

(No Model.)

F. F. LANDIS.

CENTRIFUGAL DISCHARGER FOR PNEUMATIC STRAW STACKERS.

No. 517,525.

Patented Apr. 3, 1894.

FIG. 1-

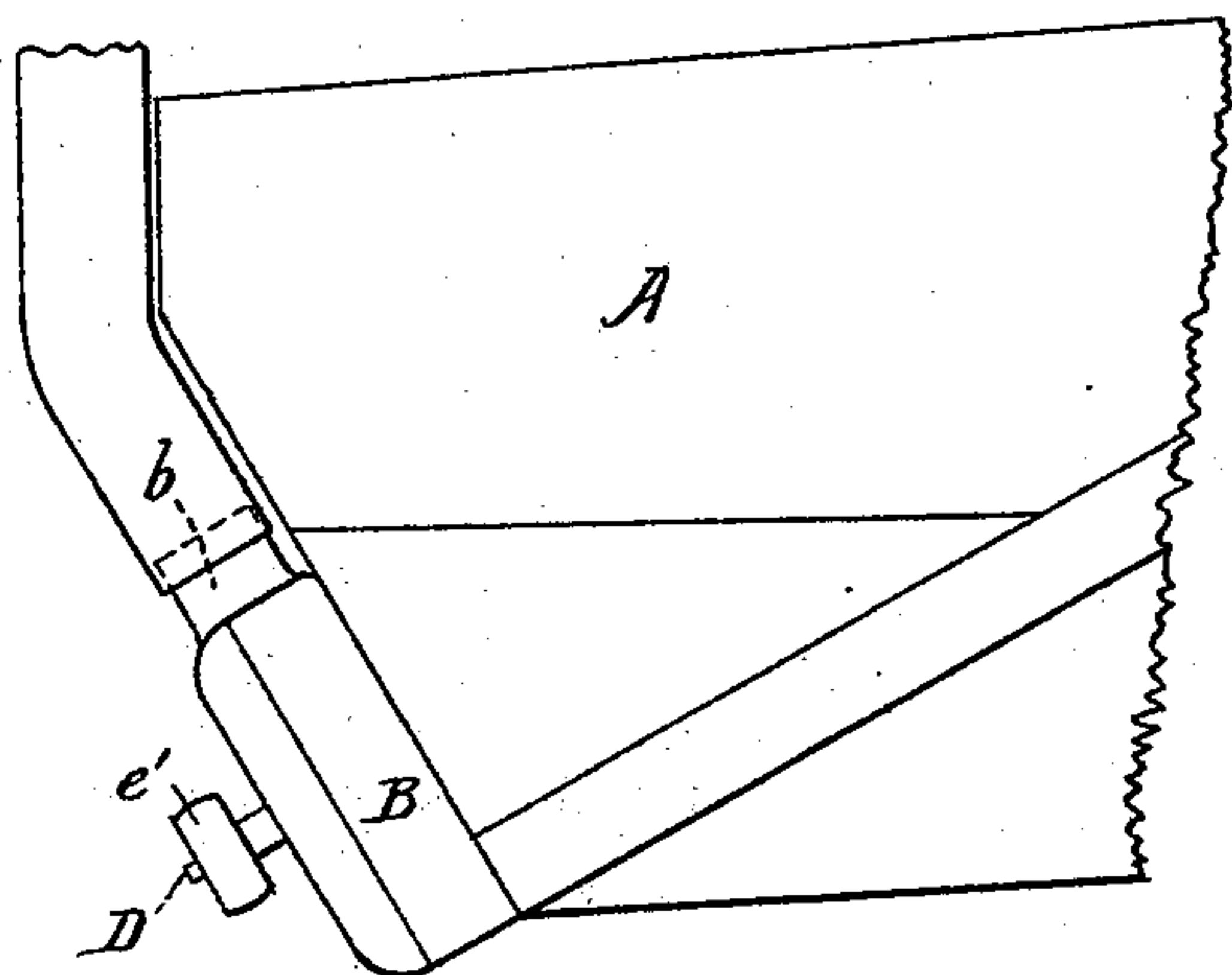


FIG. 4-

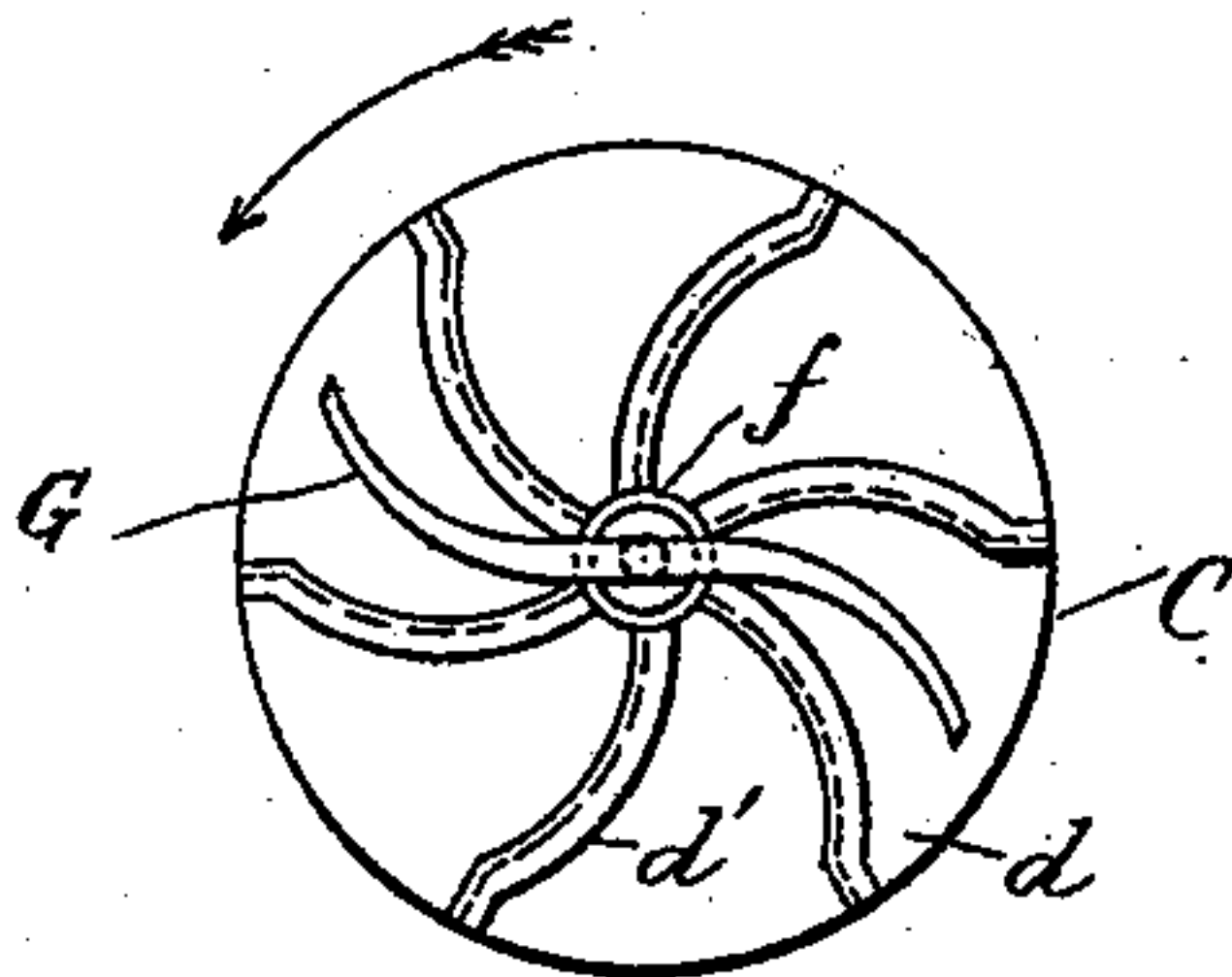


FIG. 2-

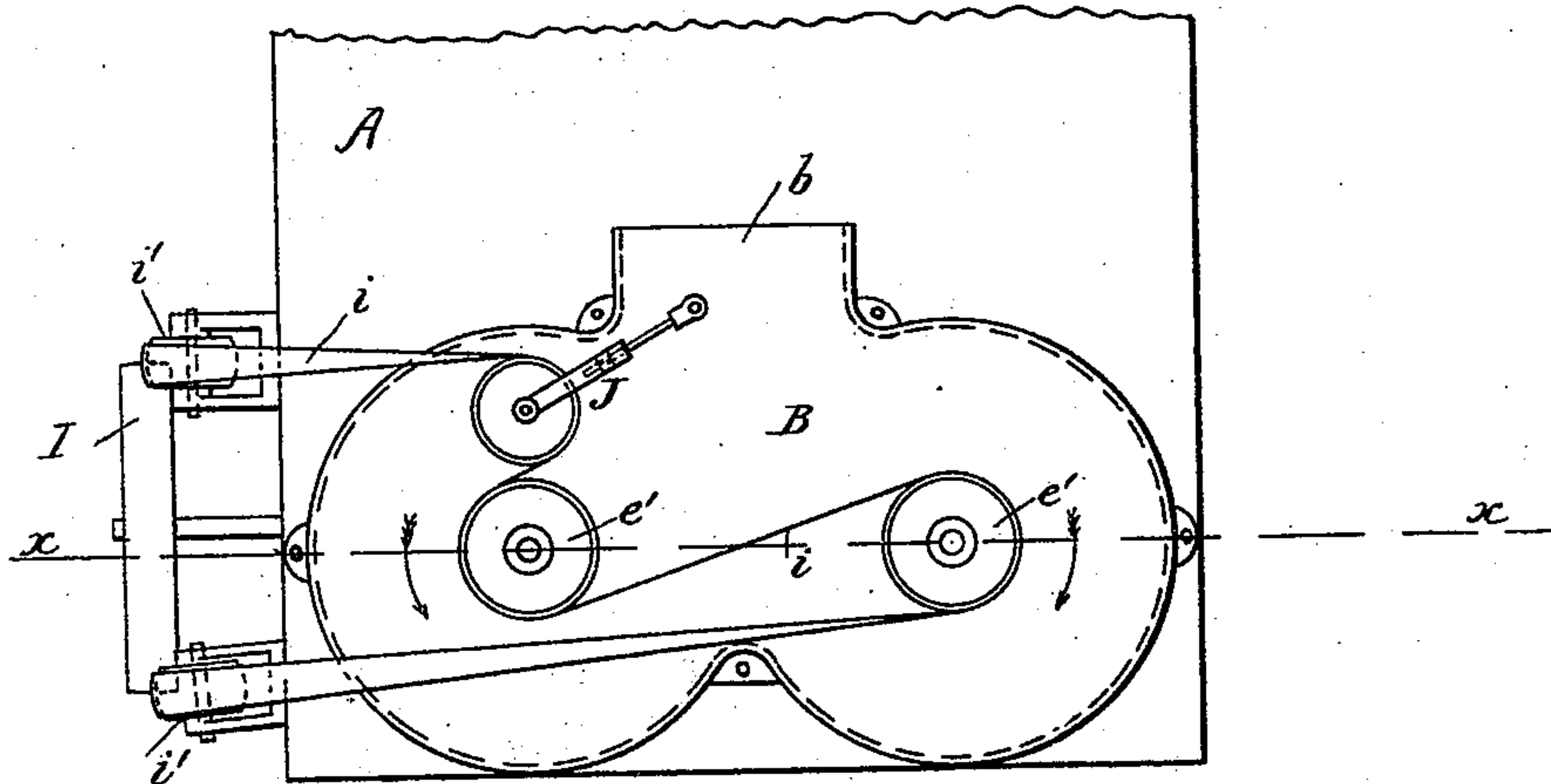
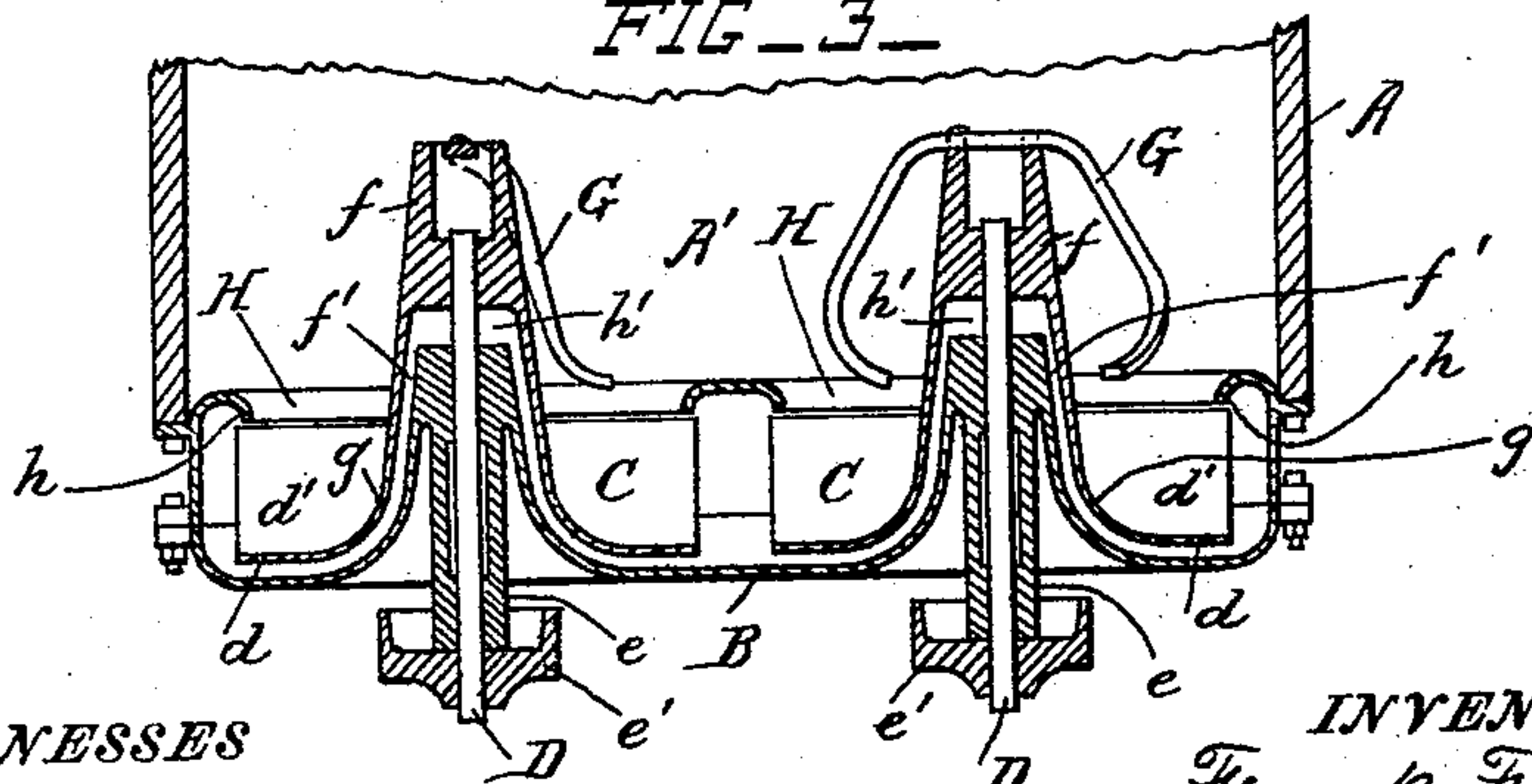


FIG. 3-



WITNESSES

Geo. F. Moran Jr.
J. D. Milans,

INVENTOR

Frank F. Landis
by Herbert W. Jenner
Attorney

UNITED STATES PATENT OFFICE.

FRANK F. LANDIS, OF WAYNESBOROUGH, PENNSYLVANIA.

CENTRIFUGAL DISCHARGER FOR PNEUMATIC STRAW-STACKERS.

SPECIFICATION forming part of Letters Patent No. 517,525, dated April 3, 1894.

Application filed December 13, 1893. Serial No. 493,543. (No model.)

To all whom it may concern:

Be it known that I, FRANK F. LANDIS, a citizen of the United States, residing at Waynesborough, in the county of Franklin and State of Pennsylvania, have invented certain new and useful Improvements in Centrifugal Dischargers for Straw-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 centrifugal dischargers used in connection with pneumatic straw stackers; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the drawings: Figure 1 is a side view of the end of a separator showing the discharger in position. Fig. 2 is a front view of the double discharger. Fig. 3 is a sectional plan view taken on the line $x-x$ in Fig. 2. Fig. 4 is a detail rear view of one of the dischargers removed from the casing.

A is a portion of the casing of a thrashing machine or grain separator of any approved construction.

A' is a chamber at the rear end of the machine. This chamber receives all the straw, chaff and other rubbish after the grain has been thrashed out and separated from it.

B is the discharger casing, and C is a discharger inclosed therein.

The discharger casing is preferably secured against the end of the thrashing machine, and may be placed at any angle which will substantially conform to the usual inclination of the end of a thrashing machine from a vertical line.

A diagonally arranged discharger is not only preferred because it does not necessitate a change in the form of the end of the thrashing machine, but because it is better adapted to catch the straw as it falls from the straw shaking devices inside the thrashing machine.

A single discharger may be used, but a double discharger is preferred.

The discharger, whether single or double, when provided with feed fingers as hereinafter fully described, may be arranged in a vertical position if desired; and can be ar-

ranged at the side of the thrashing machine or against its end, if the end be vertical.

The casing of the double discharger is provided with a single delivery pipe b in the middle between the two dischargers, which are arranged with their shafts parallel to each other, and are revolved in opposite directions, as indicated by the arrows in the drawings.

The discharger consists essentially of a revolving disk d , secured upon a shaft D , and arms d' . The arms are curved rearwardly of the direction of the revolution of the discharger, and preferably have channel-shaped faces. The discharger can be made of any other approved construction, and it may be cast in a single piece, or it may be made of separate parts secured together by rivets or bolts. Each discharger shaft D is journaled in a long bearing e on the casing, and is provided with a driving pulley e' .

The hub f of the discharger is preferably formed with a very deep recess f' so that the bearing e may be of great length. The hub f is preferably conical and g is a concave portion which connects the hub with the disk d .

G are feed fingers secured to the end of the discharger hub. These fingers revolve inside the chamber A' and are preferably curved rearwardly of their direction of motion, and inwardly toward the discharger arms. These fingers catch the straw in the chamber A' and convey it into the discharger casing, with the assistance of the current of air passing through the discharger casing.

The discharger casing is provided with a flaring inlet opening H, and a bead h in close proximity to the discharger arms. The hub of the belt pulley runs against the outer end of the bearing, and prevents the discharger arms from touching the bead. A space h' is left between the bearing and the hub of the discharger, so that the discharger may move laterally to permit the passage of bunches of straw between the said bead and the arms of the discharger. The discharger is normally pressed toward the bead by the pressure of the air in the narrow space between the discharger casing and the disk d .

The two dischargers are arranged in the casing with only a narrow space between the

tips of their arms, as shown in Fig. 3, and the streams of straw thrown up the delivery pipe come against each other at an acute angle and while moving in substantially the same direction. The streams of straw therefore come together gently, and the straw is not broken or disintegrated by the impact of one stream against the other.

When the two dischargers force the straw into a single delivery pipe the two currents of straw and air are not forced against an unyielding body as is the case when a single discharger is used and which forces the straw against the periphery of the casing below the delivery pipe. When a double discharger is used the friction of the straw against the discharger casing is materially reduced, and the double discharger can be driven with less power than it requires to run a single discharger of equal capacity.

Any approved driving mechanism may be used in connection with the double discharger, and the following is a description of a convenient arrangement.

I is a belt pulley secured on one of the revolving shafts of the thrashing machine, and i is a driving belt which passes over the guide pulleys i' and around the two pulleys e' , as shown in Fig. 2, so that the dischargers are revolved in the directions of the arrows.

J is a belt tightener of approved construction, which also increases the contact of the belt with one of the pulleys e' .

What I claim is—

1. In a centrifugal discharger, the combination, with a straw chamber, of a discharger casing provided with two inlet openings communicating directly with the said straw chamber, and a single delivery pipe; two dischargers, each consisting of a disk provided with arms, arranged at a little distance apart within the said casing; and driving mechanism operating to revolve the dischargers in opposite directions, whereby the streams of

straw are brought together gently and are forced up the said delivery pipe, substantially as set forth.

2. In a centrifugal discharger, the combination, with a straw chamber having an inclined end portion, of a diagonally-arranged discharger casing abutting against the end of the said chamber and provided with two inlet openings communicating with the chamber, and a single delivery pipe; two dischargers, each consisting of a disk provided with arms, arranged at a little distance apart within the said casing; and driving mechanism operating to revolve the dischargers in opposite directions, whereby the straw is forced up the said delivery pipe, substantially as set forth.

3. In a centrifugal discharger, the combination, with a straw chamber, of a discharger casing provided with an inlet opening and a shaft bearing, a shaft journaled in the said bearing and provided with means for revolving it, a discharger secured on the said shaft and provided with a disk and with arms, and feed fingers secured to the hub of the discharger inside the said chamber and in front of the inlet opening, substantially as set forth.

4. In a centrifugal discharger, the combination, with the discharger casing provided with an inlet opening, and a long shaft bearing; and a shaft journaled in the said bearing and provided with means for revolving it; of a discharger secured on the shaft and provided with a disk, and with arms, and having a conical and recessed hub inclosing one end of the said shaft bearing, and projecting through the inlet opening; and the rearwardly and inwardly curved feed fingers secured to the end of the said hub, substantially as set forth.

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

FRANK F. LANDIS.

Witnesses:

HERBERT W. T. JENNER,
ALF. N. RUSSELL.