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J. K. SHARPE, JR.

FAN FOR PNEUMATIC STACKERS.

(Application filed Aug. 4, 1902.)

(No Model.)

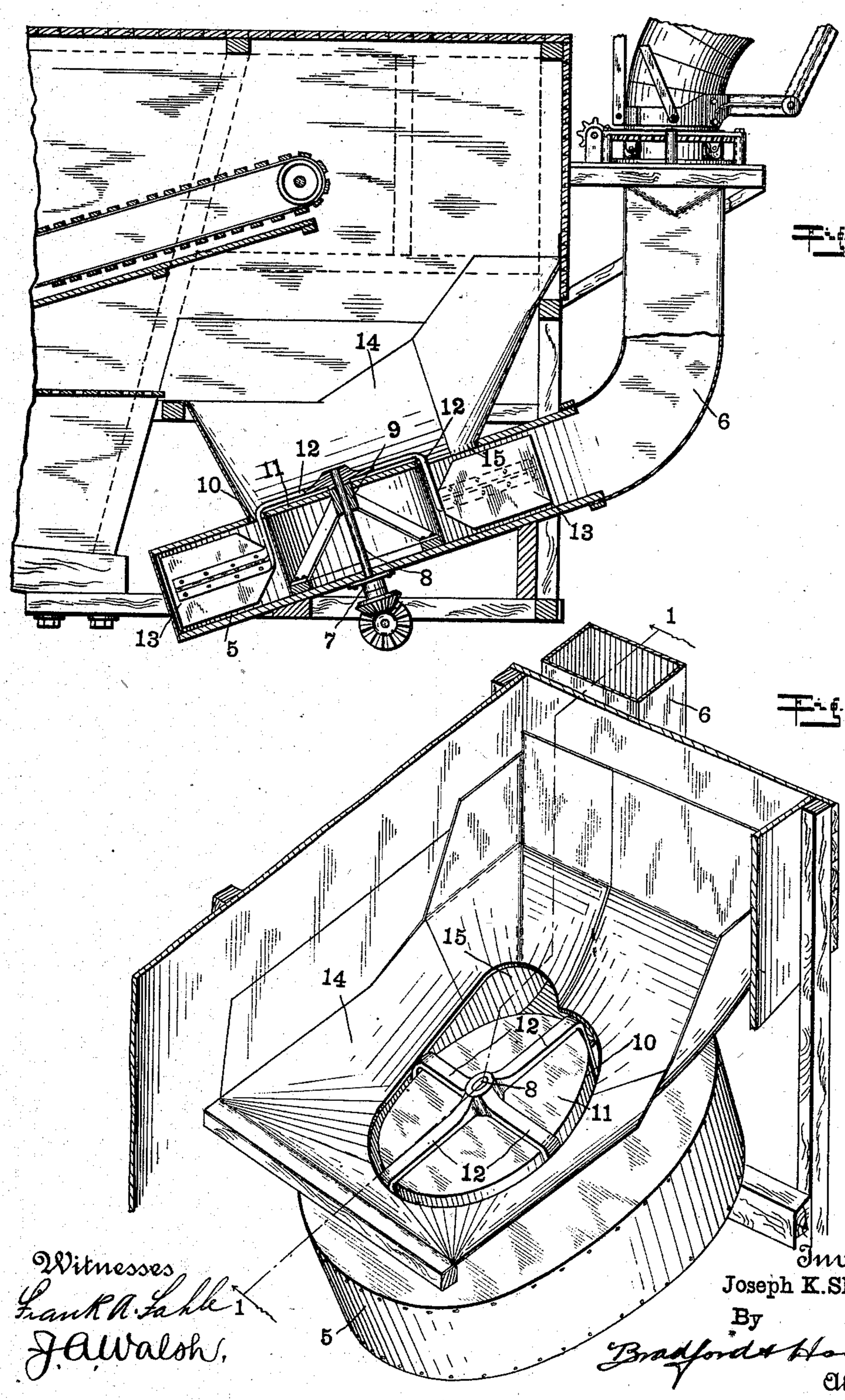

Fig. 1.

Fig. 2.

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UNITED STATES PATENT OFFICE.

JOSEPH K. SHARPE, JR., OF INDIANAPOLIS, INDIANA, ASSIGNOR TO THE INDIANA MANUFACTURING COMPANY, OF INDIANAPOLIS, INDIANA, A CORPORATION OF WEST VIRGINIA.

FAN FOR PNEUMATIC STACKERS.

SPECIFICATION forming part of Letters Patent No. 714,525, dated November 25, 1902.

Application filed August 4, 1902. Serial No. 118,346. (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 Fans for Pneumatic Stackers, of which the following is a specification.

In the operation of pneumatic stackers of that type in which the straw or other material is introduced into the blast mechanism at a point substantially at the eye of the fan difficulty is experienced by reason of the tendency of heavy charges of straw to choke the fan, and thus reduce the carrying capacity.

The object of my invention is to produce a fan-housing and hopper therefor of such form that the greater portion of straw, while entering the mechanism substantially at the eye of the fan, will nevertheless pass immediately into the discharge-spout instead of being drawn around through the fan-casing by the fan-blades.

A further object of my invention is to provide means which will allow the extension of the inner end of the fan-shaft and the introduction of an additional bearing therefor, which bearing may be at or near the upper plane of the fan-casing, and yet be protected from the straw.

The accompanying drawings illustrate my invention.

Figure 1 is a vertical section on line 1 1 of Fig. 2, and Fig. 2 is a perspective view of the fan-casing and hopper leading to the eye thereof.

In the drawings, 5 indicates a fan-casing substantially circular in cross-section and having a discharge-spout 6 leading substantially tangentially therefrom in the usual manner. Casing 5 carries at the center of its under side a bearing 7, in which is mounted the fan-shaft 8, said fan-shaft being extended through the casing and supported at its inner end by a bearing 9, suitably supported from the floor of the casing. Surrounding bearing 9 and extending from the floor of the casing into the eye of the fan-casing is a core 11, which may be stationary, as shown in the drawings, or may be attached to the fan-shaft, so as to rotate therewith. The fan-arms 12 are secured to the inner end of the shaft 8, which inner end projects beyond the core 11. Each arm 12 extends substantially radially from the shaft 8 to the annular space or eye 10, surrounding the core and is then curved downward into the casing, and to this downward end is secured a suitable fan-blade 13. Leading toward the eye 10 is a hopper 14, of any desirable form, said hopper, however, being cut away immediately adjacent the discharge-spout 6 to form a supplemental eye 15, which forms an enlargement of the annular eye 10. The position of the supplemental eye 15 is controlled by the position of the discharge-spout 6, and said eye may be arranged to one side of the machine, as shown in Fig. 2, or, if desired, the entire fan-casing may be swung to so change the position of the discharge-spout 6 as to bring the said supplemental eye 15 substantially on the medial line of the hopper without departing from my invention.

In operation the fan is rotated in the usual manner and creates a blast through the discharge-spout 6, the air-supply being drawn through the annular eye 10 and the supplemental eye 15. As the straw or other material to be operated upon falls into the hopper the greater portion thereof is drawn directly through the supplemental eye 15 and from thence passes out through the discharge-spout. That straw which does not immediately fall into the supplemental eye 15 is caught by the arms 12 and by them turned in the hopper until it comes to the supplemental eye 15, through which it is then drawn. The chaff and smaller stuff will pass through the annular eye 10; but the larger mass of material will be prevented from passing through this small annular space by the central core. By the construction described the greater portion of the material operated upon is prevented from passing into engagement with the blades of the fan and is ejected directly through the discharge-spout. The construction also permits the lengthening of the fan-shaft and the provision of the second bearing 9, thus adding materially to the rigidity of the structure.

I claim as my invention—

1. The combination, with a fan-casing having a discharge-spout and an annular eye enlarged adjacent the discharge-spout, of the fan-shaft extending through the casing and carrying fan-blades arranged to traverse the casing, and bearings for the shaft near each end thereof.

2. The combination, with a fan-casing having a discharge-spout and a central eye leading to said discharge-spout, of a central stationary core arranged in said eye, a shaft extending through said core, suitable bearings for said shaft, fan-arms, carried by the shaft, extending over the inner end of the core and downward into the fan-casing through the annular space remaining of the eye of the fan-casing, and fan-blades secured to said arms.

3. The combination, with a fan-casing having a discharge-spout and an eye leading into its interior, said eye being substantially circular for its major portion and enlarged immediately adjacent the discharge-spout, of a fan-shaft, and the fan-blades arranged to traverse the casing.

4. The combination, with a fan-casing having a discharge-spout and a central eye leading to said discharge-spout and enlarged adjacent said spout, of a central stationary core arranged in said eye, a shaft extending through said core, suitable bearings for said shaft within the core, fan-arms, carried by the shaft, extending over the inner end of the core and downward into the fan-casing through the annular space remaining of the eye of the fan-casing, and fan-blades secured to said arms.

5. The combination, with a fan-casing having a discharge-spout and an eye leading into its interior, of a fan-shaft, a central core surrounding said shaft and extending into the eye of the fan, and blades carried by the fan-shaft to traverse the annular portion of the fan-casing.

6. The combination, with a fan-casing having a discharge-spout and an eye leading into its interior, of a stationary core extending into said eye, a fan-shaft carrying blades arranged to traverse the annular remainder of the fan-casing, and bearings for the shaft within the core.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 2d day of July, A. D. 1902.

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

Witnesses:

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