(No Model.)

M. LAVERING & E. H. ANSPAUGH.

GRAIN SEPARATOR.

No. 343,822. Patented June 15, 1886.

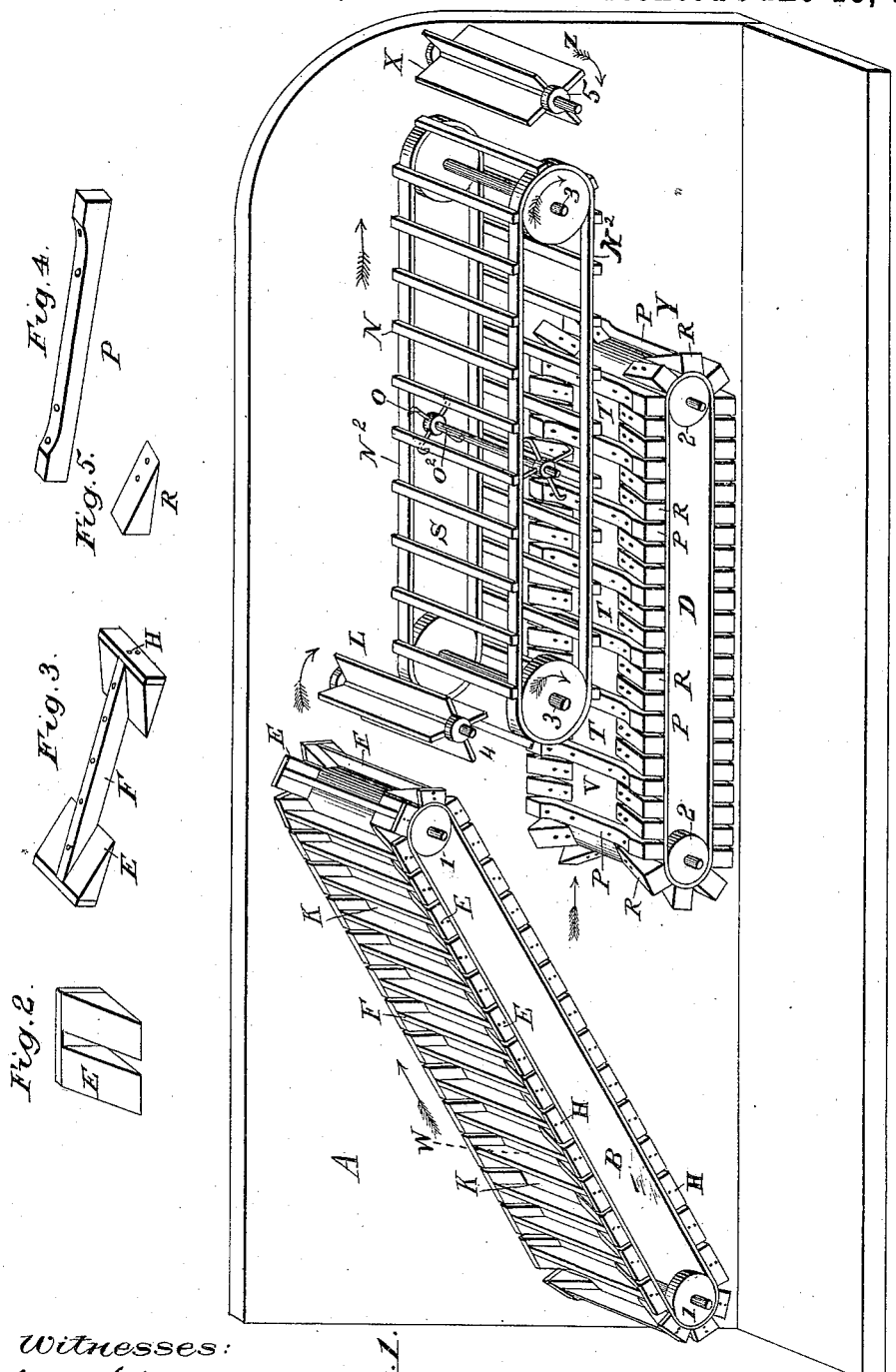

Fig. 1.

Fig. 4.

Fig. 5.

Fig. 3.

Fig. 2.

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UNITED STATES PATENT OFFICE.

MORGAN LAVERING AND ELI H. ANSPAUGH, OF COLUMBIA CITY, IND.

GRAIN-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 343,822, dated June 15, 1886.

Application filed June 10, 1881. Serial No. 134,482. (No model.)

To all whom it may concern:

Be it known that we, MORGAN LAVERING and ELI H. ANSPAUGH, citizens of the United States, residing at Columbia City, in the county of Whitley and State of Indiana, have jointly invented a new and useful Improvement in Grain-Separators, of which the following is a specification.

Our invention relates to the means employed for separating the thrashed grain from the straw and chaff; and the object of our invention is to effect such separation thoroughly, expeditiously, and economically. We attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a detailed side and top view in perspective of the entire machine. Fig. 2 represents a grain cell-head. Fig. 3 represents a cell-bar with a cell-head attached to each end thereof. Fig. 4 shows a grain-cleat, and Fig. 5 shows a grain-stop.

Similar letters refer to similar parts throughout the several views.

In Fig. 1, A represents the frame-work, different portions of which support the operative parts of the machinery.

B is the first grain-web, made of canvas cloth, and to it are attached, transversely and on edge, the bars F F, each one of which has a cell-head attached to each end, as shown in Fig. 3.

D shows the second grain-web, to which are attached, transversely and on edge, the grain-cleats P P, Fig. 4, and the grain-stops R R, Fig. 5.

E, Fig. 2, is a cell-head shown separately from the bar to which it belongs.

F is the bar connecting the two cell-heads.

H designates short back boards, to which the cell-heads are secured in pairs at a sufficient distance apart to allow the ends of the bars F to be received between them, the back boards, H, being also secured to the bars F. We secure the cell-heads to the cell-bars by nailing or other equivalent means.

K represents the cells or spaces between the bars after they are fastened to the web B. Motion is given to web B through the pulleys 1 and 1 attached to the outer ends of suitable shafts, around which the web is drawn.

L is a beater (revolved through pulley 4) at the upper end of B.

N N are slats fastened to the bands N^2 N^2 of the straw-carrier S, which runs upon shafts propelled through pulleys 3 and 3.

O O are the two sets of arms of the agitator, connected by shaft O^2, revolved by means of a pulley.

T T are the spaces or grain-cells between the slats P P.

W indicates the point at which the thrashed grain, straw, and chaff are supposed to first strike the grain-web B.

X is a beater placed at the extreme outer end of carrier S.

Pulleys 2 and 2, acting through the shafts to which they are attached, give motion to the second grain-web, D.

In all operating parts of the machine the directions of the different motions are indicated by arrows. The belts for propelling the various pulleys are omitted, for the reason that their application and use are obvious and well understood.

The practical operation of our improved grain-separator is substantially as follows: The thrashed grain, straw, and chaff coming out of the thrasher strikes web B at W, and, entering the cells or spaces K K between the bars F F, is conveyed forward and upward until it passes over the upper end of grain-web B, where the grain falls down to second grain-web, D, at about the point indicated by V, the straw being caught by the beater L and thrown over on the carrier S, which conveys it to where it is caught by beater X and thrown over to the point Z, where it passes to another straw-carrier. (Not here shown.) When the grain falls to the second web, D, as mentioned, it enters the spaces or cells T T between the slats P P, and is conveyed to the outer end of said web, where, at the point Y, it falls off upon the riddles, which are not here shown. By the use of this second grain-web, D, we save from loss a great amount of grain that is scattered and wasted in using ordinary machines.

The use of the straw-carrier S in the manner shown, and the use of the agitator O O, with its curved arms striking on the under side of the upper portion of carrier-bands N^2 N^2, effect a more thorough separation and saving of grain than is possible under the old methods.

The formation of the cells K K on web B will

be readily understood by a reference to Figs. 2 and 3, from which it is evident that if we attach two or more of the devices shown in Fig. 3 to the canvas closely together, side by side, one or more cells or boxes will be formed, of which the sides will consist of the bars F F, the ends of the cell-heads E E, and the bottoms of the canvas of the web B. To form the cells or spaces T T on the second grain-web, D, the slats P P are attached, as before stated, and the stops R R attached to the web between the slats, as shown. Cell-heads E E and stops R R are made wedge-shaped and sloping inward, so as to cause the grain to always roll toward the center of each web. The width of the cells or spaces K K can be regulated by increasing or diminishing the length of the cell-heads. The width of spaces T T depend on the number and widths of the stops R R, attached to the canvas between the slats. The bars F F and slats P P are made as long as the widths of the grain-webs to which they are fastened.

It is obvious that our improved grain-separator can be made of any desired size and capacity that may be demanded.

While we have described the entire machine at length, we wish it to be understood that the invention rests in the peculiar construction of the belts B and D, and in the combination thereof with the straw-carrier S and beater L.

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

1. In a grain-separator, the combination of a belt or web, B, arranged at an incline and equipped with cross-bars and cell-heads, and a beater arranged at the end of said web, with a straw-carrier, S, arranged to take the straw from the beater, and a second belt or web, D, arranged horizontally beneath the beater and provided with cells formed by slats P P and inclined or beveled stops R R, the whole arranged for joint operation, as set forth.

2. In a grain-separator, a grain web or belt provided with grain-cells formed by transverse slats and wedge-shaped grain-stops fastened to the grain web or belts, substantially as described and set forth.

3. The combination, with the endless web of canvas, of the wedge-shaped blocks E, secured in pairs to back boards at a distance apart, and the cross-bars F, arranged with their ends between such pairs of wedge-shaped blocks, and the whole secured in regular series to the canvas, to form the web or belt B, as set forth.

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