

(No Model.)

3 Sheets—Sheet 1.

C. E. MAGGARD.

SEPARATOR ATTACHMENT FOR THRASHING MACHINES.

No. 551,679.

Patented Dec. 17, 1895.

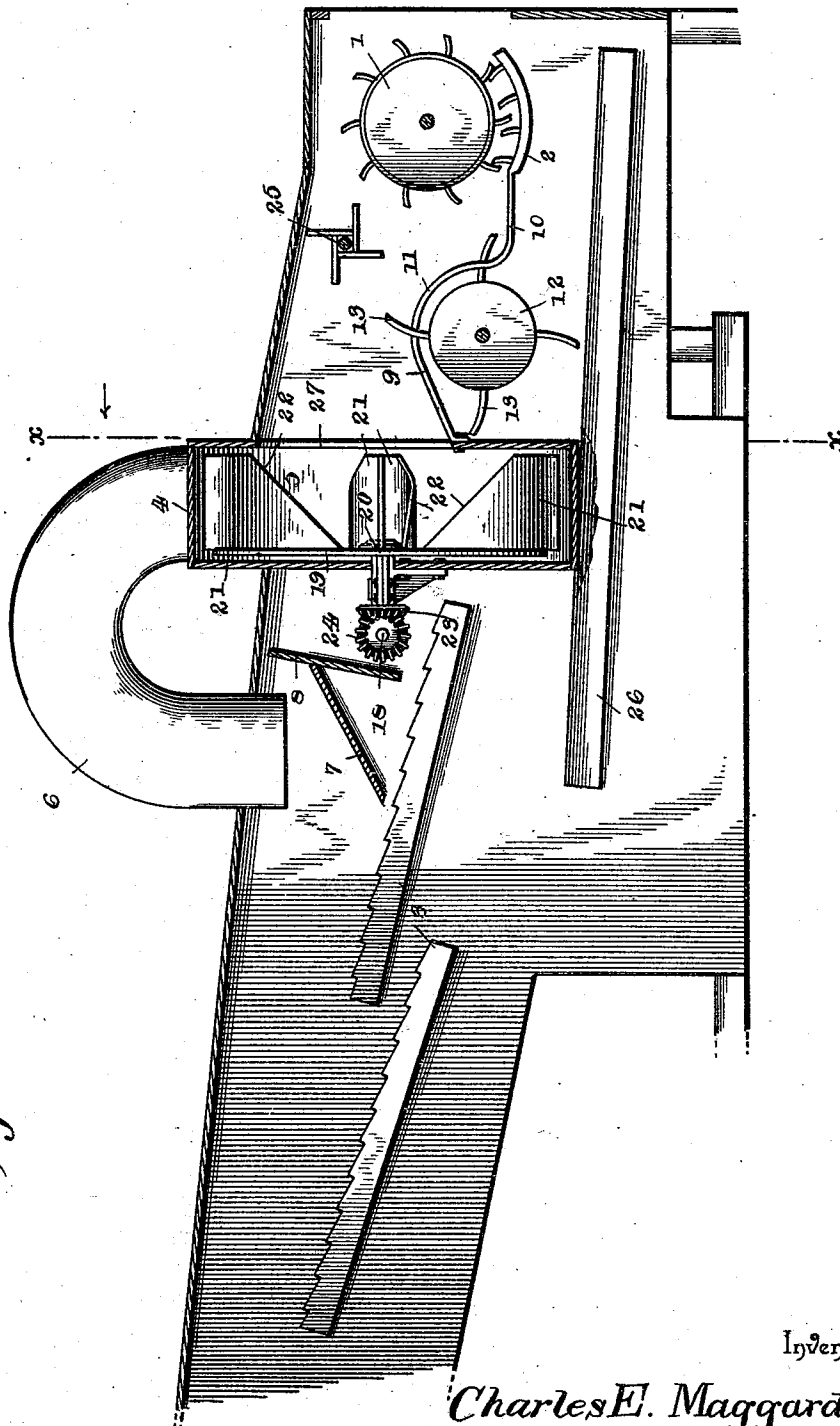


Fig. 1.

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V. B. Hillyard.

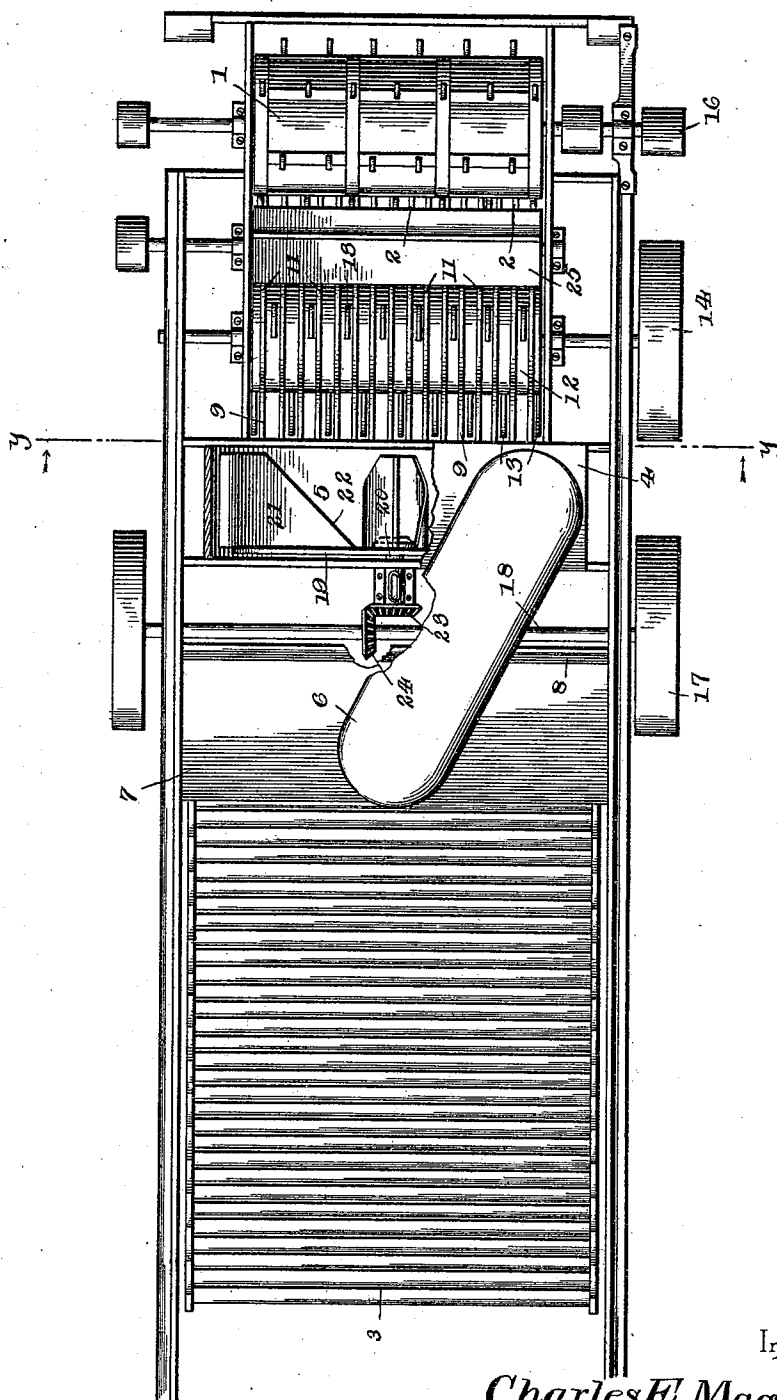
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Fig. 2.



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Fig. 4.

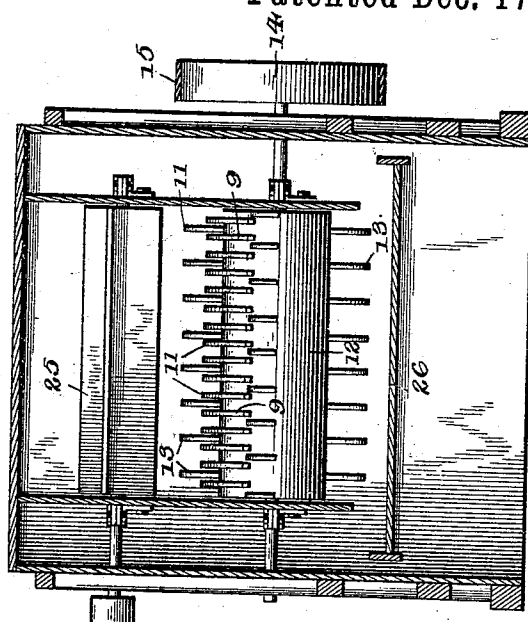
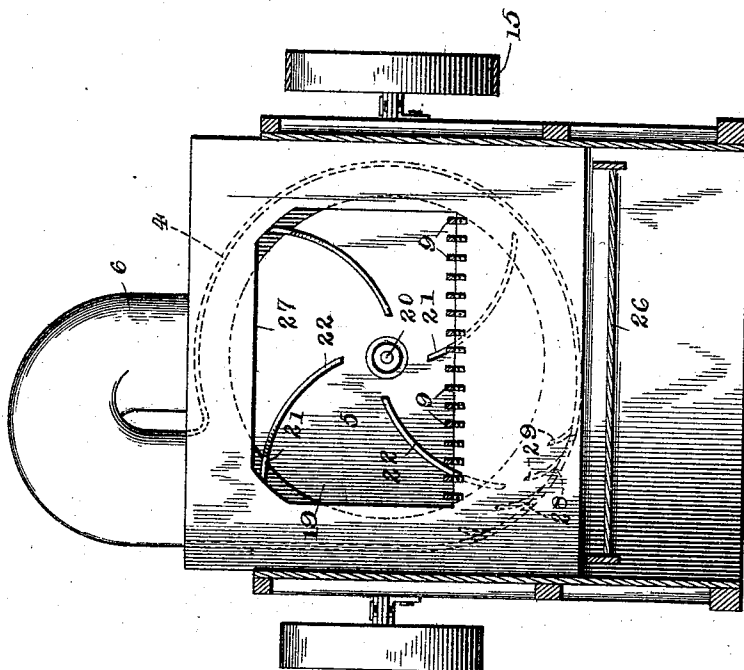


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES E. MAGGARD, OF KANSAS CITY, MISSOURI.

SEPARATOR ATTACHMENT FOR THRASHING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 551,679, dated December 17, 1895.

Application filed June 15, 1895. Serial No. 552,936. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. MAGGARD, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented a new and useful Separator Attachment for Thrashing-Machines, of which the following is a specification.

This invention relates to improvements in machinery for thrashing and separating grain, and aims to provide an attachment for thoroughly and effectively separating the grain from the straw and locating the same between the thrashing-cylinder and the straw-rack, and which will lighten the straw and facilitate the disengagement of the grain therefrom.

The improvement consists primarily of a fan located between the thrashing-cylinder and the straw-rack of an ordinary grain-thrasher, and which is adapted to change the direction of travel of the straw and grain in its passage from the thrashing-cylinder onto the straw-rack.

The improvement also consists of a grate and spiked cylinder disposed between the fan-case and the thrashing-cylinder for agitating, beating and more effectively separating and loosening the grain from the straw prior to the entrance of the latter into the fan-case.

The improvement also further consists of the novel features and the peculiar construction and combination of the parts which hereinafter will be more fully set forth and claimed, and which are illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the attachment, partly in section, and showing its relative disposition to the parts of an ordinary thrashing-machine with which it co-operates. Fig. 2 is a top plan view of the structure illustrated in Fig. 1, parts being broken away. Fig. 3 is a cross-section on the line X X of Fig. 1, looking to the left, as indicated by the arrow. Fig. 4 is a cross-section on the line Y Y of Fig. 2, looking to the right, as designated by the arrow.

The attachment is designed to be applied to any style of thrasher and is located between the straw-rack and the thrashing-cylinder thereof. The thrashing-cylinder 1, the grate 2, and the straw-rack 3 are of ordinary construction, and are illustrated simply to show

the application and relative disposition of the invention. Immediately in front of the straw-rack 3 is arranged a fan-casing 4, in which revolves a fan 5, and this casing 4 is disposed in vertical relation and has a curved spout 6 extending from its upper end and curving over the inner or receiving end of the straw-rack 3. A deflector 7 is located beneath the delivery end of the spout 6 and inclines upwardly and forwardly from its rear edge, and intersects at its upper edge with a vertically-disposed board 8, to which it is joined, and which in the operation of the machine prevents the straw and grain from passing over the deflector 7. The board 8 and the deflector 7 extend the full width of the thrasher, and are arranged over the receiving end of the straw-rack 3.

A grate 9 is placed between the fan-case 4 and the grate 2, and comprises a horizontal portion 10, which joins with and practically forms a continuation of the grate 2, and a curved portion 11, which curves upwardly and rearwardly and is attached to the fan-casing 4. A spiked cylinder 12 is located beneath the curved portion 11 of the grate 9, and its teeth 13, which are curved, are so disposed as to operate between the bars or ribs comprising the grate 9, and these teeth 13 curve in an opposite direction to the movement or travel of the cylinder 12. A band-pulley 14 is mounted upon the outer end of the journal or shaft of the spiked cylinder 12, and is engaged by the driving-belt 15, which passes around a band-pulley 16 on the shaft of the thrashing-cylinder 1 and a pulley 17 on the end of a transversely-disposed shaft 18.

The fan 5 comprises a disk or circular plate 19, which is fastened to one end of a short shaft 20, and a series of blades or wings 21, which are firmly and rigidly attached at one edge to the plate or disk 19, and which curve outwardly in the direction of their length in an opposite direction to the rotation of the fan, and these blades or wings have their inner outer corners cut away, as shown at 22, to provide a clearance space for the entrance of the straw and grain into the fan-casing, thereby providing an unobstructed passage for the grain and facilitating the operation of the fan in drawing into the fan-case the straw and grain and forcing the same through the discharge-spout 6. The short shaft 20, which is

suitably journaled to a bearing provided on the fan-casing 4, has a bevel-pinion 23 at its rear end, which meshes with a corresponding bevel-pinion 24 on the shaft 18 and by means of which motion is transmitted from the said shaft 18 to the fan.

The winged beater 25 is of ordinary construction and is located in its accustomed position, and acts in conjunction with the thrashing-cylinder 1 and the spiked cylinder 12 to move the grain forward to the fan. The pan 26, for receiving the grain, is located beneath the grate 2, spiked cylinder 12, fan-case 4, and the receiving end of the straw-rack 3, and is designed to receive the grain falling from the said parts.

The front side of the fan-casing 4 has an opening 27 formed therein for the passage of the straw and grain therethrough into the fan-case, and the latter has a series of openings 28 in its outer wall for the escape of grain, and these openings 28 are provided wholly to one side of a line passing vertically through the axis of the fan 5, and to the left of said line, as shown most clearly in Fig. 2. A series of curved deflectors 29 are disposed to the right of the openings 28, and are adapted to receive the grain and guide the same through the openings 28.

The operation of the invention is as follows: The grain to be thrashed is fed to the cylinder 1 in the usual manner and passes between the said cylinder and the grate 2 and from the latter onto the horizontal portion 10 of the grate 9, and is caught by the teeth 13 of the spiked cylinder 12 and moved upwardly and forwardly over the curved portion 11 of the grate 9 and into the fan-casing 4, whence it is taken up by the fan 5 and forced through the spout 6 onto the straw-rack 3. The fan 5 thoroughly and effectually lightens the grain and changes its direction of travel, and the curved spout 6 gives proper direction to the said grain, or grain and straw, as it is delivered onto the straw-rack 3.

The precise construction of the fan and the delivery-spout 6 and the relative disposition of these parts are not essential to the spirit of the invention, which contemplates a fan or blower of any pattern and a discharge-spout of convenient form and arrangement to deliver the grain and straw from the fan onto the straw-rack.

Inasmuch as the invention can be adapted to the various makes and styles of thrashers commonly placed upon the market, it is to be understood that changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new is—

1. In a thrasher, the combination with the thrashing cylinder and straw rack, of a fan disposed between the two and receiving the thrashed grain, and adapted to separate the

grain from the straw, and having openings in its casing for the escape of the grain, and a spout communicating with the fan casing to convey the straw therefrom and deliver it upon the straw rack, substantially as set forth.

2. In a thrashing machine, the combination with the thrashing cylinder and straw rack, of an intermediate fan having a discharge spout extending over the straw rack, and the fan case having a series of openings in its outer wall for the escape of grain, substantially in the manner set forth.

3. In a thrashing machine, the combination with the thrashing cylinder and straw rack, of an interposed fan having a discharge spout extending over the straw rack, the fan case having a series of openings in its outer wall, and a series of deflectors disposed to one side of the said openings, substantially as set forth for the purpose described.

4. In a thrashing machine, the combination of the thrashing cylinder and straw rack, with a vertically-disposed fan case located between the thrashing cylinder and straw rack, and having an opening in the side facing the thrashing cylinder, and having a discharge spout extending over the straw rack, and a fan operating within the fan casing and comprising wings which have their inner outer corners cut away, substantially as described for the purpose set forth.

5. In a thrashing machine, the combination with the thrashing cylinder and straw rack, of an interposed fan having a discharge spout extending over the straw rack, and a deflector located above the straw rack and opposite the delivery end of the said spout, and having an upward extension at its front end, substantially as set forth for the purpose described.

6. In a thrashing machine, the combination with the thrashing cylinder and grate, of a second grate forming practically a continuation of the thrasher grate and curving upwardly and rearwardly, and a spiked cylinder located beneath the curved portion of the said second grate and having its teeth operating in the space between the ribs thereof, substantially as set forth for the purpose described.

7. The combination with a thrashing cylinder, its grate, and a straw rack, of a fan arranged in the plane of and between the thrashing cylinder and straw rack, and having a curved delivery spout, a second grate between the fan case and the ordinary grate, and having a horizontal and a curved portion, and a spiked cylinder operating beneath the curved portion of the second grate, substantially as set forth for the purpose described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES E. MAGGARD.

Witnesses:

JOHN J. FITZPATRICK,
A. L. BOUDIN.