

E. J. VRAALSTAD.
SEPARATOR AND STACKER.
APPLICATION FILED MAY 15, 1908.

954,365.

Patented Apr. 5, 1910.

5 SHEETS—SHEET 1.

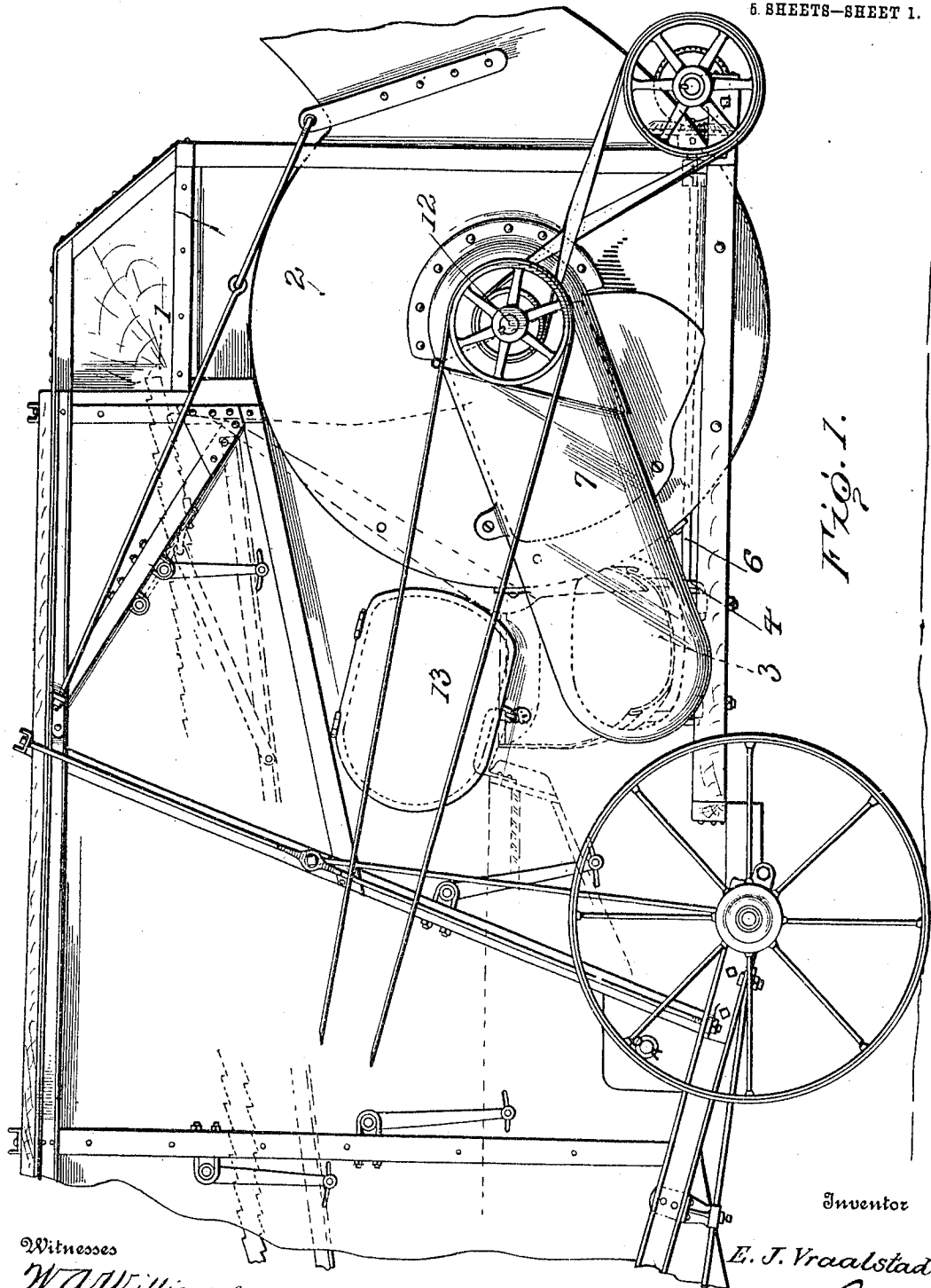


Fig. 1.

Inventor

E. J. Vraalstad

Witnesses

W. A. Williams
James L. Hagman

By

[Signature]
Attorney

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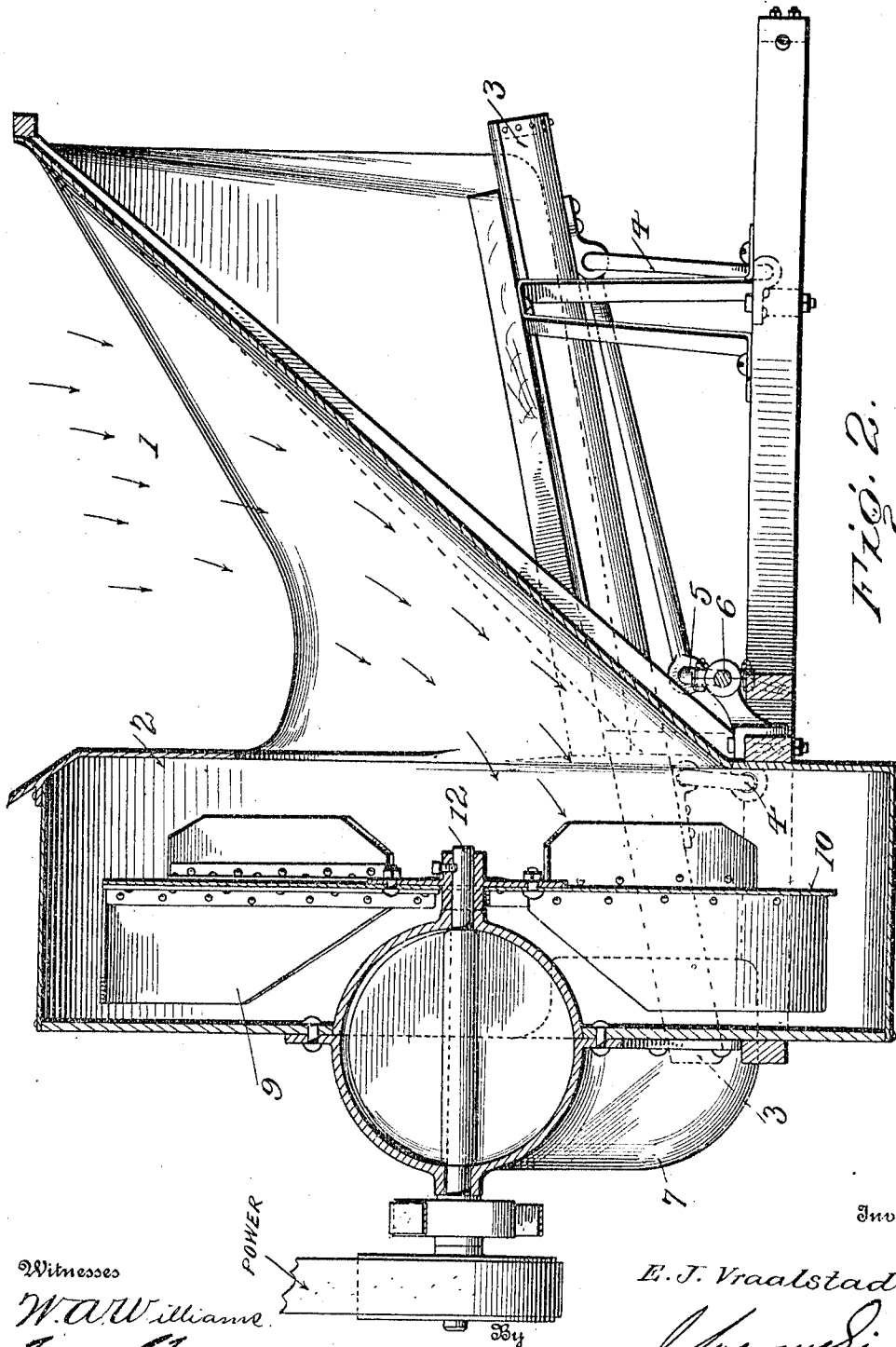


Fig. 2.

Witnesses

W. A. Williams
Francis S. Maguire

POWER

By

E. J. Vraalstad.

[Signature]

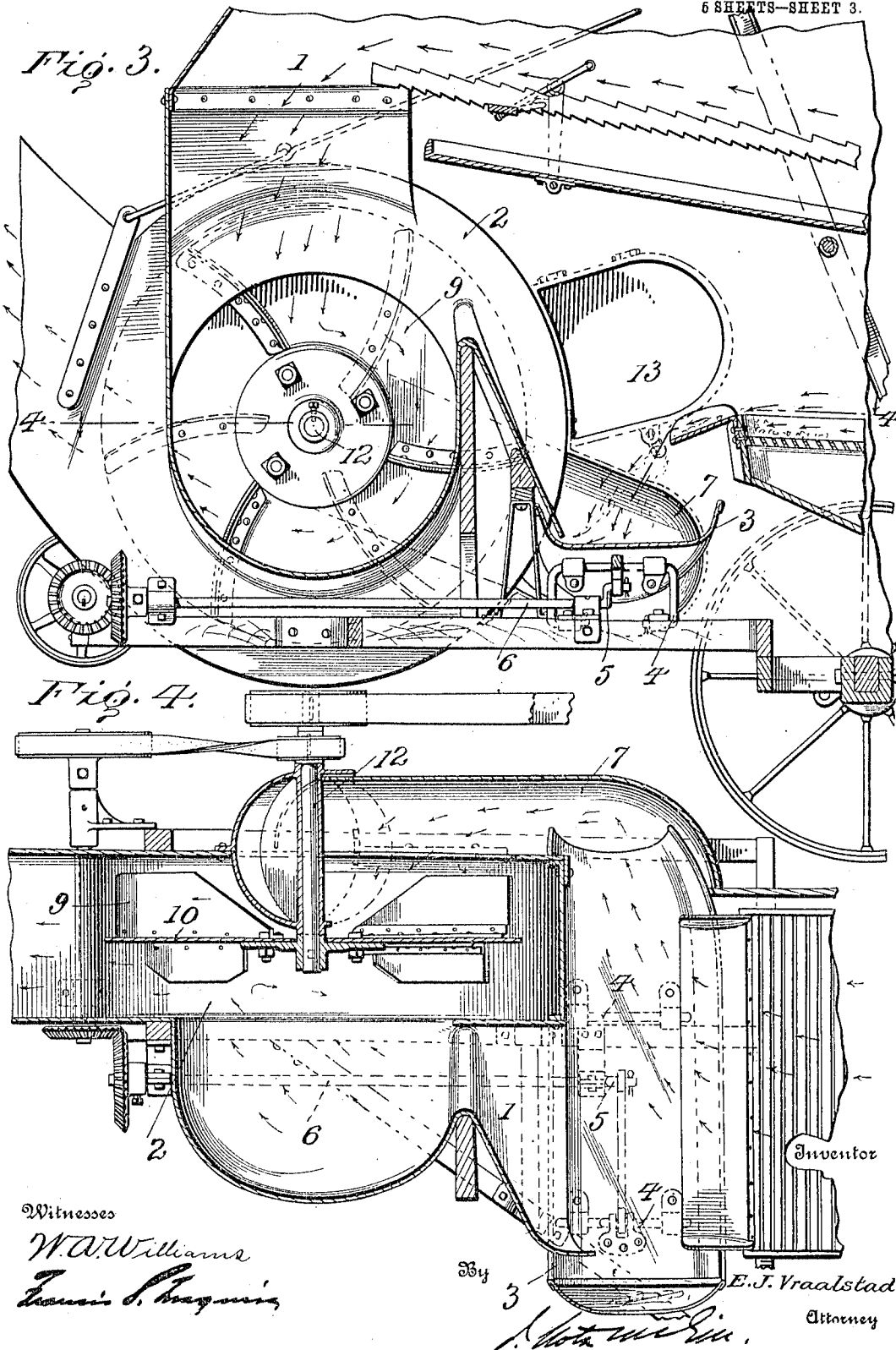
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6 SHEETS—SHEET 3.



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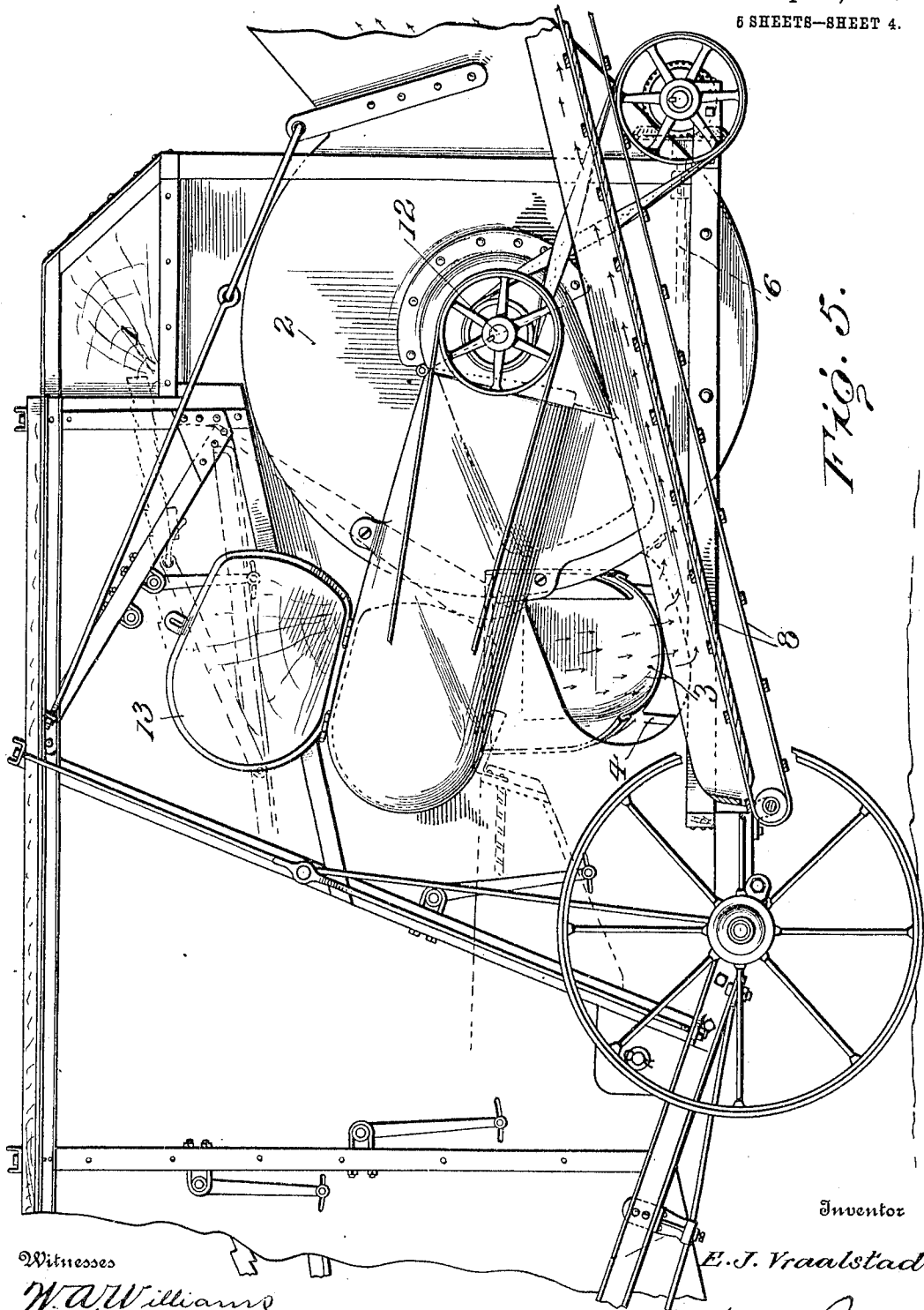


Fig. 5.

Inventor

E. J. Vraalstad

Witnesses

W. A. Williams
Francis S. Chagnier

By

[Signature]
Attorney

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5 SHEETS—SHEET 5.

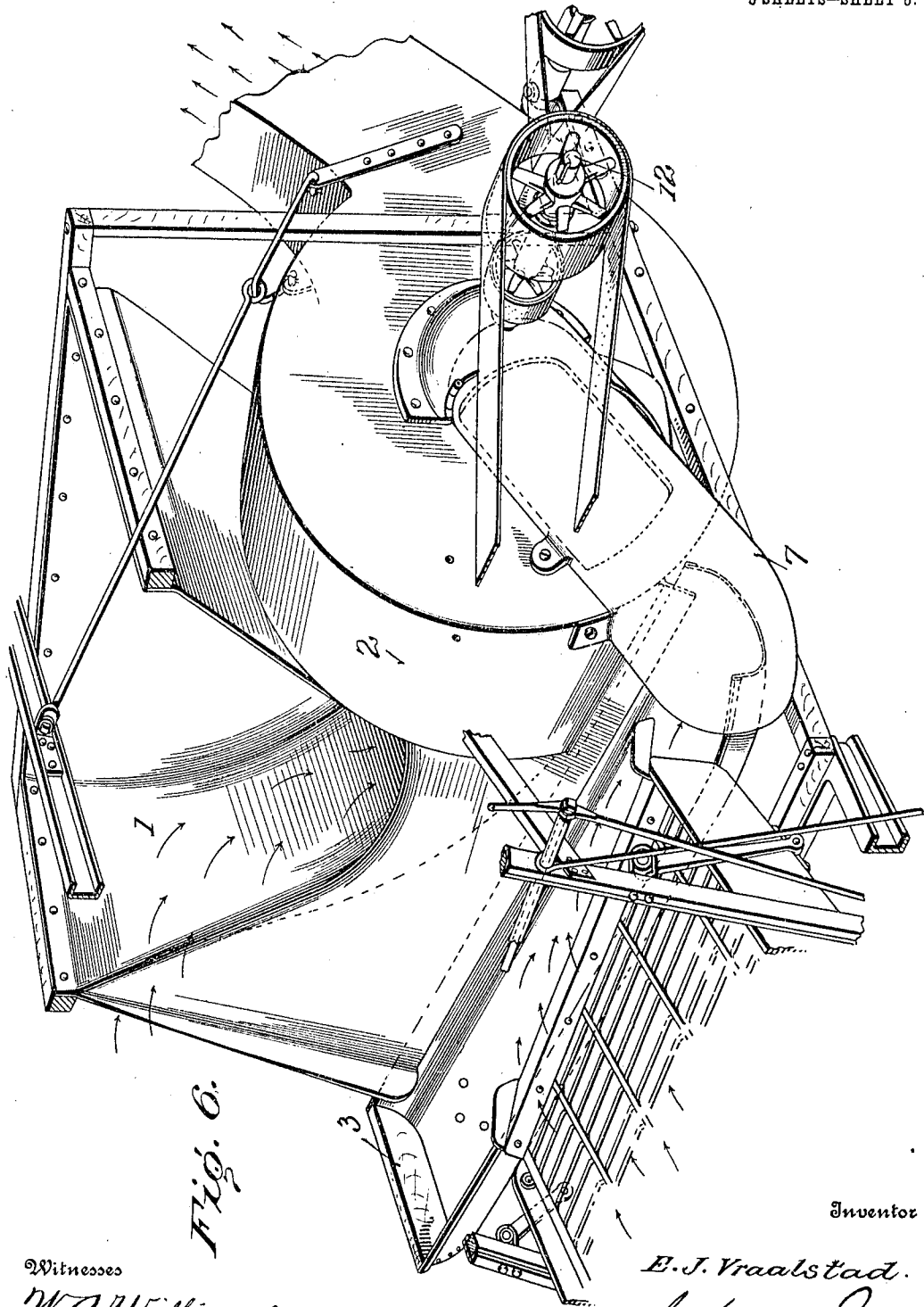


Fig. 6.

Witnesses

W. A. Williams.
Francis S. Phaguris

Inventor

E. J. Vraalstad.

By

[Signature]

Attorney

UNITED STATES PATENT OFFICE.

EDWARD J. VRAALSTAD, OF BUFFALO, NEW YORK, ASSIGNOR OF ONE-HALF TO BUFFALO PITTS COMPANY, OF BUFFALO, NEW YORK, A CORPORATION OF NEW YORK.

SEPARATOR AND STACKER.

REISSUED

954,365.

Specification of Letters Patent.

Patented Apr. 5, 1910.

Application filed May 15, 1908. Serial No. 433,135.

To all whom it may concern:

Be it known that I, EDWARD J. VRAALSTAD, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Separators and 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.

In the use of threshing machines or separators having means at the discharge end for discharging, by pneumatic pressure, the straw, chaff, etc., difficulty has been experienced because of the constant presence of a plenum within the machine created by the fans employed in separating and cleaning the grain. The straw-discharging fan being incapable of overcoming the plenum, dust and other foreign particles are forced out through various openings and crevices of the machine.

The object of my invention is to so construct and arrange the parts as to practically destroy the plenum within the machine, and at the same time avoid increased friction between the fan and the straw.

A further object is to provide in a separator and stacker means whereby the chaff may be discharged separately from the straw, or in conjunction therewith, but in either event maintain the advantage last recited.

The invention will be hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a portion of a threshing machine, equipped with my improvements. Fig. 2 is an enlarged transverse sectional view through the fan, its casing, and the straw chamber. Fig. 3 is a sectional view through the delivery end of the straw chamber looking toward the fan. Fig. 4 is a horizontal sectional view on line 4—4, Fig. 3. Fig. 5 is a view similar to Fig. 1, but with the chute or off-take in a different position. Fig. 6 is an enlarged view in perspective.

Referring to the drawings, 1 designates the straw-chamber of a separator; and 2 a fan casing located at one side of the straw-chamber and extended longitudinally of the machine, said casing having an opening

through its inner wall into the straw-chamber.

3 designates a chaff-receiving pan into which the chaff is discharged from the chaff shoe. This pan is set on an incline transversely of the separator, and is shown as mounted on crank bearings 4. It is designed to be vibrated longitudinally by the rotation of a crank 5 connected to the bottom thereof, such crank being operated by a shaft 6 driven by any suitable means.

7 designates a chute or off-take which is hinged or otherwise pivotally mounted on the outer wall of fan casing 2, concentrically thereof, and which is designed to occupy either of two positions. When in its lower position it receives the chaff from the vibrating pan 3 and allows it to pass into the fan-casing through an opening in the outer wall thereof. When this chute or off-take is in its raised position its free end is projected into the machine or fits over an opening in the side thereof, so as to still maintain communication between the interior of the separator and the fan-casing. Under this condition the chaff is discharged from the vibrating pan either direct onto the ground or onto a conveyer 8. (See Fig. 5.)

9 designates a duplex fan located within the fan-casing. I have referred to this as a "duplex" fan for that it embodies two sets of fan blades on opposite sides of a dividing disk 10, all mounted on a common shaft 12. The inner blades, opposite the opening into the straw-chamber, constitute in themselves the straw-handling fan, and are made narrower than the outer blades facing the opening into the outer wall, which blades without engaging the straw, aid in ejecting it through the discharge tube. When the chute or off-take occupies its lowered position this outer fan in discharging the chaff aids in ejecting the straw, and coöperates with the inner fan in reducing the air pressure in the machine. When the chute is raised this outer or larger fan while continuing to reduce the air pressure within the separator will assist the straw-handling fan in ejecting the straw but without mingling the chaff therewith. Thus I am enabled to off-set the plenum within the separator without in any way increasing the friction between the straw and its discharging fan. Whether or not the second fan of wide blades be em-

ployed for discharging the chaff, or solely for aiding in reducing the air pressure in the separator, it also coöperates with the straw-handling fan in discharging the straw
5 through the tube.

The opening into which the end of the chute projects, or with which it coincides, when in its raised position, is closed by a door 13 when the chute is lowered to receive
10 the chaff from the vibrating pan. But as to this, as well as to other details, my invention is not restricted, since it is obvious that changes may be made without departing from the scope thereof.

15 I claim as my invention:—

1. In a separator and stacker having a straw-chamber, a fan casing paralleling the side of the separator and into the inner side of which said straw-chamber opens, a shift-
20 able chute or off-take opening into the opposite side of said fan casing, and ejecting means within the latter.

2. In a separator and stacker having a straw-chamber, a fan casing into the inner
25 side of which said straw-chamber opens, an adjustable chute opening into said fan casing on the side thereof opposite to the straw-

chamber opening, and a duplex fan within said fan casing for ejecting the straw and chaff.

3. In a separator and stacker having a straw-chamber, a chaff-outlet, a fan-casing into which said straw-chamber opens, a fan in said casing for ejecting the straw, an adjustable chute, and a second fan in said casing, said chute or off-take opening into said
35 fan-casing adjacent to said second fan.

4. In a separator and stacker having a straw-chamber, and a chaff-outlet, a fan-casing having inner and outer openings, said
40 inner opening forming a communication with the straw-chamber, a duplex fan on a common shaft within said fan-casing, a divider between said fans, and an adjustable chute or off-take, one of said fans serving
45 wholly for ejecting the straw and of less capacity than the other fan.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

EDWARD J. VRAALSTAD.

Witnesses:

H. P. SEIPP,
C. M. GRIMES.