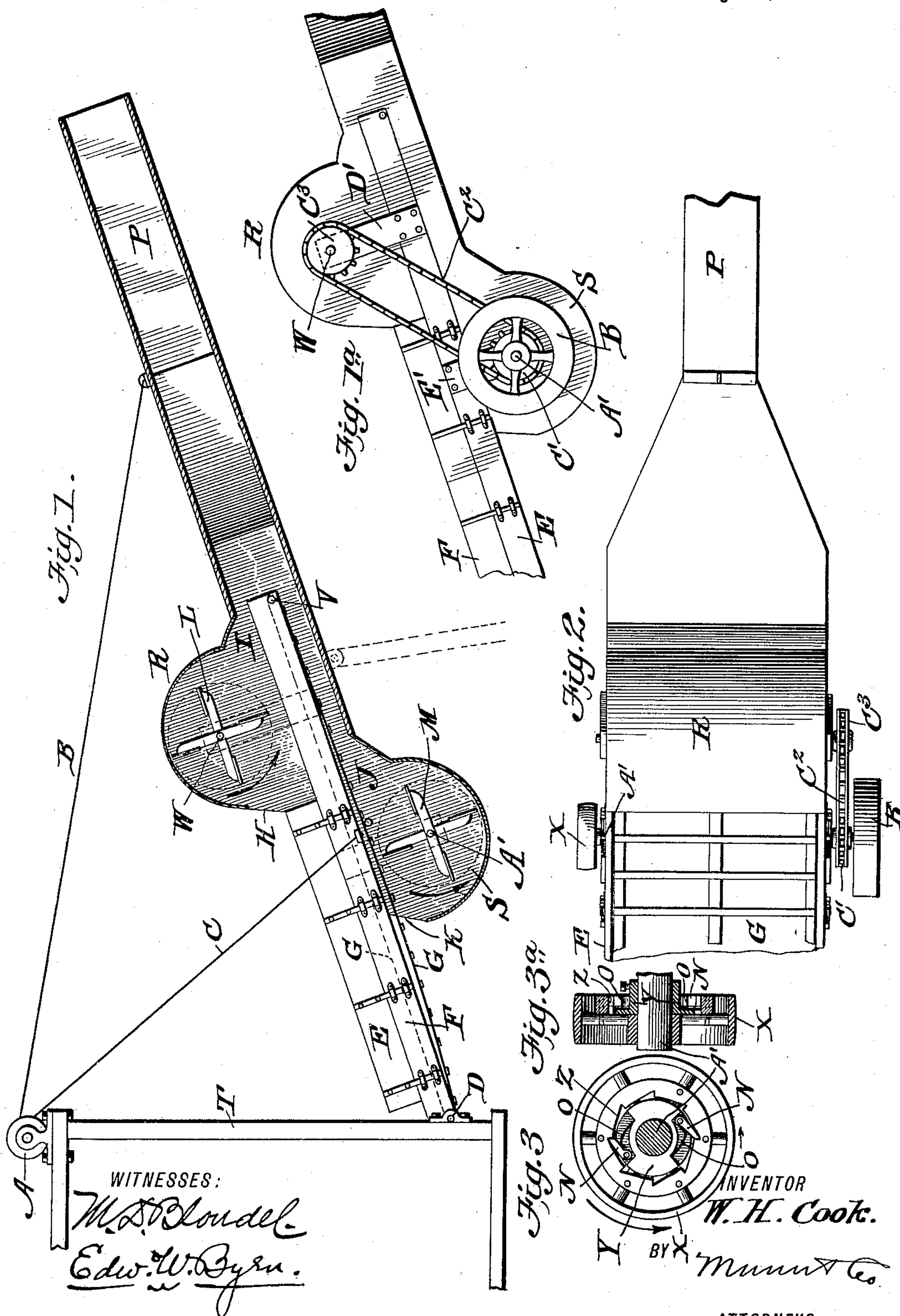


(No Model.)

W. H. COOK.  
PNEUMATIC STACKER.

No. 603,593.

Patented May 3, 1898.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

WILLIAM H. COOK, OF WINFRED, SOUTH DAKOTA, ASSIGNOR TO THE INDIANA MANUFACTURING COMPANY, OF INDIANAPOLIS, INDIANA.

## PNEUMATIC STACKER.

SPECIFICATION forming part of Letters Patent No. 603,593, dated May 3, 1898.

Application filed December 28, 1896. Serial No. 617,255. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. COOK, of Winfred, in the county of Lake and State of South Dakota, have invented a new and useful Improvement in Pneumatic Straw-Stackers, of which the following is a specification.

My invention is in the nature of a pneumatic straw carrier and stacker in which the straw is taken from the endless elevator-apron and is carried along by the force of a blast of air to the desired point; and it consists in the special construction and combination of parts, which I will now proceed to describe, with reference to the drawings, in which—

Figure 1 is a side elevation, partly in section. Fig. 1<sup>a</sup> is a side view of the fan-case; Fig. 2, a partial plan view, and Fig. 3 an enlarged side view in detail, of the ratchet clutch; and Fig. 3<sup>a</sup> is a section of the same.

In the drawings, E F is a trough-shaped frame, in which travels the usual endless apron G, which is provided with transverse slats and constitutes a well-known form of carrier. The trough-shaped frame at its inner end is hinged at D to a suitable upright frame T, so that said trough-shaped frame may be adjusted to different angles of elevation.

At the outer end of the trough-shaped frame there is a transverse roller V, around which the endless apron passes, and a similar roller is located at the inner end. About the outer end of said trough-shaped frame there is constructed a double housing or casing, one portion R of which is above the end of the trough and the other portion S of which is below it. This casing converges or contracts at its outer end, so as to connect with a pipe P. The pipe, casing, and trough are rigidly connected together and are suspended at any desired inclination by ropes B C, passing around a pulley or windlass A at the top of the upright frame. If desired, supporting-legs, as shown in dotted lines, may also be used, either alone or in combination with the suspending-ropes, to hold the casing and pipe in proper position.

Within the casing R there is arranged a rotary fan L, and in the lower casing S there is arranged a rotary fan M, both of which fans are geared to revolve in the direction of their respective arrows, the fan L taking in air through the opening H in its casing and dis-

charging it through the throat I into pipe P, while the fan M takes in air through the opening K in its casing and discharges it through the throat J into the pipe P, so that the straw from its carrier-apron is discharged into the medium line of these two converging streams of air to be carried out by the same through the pipe P to any desired point. In this manner the straw is delivered into the midst of a moving body of air without such straw passing into the fans at all.

The fan M is rotated by a pulley X on its shaft A', which pulley receives motion through a belt (not shown) from a driving-pulley on one of the feed-rollers of the endless apron or from any other suitable pulley, and the upper fan is driven from the lower fan by means of a sprocket-wheel C' on the end of the fan-shaft A', a chain C<sup>2</sup>, and a corresponding sprocket-wheel C<sup>3</sup> on the upper-fan shaft W.

The upper-fan shaft is journaled in uprights D', rising from the outer end of the trough-shaped frame, and the lower-fan shaft is journaled in hangers E', extending downwardly from the outer end of the trough-shaped frame, and a fly-wheel B on the lower-fan shaft serves to insure a uniform motion to the fans.

It sometimes happens that the endless apron of the straw-carrier and its driving mechanism will be retarded in motion by choking with straw, and if this should take place the fans and fly-wheel were positively geared thereto the unimpeded momentum of the latter would be liable to involve a destructive strain upon the driving mechanism. To avoid this, the drive-pulley X and the fan-shaft A' are coupled for positive revolution together in one direction but for independent revolution in the opposite direction. For this I employ a ratchet-clutch, as shown in Fig. 3. The drive-pulley X has an internally-projecting ring of ratchet-teeth Z, and the shaft A' has a head Y with two opposite recesses, in which are pivoted to the head pawls N, forced outwardly into engagement with the ratchet-teeth by springs O. When the pulley X is rotated in the direction of the arrow, its ring of teeth Z catches against the pawls N and locks the pulley to rigid revolution with the head Y and its fan-shaft; but if the speed of the



pulley X be retarded or stopped the momentum of the fly-wheel and fans turns the head Y with its pawls N over the ratchet Z until the speed of the pulley catches up again with the fan.

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

1. A pneumatic pipe conveyer, combined with an endless apron and two fans one located above and the other below the end of the elevator-apron substantially as and for the purpose described.

2. A pneumatic straw-stacker having an endless elevator-apron, a pneumatic pipe conveyer, and a rotary fan delivering a current of air into the same said fan having a ratchet-clutch connection with its driving mechanism to permit the fan to continue its revolution unimpeded by the retardation of the driving mechanism substantially as described.

3. A pneumatic pipe conveyer, combined with an endless elevator-apron, two rotary fans, one located above and the other below

the outer end of the elevator-apron, gears connecting the two fans, and a fly-wheel regulating their motion substantially as and for the purpose described.

4. The combination with a hinged trough-shaped frame, of an endless-apron elevator, a pipe conveyer, and fans and fan-casings arranged at the outer end of the trough-shaped frame, and means for sustaining and adjusting these devices as to inclination substantially as described.

5. The combination of the trough-shaped frame, and its endless-apron elevator, the double fan-casings R S having inlet-openings next to the elevator-apron, a pipe conveyer communicating with the opposite side of said casings, and two rotary fans arranged one above and the other below the end of the revolving apron substantially as and for the purpose described.

WILLIAM H. COOK.

Witnesses:

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