

No. 608,306.

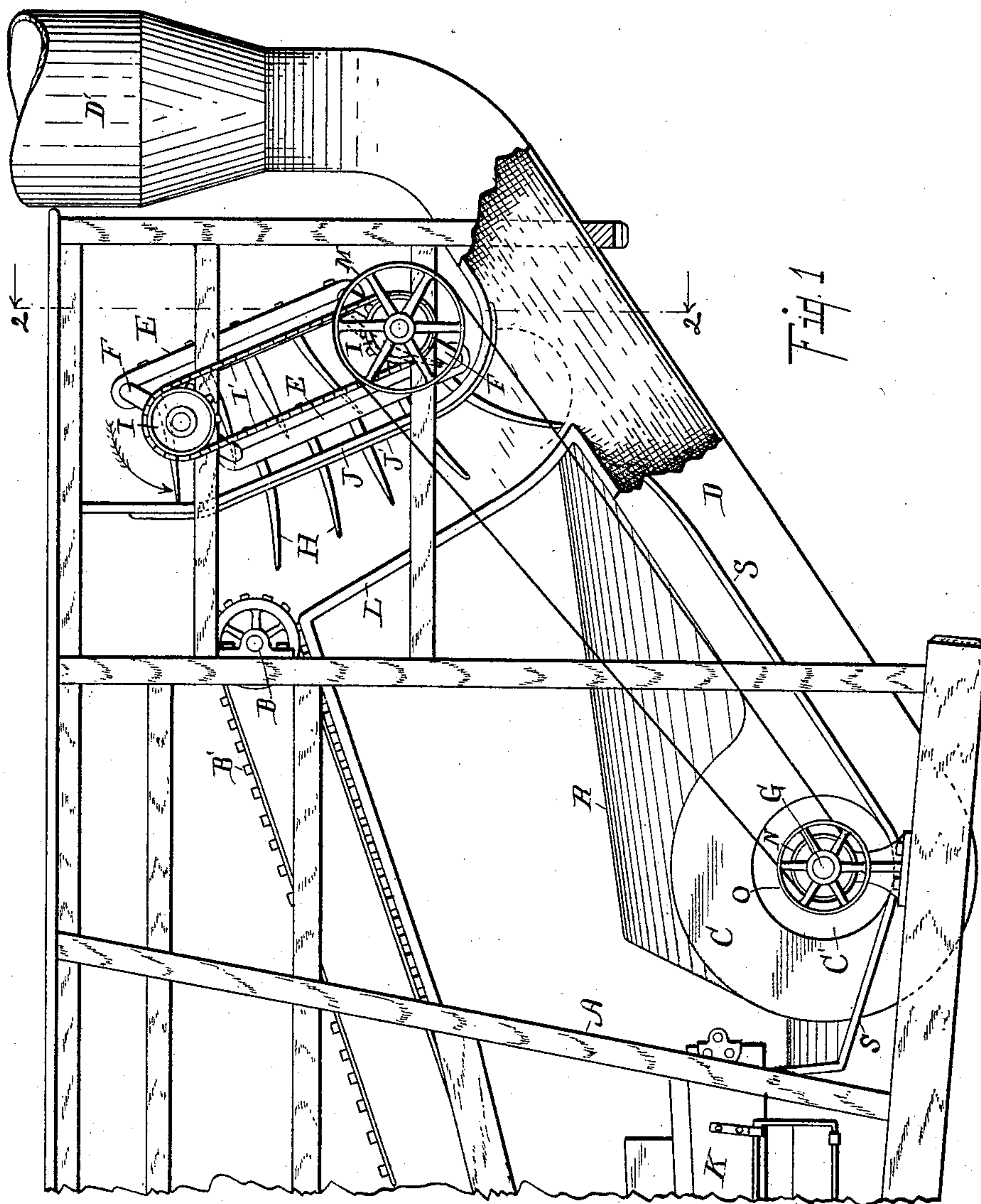
Patented Aug. 2, 1898.

A. W. SISSON.
PNEUMATIC STACKER.

(Application filed Nov. 8, 1897.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses.

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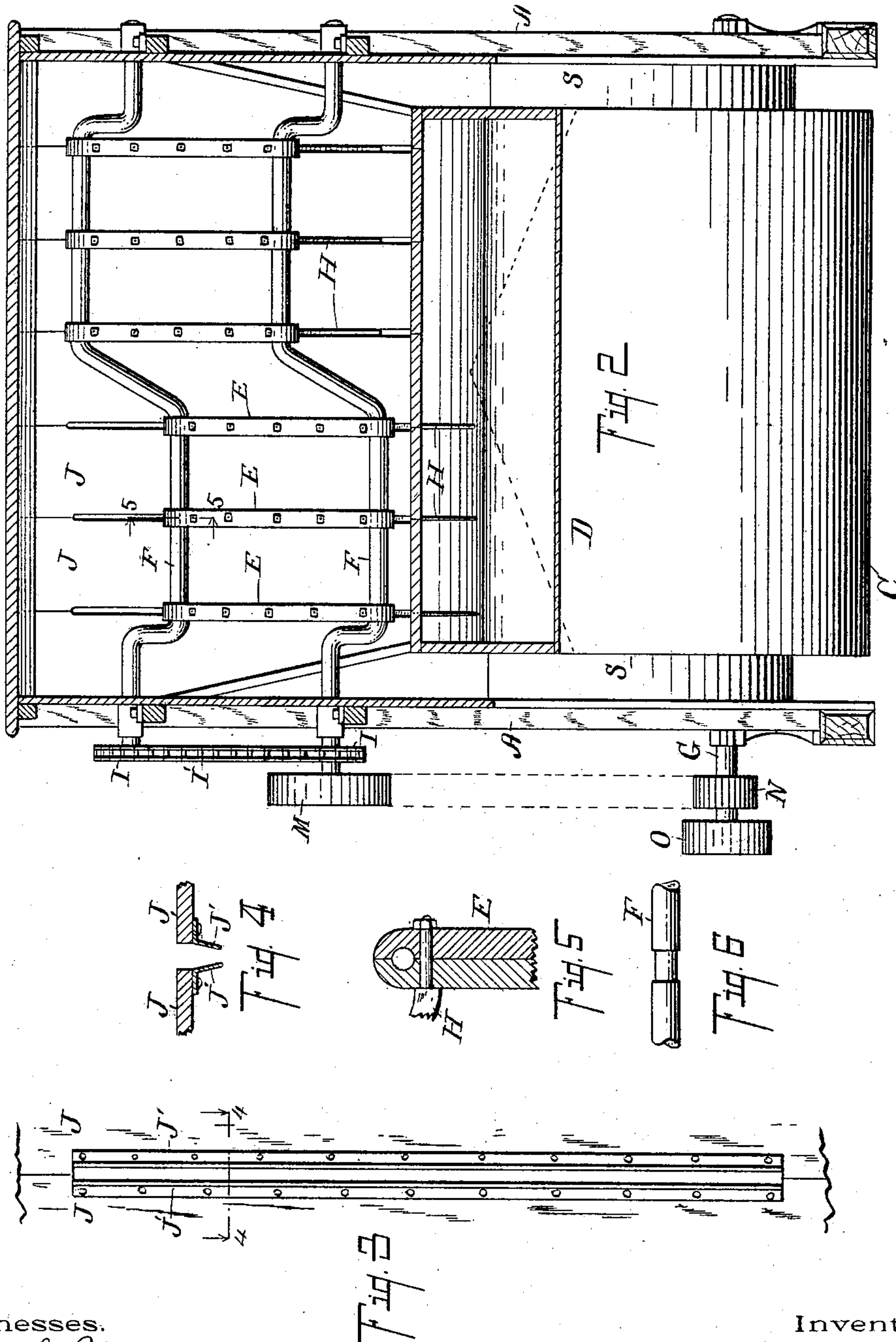
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UNITED STATES PATENT OFFICE.

ARTHUR W. SISSON, OF BATTLE CREEK, MICHIGAN.

PNEUMATIC STACKER.

SPECIFICATION forming part of Letters Patent No. 608,306, dated August 2, 1898.

Application filed November 8, 1897. Serial No. 657,898. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR W. SISSON, a citizen of the United States, residing at the city of Battle Creek, in the county of Calhoun and State of Michigan, have invented a certain new and useful Improvement in Pneumatic Stackers for Threshing-Machines, of which the following is a specification.

This invention relates to improvements in straw-stacking or straw-carrying devices for threshing-machines.

This invention relates more particularly to pneumatic stackers or those using fans or blowers to blow the straw through a suitable delivery pipe or tube to the stack.

In the devices as heretofore constructed much difficulty has been experienced in delivering the straw into the blast, where it would be engaged and forced into the delivery-pipe. Many attempts have been made to secure these results by utilizing more than a single fan, by placing the fan in the upper part of the threshing-machine, by providing endless carriers to deliver the straw into the blast, and by various other means. The problem is considerably complicated by the fact that in the separators of the large capacities now manufactured the height of the same has about reached its limit, owing to the construction of barn-door openings where the machines are used. It is desirable to deliver the straw into the blast as little broken as possible that it may preserve its value as straw when delivered into the stack. In machines of this kind it is desirable to deliver the straw as evenly as possible to prevent clogging.

The objects of this invention are, first, to provide in a straw-stacking device an improved combination whereby the straw is readily delivered into the blast to be carried out of the delivery-tube; second, to provide a simple and compact structure of pneumatic stacker which can be utilized in a threshing-machine separator without the necessity of supporting the same on separate trucks as a separate machine, though my structure is adapted to use on separate trucks; third, to provide an improved means of delivering the straw into the blast of the pneumatic straw-stacker which shall positively force the straw into the blast and release the same at that

point; fourth, to provide an improved means of delivering straw into the blast of a pneumatic stacker which shall be substantially continuous and even, so that the blast created by the fan or blower can take care of the straw.

Further objects of my invention will definitely appear in the detailed description to follow.

I accomplish these objects of my invention by the devices and means described in this specification.

The invention is definitely pointed out in the claims. The essential parts of the structure are illustrated in the accompanying drawings, in which—

Figure 1 is a detail of the rear portion of the threshing-machine with improved pneumatic stacker in position, the casing of the separator being broken away to show the details of construction. Fig. 2 is a detail transverse sectional view taken on a line corresponding to line 2 2 of Fig. 1, looking in the direction of the little arrows, showing particularly the means of forcing the straw into the blast with other details. Fig. 3 is an enlarged detail of the passage through which the teeth of the straw-forcing device project and pass, the same being straight instead of curved, as in the machine. Fig. 4 is a transverse detail sectional view on line 4 4 of Fig. 3. Fig. 5 is an enlarged detail transverse sectional view taken on line 5 5, Fig. 3. Fig. 6 is an enlarged detail view showing the journal for carrying the toothed bars E.

In the drawings similar letters of reference refer to similar parts throughout the several views.

Referring to the lettered parts of the drawings, A A represent the side timbers and supports of the rear portion of a threshing-machine separator.

B is one of the rear shafts of the machine, and B' is the carrier which delivers the straw to the back of the machine.

C is the fan or blower in a suitable case to the lower part of the machine in rear of the shoe K, which contains the sieve.

D is the delivery-spout from the blower, which passes rearwardly and upwardly by the rear end of the machine to the delivery tube or pipe D' above, a portion of which is

shown in Fig. 1, for delivering the straw to the stack. The case of blower C is housed over by a roof R, and suitable guide boards or strips S are provided to deliver any chaff and fine straw that may fall upon the same into the draft C', where it will be drawn in and carried up by the blast to delivery-spout D. The usual housing extends under carrier B' to the rear of the machine. An opening is made in the top side of delivery-spout D below and in the rear of this carrier. A suitable guide board or sheet L extends down from the rear of the carrier B to the rear of the opening. To the front of this opening in the delivery-spout is situated the means of engaging the straw and forcing it into the chute or spout D to be engaged by the blast to carry it into the delivery-pipe above. This structure carries vertical rows of teeth II, which are operated to pass through slots in the casing J to the front of them to engage the straw from the carrier B and force it down into the blast. The slots through which the teeth II project are protected by plates of sheet metal J' J', secured to each side and bent toward the center thereof, which strip the straw from the teeth. These teeth are secured to toothed parts E E E by any suitable means, as by screw-nuts on the back or in any well-known manner. Extending across the threshing-machine at this point are shafts F, each of which is bent to form two cranks projecting in opposite directions and the two shafts operating parallel with each other, and are coupled together to that end by sprocket-chain I' over pulleys I I on said shafts. On these are supported the tooth-bars E at each end. Owing to the fact that these bars are supported on oppositely-situated cranks they alternate with each other in their operation—that is, in doing their work first the right hand then the left hand side or sets of teeth strike down through the straw to force the same down in the blast below. The bottom teeth of each group are curved downwardly, so that they force the straw entirely into the blast, as shown by the path of their motion, as indicated by dotted lines in Fig. 1. By dividing the actuating-teeth into groups operating alternately with each other the straw will be delivered evenly, even though it comes into the space in bunches, because the bunches will be broken by the teeth and only a half of it delivered at once. Straw that is not forced into the blast by the teeth remains banked up by the blast in front of the opening into the chute D.

From this description the operation of my straw-stacking machine or device must be clear.

I desire to state in this connection that the structure of my straw delivering and stacking device can be greatly varied in its details without departing from my invention. The exact means of actuating the feeding-teeth I

have shown is preferred by me, and I am aware that there are numerous other means whereby the feeding-teeth can be given substantially the same motion. The plates J' J' to each side of the tines or teeth II strip the straw from the teeth that might stick or adhere there and are almost indispensable, though under certain circumstances they may be omitted.

I desire to state also that I am aware that other styles of fans or blowers than I have shown might be utilized in this connection.

Having thus described my improved straw-stacking device, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the fan or blower C, the upwardly-projecting chute D, leading therefrom with an opening in its upper side; the carrier B' from the thresher delivering above said opening; a suitable casing from the said carrier B' to the opening in the chute having a front L, and back J, said casing containing vertical slots, parallel shafts coupled together transverse to the machine and in the rear of the passage from the carrier to the chute, each having oppositely-projecting cranks between its ends; tooth-bars E, E, journaled on said cranks and connecting the same together; teeth H, on said tooth-bars adapted to project through the slots in the casing J, and guards and strippers J' J' each side of the slots to remove the straw from the teeth all coacting together substantially as described for the purpose specified.

2. The combination of a fan or blower supported in the lower rear part of the machine; a chute or passage leading upwardly or rearwardly therefrom having an opening on its upper side; a casing surrounding said opening and projecting upwardly to receive the straw, said casing containing vertical slots on one side parallel shafts connected together and having cranks; bars connecting said cranks together; teeth or tines on said bars, the bottom ones of which project downwardly and enter the chute in operation; and suitable means of driving the parts as specified.

3. The combination of a fan or blower; a chute or passage leading therefrom having an opening in its wall; a casing around said opening and extending upwardly therefrom for the reception of straw; tines or teeth adapted to project into the casing and chute; and means for actuating said tines or teeth to press the straw into the chute and withdraw them therefrom to release the straw in the chute and allow it to be carried away by the blast.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

ARTHUR W. SISSON. [L. S.]

Witnesses:

HENRY H. HUBBARD,
HARRY McCAMLY.