

No. 667,322.

Patented Feb. 5, 1901.

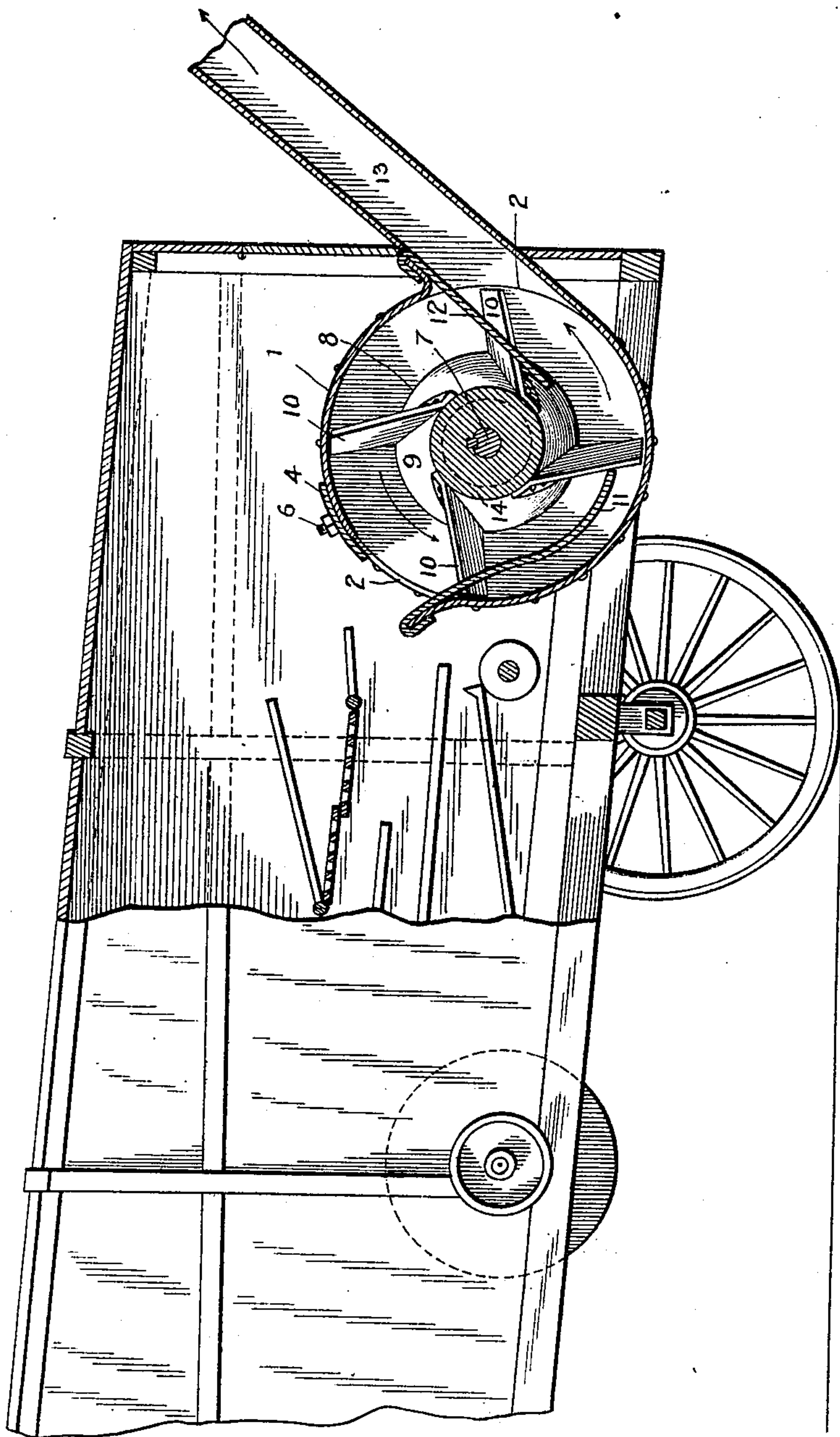
O. O. KITTLESON.
PNEUMATIC STRAW STACKER.

(Application filed Nov. 5, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



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2 Sheets—Sheet 2.

Fig. 2.

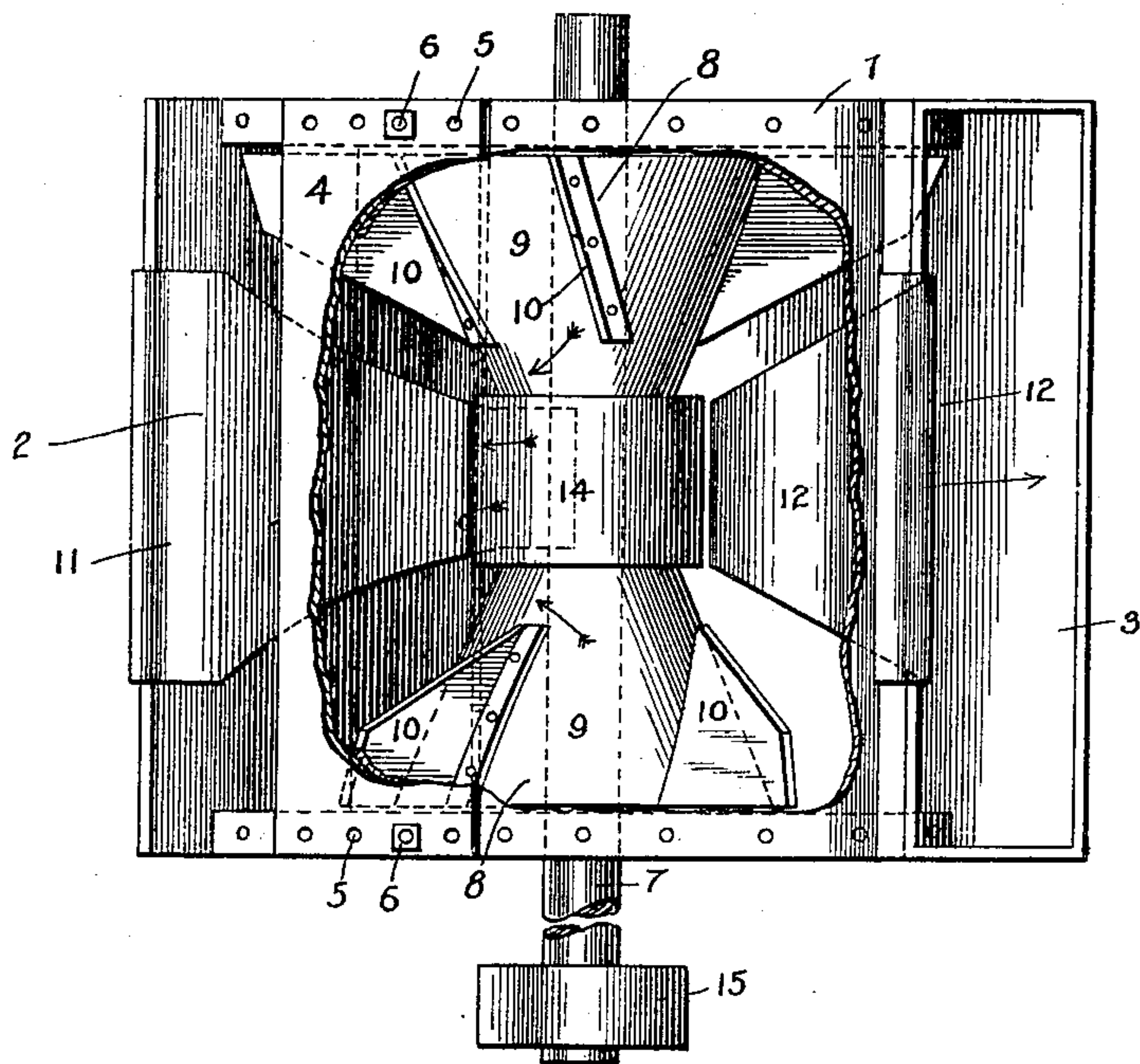
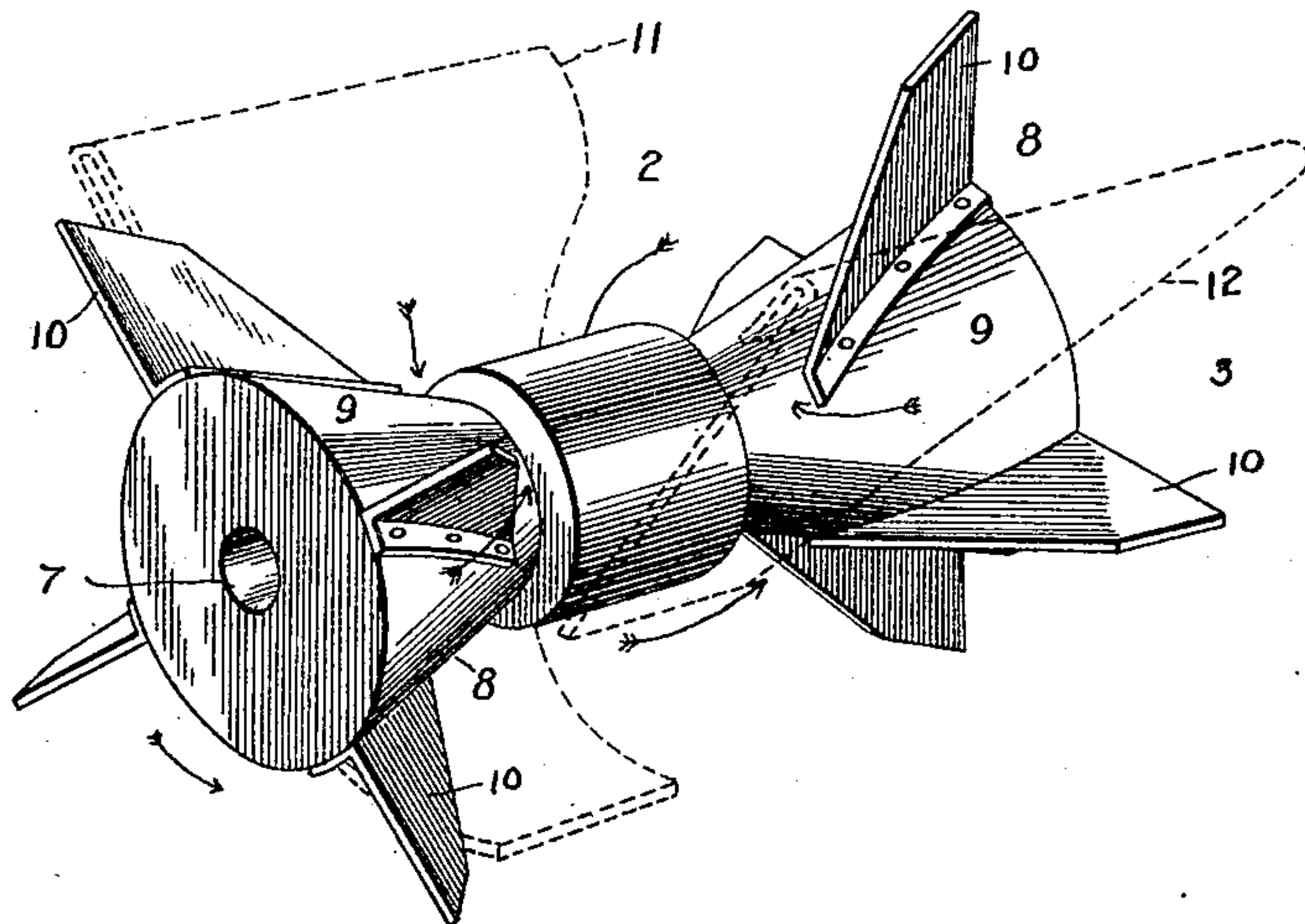


Fig. 3.



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UNITED STATES PATENT OFFICE.

OLE O. KITTLESON, OF LEE, ILLINOIS.

PNEUMATIC STRAW-STACKER.

SPECIFICATION forming part of Letters Patent No. 667,322, dated February 5, 1901.

Application filed November 5, 1900. Serial No. 35,563. (No model.)

To all whom it may concern:

Be it known that I, OLE O. KITTLESON, a citizen of the United States, residing at Lee, in the county of Lee and State of Illinois, have invented a new and useful Pneumatic Straw-Stacker, of which the following is a specification.

My invention is an improved straw-stacker, and relates particularly to the pneumatic conveyer for exhausting the straw from the separating mechanism and conveying the same pneumatically to and through the stacker-tube, the pneumatic conveyer while shown in this application in connection with a threshing and separating machine being adapted to be used also in connection with other machines, as sawmills, planing-mills, and corn-shellers, to pneumatically convey material therefrom.

My invention consists in the peculiar construction and combination of devices, as will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is an elevation, partly in section, of a threshing and separating machine provided with a straw-stacker in which is a pneumatic conveyer constructed in accordance with my invention. Fig. 2 is a detail top plan view of my improved pneumatic conveyer, a portion of the upper side of the casing being broken away to disclose the blowers, the feed-plate, and the deflector-plate. Fig. 3 is a detail perspective view of the rotary blower of my improved pneumatic conveyer, the feed and deflector plates being indicated in dotted lines in their respective relative positions.

In the embodiment of my invention I provide a cylindrical casing 1, which is provided with an intake-opening 2 and a discharge-opening 3. A regulating-plate 4 is secured and adjustable on the casing and is adapted to open the intake-opening to any desired extent. In the form of my invention here shown the said plate is provided with adjusting-openings 5 for the bolts 6 to secure it on the casing. A revoluble shaft 7 extends through the ends of the casing, is disposed concentrically in the casing, and revolves therein. On the said shaft are secured a pair of rotary blowers 8, each of which comprises a cone-shaped central or hub member 9 and a series of radial wings 10, which are obliquely

disposed on said central or hub member. The said rotary blowers are disposed opposite each other within the casing and face each other, and their respective obliquely or spirally disposed wings 10 when the said blowers are rotated in the direction indicated by the arrow in Fig. 1 set up exhaust-currents of air in the casing, which currents from the respective blowers meet at a point between the blowers and are discharged through the discharge-opening 3. The directions taken by the exhaust-currents are shown by the arrows in Figs. 2 and 3, and it will be understood from the foregoing and by reference to the drawings that the air-currents pass from the sides of the casing to the center thereof at a point between the blowers before being discharged from the casing through the discharge-opening, and hence it will be understood that straw which is pneumatically conveyed into and discharged from the casing will not come in direct contact with the revolving blowers and be beaten, threshed, and injured thereby, but will be supported and carried by the currents of air between the blowers and through the discharge-opening of the casing without injury.

I provide a feed-plate 11, which extends from the lower side of the intake-opening 2 to a point below the blowers and between the same, as shown. This feed-plate serves to increase the strength of the exhaust-current passing through the casing under the shaft 7, as will be understood, and also serves to feed the straw delivered from the separator to the said exhaust-current. I further provide a deflector-plate 12, which is secured to the upper side of the discharge-opening 3 and extends to a point between the blowers. This deflector-plate serves to direct the commingled exhaust-currents through the discharge-opening and into the lower end of the stacker-tube 13, and, furthermore, serves to intercept the straw carried through the casing pneumatically and prevent the straw from traveling around and around in the casing with the blowers, which it might otherwise do.

A drum 14 of suitable size is interposed between the blowers and by partially filling the central portion of the casing at the point between the blowers serves to increase the strength of the exhaust-current passing

through the casing. The deflector-plate 12 approaches the face of the said drum 14 at the lower side thereof and coacts therewith in conveying the straw from the casing to the 5 stacker-tube.

A pulley 15 on the shaft 7, at one end thereof, enables the blowers to be driven by a suitable belt from a counter-shaft with which the threshing-machine is provided.

10 When my improved pneumatic conveyer is used as an element of a pneumatic straw-stacker, as here shown, the straw is conveyed from the machine to the stack without being rethreshed, broken, and otherwise injured, 15 and hence a serious objection heretofore existing to pneumatic stackers is obviated.

Having thus described my invention, I claim—

1. In combination with a casing having an 20 intake and a discharge opening, of a pair of rotary blowers in said casing, facing each other and having spirally-disposed wings adapted to exhaust in opposite directions from the sides of the casing and commingle 25 the side exhaust-currents at a point between the said blowers and force the same through the discharge-opening, substantially as described.

2. The combination with a casing having 30 an intake and a discharge opening, of a pair of rotary blowers in said casing, facing each other and having spirally-disposed wings adapted to exhaust in opposite directions from the sides of the casing and commingle 35 the side exhaust-currents at a point between said blowers and force the same through the discharge-opening, and a deflector disposed between said blowers and conducting to the discharge-opening of the casing, substantially 40 as described.

3. In combination with a casing having an

intake and a discharge opening, of a pair of rotary blowers in said casing, facing each other and having spirally-disposed wings, a 45 deflector disposed between said blowers and conducting to the discharge-opening of the casing and a feed-plate leading from the intake of said casing to a point between said blowers, substantially as described.

4. In combination with a casing having an 50 intake and a discharge opening, of a pair of rotary blowers in said casing, facing each other each of said blowers comprising a conical central or hub portion and a series of obliquely-disposed wings thereon, the wings 55 of the respective blowers being disposed at an angle to each other and adapted to exhaust in opposite directions from the sides of the casing and commingle the side exhaust-currents at a point between said blowers and 60 force the same through the discharge-opening, substantially as described.

5. In combination with a casing having an 65 intake and a discharge opening, of a pair of rotary blowers in said casing, facing each other, each of said blowers comprising a conical central or hub portion and a series of obliquely-disposed wings thereon, a drum between the said blowers, a deflector disposed 70 between the said blowers and conducting from said drum to the discharge-opening of the casing, and a feed-plate leading from the intake of said casing to a point between said blowers, below said drum, substantially as 75 described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

OLE O. KITTLESON.

Witnesses:

L. H. JARDAL,
A. J. WAREBERG.