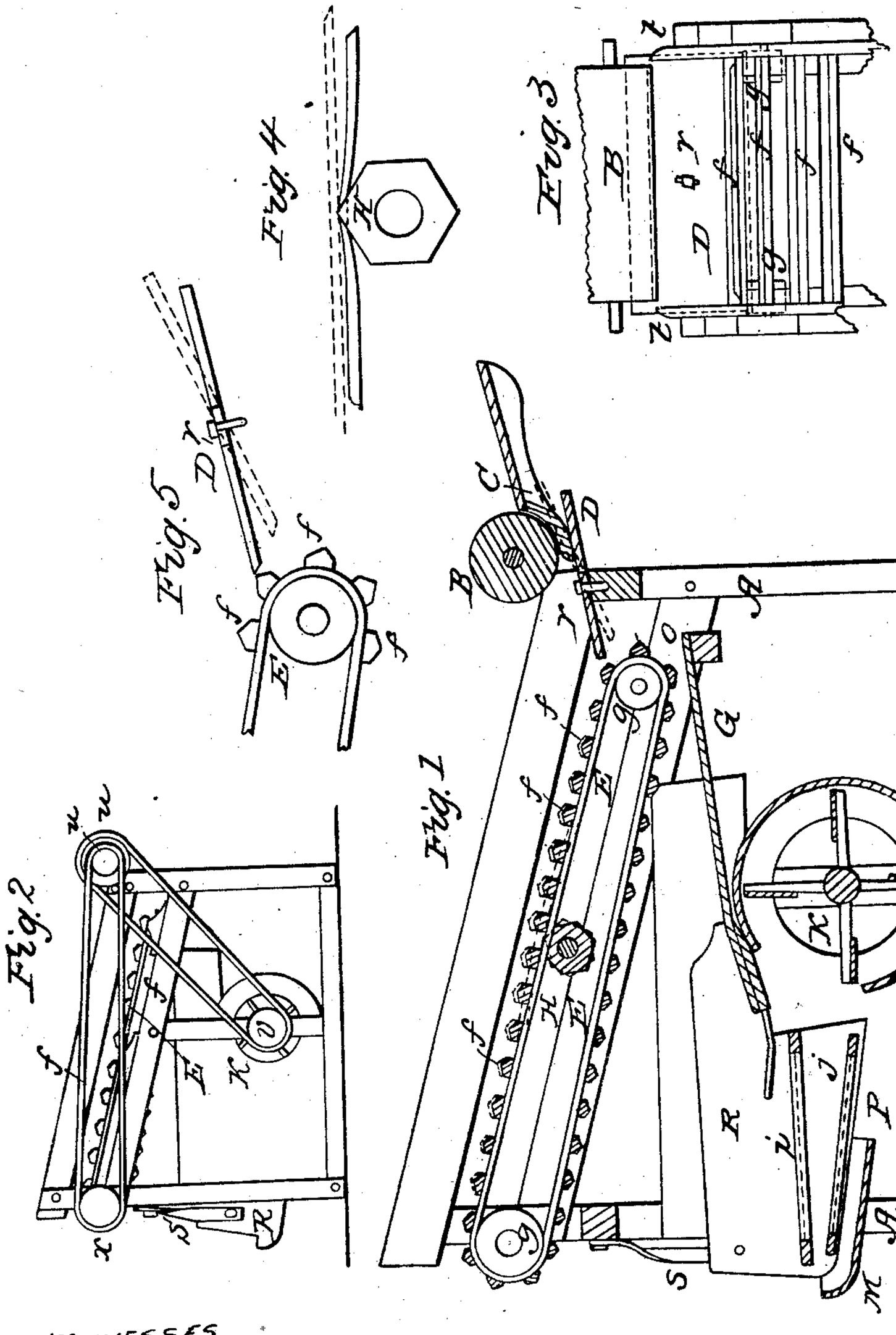
A. POTTER.

Thrashing Machine.

No. 24,605. Patented June 28, 1859.



WITNESSES

J. Fraser.

G. G. Allis

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AUSTIN POTTER, OF WILLIAMSON, NEW YORK, ASSIGNOR TO HIMSELF AND JOEL W. NORTON, OF SAME PLACE.

GRAIN-SEPARATOR.

Specification of Letters Patent No. 24,605, dated June 28, 1859.

To all whom it may concern:

Be it known that I, AUSTIN POTTER, of Williamson, in the county of Wayne and State of New York, have invented a new and useful Improvement in Separators for Threshing-Machines; 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, and to the letters of reference marked thereon.

Figure 1, is a longitudinal vertical section thereof. Fig. 2, is a side elevation of the same. Fig. 3, is a plan view of portions of the endless apron and cylinder, part being broken away, and is designed more particularly to show the adjustable slide board D. Fig. 4, is an end view of the supporting and shaking roller H. Fig. 5 is a view of the adjustable slide-board D, and a portion of the endless riddle E, detached.

Similar letters refer to corresponding parts in all of the figures.

My invention has for its object the production of a separator to operate in connection with threshing machines greatly simplified and reduced in cost, but possessing all the efficiency of any in use, and having the advantage of being operated by much less power than is ordinarily required for this purpose.

To enable others to make and use my invention I will describe its construction and operation.

A A is an ordinary wooden frame for sustaining and inclosing the operating parts of the machine; B C are the cylinder and concave of an ordinary thresher.

The frame A, may be attached to that of the thresher or separately constructed for convenience and portability, as I prefer to build them, in which case the cylinder would not appear in connection with it, nor does it form a part of my invention, but I have represented it in the drawing to show its relative position to the separator.

D is a movable slide-board, presenting an inclined surface for conveying the grain and straw as it leaves the cylinder onto the riddle E, which is of common construction, consisting of two endless belts of leather or other suitable material to which are connected the slats or bars *f f*, and which revolve on the pulleys *g g* at each end. These pulleys are placed so far apart that the length of the endless apron is nearly equal to that of the machine, in consequence of which the belts or straps have a tendency to sag somewhat in the middle. This is not only overcome but taken advantage of to obtain the proper vibrating motion necessary to sift the grain from the straw as it is carried along the riddle, by placing equidistant between *g g*, a roller H, of octagonal or hexagonal form which is caused to revolve by the friction of the belt while resting upon it and produces the desired results of both supporting and shaking the apron E, in a very effectual manner, and with only the friction of ordinary rollers. One end of the apron is elevated to carry the straw clearly over the machine. The grain being separated from the straw by the riddle E, falls upon the inclined shaker board G, down which it descends until in falling on the sieves *i j*, it receives the blast from the fan K, which clears it of the chaff and dust. The heel board M, prevents it from being blown or scattered with the chaff, rising as it does to a point above the level of the sieve, and serves to guide it to the proper place of discharge at P.

The shaker board G, is pivoted to a transverse piece at *o* extending a little back of the riddle, so that the grain cannot avoid falling on it, and being connected with the shoe R, it carries all of the grain directly to the sieves without loss or clogging. It forms the interior bearing of the shoe, which is supported by straps or rods *s*, at the farther end, and is operated by a rod and crank from the shaft of the blower, which are not shown in the drawings, but are of common construction. The connection of the shoe and shaker board by giving vibration to the entire receiving surface beneath the riddle or separator E, insures the regular flow of the grain and chaff to the blast, preventing its clogging, and thereby enabling the blast to act uniformly, cleaning it more effectually. The adjustable slide board D, serves an important purpose as an intermediate regulator between the thresher and separator, receiving the threshed grain as it leaves the cylinder B, and depositing it on the riddle E. It is provided with a slot *r* Fig. 3, in the center, through which a pin or bolt passes into the transverse portion of the frame on which it rests. It is also fitted into ways grooved in the sides of the frame *t t*. By

sliding D, back and forth it carries the grain and straw either upon the top of the riddle, or into the meshes between the slats at the end, where those spaces are expanded from the convexity of the pulley *g*. In some kinds of grain where the straw is fine and the amount of grain proportionably greater than in others, as in oats for instance, it has the best effect to draw back the board D, and let the straw impinge directly upon the end or open meshes of the riddle, as the force with which it leaves the cylinder aids greatly in separating the grain from it, doing it more effectually by far than if laid gently on the top of the riddle. The cause of this, it will readily be seen, is the greater violence of the motion which it receives. In other kinds, as rye and certain varieties of wheat where the grain is smooth and the straw is coarse and not liable to retard the grain, the separation is so easily effected that the vibration of the riddle is sufficient to prevent any waste. The arrangement for regulating and adapting this part of the operation is so perfect that it can be successfully employed in separating all varieties of grain which admit of being threshed in the ordinary manner.

The arrangement for driving the operating parts of the separator are exceedingly simple and economical of the power employed. A pulley *u* Fig. 2, on the cylinder shaft drives the fan K, by a band to pulley *v* on its shaft. A smaller pulley *w* also on the cylinder shaft drives the endless screen or riddle, by a band to pulley *x*. The shoe or shaker is operated from the shaft of the fan and the whole is driven with very little power. The simplification of parts gives this separator in addition the important advantages of cheapness and portability, as well as efficiency and adaptation to the various kinds of work required.

I do not claim the use of endless aprons or riddles, such being common for the purpose, but

What I claim as my invention and desire to secure by Letters Patent, is:

1. The application of the adjustable slide-board D, to the endless riddle E, in such a manner that the grain and straw can be made to impinge upon the end or more open meshes of the same, or upon the top, thereby varying and adapting the action to the quality of grain and straw, and employing the force with which it leaves the cylinder as a means of separating the two, substantially as and for the purposes described.

2. I also claim the combination and arrangement of the parts, consisting of the fan, H, self-vibrating riddle, E, with pulleys *u*, *x*, driven directly from the cylinder, B; elongated shaker and board, R, G, and intermediate adjustable slide-board, D, operating conjointly, substantially as described to form a portable, cheap and effective separating attachment to threshing machines as set forth.

AUSTIN POTTER.

Witnesses:
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S. J. ALLIS.