

No. 751,619.

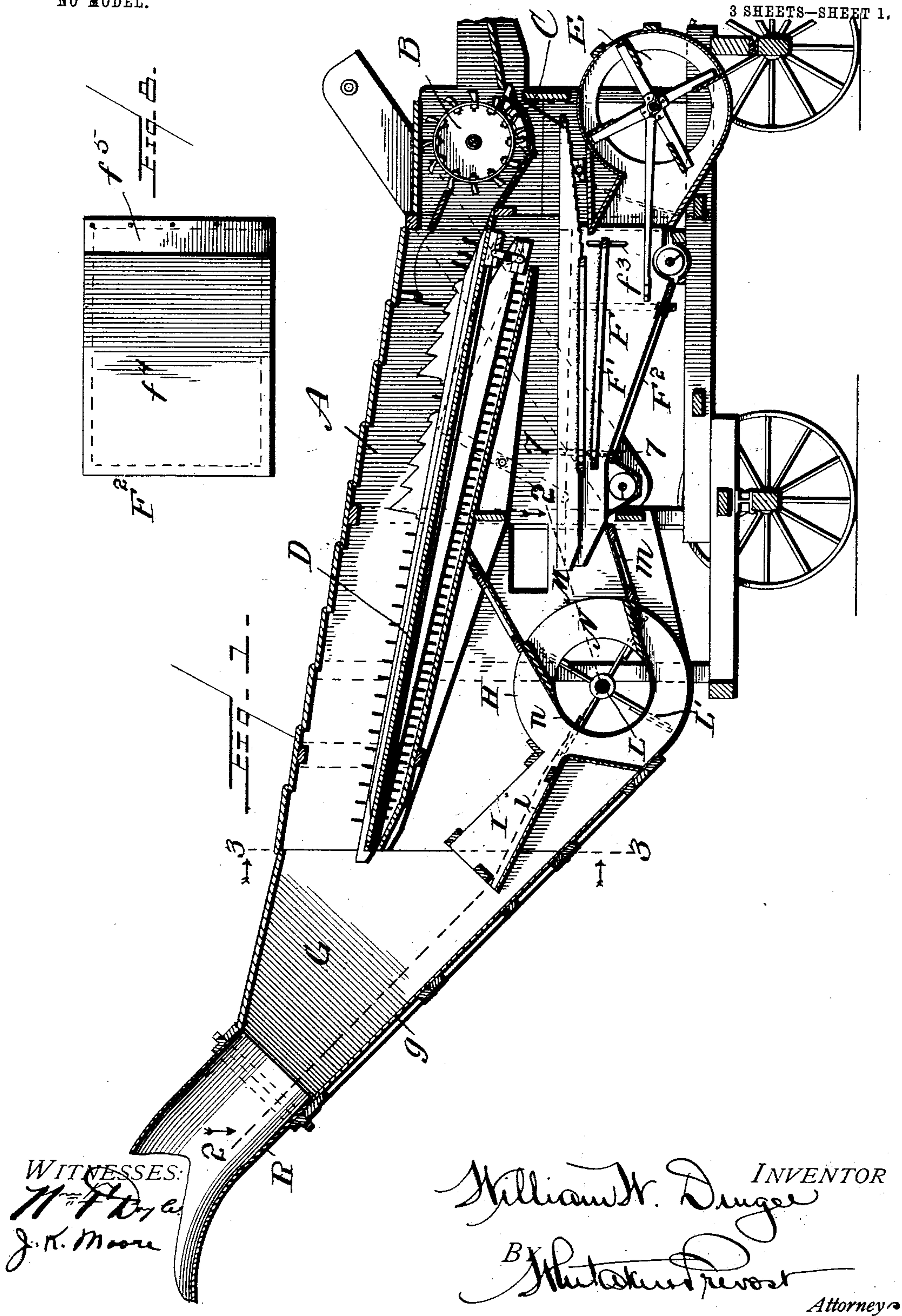
PATENTED FEB. 9, 1904.

W. W. DINGEE.
THRESHING MACHINE.

APPLICATION FILED JULY 27, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



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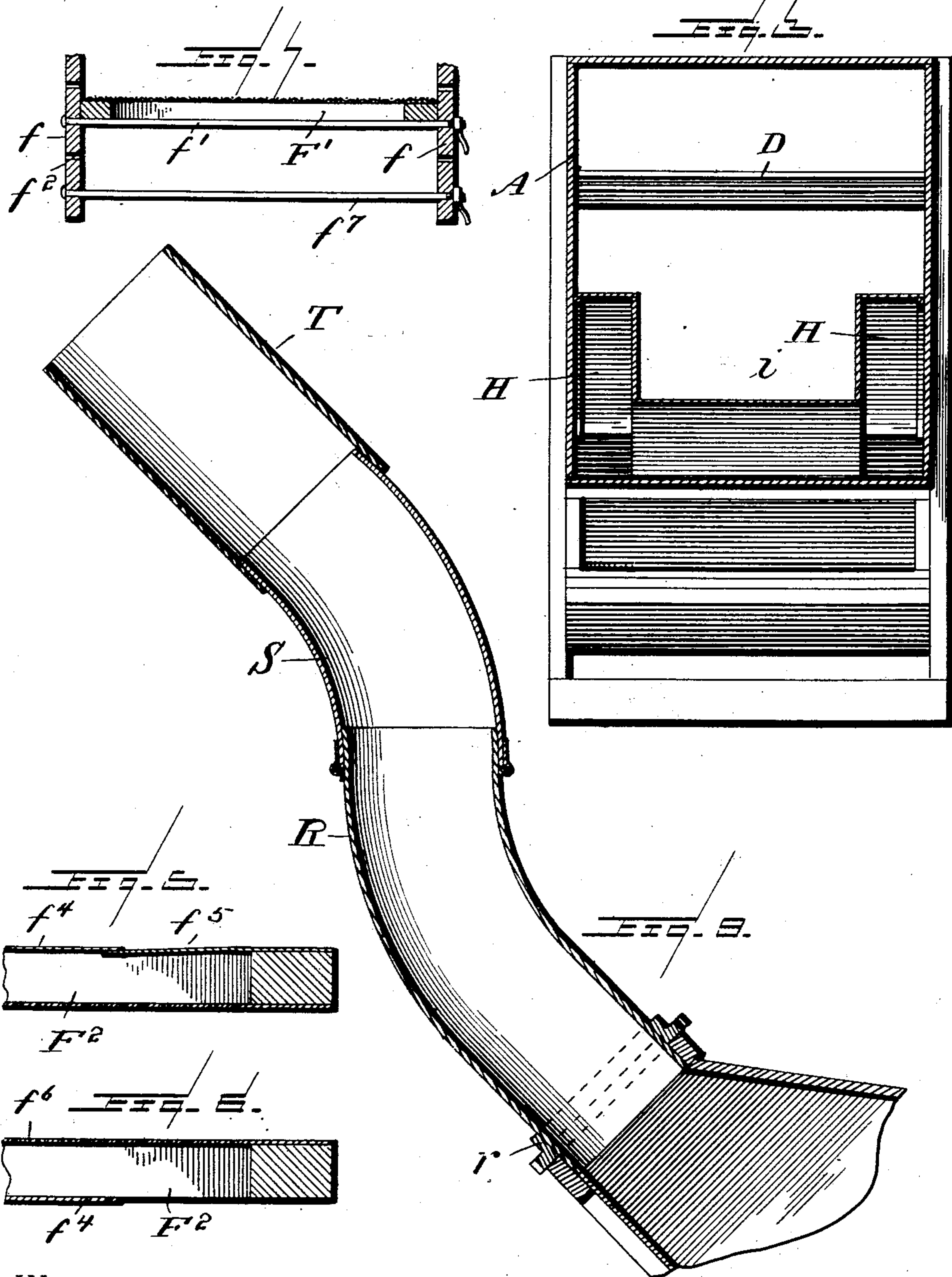
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~~WITNESSES:~~

H^{rs} F. Doyle.

J. K. Moore

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BY
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UNITED STATES PATENT OFFICE.

WILLIAM W. DINGEE, OF RACINE, WISCONSIN.

THRESHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 751,619, dated February 9, 1904.

Application filed July 27, 1903. Serial No. 167,144. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. DINGEE, a citizen of the United States, residing at Racine, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Threshing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention consists in the novel features hereinafter described, reference being had to the accompanying drawings, which illustrate one form in which I have contemplated embodying my invention, and the said invention is fully disclosed in the following description and claims.

Referring to the drawings, Figure 1 represents a central longitudinal vertical section of a threshing-machine and stacker embodying my invention. Fig. 2 represents a horizontal section through the straw-receptacle and straw-discharging fans and showing the discharge-spout of the straw-receptacle swung laterally and adjusted to begin the laying of a stack. Fig. 3 represents a vertical transverse section through the straw-receptacle. Fig. 4 represents a partial view of the shoe, showing the combined shoe-bottom and screen in position and arranged to operate as a screen. Figs. 5 and 6 are enlarged detail views of portions of said combined shoe-bottom and screen. Fig. 7 represents a partial transverse vertical section of the shoe, showing the means for holding the sieves and screen thereof in position. Fig. 8 is a bottom plan view, on a smaller scale than Figs. 4, 5, and 6, of the combined shoe-bottom and screen. Fig. 9 is a detail sectional view showing the adjustable spout for the straw-receptacle arranged to deliver straw to the top of the stack.

In the drawings, A represents the main frame or casing of a threshing-machine. B is the cylinder, C the concave, D the straw-carriers, consisting in this instance of walking-rakes, all of usual or any preferred construction, said parts forming no portion of my present invention.

E is the grain-cleaning fan, which is located, preferably, at the front end of the machine

below the cylinder and concave, and F represents the shoe, which is of usual form and supported and provided with mechanism for imparting a reciprocating motion thereto in the usual manner. Between the side pieces f of the shoe are placed one or more riddles or sieves, which are supported at each end upon the transverse rods f' , which extend through the sides of the shoe and are provided exteriorly of the shoe with a head at one end and a clamping wing-nut at the other end or with a clamping-nut at each end. The side pieces of the shoes are provided with means for permitting these clamping-rods f' to be raised and lowered for the purpose of adjusting the screen or sieves F' , which may consist of a vertical series of holes f^2 , indicated at the left in Fig. 4, or a vertical slot, as at f^3 , at the right of Fig. 4, either or both means being employed. When the sieves have been placed in their adjusted positions, resting upon the rods f' , the wing-nuts thereof are screwed up so as to clamp the sieves tightly between the sides pieces of the shoe and hold them firmly in their adjusted positions.

The shoe F is provided with a detachable bottom F^2 , which can be readily removed to permit the sieves to be taken out and replaced through the bottom of the shoe, thus facilitating the changing of the sieves in adapting the machine for use with various kinds of grain. This removable bottom preferably comprises a rectangular frame to one side of which is secured an impervious bottom having a portion thereof removable. In the present instance I have shown one side of said frame provided with an impervious plate f^4 of sheet metal covering the main portion of the frame and a detachable plate f^5 , covering the remaining portion of the frame and detachably secured thereto by means of screws, as shown in Fig. 8, or otherwise. The other side of said frame is covered with wire-netting or a sheet of perforated metal, as shown at f^6 , forming a screen. The rear end of the shoe-bottom is supported by a transverse clamping-rod f^7 , extending through a hole in the sides of the shoe, said rod being provided with means for clamping the sides of the shoe together upon the removable bottom, as pre-

viously described in regard to the screen, and the removable bottom is provided adjacent to its forward end and on both sides with hook-shaped brackets f^8 , engaging a similar transverse clamping-rod f^9 , as clearly shown in Fig. 4. These hooks or brackets f^8 , as will be seen, are applied to the lower end of the shoe-bottom, and by placing the lower set of said brackets in engagement with the rod f^9 said bottom will be prevented from sliding downward upon said rod, thus holding the bottom in position while the clamping-rods are tightened upon it. When it is not desired to screen the grain, the shoe-bottom is placed in the shoe with the impervious face upward and the detachable part thereof in operative position. When it is desired to screen the grain, it is only necessary to take out the shoe-bottom, remove the detachable plate f^5 , and reinsert the said bottom with the screen f^6 thereof uppermost, as shown in Fig. 4, when the grain will be screened and the foreign matter discharged through the bottom from the aperture formed by the removal of the detachable plate f^5 .

At the rear end of the machine frame or casing is the straw-receptacle G, which receives the straw from the straw-carriers D. This receptacle has an upwardly and rearwardly inclined bottom g and inwardly-converging sides g' and is provided at its rear end with a discharge-aperture of substantially the size of the delivery-spout hereinafter described.

H H represent two fan-casings located at opposite sides of the machine, and between said casings is a closed bulkhead I, (see Figs. 1 and 2,) extending to the straw-receptacle G and having its bottom i inclined downwardly with respect to the bottom g of the straw-receptacle. The two fans in the fan-casings H discharge air under and at both sides of the bulkhead I, thereby forcing the air to enter the straw-receptacle in a continuous U-shaped sheet, so as to act upon the straw along the lines of the bottom and converging sides of the straw-receptacle, compressing the straw, so as to enable it to pass readily through the discharge-spout. The inclined bottom i of the bulkhead I assists in forcing the air-current downwardly against the bottom g of the straw-receptacle.

L represents a shaft extending transversely of the machine through the two fan-casings H and provided within each of said casings with a fan L' .

At the rear end of the shoe F is the chaff-receptacle M, provided with a hinged or removable bottom m , and communicating therewith is a substantially cylindrical space N, between the two fan-casings, the front wall of which is formed by a semicylindrical plate n , the edges of which coincide with the edges of the central draft-aperture of the fan-casings, as shown in Figs. 1 and 2. The shaft L is provided within this cylindrical space N with

a disk O, secured thereto in a position inclined to the shaft. It will be seen that the natural draft of the fans will draw the chaff from the chaff-receptacle M through the space N into the fans, and the inclined disk O as it rotates will divide the chaff and throw it both sides, distributing it between the two fan-casings. Under these circumstances the chaff will be carried into the straw-receptacle and discharged with the straw. If it is desired to deliver the straw free from chaff, the chaff-receptacle bottom M can be opened and the chaff allowed to deposit through said opening upon the ground.

At the discharge end of the straw-receptacle I provide an oscillating spout which is formed, preferably, of two elbow-sections R and S. The section R has a swiveled connection to the discharge-aperture of the straw-receptacle and is provided with means of imparting to it an oscillating motion. In the present instance this means consists of an annulus r , secured to the elbow R and meshing with a pinion r' on a stud r^2 , connected by a universal joint with an operating-shaft r^3 , which may be turned by hand by means of a handle or crank r^4 or which may be operated from some running part of the machine, if desired, to give the desired oscillating movement to the swiveled spout, so as to lay the straw in the formation of a stack. The elbow S is swiveled upon the section R and is adjustable in a rotary manner thereon, and by adjusting these two elbow-sections with respect to each other the straw can be discharged at a low or high level, according to the stage of the stack under construction. In Fig. 2 the sections R and S are shown as they are arranged when the stack is commenced, and in Fig. 9 I have shown the sections R and S arranged to deliver the straw at a considerable height, as when finishing out the top of a stack. In Fig. 9 I have also shown the section S provided with a straight sleeve T, detachably connected thereto for assisting in delivering the straw to the top of the stack.

The particular constructions relating to the shoe are not herein claimed, the same being covered by my application for Letters Patent of the United States, Serial No. 173,603, filed September 17, 1903, the same being a division of this application.

What I claim, and desire to secure by Letters Patent, is—

1. In a threshing-machine, the combination with the straw-receptacle provided with a continuous air-inlet extending along the bottom and vertically upward at both sides, said receptacle having its side walls converging beyond said air-inlet, of air-forcing devices communicating with said air-inlet, whereby a stream of air U-shaped in cross-section is introduced into said receptacle adjacent to its bottom and sides, substantially as described.

2. In a threshing-machine, the combination

with the straw-receptacle provided with a continuous air-inlet extending along the bottom and vertically upward at both sides, said receptacle having its side walls converging beyond said air-inlet, a delivery-spout for said receptacle, and a pair of separate air-forcing devices each communicating with the bottom portion and one of the side portions of said air-inlet, whereby a stream of air U-shaped in cross-section is introduced into said receptacle adjacent to its bottom and sides, substantially as described.

3. In a threshing-machine, the combination with the straw-receptacle, provided with a U-shaped air-inlet extending entirely across the bottom and up the sides of said receptacle and having a discharge-spout, the walls of said receptacle converging from said air-inlet, to the discharge-spout, fan-casings located at opposite sides of the machine each having a discharge communicating with the bottom and one side portion of the said U-shaped air-inlet, a chaff-receptacle within the machine, an inclosed chamber between said fan-casings extending transversely of the machine, and communicating with said chaff-receptacle and with the eyes of said fan-casings, whereby the chaff can be delivered through said fans into the straw-receptacle, substantially as described.

4. In a threshing-machine the combination with the straw-receptacle, provided with a U-shaped air-inlet extending entirely across the bottom and up the sides of said receptacle and having a discharge-spout, the walls of said receptacle converging from said air-inlet, to the discharge-spout, fan-casings located at opposite sides of the machine, each having a discharge communicating with the bottom and one side portion of the said U-shaped air-inlet, a chaff-receptacle within the machine, an inclosed chamber between said fan-casings extending transversely of the machine, and communicating with said chaff-receptacle and with the eyes of said fan-casings, and a distributing device in said inclosed chamber for dividing the chaff and throwing part of it toward each of said fan-casings, substantially as described.

5. In a threshing-machine, the combination with the straw-receptacle, provided with a U-shaped air-inlet extending entirely across the bottom and up the sides of said receptacle and having a discharge-spout, the walls of said receptacle converging from said air-inlet, to the discharge-spout, fan-casings located at opposite sides of the machine each having a discharge communicating with the bottom and one side portion of the said U-shaped air-inlet, a chaff-receptacle within the machine, an inclosed chamber between said fan-casings extending transversely of the machine, and communicating with said chaff-receptacle and with the eyes of said fan-casings, fans in said fan-casings, a common shaft for said fans extend-

ing through said inclosed chamber, and a distributing-disk mounted in an inclined position on said shaft centrally of said chamber for throwing part of the chaff toward each of said fan-casings, substantially as described.

6. In a threshing-machine, the combination with the straw-receptacle, provided with a U-shaped air-inlet extending entirely across the bottom and up the sides of said receptacle and having a discharge-spout the walls of said receptacle converging from said air-inlet, to the discharge-spout, fan-casings located at opposite sides of the machine each having a discharge communicating with the bottom and one side portion of the said U-shaped air-inlet, a chaff-receptacle within the machine, an inclosed chamber between said fan-casings extending transversely of the machine, and communicating with said chaff-receptacle and with the eyes of said fan-casings, said chaff-receptacle having an auxiliary discharge-aperture in its bottom, and a movable closure for said aperture, substantially as described.

7. In a threshing-machine, the combination with the straw-receptacle provided with a discharge-outlet and an air-forcing device communicating therewith, of an elbow-shaped discharge-pipe connected directly to the discharge-outlet of the straw-receptacle by a swivel-joint, having its plane of movement inclined between a vertical and horizontal position, whereby the movement of said elbow-pipe upon its swivel-joint will raise and lower the end of the pipe, substantially as described.

8. In a threshing-machine, the combination with the straw-receptacle provided with a discharge-outlet and an air-forcing device communicating therewith, of an elbow-shaped discharge-pipe connected directly to the discharge-outlet of the straw-receptacle by a swivel-joint, having its plane of movement inclined between a vertical and horizontal position, and a second elbow-pipe rotatably mounted upon the end of the first-mentioned elbow and adjustable with respect thereto, substantially as described.

9. In a threshing-machine, the combination with the straw-receptacle provided with a discharge-outlet and an air-forcing device communicating therewith, of an elbow-shaped discharge-pipe connected directly to the discharge-outlet of the straw-receptacle by a swivel-joint, having its plane of movement inclined between a vertical and horizontal position, and mechanism for imparting an oscillating movement to said elbow-pipe upon its swivel-joint, substantially as described.

10. In a threshing-machine, the combination with the straw-receptacle provided with a discharge-outlet and an air-forcing device communicating therewith, of an elbow-shaped discharge-pipe connected directly to the discharge-outlet of the straw-receptacle by a swivel-joint, having its plane of movement in-

clined between a vertical and horizontal position, mechanism for imparting an oscillating movement to said elbow-pipe upon its swivel-joint, and a second elbow-pipe rotatably
5 mounted upon the end of the first elbow-pipe and adjustable with respect thereto, substantially as described.

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

WILLIAM W. DINGEE.

Witnesses:

E. E. RUSSELL,
O. Z. OLIN, Jr.