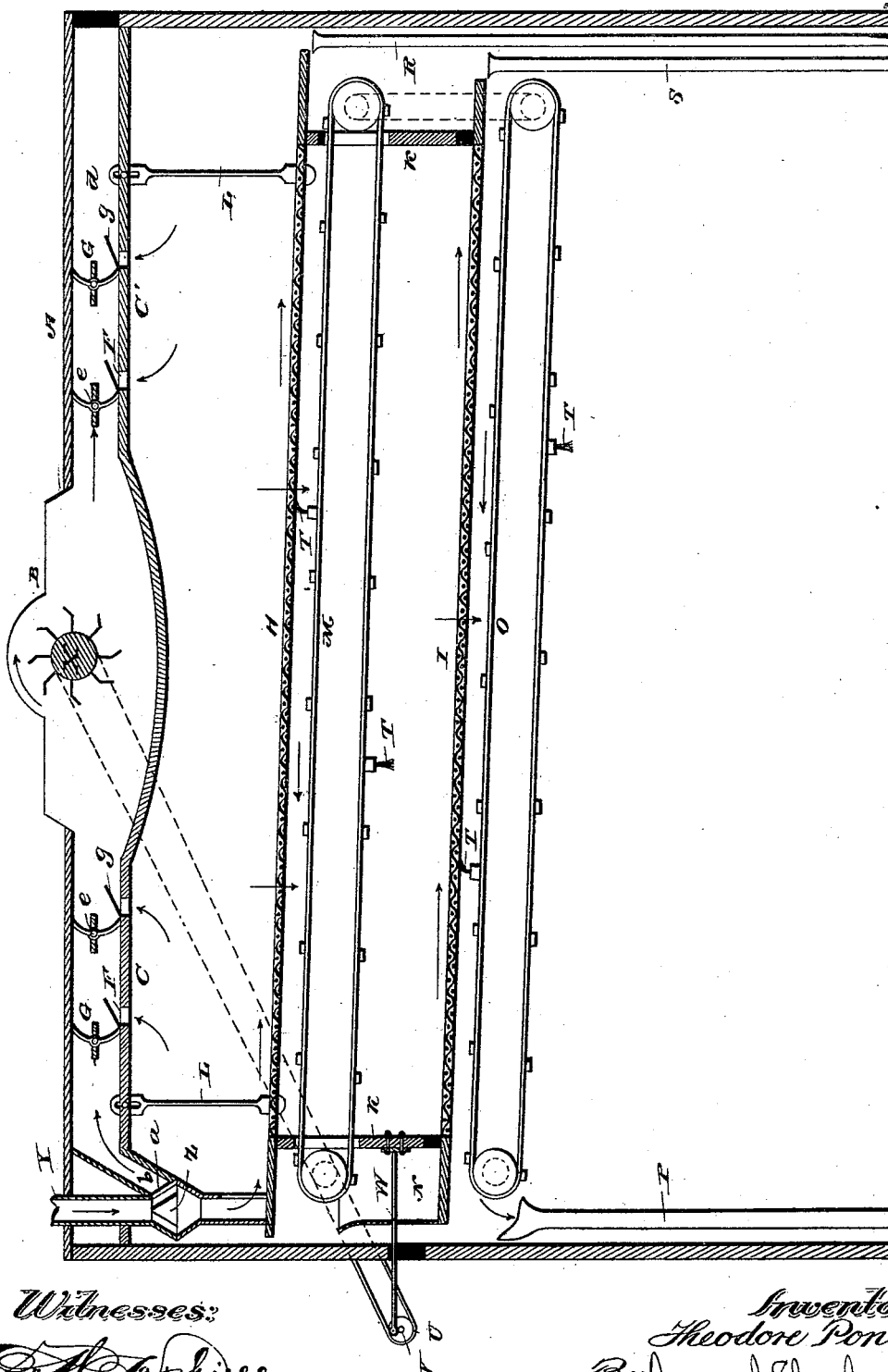


(No Model.)

T. PONSAR.  
MIDDLINGS SEPARATOR.

No. 420,957.

Patented Feb. 11, 1890.



Witnesses:

*J. A. Ashlee*  
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# UNITED STATES PATENT OFFICE.

THEODORE PONSAR, OF TALMAGE, NEBRASKA.

## MIDDLINGS-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 420,957, dated February 11, 1890.

Application filed February 19, 1889. Serial No. 300,400. (No model.)

*To all whom it may concern:*

Be it known that I, THEODORE PONSAR, a citizen of the United States, residing at Talmage, in the county of Otoe and State of Nebraska, have invented certain new and useful Improvements in Middlings-Separators; and I do 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 middlings-separators; and it consists in certain arrangements and combination of parts, hereinafter described, and pointed out in the claims.

In the drawing is shown a longitudinal vertical section of a separator constructed according to my invention.

Referring to the said drawing by letter, A is the casing of the machine, having a raised central portion B on top. Within the casing, near the upper end, are horizontal partitions C C', extending from the sides of the said casing to the raised section of the top. Each of these partitions is provided with valved passages F, and between the said partitions and the top of the casing are transverse partitions G.

H I are screens placed one above the other and connected by end pieces K, beyond which the frames of the screens extend. The screens may be formed of cloth, perforated metal, or the like, and are hung on spring-links L, made adjustable at the upper ends, so that one or both ends of the screens may be adjusted.

Below the screen H is an endless traveling belt or carrier M, passing through the end pieces K and arranged to travel toward the head of the said screen, where it discharges into a hopper W, communicating with the lower screen. The screen I is similar to the other screen, and has an endless carrier O beneath it and traveling toward the head of the said screen. This carrier discharges into a conveyer-tube P. The tail ends of the screens discharge into conveyer-tubes R and S, respectively.

Each carrier is provided with brushes T for cleaning the screens.

The screens are reciprocated by an eccentric U on a shaft V, and connected to the said screens by a pitman W.

Within the top B of the case is journaled a fan X, driven by a belt from the shaft V. The top conveyer-belt is also driven from the shaft V, and has a belt-connection with the other belt at the tail end of the machine.

The material is fed through a spout Y, containing a conical spreader Z. This spout communicates with the space above the partition C, and discharges on the upper end of the screen H. The spout Y has an opening *a*, which communicates by a passage *b*, leading between the top of the casing and the horizontal partition C, so that dust and other impurities which may be in the grain as it is fed into the machine will be drawn off at this point by the suction of the fan and discharged at the upper portion of the tail end of the machine.

The valves G, which are arranged, as shown, within the passage *d* above the horizontal partition C, are adapted to regulate the force or volume of draft created by the fan. These valves G, which are journaled on a rod *e*, carry a thumb screw or lever, (not shown,) so that they may be readily manipulated by the operator or attendant.

Above the valve-passages F in the horizontal partitions C, I fix inclined plates or deflectors *g*, arranged obliquely, so that the impurities drawn through such passages by the action of the fan from the screen below will be prevented from going toward the head of the machine when the valves G have been opened.

By the employment of the spring-arms L it will be seen that the screens may be adjusted to any desired inclination and adapted for any suitable touch of the brushes carried by the endless belts.

The brushes T may be of the form usually employed, and are secured transversely upon the endless carriers, so as to lie the entire width of the screens. By having the arms L of a yielding nature the screens will be allowed a limited vertical movement, so that in fact a toss will be imparted to the screens during operation.

Having described my invention, what I claim is—

1. In a middlings-separator, the combination, with the main case and the fan, of the horizontal partitions C, arranged at opposite sides of the fan-case and provided with valve-

openings, said partitions forming a continuous passage from the head to the tail end of the frame, the deflectors *g*, fixed obliquely in said passage above the openings and directed toward the tail end of the machine, the valves *G*, arranged in the passage in advance of said openings and between the top of the case and the partitions, the upper screen suspended from said partitions, the feed-tube *Y*, having an opening *a* communicating with the valved passage, and also an opening connecting the feed-tube with the upper screen, substantially as specified.

2. In a middlings-separator, substantially as described, the combination, with the lower screen having a hopper *N* at its upper end, of the upper screen connected to the lower one by a transverse wall near their upper and lower ends, the endless carrier arranged horizontally between said screens, and spring-arms secured at one end to the upper screen and having their upper ends slotted, adjustably secured to the horizontal partitions in the main case, substantially as specified.

3. The middlings-separator described, con-

sisting, essentially, of a main case having an elevated fan-chamber in its top, horizontal partitions arranged to form a passage in the upper portion of the case, valves arranged in said passage, valve-openings in said partitions, deflectors arranged above said openings, the feed-tube having a cone distributor, an opening communicating with the valved passage, and an opening communicating with the upper screen, the lower screen having a hopper at its upper end and connected with the upper screen by transverse walls, endless carriers provided with clearing-brushes arranged beneath the respective screens, a discharge-spout at the tail end of each screen, and a discharge-spout at the head end of the lower endless carrier, and slotted spring-arms for adjustably supporting the screen in the casing, substantially as specified.

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

THEODORE PONSAR.

Witnesses:

E. W. SCHIRMER,  
H. H. TANGEMAN.