GREER & LANDIS.

Grain Thrasher and Separator.

No. 79,467. Patented June 30, 1868.

Fig. 1

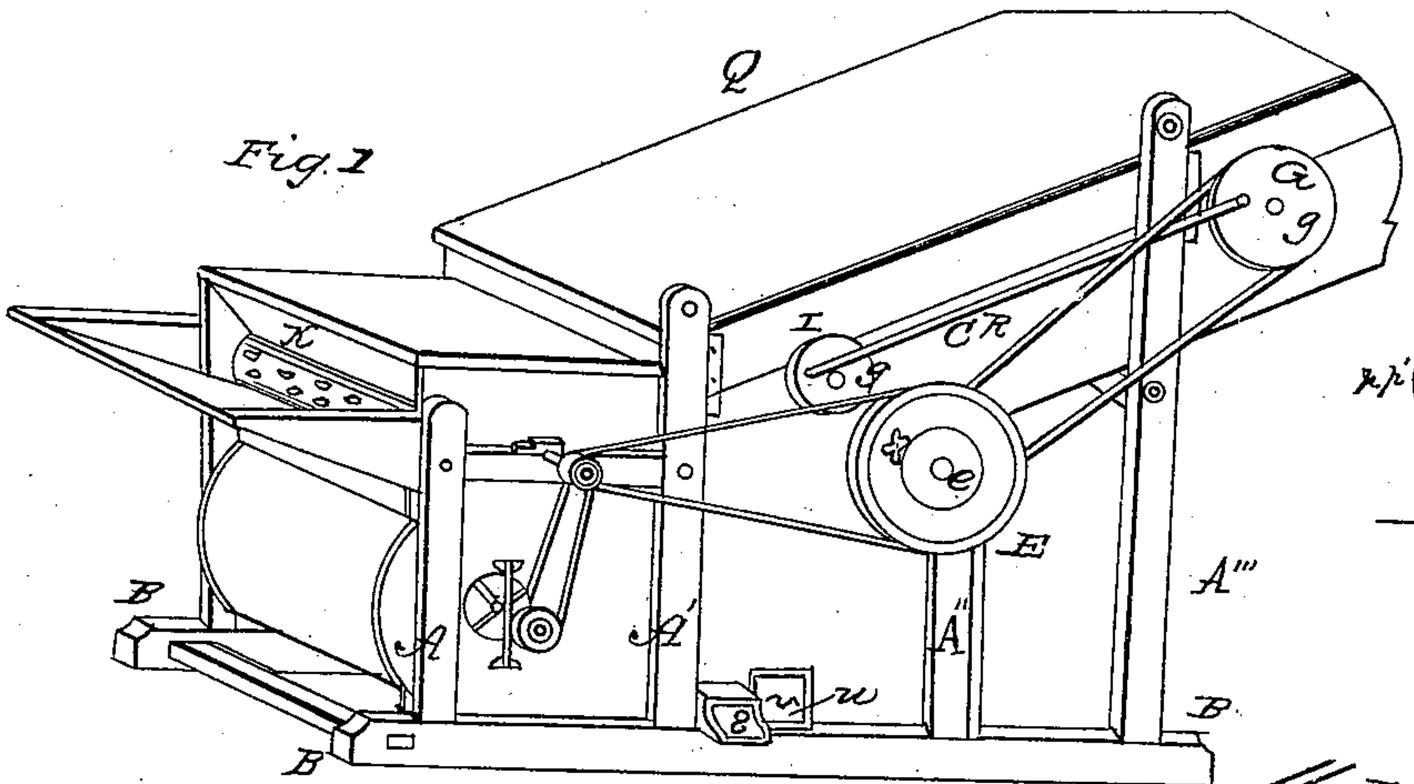


Fig. 5

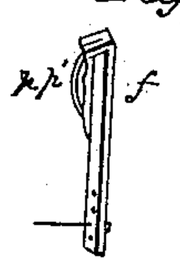


Fig. 2

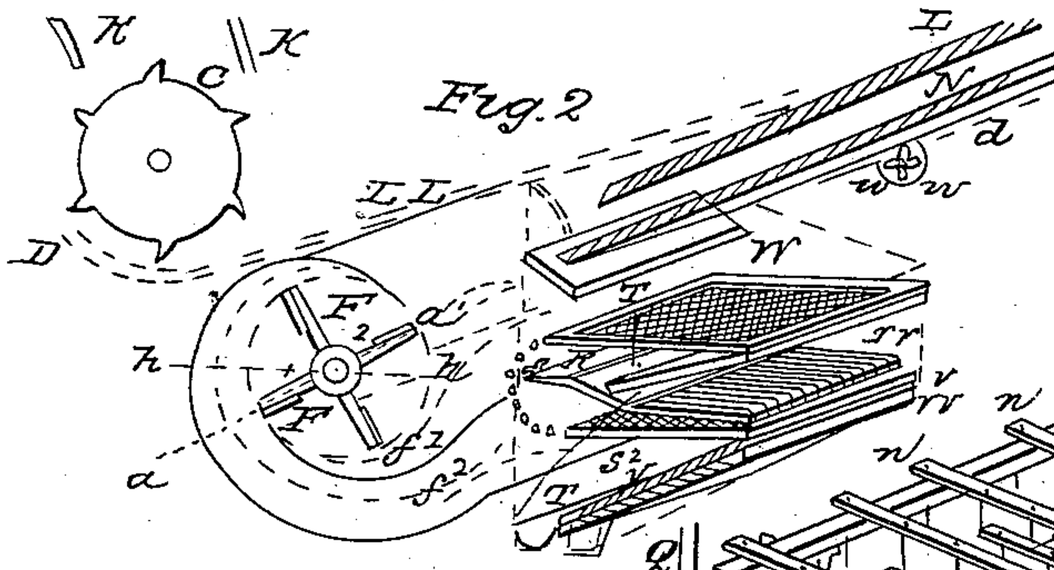


Fig. 4

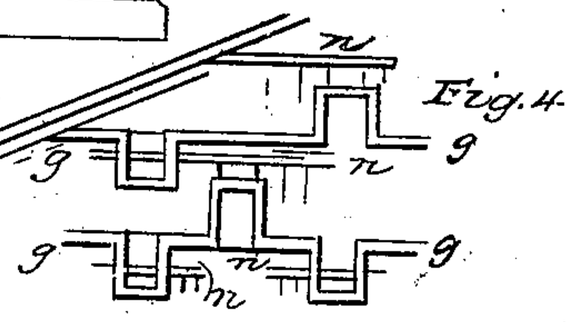
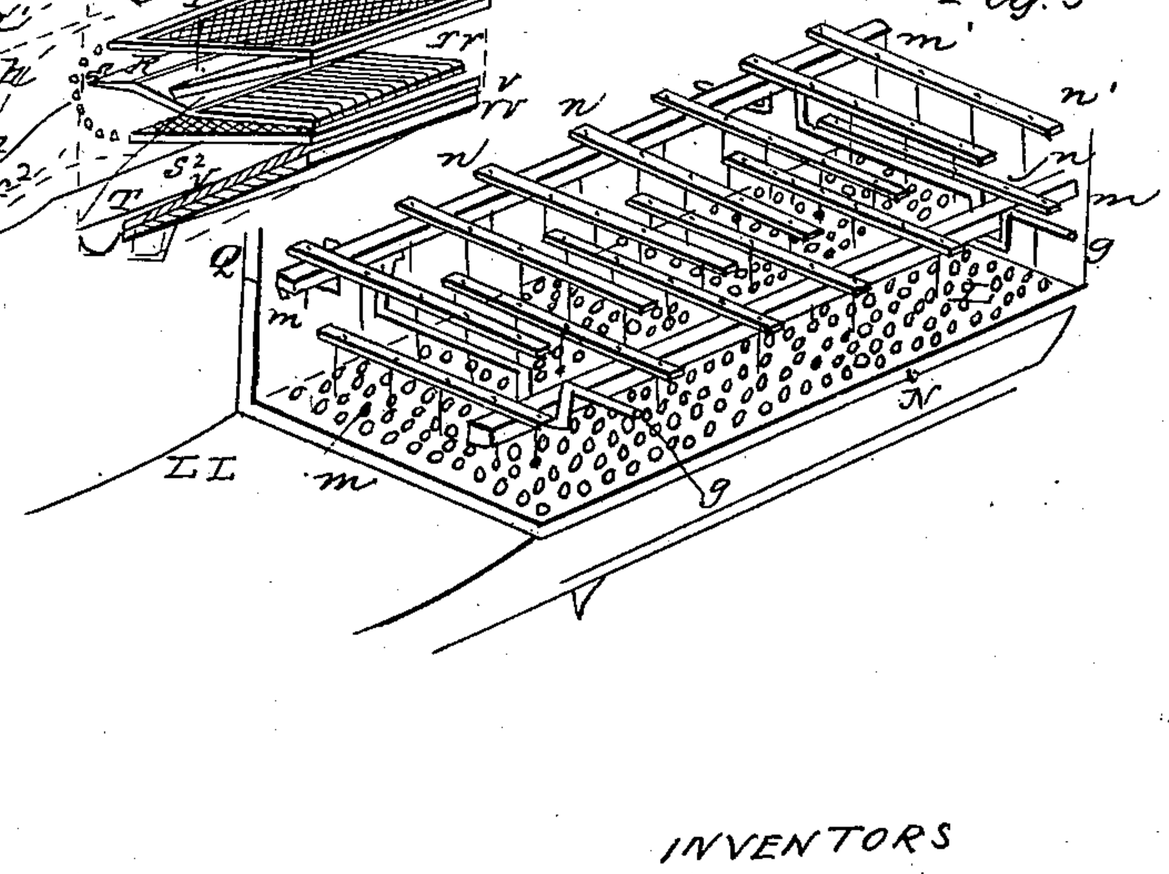


Fig. 3



WITNESSES

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GEORGE W. GREER AND FRANK F. LANDIS, OF LANCASTER, PENNSYLVANIA.

Letters Patent No. 79,467, *dated June* 30, 1868.

IMPROVEMENT IN GRAIN-THRESHER AND SEPARATOR.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, GEORGE W. GREER and FRANK F. LANDIS, of the city of Lancaster, in the State of Pennsylvania, have invented new and useful Improvements on Machines for Threshing and Separating Grain; and we hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 is a perspective view of the machine.

Figure 2 illustrates the arrangement of the double-chambered fan-casing, and the double shoe and appliances.

Figure 3, the cranks, beams, and raking-apparatus, to agitate and carry off the straw.

Figure 4 shows a double and a triple crank.

Figure 5, the oblique cam and shaker.

The nature of our invention consists, mainly, in the double-blast channels, double shoe, regulating-device, and carrying off partially-threshed heads, and in the peculiar construction of our rakes for thoroughly agitating and conveying the straw from the machine. There are other minor improvements also.

To enable others skilled in the art to make and use our invention, we will describe the same.

The framework, cylinder, concave perforated bottom, &c., in common use or well known, require no special description. Fig. 1 indicates the general character of the machine.

The novelty consists in the following particulars: First, the construction of the fan-case, fig. 2. The arms of the fan F are the radius of the dotted circle. This circle, at two points, a' and z, is produced so as to form two channels or flues, f^1 f^2. These points, 1 2, are determined by stepping off on a line, a a', having an angle of twenty-eight degrees from the horizontal line h h, through the centre, the desired width of the flue. From point 1 to a' gives the radius for the curve a' to a. The same radius, from point 2 to z, will give the inner curve, and by extending the radius from said point 2 to a, the lower outer curve will be given. The wings of the fan, coming in close contact successively (as they revolve) with the points a' z, propel the air with about equal force into the separate flues f^1 and f^2, the partition z z leading to about the middle of the double shoe, as shown.

The regulating-board R is hinged to the inclined board r by a pivot, on which it turns. The circular row of dots represent holes, into which a bolt, (or its equivalent,) fastened to the outer edge on one side, locks, to retain the board R in its adjusted position, so as to regulate the blast more or less strongly to pass over or under the upper sieve, or into the upper or lower shoe, s^1 s^2, as may be desirable.

The lower edge of the inclined board r is provided with stout parallel wires, r r, bent down behind, and inserted into a cross-strip, o, for the purpose of arresting unthreshed or portions of heads, and drive them (by the blast over the same) over the hind end, and to prevent such from falling down with the grain, and lodging in the meshes of the sieve U, as is the case on the machines in use, so that the machines must be stopped to clean the sieve. This trouble is obviated by the wire-slatted attachment r r. This, together with the double and branching blast, (shown by the divided red lines,) leading into the double shoe aforesaid, constitutes the main feature of our improvement in this department.

The perforated bottom L, and tight bottom N, receive a jarring motion by a four-cogged pinion, w, on the pulley-shaft E, which comes in contact with a nose or lug, d, on the under side of the bottom, N, to shake the grain down, when it falls upon the inclined board x, which has bent, comb-like wires across it on the lower edge, through which the grains pass on to the sieve W; thence, freed from the greater portions of chaff, &c., it falls upon the inclined board T, over the regulating-board r, on to the sieve U, in the lower shoe s^2, and so on over screen v and the bottom, v v, into the seed-spout s and screen-box u, subjected to an increased action of the blast in its passage, and thoroughly cleaned and separated.

The raking-box Q, or cap, contains the raking-device, fig. 3, the cranks *g* being on the shafts of the pulleys I G, revolving in concert by means of the connecting-rod C R, and gear, as shown by fig. 1.

Two beams, *m m'*, the length of the box, are connected by a box or bearing on the under side, to the throw off the crank-shaft, (say seven inches' throw,) in a reversed position, so that when the beam is up on one side, the other is down. These beams have a series of cross-pieces, *u*, provided with slightly-curved wire teeth, forming rakes, and extending inwards to the (opposite) throw of the crank. These rakes freely pass over each other, successively tending to agitate the straw, so as to shake out every grain, and convey the straw back in the most perfect manner heretofore witnessed. A three-throw crank and three beams might be used, as shown in fig. 4, but deem it substantially the same.

In the illustration, fig. 2, the fan and shoe arrangement is shown behind the cylinder *c*, and is deemed better than when directly under, as shown in fig. 1, catching too much of the weightier dirt and offal from the beaters.

We have made other changes, which are not patentable, but conduce greatly in producing an efficiency of the highest order, and a great reduction in the power required to drive the same; and notwithstanding the several patents and good machines in use, the concurring testimony of experienced farmers encourages us to present our claims to what we deem as novel as they are proved useful.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The double-chambered fan-casing or flues f^1 and f^2, made substantially in the manner and for the purpose specified.

2. The arrangement of the double shoe s^1 s^2, in combination with the regulating-board R, made substantially in the manner and for the purpose set forth.

3. In combination with the regulating-board R, and inclined board *r*, the appendage of the wire rack *r r* to the same, made substantially in the manner and for the purpose described.

4. The raking-device, when constructed with parallel beams *m* and toothed slats or rakes *n*, revolving over each other in the manner and for the purpose specified.

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Witnesses:
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