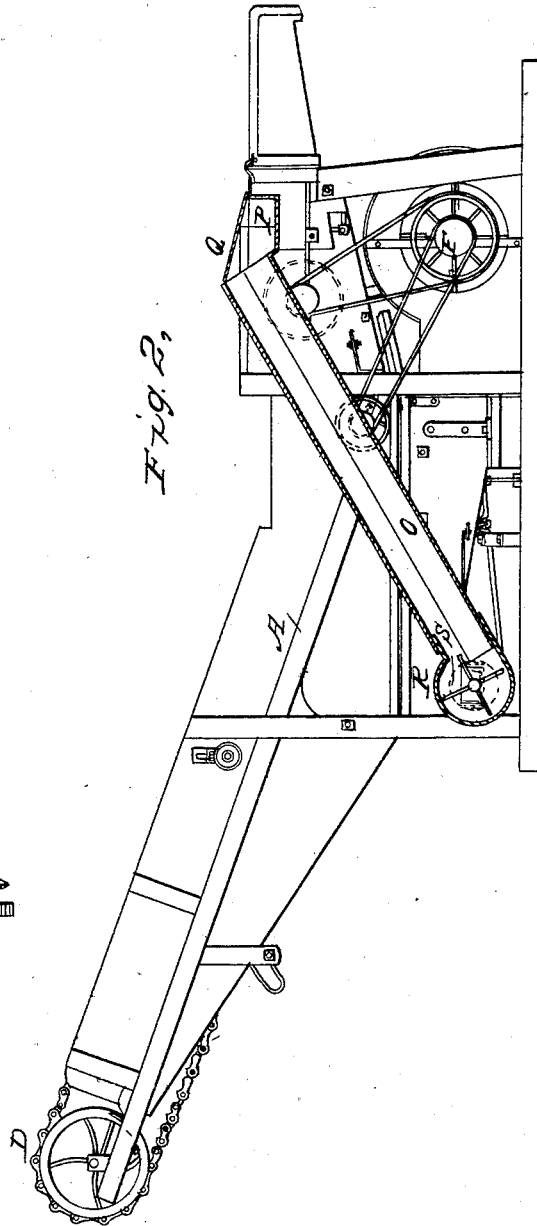
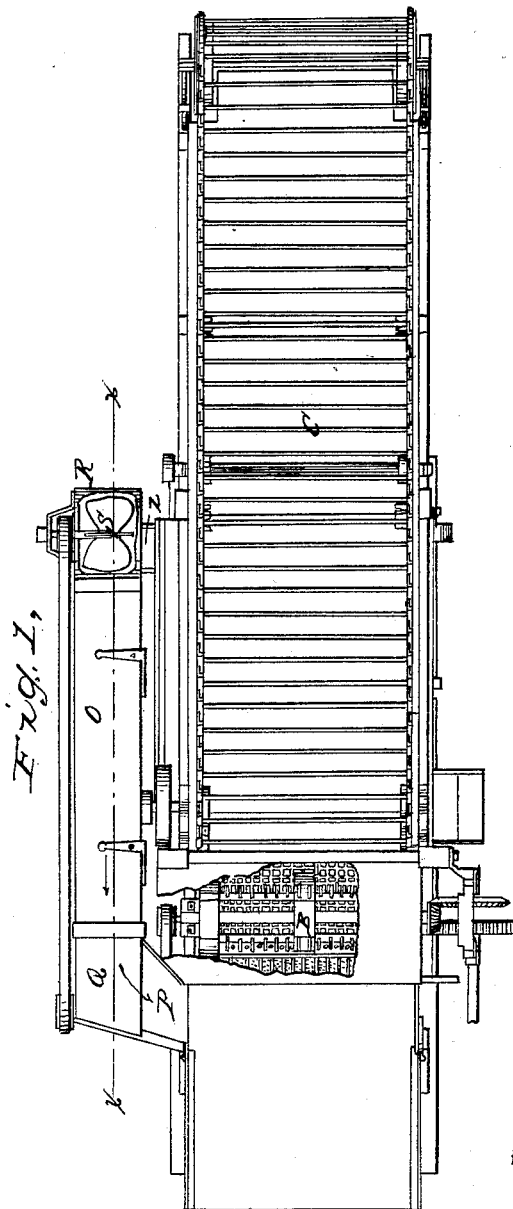


J. RAYNER.  
Grain Thrasher and Separator.

No. 45,676.

Patented Dec 27, 1864.



WITNESSES:  
*James H. Girdley*  
*J. J. Chambers*

INVENTOR:  
*J. Rayner*

# UNITED STATES PATENT OFFICE.

JOSEPH RAYNER, OF PIQUA, OHIO, ASSIGNOR TO HIMSELF, JOHN R. MOFFITT, HA CLARK, AND H. TAMPLIN, OF SAME PLACE.

## IMPROVEMENT IN GRAIN THRASHING AND SEPARATING MACHINE.

Specification forming part of Letters Patent No. 45,676, dated December 27, 1864.

*To all whom it may concern:*

Be it known that I, JOSEPH RAYNER, of Piqua, in the county of Miami and State of Ohio, have invented a new and Improved Elevator for Machines for Thrashing and Separating Grain; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan of a grain thrasher and separator with my invention attached. Fig. 2 is a vertical section at *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts in both views.

The nature of my said invention consists in a certain combination and arrangement of devices, hereinafter described, for the purpose of returning the tailings to the thrashing-cylinder to be rethrashed.

To enable others skilled in the art to which my invention pertains to make and use the same, I will proceed to describe its construction and operation.

The main frame A, thrashing-cylinder B, chute C, straw-carrier D, shaking-shoe E, and separating-fan F are by preference arranged and operated as set forth in original Patents Nos. 19,865, 24,838, and 26,283, and reissued Patents Nos. 715, 718, and 719, granted to John R. Moffitt, of Piqua, Ohio, and require no specific description. My invention is, however, equally applicable to machines of other construction.

The elevator by which the tailings are returned to the thrashing-cylinder is constructed as follows: O is an inclined box or tube of any suitable form extending from the tailing-spout *l* forward and upward to the conductor P, which discharges in front of the thrashing-cylinder. The box O is closed on all sides, but open at its ends. Q is a cap covering the upper ends of the box O, and presenting inward toward the thrashing-cylinder. R is a drum, covering the lower end of the box, and

forming a communication between it and the tailing-spout *l*. S is a fan, journaled within the drum R and rotated by a belt, *s*, from the shaft of the separating-fan F, or in any other suitable manner.

In using this invention the imperfectly-thrashed heads and other matters which (being too large or too light to pass into the receptacle for clean grain and too heavy to pass off with the chaff and straw) fall down at the tail of the shaking-shoe, and are commonly known as "tailings," are conducted into the drum R, and by the centrifugal action of the fan S and a powerful current of air produced thereby are forced upward through the conductor P, and thereby returned to the cylinder B to be rethrashed.

The tailings may be conveyed from the shoe to the conductor and from the conductor to the thrashing-cylinder by any suitable means. The fan S may, if preferred, rotate upon a vertical instead of a horizontal axis, the other modifications may be made without departing from the essential principles of the invention.

I am aware that rotary fans have before been employed for elevating grain in various ways, and therefore do not desire to be understood as claiming this principle, broadly.

I claim as new and desire to secure by Letters Patent—

As an improvement in machines for thrashing and separating grain, the combination of the spout *l*, fan S, tube O, and conductor P, constructed and arranged as specified, and operating in connection with a shaking-shoe and thrashing-cylinder, substantially as and for the purposes set forth.

In witness whereof I, the said JOSEPH RAYNER, have hereunto set my hand this 18th day of March, A. D. 1862.

JOSEPH RAYNER.

In presence of—

S. S. MCKINNEY,  
J. F. MCKINNEY.