No. 696,553.

Patented Apr. 1, 1902.

D. DOW.

PNEUMATIC STACKER.

(Application filed Oct. 24, 1901.

(No Model.)

2 Sheets—Sheet 1.

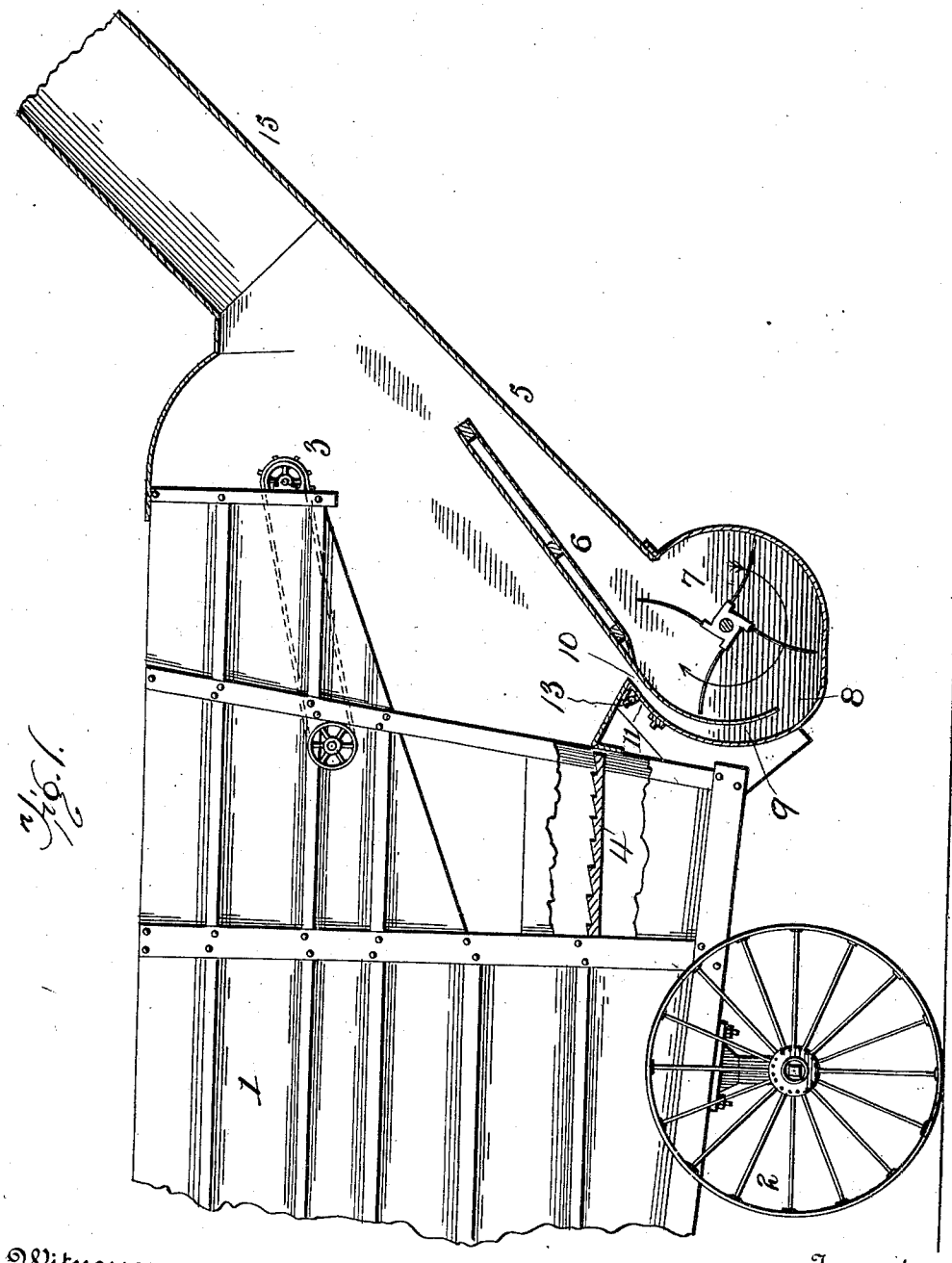


Fig. 1.

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Fig. 2.

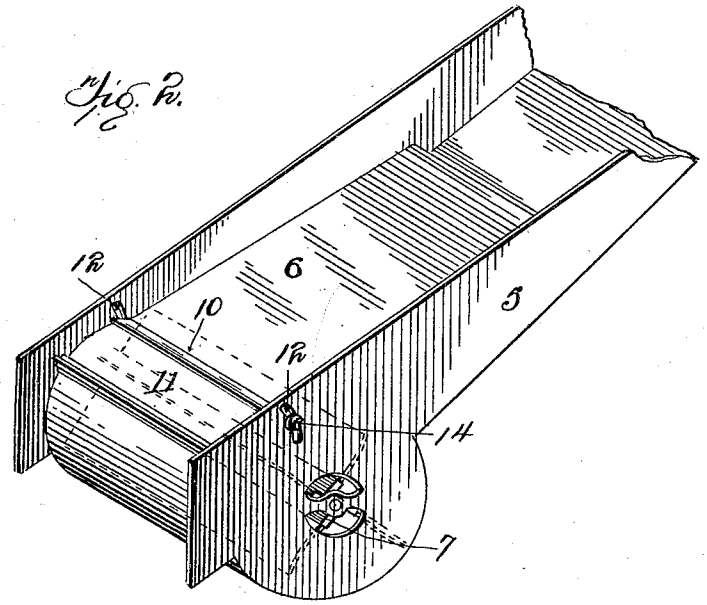


Fig. 4.

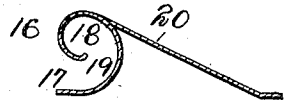


Fig. 3.

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UNITED STATES PATENT OFFICE.

DANIEL DOW, OF GRAND FORKS, NORTH DAKOTA.

PNEUMATIC STACKER.

SPECIFICATION forming part of Letters Patent No. 696,553, dated April 1, 1902.

Application filed October 24, 1901. Serial No. 79,841. (No model.)

To all whom it may concern:

Be it known that I, DANIEL DOW, of Grand Forks, county of Grand Forks and State of North Dakota, have invented certain new and useful Improvements in Pneumatic Stackers; and I do hereby declare the following is a full and clear description thereof.

My invention relates to threshers, more particularly to pneumatic or wind stacker attachments.

The objects of my invention are to provide a pneumatic stacker with a chaff-blowing as well as a straw-blowing mechanism. I provide means for blowing the straw and chaff together out of the wind-stack, or I may separate the chaff from the straw and blow the former out through a separate tube in order to separate the straw and the chaff whenever desirable.

In carrying out my invention I apply it to any approved threshing-machine and receive the chaff from the delivery mechanism with which the particular thresher may be provided into a hopper, from which it is blown out through the wind-stack without interfering with the main air-current for blowing the straw. I accomplish this desirable result in a novel manner, hereinafter particularly described, by means of a single fan, which is so constructed that the blast through the chaff-duct does not weaken the current through the main straw-duct. The throat of the chaff-duct is made adjustable, whereby both the volume and the depth of the air-current passing over the chaff-floor is regulated to the particular needs of the work to be done.

With these purposes in view my invention consists in the following construction and combination of parts, the details of which will first be fully described and the features of novelty then set forth and claimed.

Figure 1 represents a side elevation and longitudinal section of the rear end of the thresher and pneumatic stacker to which I have applied my improvements. Fig. 2 is a perspective view of the fan-casing and parts in the immediate neighborhood thereof. Fig. 3 is a view similar to Fig. 2, showing the means for deflecting and separating the chaff from the straw in their delivery. Fig. 4 is a side view of the chaff-deflector.

The rear of the thresher 1 has the usual wheels 2, straw-delivery mechanism 3, and chaff-delivery means 4, (shown in Fig. 1,) such mechanism serving merely to exemplify any type of thresher provided with any suitable mechanism for the same purpose.

The pneumatic conveyer or stacker 5 may likewise be of any approved and known construction. In the lower portion of the stacker I provide a chaff-floor 6, which serves as a division-wall between the wind-currents of the straw and the chaff air-currents.

7 is a fan rotating in the direction of the arrow, drawing the air laterally in the usual way and discharging it circumferentially. Near the bottom of the fan is located the induction-opening 8 of the chaff-duct 9. This duct is preferably contracted from opening 8 to the throat or eduction-opening 10. The outer side wall of the chaff-duct 9 near the throat is flexible at 11 in order that it may be moved to or from the wall of the fan-casing for the purpose of adjusting or regulating the opening at the throat and the volume of air passing therethrough. This is accomplished preferably by means of slots 12 in the end walls and a rod 13, secured to the throat of the duct 9, the ends of the rod passing out through the slots 12 and having nuts 14, by means of which the flexible portion 11 may be set in any desired position.

In the construction shown in Figs. 1 and 2 the chaff and straw are taken from different delivery-points in the thresher and blown out through the usual wind-stack 15 in an intermingled condition.

In Fig. 3 the same construction is shown, with the chaff-deflector 16 applied to the chaff-floor 6. This deflector is disposed diagonally across the chaff-floor. In cross-section, as shown in Fig. 4, the deflector is of convolute shape, comprising a floor portion 17 and a rising convolute conveyer-passage 18, disposed above the floor portion 17, having communication throughout its length by a lateral opening 19, facing the air-blast. 20 is a rear plate forming a brace and false floor diagonally disposed to the chaff-floor, the space beneath being a dead-air space.

The discharge from the chaff-duct is a relatively thin and wide layer of air, which sweeps the chaff-floor of any accumulations of chaff thereon and forces it over the floor portion 17,

up into the convolute conveyer 18, and lengthwise along the same diagonally across the chaff-floor into a separate chaff-tube, to be conveyed to any suitable point.

By taking air at the eduction-opening 8 of the chaff-duct at the lower portion of the fan a full supply of air is furnished thereto, after which in the further rotation of the fan a maximum supply of air is furnished to the main straw air-duct beneath the chaff-floor 6. By this construction the main air-blast is not weakened or split up, as it would be in a thresher which divides the delivery of the air at a higher point or in the neighborhood of the throat of the chaff-duct. The latter construction weakens the blast of both the chaff and the straw duct and decreases the efficiency of the machine.

By adjusting the throat of the chaff-duct with respect to the particular work required the discharge from the said chaff-duct is limited to just that volume of air necessary to blow the chaff through the main stacker-tube or just sufficient to furnish the requisite amount of air for filling the convolute conveyer 16, leading to a separate chaff-delivery tube. It is desirable to regulate the discharge from the chaff-duct in order to secure just that amount of air which will carry off the chaff through the separate tube without blowing it over the deflector and into the main stacker-tube.

While I have described my invention in connection with certain details of construction, yet I do not wish my invention to be limited thereto. I may use any instrumentalities for carrying out my invention other than those specifically referred to within the scope of my claims.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a pneumatic stacker, the combination of a main wind-tube, a fan, a chaff-floor disposed above the fan, a main air-duct, a chaff air-duct having an inlet near the lower part of the fan and a throat located at the bottom of the chaff-floor, substantially as described.

2. In a pneumatic stacker, the combination of a main wind-tube, a fan located at the lower portion thereof, a chaff-floor disposed above the fan, a main air-duct, and a chaff air-duct having an inlet near the lower part of the fan and provided with an adjustable throat.

3. In a pneumatic stacker, the combination of a main wind-tube, a chaff-floor located therein, a fan located at the lower portion thereof, a main air-duct and a chaff air-duct connected with the fan near the lower portion thereof, the throat or outlet of the chaff-duct having one of its walls flexible and provided with means for adjustably setting the same.

4. In a pneumatic stacker, the combination of a main wind-tube, a chaff-floor located therein, a fan located at the lower portion thereof, a main air-duct on the under side of the chaff-floor, a chaff-duct above the chaff-floor and a chaff-deflector diagonally over the chaff-floor.

5. In a pneumatic stacker, the combination of a main wind-tube, a chaff-floor disposed intermediately thereof, a diagonally-disposed chaff-deflector disposed upon the chaff-floor and a fan located near the lower end of the chaff-floor and adapted to deliver air to both sides thereof.

6. In a pneumatic stacker, the combination of a main wind-tube, a chaff-floor disposed intermediately thereof, a diagonally-disposed convolute chaff-deflector upon the chaff-floor and a fan located near the bottom of the chaff-floor.

In testimony whereof I have affixed my signature in the presence of two witnesses.

DANIEL DOW.

Witnesses:
JAMES TWAMLEY,
W. J. ANDERSON.