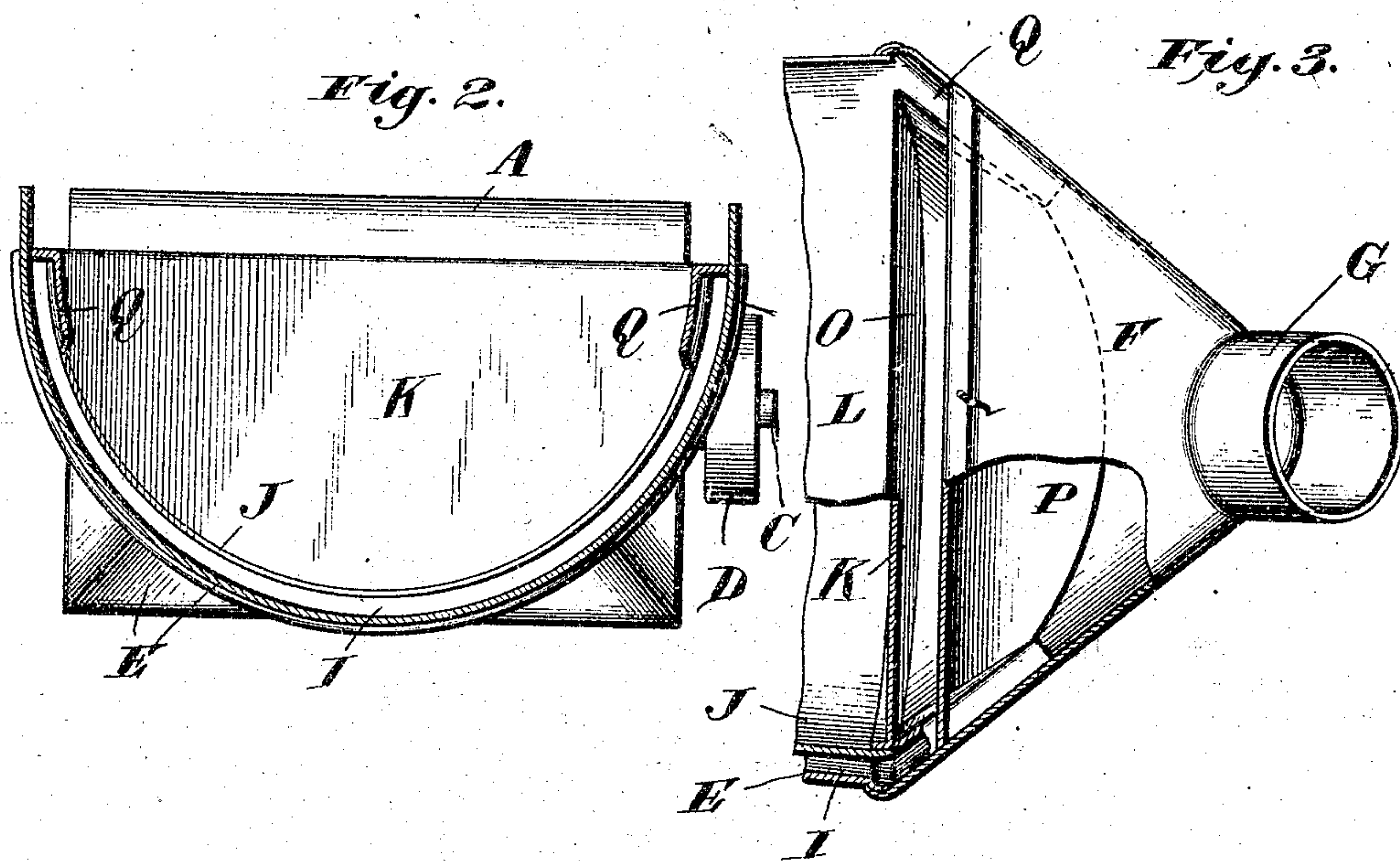
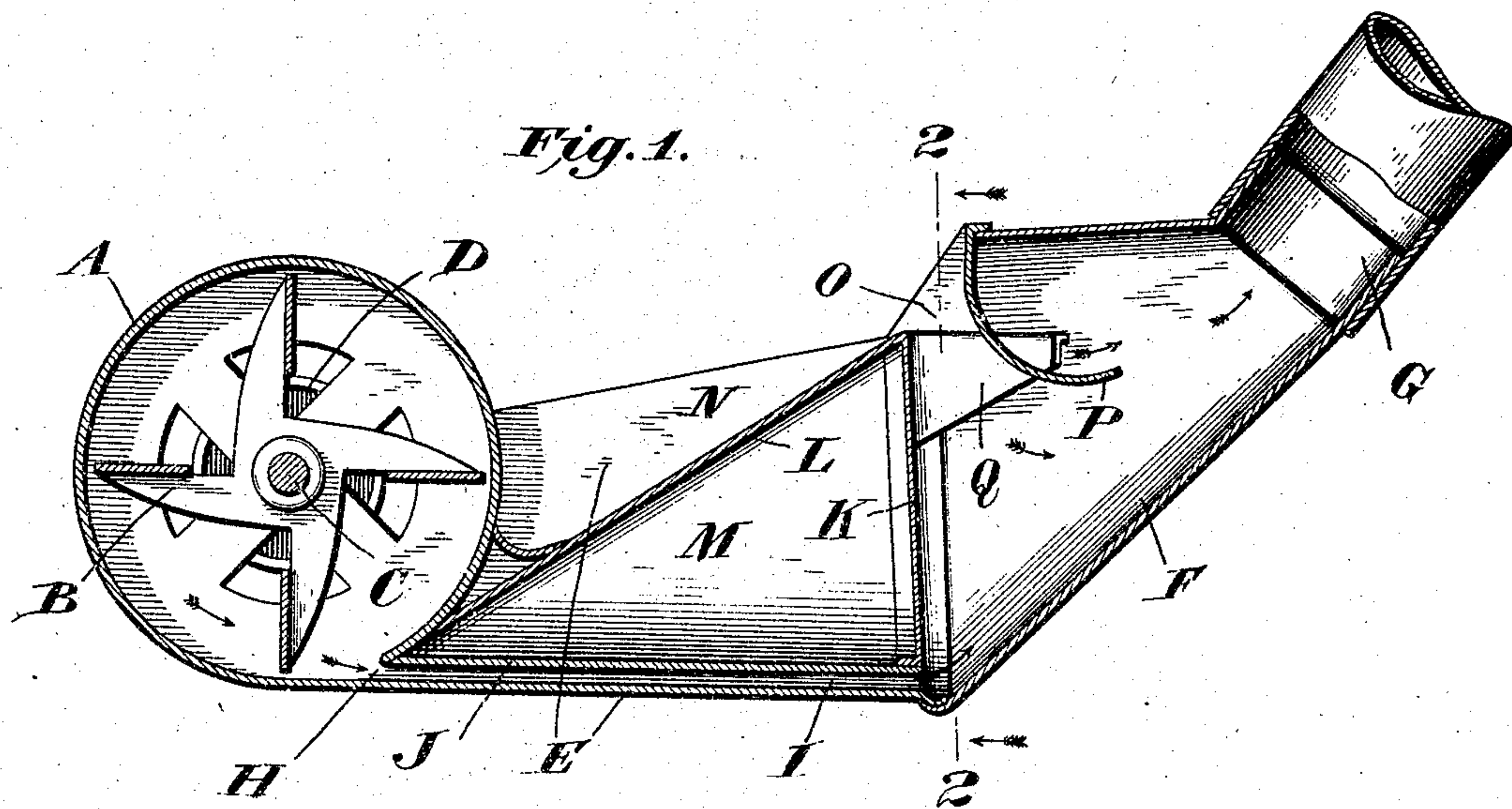


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J. McKONE.
BLOWER.

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JOSEPH McKONE, OF NEEPAWA, CANADA.

BLOWER.

SPECIFICATION forming part of Letters Patent No. 782,355, dated February 14, 1905.

Application filed September 12, 1904. Serial No. 224,156.

To all whom it may concern:

Be it known that I, JOSEPH 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 Blowers; 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 blowers for delivering straw, chaff, and refuse from threshing-machines or grain-separators and the like, and particularly to that type of blowers wherein the straw is introduced into the chute behind the fans and there subjected to the blast coming from the fans to the delivery-pipe.

By means of my improved construction as exemplified in the accompanying drawings the following objects and advantages are obtained in a blower of this character: First, the blast is most effectively utilized for blowing off the straw and chaff through the delivery-tube and creates a strong suction for drawing the straw into the chute and is controlled so as to avoid back pressure; second, the power required to drive the fans is reduced in consequence of such construction and control of the blast; third, the chute may be set at any angle most convenient for receiving the straw from separator; fourth, the straw is permitted to be delivered through a round pipe, allowing free turning or adjustment of the pipe in all directions, which cannot be had in other blowers of the character using a square or rectangular chute.

In the accompanying drawings, which form a part of this specification, I have illustrated a practical embodiment of my invention which will be fully described by reference thereto without limitation to the specific construction and details shown and thereafter more particularly defined in the annexed claims.

In said drawings, Figure 1 is a central longitudinal section of the apparatus. Fig. 2 is a vertical cross-section on line 2 2 of Fig. 1 looking in the direction of the arrows and showing the parts behind the line in elevation. Fig. 3 is a top plan view of the rear portion of

the apparatus, showing the funnel-shaped chute and its straw-inlet.

Referring to the illustrated apparatus, letter A denotes a blower-casing inclosing a rotary fan-blower B, whose shaft C is shown provided with a pulley D for application of power. Projecting from the rear longitudinal side of the blower-casing is an open-topped box-like structure or trough-like casing E, whose contour merges from a substantially rectangular cross-section immediately adjacent to the blower-casing to a substantially semicircular cross-section at its front end, where it meets a hopper-like or funnel-shaped chute F. This chute is upwardly inclined from the bottom of said box-like structure or casing E and is likewise of substantially semicircular cross-section, having a flattish converging top and a conical rearwardly upwardly inclined under surface, the chute as a whole converging into a rear upper delivery-spout G. The blower-casing A has a longitudinal slot or elongated opening H at its lower part, through which the blast is blown in a tangential direction, said blast passing into the chute through a wide shallow passage I, extending along the lower part of said structure or casing E. This passage is formed between the bottom of said casing E and a curved plate or partition J, located slightly above said bottom and practically conforming therewith in shape, so that the blast-passage merges from an elongated straight opening at the blower-casing to a semicircular opening at the rear, where it meets the chute F. At the rear end of said plate J is an upstanding semicircular plate or wall K, transversely disposed across the box-like casing E, though not contiguous or joining with its interior walls, but leaving the aforementioned semicircular opening at the rear end of the blast-passage I. The top of said plate K is shown jointed by an inclined transverse plate L with the rear longitudinal side of the blower-casing, said plate L being also contiguous with the inner walls of casing E. The walls J, K, and L thus form a dead-air space M and provide the lower blast-passage I and an upper space N between the vertical sides of casing E, from which the straw is handled. The

rear end of the chute F is above the upper edge of plate or wall K, though preferably not directly above, but somewhat to the rear, leaving an elongated transverse opening at O for introduction of straw into the chute. From the rear edge of the top of the chute is a depending curved transverse plate or lip P, extending substantially down into the chute and curved toward the delivery-spout for the purpose of preventing return of air-currents toward the opening O and properly guiding the blast up into the delivery-spout. Within the chute, at opposite sides of the feed-opening O, are two lips or curved plates Q, joined to but offset from the inner walls of the chute, extending rearward from the plate or wall K to a substantial distance into the chute. The curved plate P is located between these lips or plates Q. These lips form between them and the walls of the chute lateral continuations of the blast-passage I from the upper sides of the rear semicircular end of said passage. They prevent the blast at the upper sides of said passage from blowing out into the opening O and conduct the air to the center of the chute, thus avoiding back pressure.

In use the apparatus is attached or connected to the rear of a threshing-machine or grain-separator in proper position for receiving the straw through the opening O. The rear delivery-spout G is of course connected to any suitable pipe or pneumatic stacker-tube for conveying off the straw delivered from the separator into the chute. Owing to the relation and arrangement of the several parts, as herein set forth, the blower may be set at any desired angle whatever appropriate for receiving the straw at N and introducing it into opening O. The blast from the fans passes through the passage I into the chute in a semicircular sheet, sweeping along the interior walls of the chute, and is thence conducted to the rear central part of the chute directly into the delivery-spout and up through the conveyer-tube connected thereto, being so deflected by the conjoint action of the converging walls of the chute and the curved plate or lip P and opposite in hanging leaves or lips Q. A strong suction is also created thereby down through the opening O, and, as before mentioned, the air-currents are prevented from emergence at such opening, particularly the strong upward currents at the opposite sides of K, all of the air-currents being directed to the rear upper center of the chute, and thus avoiding back pressure. Inasmuch as the straw is delivered into a round delivery pipe or tube, the pipe may be swung or turned to any position or allowed to follow any course.

I claim as my invention and desire to secure by Letters Patent of the United States—

1. An apparatus of the character described having, in combination, a blower, a chute in

rear thereof having a front inlet-opening for introduction of straw and a rear delivery-spout, and a blast-passage leading from said blower under and around the sides of said inlet-opening and into the chute so as to pass said inlet-opening and sweep along the interior walls of the chute into its delivery-spout.

2. An apparatus of the character described having, in combination, a blower, a funnel-shaped or convergent delivery-chute in rear thereof, a blast-passage leading from the blower into the mouth or wider end of the chute and having a cross-section corresponding with the form of the mouth of said chute for conducting the air along and around the inner walls of the latter, and a straw-inlet passage located in the mouth of the chute.

3. An apparatus of the character described having, in combination, a blower, a funnel-shaped or convergent chute having an upper front straw-inlet opening at its mouth and a rear delivery-spout, and a blast-passage leading from the blower into the mouth of the chute and having a semi-annular or equivalent form for conducting the air under and past the sides of said straw-inlet opening and along the inner walls of the chute, and plates or lips overhanging from the inner walls of the chute at opposite sides of said straw-inlet opening constituting continuations of the sides of said blast-passage and conducting the air toward the center of the chute.

4. An apparatus of the character described having, in combination, a blower, a blast-passage leading therefrom assuming a semi-annular or equivalent form, a delivery-chute having its mouth joined to said semi-annular passage and having an upper front straw-inlet opening, and plates or lips overhanging from the inner walls of the chute at opposite sides of said inlet-opening constituting continuations of the sides of the blast-passage past the sides of said inlet-opening.

5. A blower of the character described having a delivery-chute through which a blast is blown for conducting off the straw, a straw-inlet opening thereinto, a transverse wall immediately back of said inlet-opening causing the air to pass along the inner walls of the chute, and plates or lips overhanging from the inner walls of the chute at opposite sides of said inlet-opening preventing the blast at the sides from escaping at said inlet-opening.

6. A blower having a delivery-chute through which the blast is conducted along its inner walls and a straw-inlet opening with lateral wings or plates depending inwardly from opposite sides thereof to conduct the blast past the sides of said opening.

7. An apparatus of the character described comprising, in combination, a blower, a blast-passage leading tangentially therefrom and gradually assuming a semi-annular form and finally merging into a tubular delivery-pas-

sage, and a straw-inlet opening into said delivery-passage and located between the sides of the semi-annular part of said blast-passage.

8. An apparatus of the character described having, in combination, a blower, a blast-passage leading therefrom having a semi-annular or equivalent form and finally merging into a tubular delivery-passage, a straw-inlet opening into said delivery-passage and located within or between the sides of said blast-passage, and a rear delivery-spout.

9. An apparatus of the character described having, in combination, a blower, a blast-passage leading therefrom having a semi-annular or equivalent form, a rearwardly-convergent or funnel-shaped chute having its mouth joined to said semi-annular passage and having a rear delivery-spout, an upper straw-inlet opening at the mouth of said chute, a rearwardly-curved plate or lip depending from the front of said opening into the chute, and plates or lips depending from opposite sides of said opening forming continuations of the sides of said passage.

10. An apparatus of the character described having, in combination, a blower, a blast-passage leading therefrom having a semi-annular or equivalent form, a rearwardly-convergent or funnel-shaped chute having its mouth joined to said semi-annular passage and having a rear

delivery-spout, an upper straw-inlet opening at the mouth of said chute, the sides of said passage being continued into the chute along its inner walls under the opposite sides of said opening.

11. An apparatus of the character described having, in combination, a blower, a blast-passage leading therefrom having a semi-annular or equivalent form and merging into a delivery-chute, a transverse ledge at the mouth of the chute with a depending semicircular wall, and an opening behind said ledge through which the straw is introduced into the chute.

12. An apparatus of the character described having, in combination, a blower-casing inclosing a blower and having an elongated longitudinal blast-opening, a blast-passage leading from said opening and gradually assuming a semicircular form, a delivery-chute at the terminus of said passage, and an elongated transverse straw-inlet opening at the mouth of said chute, with continuations of the sides of said passage under opposite sides of said opening.

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

JOSEPH McKONE.

Witnesses:

DELBERT THURSTON,
JAS. W. PATTISON.