

No. 696,915.

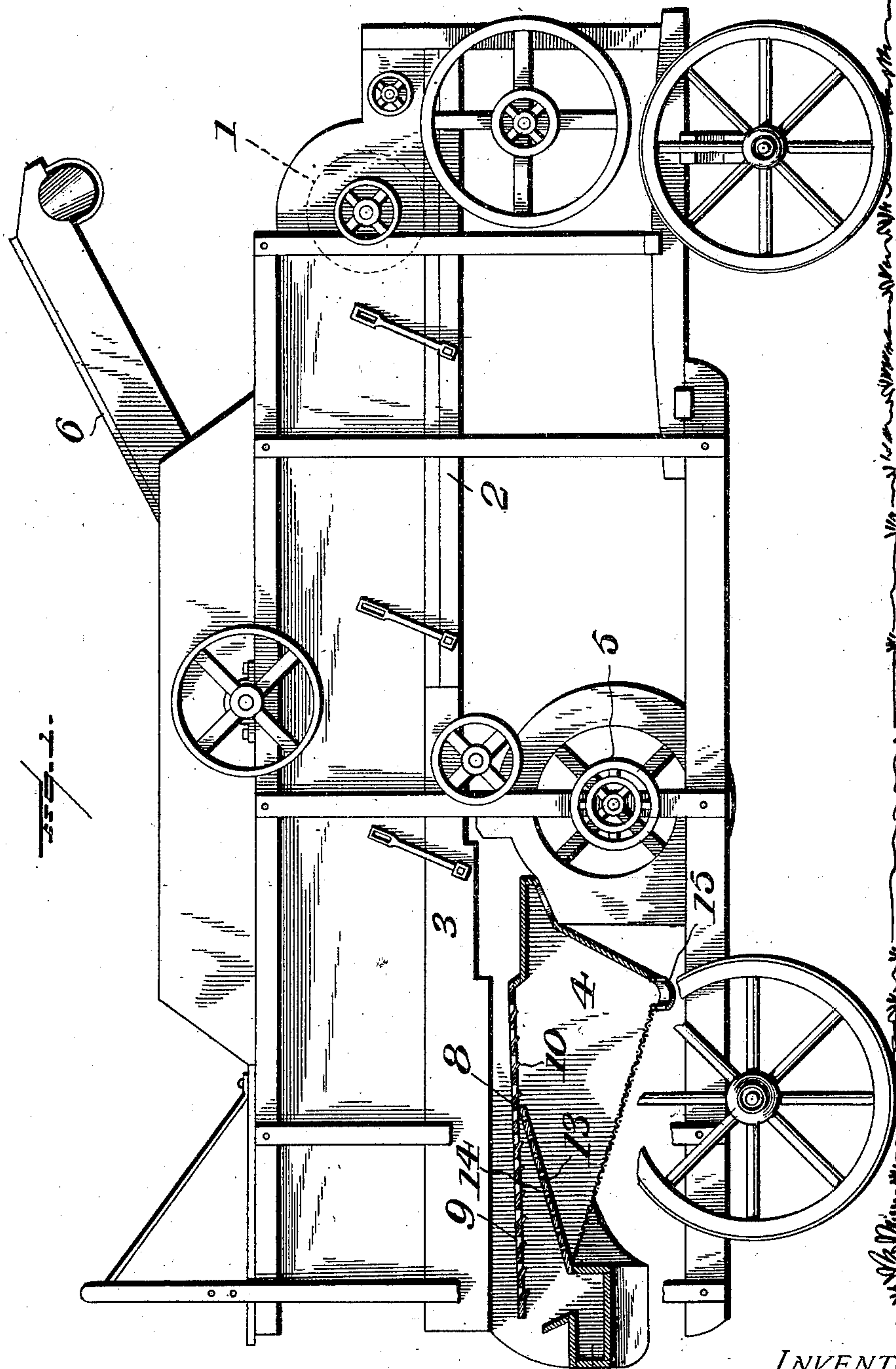
Patented Apr. 1, 1902.

F. WITTE.  
GRAIN SEPARATOR.

(Application filed Nov. 24, 1900.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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Karl H. Butler.

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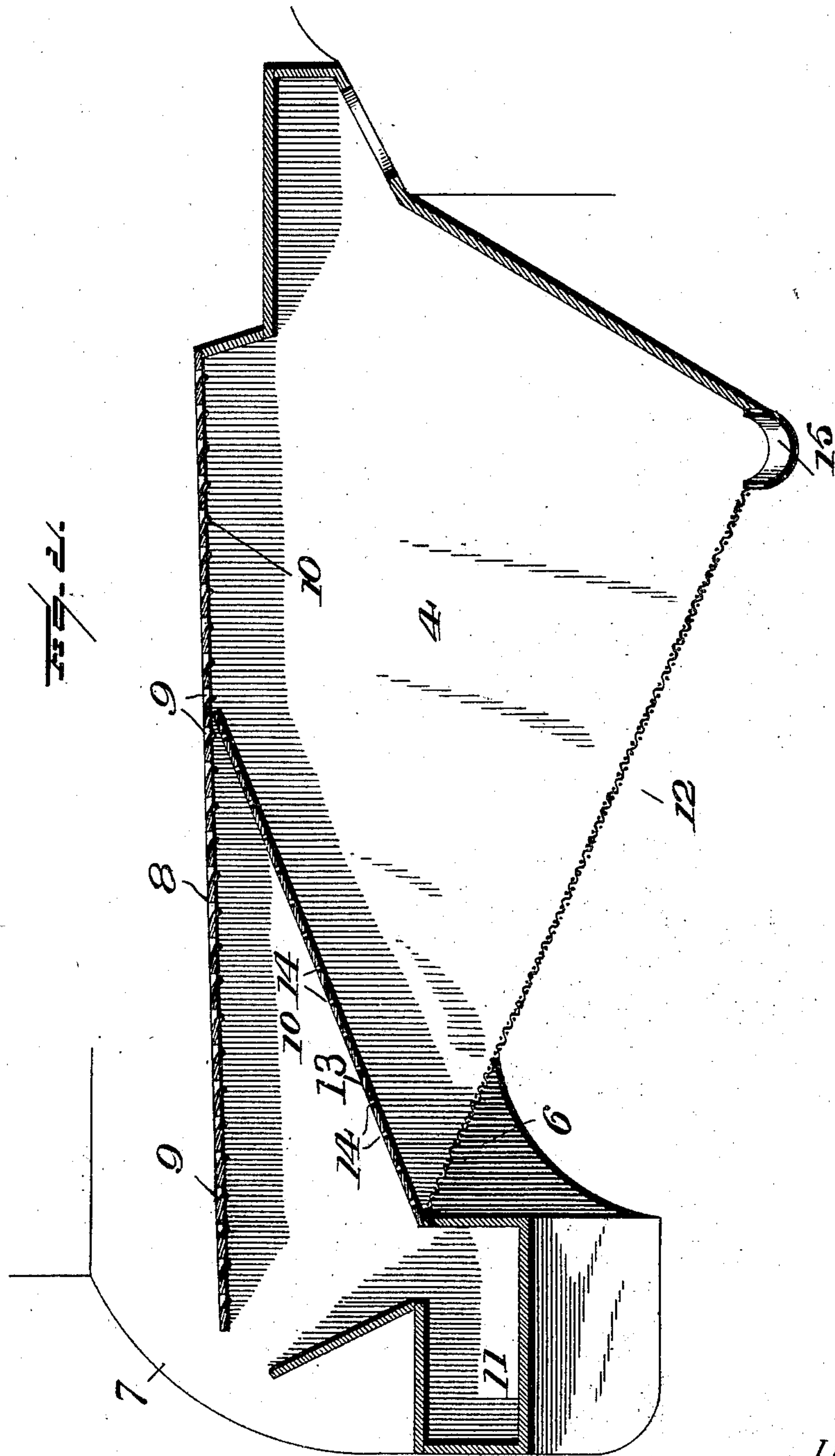
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# UNITED STATES PATENT OFFICE.

FRED WITTE, OF OKAWVILLE, ILLINOIS.

## GRAIN-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 696,915, dated April 1, 1902.

Application filed November 24, 1900. Serial No. 37,658. (No model.)

*To all whom it may concern:*

Be it known that I, FRED WITTE, a citizen of the United States, residing at Okawville, in the county of Washington and State of Illinois, have invented certain new and useful Improvements in Grain-Separators; 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.

This invention relates to improvements in grain-separators, and is more particularly designed as an improvement upon that form of separator known to the trade as "The Belleville Separator."

In the use of the Belleville separator as now constructed it has been found that the shoe thereof has failed to prevent the passage of trash, sticks, &c., therethrough, and the wheat when issuing from the delivery-spout is burdened to a considerable extent with such trash, sticks, &c.

It is therefore the object of the present invention to provide an improved form of shoe the construction of which is such that a thorough separation of trash and the like from the wheat will be effected and the latter when delivered will be in a perfectly clean state.

With this general object in view and others which will appear as the nature of the improvements is better understood the invention consists, substantially, in the novel construction, combination, and arrangement of parts, as will be hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the appended claims.

In the drawings, Figure 1 is a longitudinal sectional view of a grain-separator provided with a shoe constructed in accordance with the present invention. Fig. 2 is a similar view, on an enlarged scale, of the shoe removed.

Referring to the drawings, the numeral 1 designates a threshing-cylinder; 2 and 3, a pair of separating-pans; 4, a shoe; 5, a rotary fan for creating a blast, and 6 a tailings-elevator receiving the discharge from the shoe for conveying the tailings back to the cylinder. The parts enumerated are of the ordinary construction as employed in the Belleville separator, excepting the shoe 4, and in view of this it is not deemed essential to enter into a detail description of the same.

The invention lies solely in the construction of the shoe 4, and referring to Fig. 2 it will be observed that such shoe comprises a framework 7, which is of the ordinary construction. Arranged in the upper portion of the frame 7 is an upper riddle 8, provided with punched openings 9, below which project the lips 10, formed by the punching operation, and this riddle is likewise of the ordinary construction. The frame 7, however, at its end most remote from the fan 5 is provided with a transversely-extending tail-board spout 11, and over said spout the upper riddle 8 is designed to project, as clearly shown. It will also be noted that the degree of inclination of the riddle 8 is very slight, so that said riddle lies in what is almost a horizontal plane, and arranged beneath the riddle 8, at the bottom of the frame 7, and inclined toward the fan 5 is a screen 12, the upper end of which abuts against the tail-board spout 11.

Interposed between the upper riddle 8 and the screen 12 is an inclined lower riddle 13, having circular openings 14, the rear edge of said riddle 13 resting upon the upper edge of the nearest side of the spout 11; but the length of the riddle 13 is about one-half only of the riddle 8, and the forward edge of said riddle 13 thereby lies at about the middle of the riddle 8 and is in close contact therewith. The riddle 13 inclines in the same direction with the riddle 8; but said riddle 13 lies at an angle of from sixteen to twenty degrees to the riddle 8, whereby the tailings passing through the riddle 8 and upon the riddle 13 will be precipitated by the latter to the spout 11 without any difficulty whatever.

The shoe 4 at the lower end of the screen 12 is provided with a transversely-extending delivery-spout 15, through which the wheat passes from the shoe to a suitable receptacle.

The operation of the herein-described separator is as follows: The wheat being fed to the cylinder 1 passes through the machine in the usual manner, and when the grain arrives at the riddle 8, together with those heads which have not been sufficiently broken by the cylinder 1, the same passes through the openings of the riddle 8 and gravitates to the lower riddle 13. It is of course obvious that the majority of the uncrushed heads



will pass over the rear edge of the riddle 8 and into the tail-spout 11; but it has been found that unless the lower riddle 13 is employed that portion of the heads passing through the riddle 8 will descend to the screen 12. Herein lies the advantage of the lower riddle 13, which while permitting the free passage of the grain will prevent the uncrushed heads being fed to the screen 12 and will in lieu thereof feed the heads to the tail-board spout 11, whence the same pass to the elevator 6 and are carried thereby to the cylinder 1, so that the latter may again act upon said heads. Moreover, the trash, sticks, &c., which are the usual accompaniment of the grain from the riddle 8 to the screen 12, are diverted from the screen 12 and fed to the tail-board spout 11, so that the grain which passes down the screen 12 and into the delivery-spout 15 is perfectly free and clean.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a shoe for grain-separators, the combination with the frame thereof provided at its rear end with a tail-board spout, of an upper riddle spaced above said spout and having its rear end projecting over the spout, a screen arranged at the bottom of the frame and having its rear end in contact with the forward edge of said spout, said screen inclining forwardly and downwardly from the spout, and a lower riddle interposed between the upper riddle and the screen, said lower

riddle being inclined reversely to the screen and having its rear end resting upon the forward edge of the tail-board spout and its forward end in close contact with the upper riddle, whereby the tailings discharged from the upper riddle are received by the lower riddle and deflected thereby from the screen into the tail-board spout.

2. In a shoe for grain-separators, the combination with the frame thereof provided at its rear end with a tail-board spout, of an upper riddle spaced above said spout and having its rear end projecting over the spout, a screen arranged at the bottom of the frame and having its rear end in contact with the forward edge of said spout, said screen inclining forwardly and downwardly from the spout, and a lower riddle interposed between the upper riddle and the screen, said lower riddle being inclined reversely to the screen and having its rear end resting upon the forward edge of the tail-board spout and its forward end in close contact with the upper riddle at a point intermediate the ends of the latter, whereby the tailings discharged from the upper riddle are received by the lower riddle and deflected thereby from the screen into the tail-board spout.

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

FRED WITTE.

Witnesses:

JONAS SMITH,  
HENRY LAING.