

UNITED STATES PATENT OFFICE.

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STRAW-STACKER.

SPECIFICATION forming part of Letters Patent No. 536,645, dated April 2, 1895.

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To all whom it may concern:

Be it known that I, JOHN C. MCCOLLOUGH, a citizen of the United States, residing at Crawfordsville, in the county of Montgomery and State of Indiana, have invented a new and useful Straw-Stacker, of which the following is a specification.

My invention refers to a class of straw-stackers known as cyclone or wind-blast stackers and has for its object in general the production of a new and useful wind-blast stacker for blowing the straw and chaff directly from the rear end of the thrashing-machine to the desired point of delivery and to this end my invention consists in the peculiar construction, combination, and arrangement of the several parts as will be fully set forth and described in the following description and claims. This object has been fully attained by the mechanism illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of my invention attached at the rear end of a thrashing-machine. Fig. 2 is a top-plan of the same. Fig. 3 is a bottom plan of my stacker minus the outer section of the blast-pipe. Fig. 4 is a top plan of the same. Fig. 5 is a cross-section of the blast-pipe on the line M. N. Fig. 1. Figs. 6 and 7 are respectively a side and an end plan of the blast-fan. Figs. 8 and 9 are a side and an end plan respectively of the box-shaped blast-changers.

Like numbers of reference indicate corresponding parts throughout the several views.

In the embodiment of my invention I use a revoluble blast-fan and shaft 1 fixed in a suitable housing 2 attached at the rear end of the thrasher frame 3, an ovoid metallic blast-pipe 4 hinged and pivoted to the thrasher frame adjacent to the blast-fan housing 2, and suitable appliances as hereinafter described for adjusting the pipe and blast vertically or horizontally as may be desired by the operator. The blast-fans 1², operating in the housing 2 on the over-blast principle for throwing the current upward and backward into the blast-pipe 4, are mounted on each end of a revoluble shaft 1 having end and center bearings 1¹ which prevent any springing of the fan-shaft 1 and the consequent beating of the fans 1² and throws a strong, regular current

through the blast-pipe 4 which carries the straw and the chaff with the blast to the delivery end of the pipe and discharges it on the stack. The fan-housings 2 are provided at the blast-openings with a pair of box-shaped blast-changers 5 pivoted at their inner ends to said fan housings. For automatically operating the blast changers parallel with the horizontal movement of the pipe I provide a pair of cross-arms 5¹ pivotally secured to the blast-changers 5, a rearwardly projecting lever 5² pivoted centrally on the cross-arms 5¹, and having its fulcrum pivot on the inner cross arm and a suitable rope or cable 5³ rigidly knotted through the rear end of said lever, passing through sheaves 5⁴ mounted upon the rear side of the thrasher, and the outer ends securely knotted in the eyes 5⁵ mounted upon the sides of the blast-pipe. By the operation of this peculiar construction the blast-changers move horizontally in either direction simultaneously with the horizontal movement of the pipe directing the blast at all times parallel with the pipe.

The metallic blast-pipe 4 being essentially ovoid in shape, comprises two sections; a hinged and pivoted chute-like lower section 4 and an outer section 4¹ hinged at the upper side to the chute like lower section so as to be folded over against the top of the thrasher in traveling. The lower inner section 4 being chute-like forming a receptacle for the reception of the straw and chaff as it falls from the delivery end of the thrasher, is hinged at 4² on the roller 4³ journaled through the supporting standards 3¹ at the rear end of the thrasher frame for allowing the pipe to be operated either vertically or horizontally. It will further be observed that the pipe tapers gradually toward its delivery end for condensing the current or blast so as to keep the pipe completely cleared of chaff and heavy substances while thrashing. The outer section 4¹ is provided on the upper side with a movable adjustable deflector 6 consisting of an adjustable scoop-shaped deflector 6 hinged at the outer end of a longitudinally movable arm 6¹ securely, yet movably, held in position by a cap-piece 6². A vertical arm 6³ secured at the rear side of the scoop-shaped deflector 6 is provided with a cord or rope 6⁴ running down to a pin 6⁵ mounted at the side of the chute-

like lower section as a means for radially adjusting the scoop-shaped deflector. The deflector is moved longitudinally by the manipulation of its windlass 6⁶ securely fixed to the under side of the chute-like lower section and having its cable or rope 6⁷ knotted securely through an eye 6⁸ mounted at the lower end of the deflector arm 6⁹ and passing round a sheave 6⁹ mounted near the upper end of the outer section adjacent to the deflector arm and having both ends securely knotted through an opening in the windlass. By manipulating the windlass the deflector may be extended far out beyond the delivery end of the pipe permitting the straw and chaff to be blown against it and felled on the stack underneath it.

The raising and lowering mechanism for vertically adjusting the blast-pipe consists of a windlass 7 mounted on top of the thrasher having a connecting rope or cable 7⁷ rigidly fastened around it and working over a sheave 7² mounted in the upper end of a suitable standard underneath the blast-pipe supporting roller 10 and is provided with a triangular link 7³ having two outer ropes or cables 7⁴ secured thereto and knotted through eyes 7⁵ mounted at the sides of the outer section of the blast-pipe and provided with a pair of connecting links 7⁶ fixed movably at the outer ends upon each rope or cable 7⁴ and mounted in eyes 7⁷ at the outer end of the chute-like lower section of the blast-pipe. By the manipulation of the windlass 7, having a suitable pawl and ratchet, the blast-pipe may be adjusted vertically and set in any desired position while thrashing.

The mechanism for operating the pipe horizontally consists of a revoluble shaft 8 mounted at the rear end of the thrasher frame adjacent to the pivotal roller and hinge of the chute-like lower section of the blast-pipe and is provided with a suitable cord or cable 8⁷ rigidly fixed at each end of the revoluble shaft and wound in opposite directions around said shaft, having the central portion of the cord or cable knotted securely in an eye 8² mounted rigidly on the under side of the lower section of the blast-pipe. A crank 8³ is provided at the outer end of the revoluble shaft so as to operate the pipe horizontally in either direction.

I have found that a pawl and ratchet is not essential on the windlass-like mechanisms for operating the blast-pipe horizontally and the deflector arm longitudinally to hold them in the desired positions.

About the receptacle edge of the chute-like lower section is a row of buttons for buttoning

on a suitable canvas to cover or to close the delivery end of the thrasher so as to fell the straw and the chaff into the receptacle of the blast-pipe. A frame 9 is secured by a pivot pin 9¹ at the upper side of the rear end of the thrasher. Said frame is provided at the rear side with a spring-hinged leaf 9² which stiffens a canvas used to cover the rear end of the thrasher and allows it to adjust itself suitably to any vertical position of the blast-pipe, and at the ends with a pair of arms 9³ projecting downwardly at the sides of the thrasher. I provide a row of buttons on said arms and spring hinged leaf for buttoning on the upper side of a suitable canvas so as to cover the rear end of the thrasher and allow the canvas and pivoted frame to oscillate horizontally with the horizontal movement of the blast-pipe.

10 refers to a blast-pipe supporting roller mounted on the upper ends of its supporting posts.

In traveling with the thrasher the hinged outer section is folded over against the top of the machine.

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

1. A straw-stacker adapted to be attached at the delivery end of a thrashing machine, the same comprising a revoluble shaft having end and center bearings, a fan mounted on each end of said shaft, a fan-housing, and an ovoid metallic blast-pipe in two sections, a chute-like lower section hinged and pivoted on a roller mounted at the rear end of the thrasher frame adjacent the blast-fan housing, and an outer section hinged at its upper side to said lower section for the purpose of being folded over against the top of the thrasher in traveling, substantially as specified.

2. A straw-stacker adapted to be attached at the delivery end of a thrashing machine, the same comprising a revoluble shaft having end and center bearings, a fan mounted on each end of said shaft, a suitable fan housing inclosing the revoluble blast-fans, a pair of box-shaped blast-changers pivoted on the fan-housing at the blast-openings, and a device for operating said blast-changers, the same being controlled by the horizontal movement of the pipe, substantially as specified.

JOHN C. MCCOLLOUGH.

Witnesses:

H. RICE CANINE,
J. M. WILLIS.