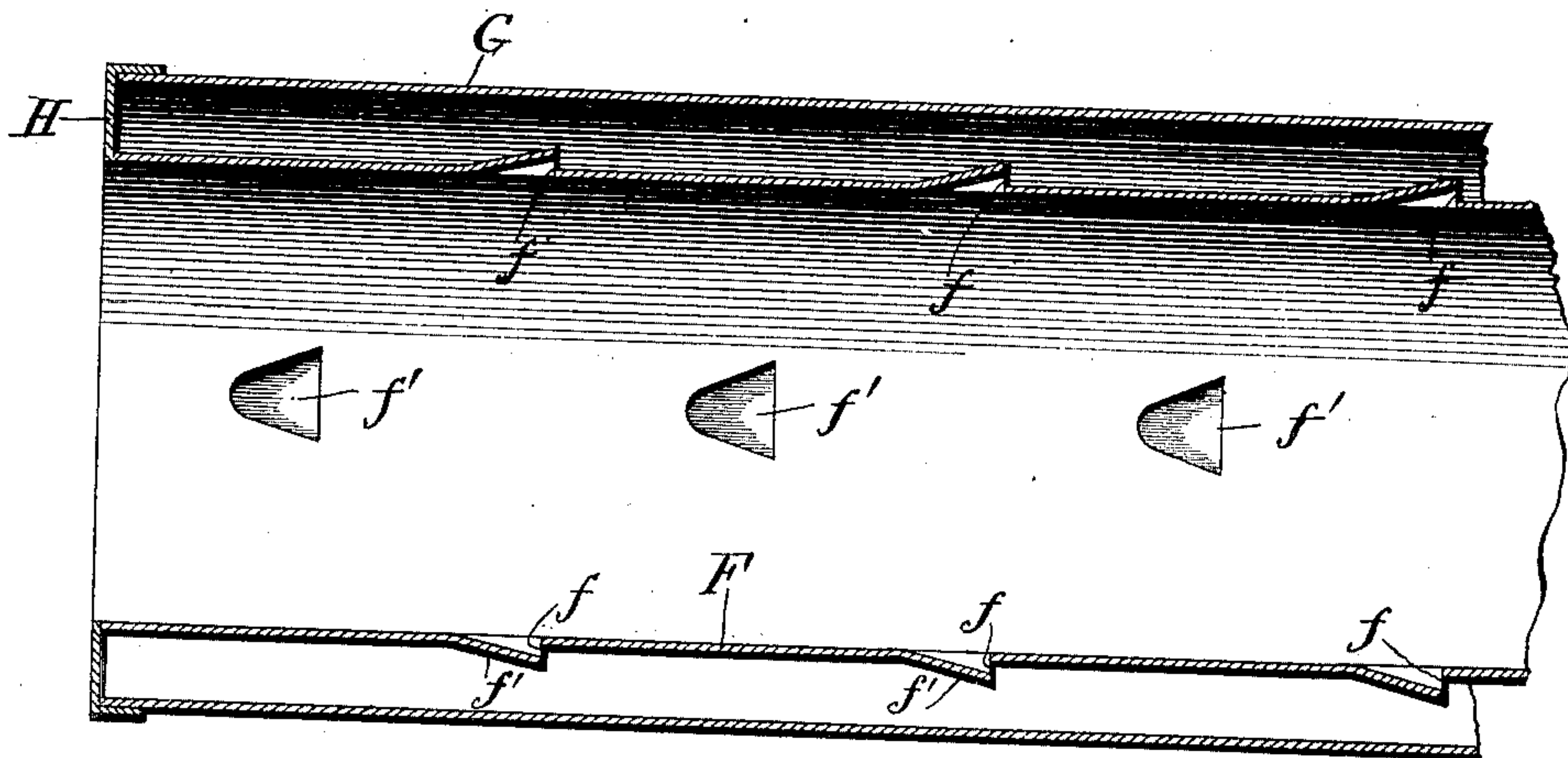


Fig. 2.



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Fig. 3.

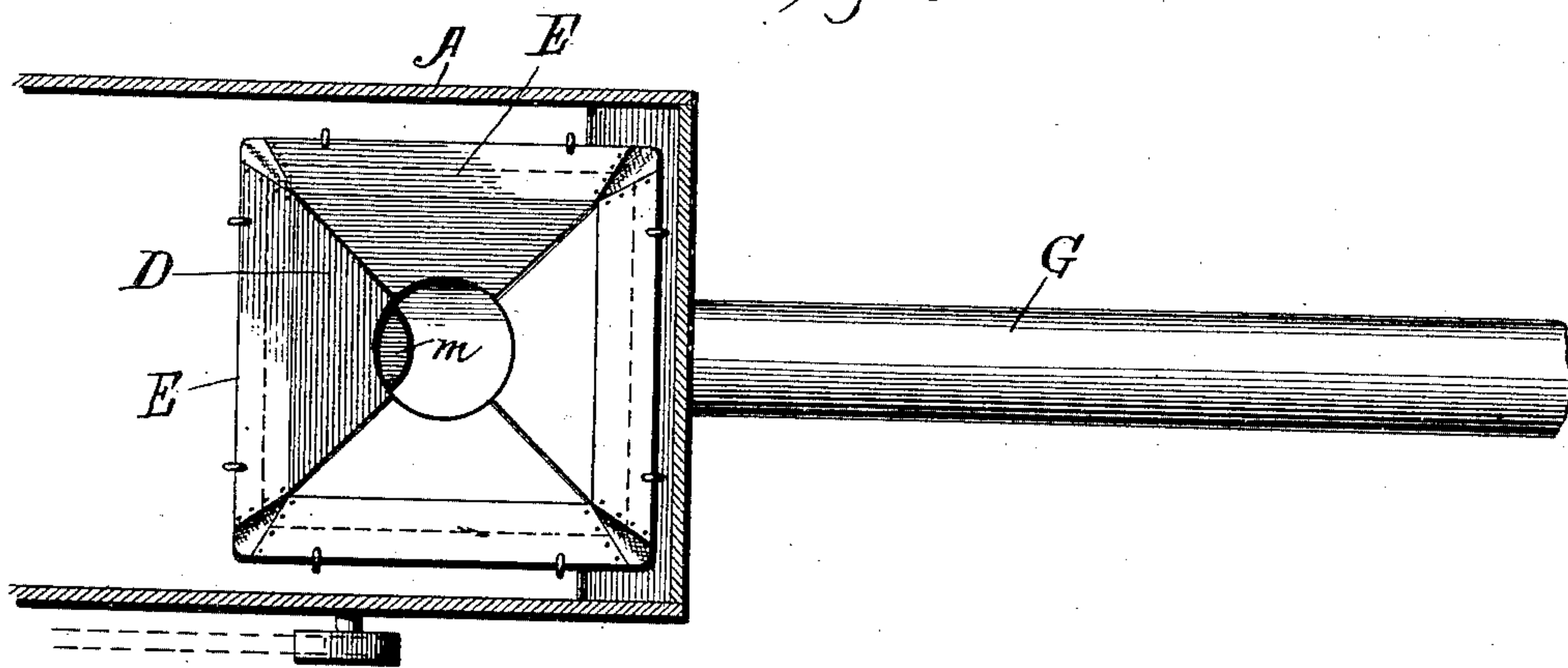
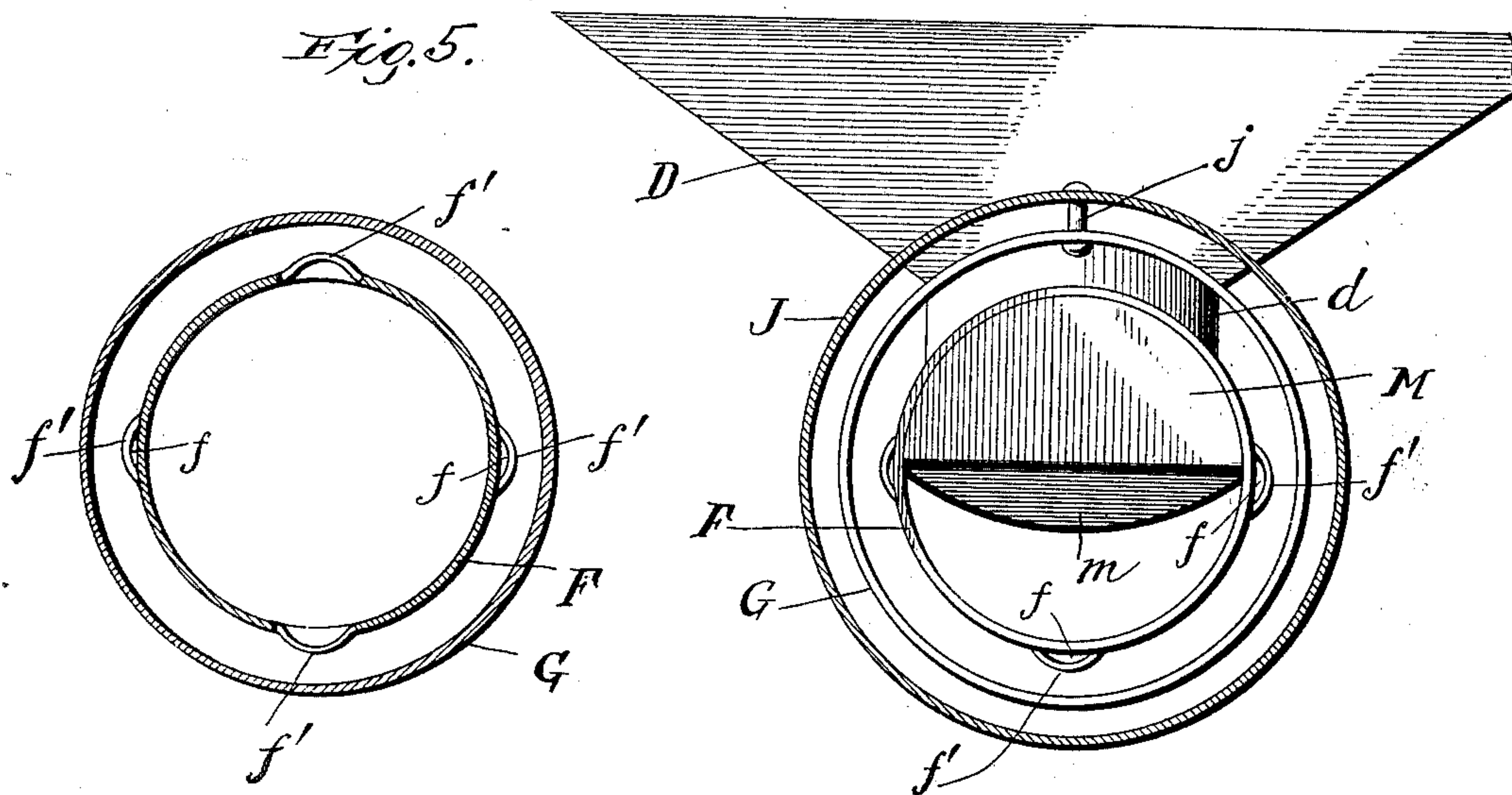


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM MCKONE, OF NEEPAWA, CANADA, ASSIGNOR OF FIVE-SIXTHS TO DANIEL HAMILTON, WILLIAM PRINGLE JOHNSTON, GEORGE ARTHUR DINWOODY, HORATIO F. FORREST, AND JAMES HENRY HOWDEN, OF NEEPAWA, MANITOBA, CANADA.

PNEUMATIC STACKER.

SPECIFICATION forming part of Letters Patent No. 713,787, dated November 18, 1902.

Application filed June 13, 1902. Serial No. 111,539. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MCKONE, a citizen of the Dominion of Canada, residing at Neepawa, in the Province of Manitoba, Canada, have invented certain new and useful Improvements in Pneumatic Stackers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to pneumatic stackers for threshing-machines or grain-separators, and the primary object is to provide a simple and efficient device of this character in which straw and chaff will be blown through the conveyer-tube without contact with the interior wall thereof, thus preventing friction.

With this and other objects in view the invention will hereinafter be first fully described with reference to the accompanying drawings, which form a part of this specification, and then pointed out in the claims at the end of the description.

In said drawings, Figure 1 is a vertical central section of the rear portion of a threshing-machine with my improved stacker attached thereto, the latter also being shown in longitudinal vertical section. Fig. 2 is an enlarged fragmentary view of the delivery portion of the stacker in longitudinal vertical section. Fig. 3 is a top plan view of the stacker as attached to the threshing-machine, the frame of the latter being represented in horizontal section. Fig. 4 is an enlarged vertical section of the stacker, taken on line *xx* of Fig. 1 looking in the direction of the arrow; and Fig. 5 is an enlarged vertical section on line *yy* of Fig. 1 looking in the direction of the arrow.

Referring to the drawings, in which like letters of reference indicate corresponding parts in the different figures, A designates a portion of a threshing-machine, B the upper straw-carrier or shaker-screen thereof, and C the lower screen or riddle, all of which parts are of ordinary construction and are shown

only to illustrate an application of the invention.

I desire it to be understood that the stacker can be attached to any machine for handling straw, chaff, or grain, its operation being independent of that of the separator.

The letter D denotes a hopper through which the straw and chaff are fed into the conveyer-tube of the stacker. Said hopper is preferably formed as a part of the stacker and to permit swinging or movement of the latter is attached to the threshing-machine beneath a suitable opening in the rear lower part of the frame or casing by flaps E or other suitable means. The straw and chaff are delivered into the hopper from the screens or straw carrier and riddle in an obvious manner.

The stacker consists in the main of an inner straight conveyer tube or cylinder F and an outer tube or cylinder G, inclosing the former and of considerably larger diameter, leaving between the tubes an annular space, which is open at the front end of the stacker, but closed at the rear or delivery end by an annular head H or other suitable means. The lower reduced portion *d* of the hopper is entered through a suitable opening therefor in the outer tube and discharges through a similar opening in the inner conveyer-tube, and said hopper is preferably formed integrally with or rigidly connected to both of said tubes, which by such construction and by means of the head H are suitably connected together and held in proper relative position. However, in some instances the hopper may be differently attached to the conveyer-tube and the tubes may be secured together or in proper relation by other suitable means. At the front or receiving end of the stacker the outer tube extends somewhat beyond the inner one, as shown in Fig. 1, and is connected by a suitable joint with the rear tubular portion of a blast-chamber or fan-casing J, within which is located a fan K or blower of any desired type. In the present construction the front end of said outer tube fits loosely within the adjacent end of

said tubular part of the blast-chamber and is secured in place by a single bolt or rivet *j*, entered through both the tube and the blast-chamber, as shown in Figs. 1 and 4, which permits swinging or movement of the stacker with relation to the separator. The said tubular part of the fan chamber or casing may be provided with a valve or damper *L* for the purpose of regulating the strength of the air-blast. The conveyer-tube is preferably formed at its front end or directly in front of the lower part *d* of the hopper with a wind-guard *M*, consisting of a segmental or semicircular plate or head closing the front upper end of said tube and having a rearwardly and downwardly inclined tongue or projection *m* extending beneath the lower discharge-opening of the hopper, whereby the air-currents induced by the blower are prevented from passing up through the hopper and hindering the delivery of straw and chaff. The conveyer-tube is formed along its entire length and at suitable points around its surface with air-inlet openings *f*, which openings are preferably formed by means of forwardly-extending and abruptly-terminating lips or projections *f'* on the outer side of the tube, whereby air-currents are caused to enter the conveyer-tube around its circumference in the direction of the air-blast passing centrally therethrough.

In operation the straw and chaff fall through the hopper into the conveyer-tube and are instantly blown through the same to be stacked. The blower supplies both the conveyer-tube and the annular space between the tubes with wind, and the air entering the openings *f* along the walls of the conveyer-tube not only aids in carrying off the straw and chaff, but also compresses the same toward the center of the conveyer-tube, thus preventing contact with the interior wall thereof and overcoming friction.

In some instances air may be admitted into the conveyer-tube through openings extending wholly or substantially around its circumference instead of through isolated openings, as shown. For instance, the conveyer-tube may be constructed of a number of sections separated one from another by small annular spaces, the front end of each section being, preferably, larger than the rear end of the preceding section or overlapping the same to insure entrance of the air in the direction desired. The several sections can be riveted at the joints or otherwise connected, suitable washers or spacing devices being provided to secure proper openings between the joints.

It is evident that the stacker may be swung or adjusted to any desired angle or position with relation to the separator without interfering with the operation of parts. If desired, the hopper may be rigidly attached to the separator and connected by flexible flaps or other suitable means with the conveyer-tube, though the construction described is preferred. The device is also susceptible of other modifications in details of construction and arrange-

ment without departing from the scope of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a pneumatic stacker for grain-separators, a conveyer-tube having a straw-inlet opening adapted for connection with the straw-discharge opening of the separator and having lateral air-inlet openings, and a tube of larger diameter inclosing said conveyer-tube, leaving an annular chamber between them, both of said tubes being adapted for communication at the front with a blower for forcing an air-blast therethrough; substantially as described.

2. In a pneumatic stacker for grain-separators, a straw-conveyer tube having lateral air-inlet openings, a tube of larger diameter inclosing said conveyer-tube, and a head or closure at the rear end of the annular space between said tubes, both of said tubes being adapted for communication at the front with a blower; substantially as described.

3. In a pneumatic stacker for grain-separators, a straw-conveyer tube and a larger tube inclosing the same, both adapted for communication at the front with a blower, said conveyer-tube having its walls provided with openings adapted to admit air-currents in the direction of the air-blast passing through said tube; substantially as described.

4. In a pneumatic stacker for grain-separators, a straw-conveyer tube and a larger inclosing tube, both adapted for communication at the front with a blower, said conveyer-tube having external forwardly-projecting open-ended lips adapted to admit air-currents in the direction of the air-blast passing through said tube; substantially as described.

5. In a pneumatic stacker for grain-separators, a straw-conveyer tube having external forwardly-projecting open-ended lips, and a tube of larger diameter inclosing the same, the annular space between said tubes being closed at the rear, and said tubes being adapted for connection at the front with a blower for forcing air-currents therethrough; substantially as described.

6. In a pneumatic stacker, an inner straw-conveyer tube having lateral air-inlet openings, a larger tube inclosing said conveyer-tube, an annular head connecting said tubes and forming a rearward closure for the space or chamber between them, and a hopper at the forward part of the device inserted laterally through said tubes and rigid therewith, said hopper being adapted for attachment to the straw-discharge portion of the separator, and the front ends of the tubes being adapted for communication with a blower; substantially as described.

7. In a pneumatic stacker for grain-separators, a straw-conveyer tube, a blower communicating with said tube at its front end for forcing an air-blast therethrough, and means for forcing the air-currents into said tube around

its circumference at suitable points along its length; substantially as described.

8. In combination with a grain-separator, a straw-conveyer tube having lateral air-inlet openings, a larger tube inclosing the same so as to provide an annular chamber between them, a hopper inserted laterally through said tubes and adapted to receive straw and chaff from the separator, and a blast-chamber connected with the front end of the outer tube by a suitable joint to permit swinging or movement of the tubes with relation to the separator; substantially as described.

9. In combination with a grain-separator, a straw-conveyer tube having lateral air-inlet openings, a larger tube inclosing the same so

as to provide an annular chamber between them, a hopper rigid with said tubes and discharging laterally into the conveyer-tube, flaps connecting said hopper with the straw-discharge opening in the separator, and a blast-chamber connected with the outer tube by a suitable joint to permit swinging or movement of the latter with relation to the separator; substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM McKONE.

Witnesses:

RICHD. EDWARDS,
DELBERT THURSTON.