No. 688,823. Patented Dec. 17, 1901.

M. S. BOWERS.

MACHINE FOR RETHRESHING THE TAILINGS IN THRESHERS.

(Application filed June 26, 1901.)

(No Model.)

Fig. 1.

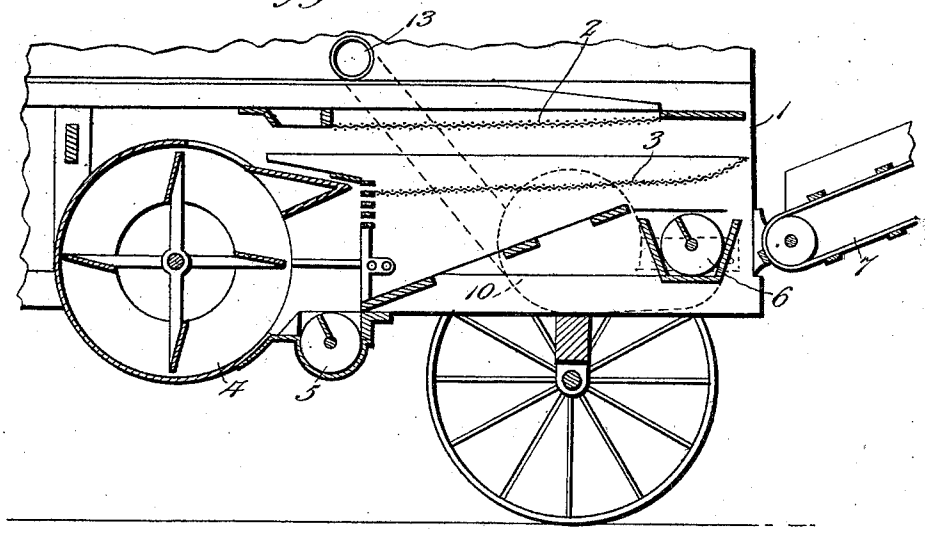


Fig. 2.

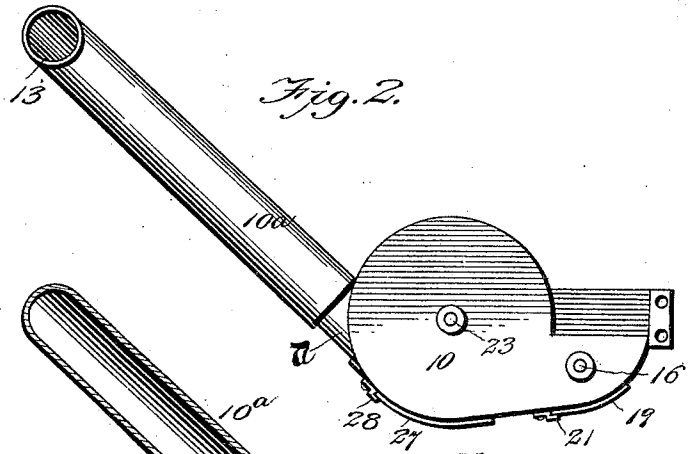


Fig. 3.

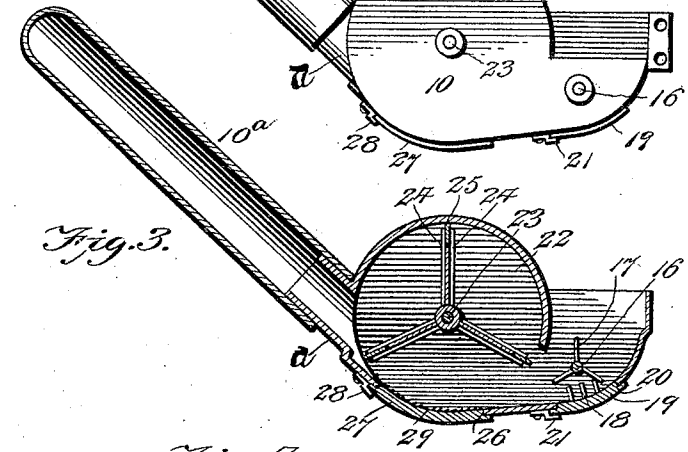
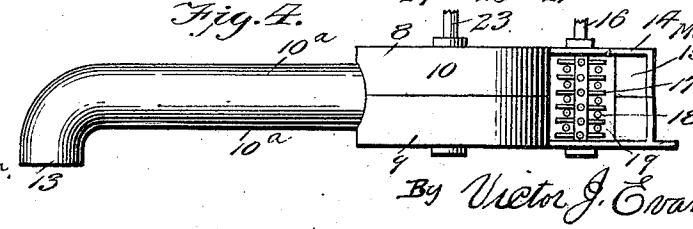


Fig. 4.



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UNITED STATES PATENT OFFICE.

MARTIN S. BOWERS, OF ZANESVILLE, OHIO.

MACHINE FOR RETHRESHING THE TAILINGS IN THRESHERS.

SPECIFICATION forming part of Letters Patent No. 688,823, dated December 17, 1901.

Application filed June 26, 1901. Serial No. 66,124. (No model.)

To all whom it may concern:

Be it known that I, MARTIN S. BOWERS, a citizen of the United States, residing at Zanesville, in the county of Muskingum and State of Ohio, have invented new and useful Improvements in Pneumatic Elevators, of which the following is a specification.

This invention relates to improvements in machines for rethreshing the tailings in a thresher, the object being to provide an elevator in the nature of an attachment to threshing-machines already in use whereby the tailings may be taken from the terminal conveyer and carried to the shoe or riddle, subjecting the tailings to a second threshing and separation, whereby the seed or grain is saved and the chaff discharged from the machine.

The device consists of a combined threshing-cylinder and concave and suction-fan and is adapted to be used in connection with any of the ordinary forms of threshing-machines and clover-hullers, being designed to take the place of the usual elevator which is employed to take the tailings back to the initial point of operation, where they are resubjected to the action of the threshing-cylinder and succeeding operative parts of the machine.

With the above general objects in view the invention consists in the novel construction, combination, and arrangement hereinafter fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a longitudinal section through the rear portion of the threshing-machine, indicating by dotted lines the position and relation of the pneumatic elevator of this invention. Fig. 2 is a side elevation of the pneumatic elevator *per se*. Fig. 3 is a central longitudinal section through the same. Fig. 4 is a plan view thereof.

Similar characters of reference designate corresponding parts in all figures of the drawings.

The elevator contemplated in this invention is designed for application to an ordinary threshing-machine, a portion of which is illustrated in Fig. 1. In said figure, 1 designates the frame of the threshing-machine, 2 the separating-pan, 3 the shoe or riddle, 4 the blast-fan, 5 the grain-conveyer, 6 the tailings-conveyer, and 7 the chaff and straw apron.

In carrying out the present invention I employ a combined blast-fan and auxiliary thresher, comprising a casing constructed in similar sections 8 and 9 of cylindrical form, closed at their outer sides by the side walls 10 and open at their inner sides where they meet, and formed at the delivery end of the casing with flanges *a*, over which the lower end of the elevator-pipe engages and is detachably held. The elevator-pipe 10^a is made of light metal and is adapted to fit over the flange *a* and hold the pipe in engagement therewith. The pipe is formed with an elbow 13, adapted to be inserted through the casing or frame 1 of the threshing-machine, as illustrated in Fig. 1, so as to deliver the rethreshed tailings upon the shaking screen and riddle, where both the grain and chaff will be again subjected to the separating action of the blast-fan and shaking-riddle. The sections 8 and 9 of the casing are also provided with rearwardly-projecting extensions 14, which together form a hopper 15, adapted to underlie the projecting end of the trough of the tailings-conveyer 6 to receive the tailings. Within the curved bottom of the hopper 15 is arranged a threshing-cylinder comprising a shaft 16 and fingers or teeth 17 radiating therefrom and by preference made tapering toward their outer extremities. The teeth or fingers 17 coöperate with other teeth or fingers 18 of the same form, projecting upward and inward from the inner surface of a concave-plate 19, which fits in an opening 20 and is detachably secured in the bottom of the hopper by any suitable means, as shown in Fig. 3. As shown, clips or angle-irons 21 are connected to the bottom of the hopper for the purpose of holding the concave 18 in place.

The two sections 8 and 9 of the casing form a fan-chamber 22, in which is rotatably mounted a fan comprising a shaft 23, with sets of blades 24 projecting radially therefrom and spaced a suitable distance apart to receive between them leather packings in the form of sheets 25, which project beyond the outer edges of the blades 24, so as to travel in contact with the inner cylindrical surface of the fan-casing. The bottom of the fan-casing is provided with an opening 26, which is closed by means of a concave plate or door 27, held in place by means of clips 28 or detachably secured in position by any proper fastening.

The inner face of the plate 27 is provided with a rasp-like surface 29, comprising fine teeth, over which the leather strips 25 move, thereby subjecting the grain or seed and the hulls thereof to a thorough threshing after they have been drawn inward through the hopper 15 and subjected to the action of the smaller threshing-cylinder in the bottom of the hopper.

The pneumatic elevator hereinabove described is composed of metal throughout. The fan, threshing-cylinder, and removable doors or plates with which said parts coöperate may all be made reversible, thereby enabling the parts to be turned end for end and materially increasing the life of the attachment. The elevator is adapted to be used in connection with any of the usual forms of threshing-machines and clover-hullers without necessitating any changes whatever and adapts an ordinary threshing-machine to be effectively used as a clover-huller.

It will be apparent that the device as a whole is susceptible of changes in the form, proportion, and minor details of construction without departing from the principle or sacrificing any of the advantages of the invention.

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

1. A rethreshing attachment for threshing-machines in the form of a pneumatic elevator adapted to receive the tailings from the tailings-conveyer and discharge the same upon a riddle, said attachment embodying a casing provided with a receiving-hopper, a blast-fan rotatably mounted in the casing, and threshing devices arranged in the bottom of the hopper in advance of the suction-fan.

2. A rethreshing attachment for threshing-machines in the nature of a pneumatic elevator comprising a fan-casing, a rotary suction-fan mounted therein, a tube leading outward from the fan-casing, a receiving-hopper, threshing devices in the bottom of said hopper in advance of the suction-fan, and removable doors or plates covering the openings in the bottom of the hopper and fan-casing and provided with teeth.

3. A rethreshing attachment for threshing-machines, comprising a two-part casing each section constituting a section of the fan-casing, a receiving-hopper and delivery-tube, removable and reversible doors closing openings in the bottom of the fan-casing and hopper and provided with teeth on their inner surfaces, a rotary thresher mounted in the bottom of the hopper, a rotary blast-fan mounted in the fan-casing provided with radial blades spaced apart, and flexible packings between the spaced blades arranged to extend beyond the edges of the blades and travel in contact with the inner surface of the fan-casing.

In testimony whereof I affix my signature in presence of two witnesses.

MARTIN S. BOWERS.

Witnesses:
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