

No. 639,448.

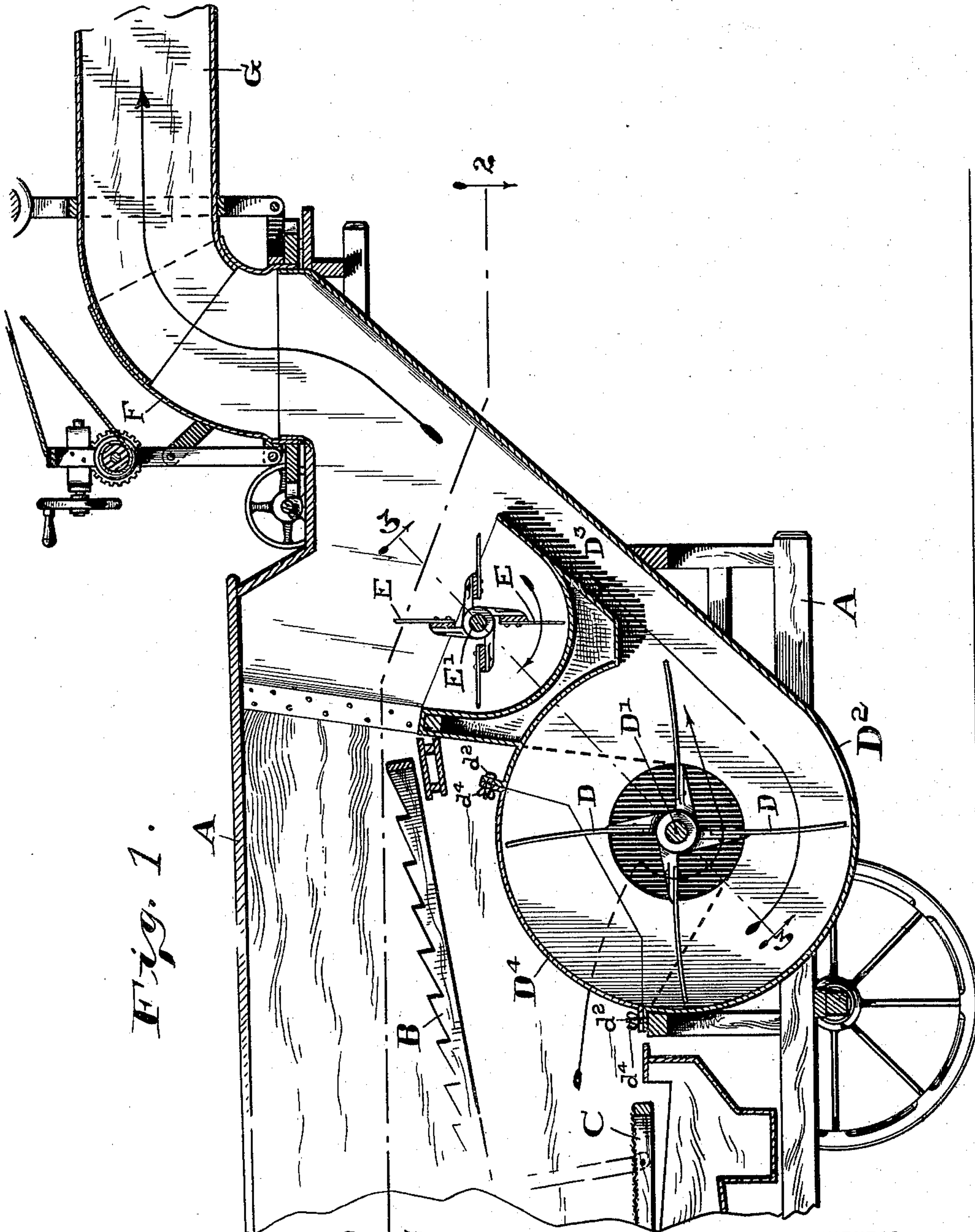
Patented Dec. 19, 1899.

J. K. SHARPE, JR.
PNEUMATIC STRAW STACKER.

(Application filed Feb. 3, 1898.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

J. W. Koerner.
J. A. Walsh.

INVENTOR:

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BY *Chester Bradford,*
ATTORNEY.

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Fig. 2.

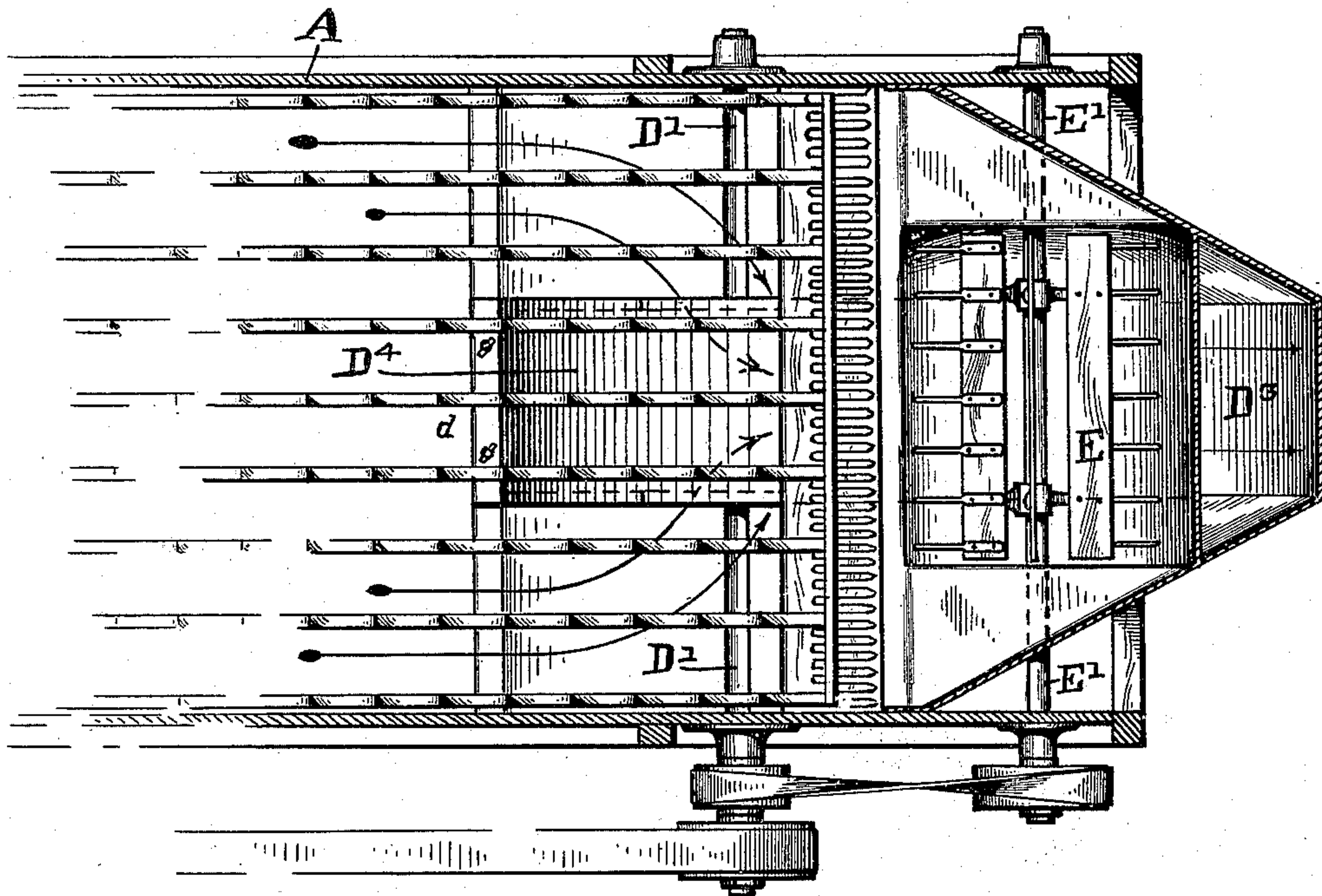
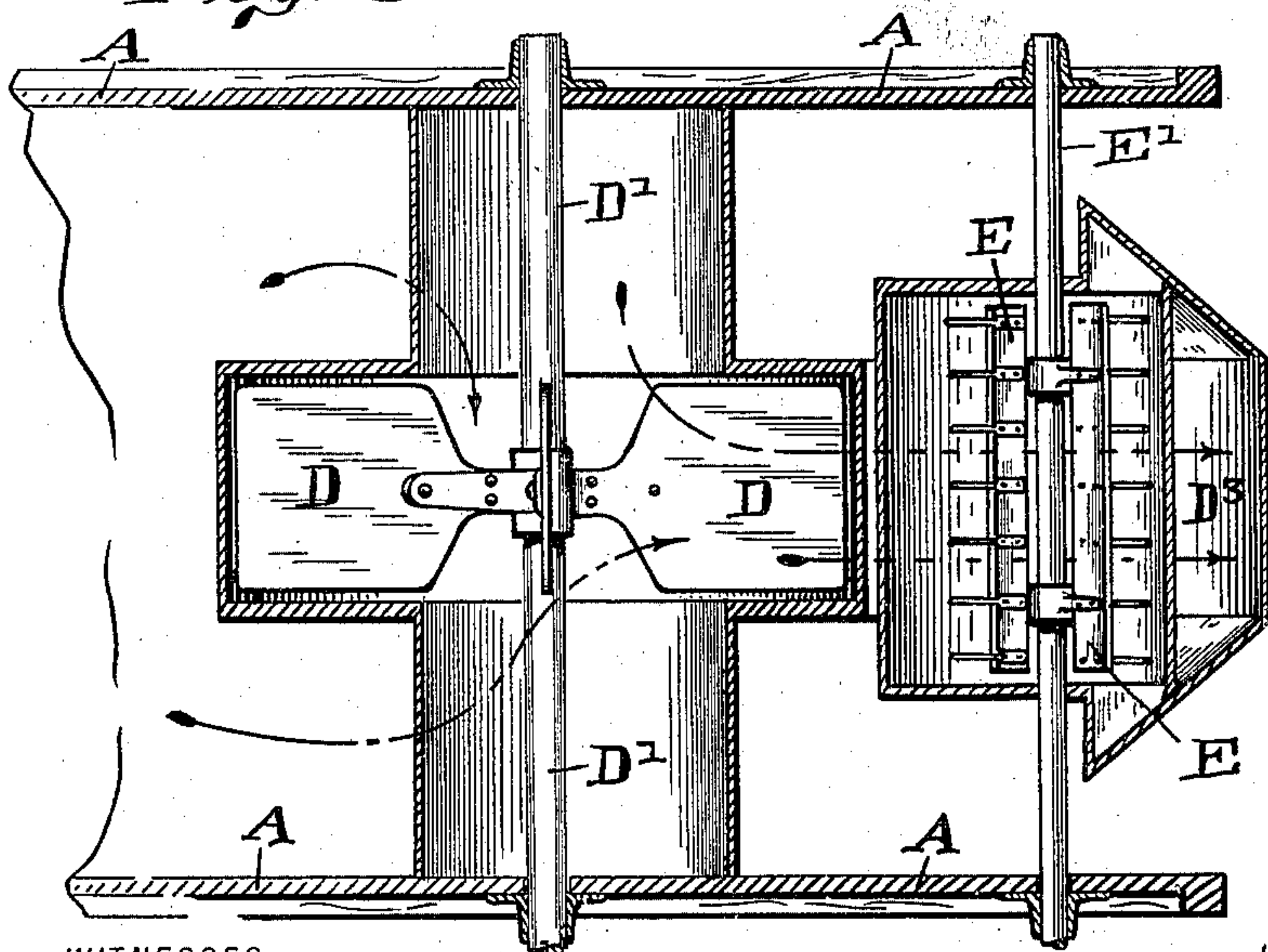


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOSEPH K. SHARPE, JR., OF INDIANAPOLIS, INDIANA, ASSIGNOR TO THE INDIANA MANUFACTURING COMPANY, OF SAME PLACE.

PNEUMATIC STRAW-STACKER.

SPECIFICATION forming part of Letters Patent No. 639,448, dated December 19, 1899.

Application filed February 3, 1898. Serial No. 669,010. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH K. SHARPE, JR., a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Pneumatic Straw-Stackers, of which the following is a specification.

My present invention relates to that class of machines known as "pneumatic straw-stackers," of which that shown and described in Letters Patent of the United States No. 467,476 to James Buchanan, dated January 19, 1892, is a leading example.

My present invention consists in certain improvements upon the machine or apparatus upon which the said Buchanan patent was granted whereby certain advantages are attained, as will be hereinafter more particularly described and claimed.

Referring to the accompanying drawings, which are made a part hereof and on which similar letters of reference indicate similar parts, Figure 1 is a longitudinal vertical sectional view of the rear end of a threshing-machine and the fans, stump, and turn-table of a pneumatic stacker. Fig. 2 is a horizontal sectional view as seen when looking downwardly from the dotted line 2 2 in Fig. 3, and Fig. 3 a similar view as seen from the dotted line 3 3.

In said drawings the portions marked A represent the body, including the framework and casing, of an ordinary threshing-machine; B, the notched bars constituting the straw-floor thereof; C, the shaking-sieves therein, upon which the grain and chaff are precipitated from among the straw after being threshed; D, the main blast-fan of my improved pneumatic straw-stackers; E, an auxiliary or supplemental fan; F, the "stump," so called, of the stacker proper; G, the trunk or chute thereto, and H the hood on the end of said trunk or chute.

The threshing-machine body A, its straw-floor B, and the sieves C, as well as many of the other parts thereof, are not peculiar to my present invention; but they have a bearing thereon, as the relation of the fans thereto is important to the perfect operation of the apparatus. I may say here that my present

invention is the result of extensive and protracted experiments which I have made to determine the most desirable arrangement and relation of parts to secure the best results.

The blast-fan D is in itself of an ordinary form. It is of a considerably larger size than the fan shown in the Buchanan patent above referred to, and its shaft D' is so arranged in relation to the sieves C and the adjacent parts of the structure that the lower side of the fan-eye is considerably below said sieves, for a purpose which will be presently described. Said fan is what is known as an "undershot" fan—that is, it revolves in the direction indicated by the arrow in Fig. 3, and its egress-tube D³ is tangential to the under side of the fan-housing. Said fan-housing D² is of an ordinary construction, except that a section D⁴ is removable. As the fan-housing is positioned, it is, in complete form, somewhat in the way of removing the sieves. By making said section D⁴ removable, as shown, this difficulty is obviated, as when said section is removed there is given plenty of room to handle the sieves, as will be readily understood. Said section is secured to the main structure by suitable bolts d², carrying thumb-nuts d⁴, or by other suitable devices for the purpose.

The auxiliary fan E is positioned above and behind the fan D, but near thereto and to the egress-tube D³ therefrom, as is best shown in Fig. 3. It is mounted on a shaft E' in a "half-housing" of the form shown, the upper part of the fan being outside said housing. Said fan is below the extreme or delivery end of the straw-floor B and is adapted to throw the straw as it comes from said straw-floor into the blast coming through the tube D³ from the fan D. This fan is so arranged and speeded as, so to speak, to "float" the straw over from the point where it leaves the reciprocating straw-floor B, through the passage-way provided for the purpose, into the space below the stump of the stacker, where it is subjected to the greatest force of the blast from the fan D. Its operation at this point is not only to propel the straw forward, and thus supplement the work of the fan D, but to prevent or counteract any tendency on the part of the blast from said fan D to force back in-

stead of drive forward the straw as it comes from the straw-floor of the machine.

Machines of the type shown in the Buchanan patent above referred to have a superiority over those of the type where the straw passes through the fan, in that they supply a more equable air-blast and handle the straw more perfectly; but it has also been recognized that they involved a waste of power because of the necessarily large opening above the fan through which the straw entered the stacker and which involved an expansion of the air at this point, with its consequent loss of force. Machines which drive the straw through the fan have a tendency to break up the straw, which renders it less desirable for many purposes of use and less valuable and merchantable, besides also wasting some power.

By the peculiar arrangement and combination which I have devised I have been able to overcome these disadvantages, securing the direct blast of the Buchanan construction unhampered by a body of straw entering the fan and also the continued pressure attained by the other construction wherein the straw passes through the fan, as by means of my supplemental fan, located and arranged as stated, I am enabled to counteract the expansion of air in the blast and consequent waste of power to which the Buchanan machine is subject.

As will be noticed, especially in Fig. 1, the truck or chute of my machine is rectangular in cross-section instead of round, as has been extensively employed in the machines wherein the straw passes through the fan. In this particular my machine is like that shown in the Buchanan patent above referred to, and I have discovered in the course of my experiment that this construction is much superior to the round form, as it controls the direction of the air, causing it to flow in a straight line and preventing vortical currents and back pressure, to which the round form is subject.

The eyes in the fan-casing D² being lower than the point where the chaff is delivered from the sieves enables said chaff to pass freely into said fan-eyes and out with the blast of air. The chaff, being already of a comparatively fine character, passes freely through the fan, and of course the objection of passing the straw through it is therefore not applicable to the chaff.

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

1. The combination, with a threshing-ma-

chine, of a blast-fan positioned near the ends of the sieves, a fan-housing therefor having its discharge-opening tangential with the underside thereof, a second fan mounted above and to the rear of said blast-fan behind the straw-floor of the threshing-machine, a fan-casing which incases the lower half of said fan but not the other half, and a chute or tube through which the straw is projected onto the straw-stacker.

2. The combination of a threshing-machine, a pneumatic straw-stacker connected to said machine, and an intermediate fan positioned between the fan of the straw-stacker and the lower end of the trunk or chute thereof and behind and below the straw-carrying floor of said threshing-machine, whereby the straw is thrown or floated over from the straw-carrier floor into the main blast of said straw-stacker, substantially as set forth.

3. The combination, with a threshing-machine and a pneumatic stacker, of an auxiliary fan the shaft whereof is positioned below and to the rear of the straw-carrier floor of the threshing-machine.

4. The combination of a threshing-machine, a pneumatic straw-stacker attached thereto, an auxiliary fan positioned alongside the passage-way through which the straw travels from the threshing-machine to the straw-stacker, and a half-housing for said fan the top whereof inclines downwardly from the straw-carrier floor to said passage-way, that side of said fan which operates upon the straw being uncovered while the opposite side is contained within said half-housing.

5. The combination, in a combined threshing-machine and pneumatic straw-stacker, with the framework, casing and passage-ways thereof, of the large blast-fan D positioned low down and close behind the sieves of the threshing-machine, a fan-casing therefor the eye whereof is below the delivery-point of the chaff, whereby said fan is adapted to receive the chaff as it is delivered from the sieves, an independent passage-way being provided from the upper portion of the threshing-machine to the stump of the straw-stacker, and an auxiliary fan positioned alongside the said straw passage-way, all substantially as shown and described.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 31st day of January, A. D. 1898.

JOSEPH K. SHARPE, JR. [L. S.]

Witnesses:

CHESTER BRADFORD,
JAMES A. WALSH.