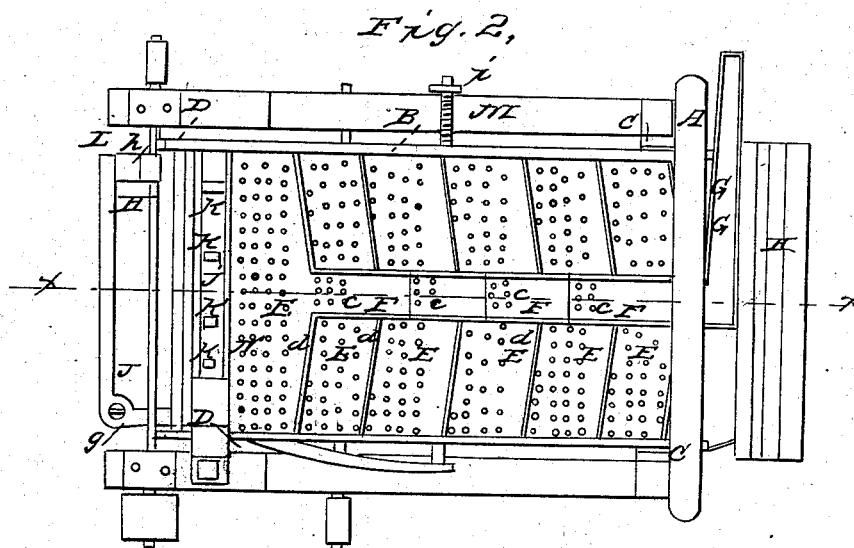
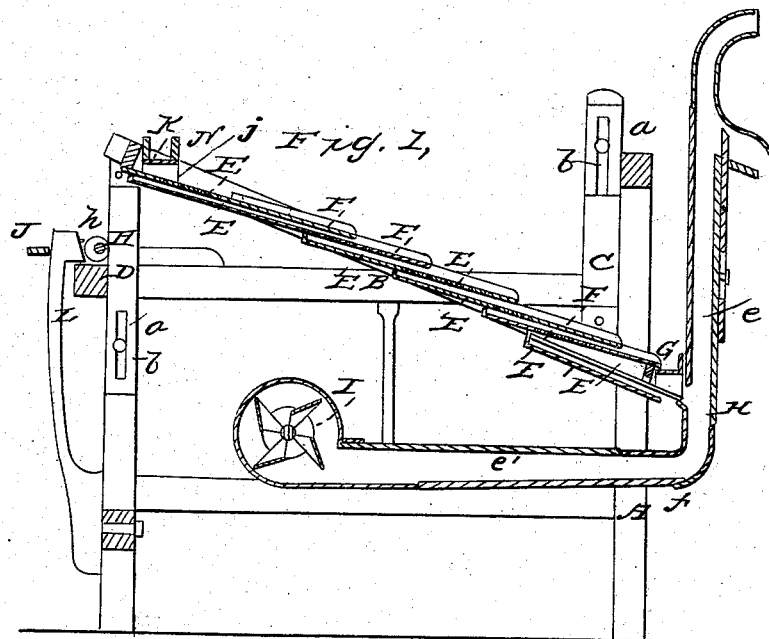


J. TOMLINSON.

Grain Separator.

No. 48,603.

Patented July 4, 1865.



WITNESSES:

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INVENTOR:

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UNITED STATES PATENT OFFICE.

JULIUS TOMLINSON, OF NEWBURG, WISCONSIN.

IMPROVED GRAIN-SEPARATOR.

Specification forming part of Letters Patent No. 48,603, dated July 4, 1865.

To all whom it may concern:

Be it known that I, JULIUS TOMLINSON, of Newburg, in the county of Washington and State of Wisconsin, have invented a new and Improved Grain-Separator; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side sectional view of my-invention, taken in the line *xx*, Fig. 2; Fig. 2, a plan or top view of the same.

Similar letters of reference indicate corresponding parts.

This invention relates to a new and improved machine for separating impurities from grain, and also for separating one kind of grain from another, such as oats from wheat, &c.; and it consists in the employment or use of a series of screens and discharge-spouts arranged relatively with each other in such a manner that the grain will be subjected to repeated screenings and thoroughly cleansed from all impurities, and one kind of grain separated from another, a blast-fan being used, and also a peculiar feeding-spout, in order to render the operation perfect or complete.

A represents a framing of rectangular form, and constructed in any proper way to support the working parts.

B is a screen-frame, also of rectangular form, and suspended in the framing A in an inclined position, the lower end of B being attached to the bottoms of hangers C C, which may be of metal or of a hard elastic wood—say hickory. The upper part of the frame B is attached to the upper ends of elastic standards D D, which may be constructed precisely like the hangers C C. The hangers and standards are attached to the framing by screws *a*, which pass through vertical slots *b* in the former into the framing, and admit of the screen-frame being adjusted in a more or less inclined position, as may be desired. (See Fig. 2.) The hangers and standards are so made as to yield or spring in a transverse direction with the framing A.

Within the frame B there is placed a series of screens, E, which overlap each other, as shown clearly in Fig. 1, and have their lower edges beveled, so as to incline from their ends to the centers of the lower edges, where there

are spouts F to conduct the offal off from each screen, the spouts overlapping each other as well as the screens.

The screens E may be constructed of perforated metal plates, and the back part of each screen, which is underneath the front part of the screen above it, is not perforated, in order that the grain may successively descend through and over each screen in the frame, the good grain—wheat, for instance—passing through the screens, while the oats, sticks, and other trash pass off through the spouts F, the upper part of each of the latter being perforated, as shown at *c*, in order to allow any grain which may chance to pass into the same to pass through upon the screen below. The lower edge of each screen is bent upward to form a flange or lip, *d*, to conduct the oats and large trash, which cannot pass through the screens, to the spouts F.

At the lower end of the screen-frame B there is attached a spout, G, which conducts the oats and trash off from one side of the machine, (see more particularly Fig. 2;) and the lower screen, E, may have a fine screen, E', underneath it, to admit of the escape of cockle and grass seed. These screens E' may be placed under more or all of the screens E, if desired. The lower screen conducts the grain into a blast-spout, H, the grain falling into the lower part of a vertical portion, *e*, thereof, the other portion, *e'*, being nearly horizontal and extending back to a fan-case, I, containing a fan of the ordinary or any proper construction. The blast-spout, of course, is equal in width to the screen-frame B, and the blast in the former drives upward all dust and light impurities, the cleansed grain being discharged at the opening *f*. The screen-frame B has a lateral shake motion communicated to it by means of a bent lever, J, which works on a fulcrum-pin, *g*, and is operated by an eccentric, *h*, on a shaft, K, the former actuating a spring, L, which bears against one end of lever J, while the other end of the lever bears against one side of the screen-frame B, the opposite side of the screen-frame having a rod, *i*, projecting from it at right angles, on which a spiral spring, M, is placed. This spring M gives the return motion to the screen-frame and causes the screen to be operated in a uniform manner without any unnecessary jars and concussions, which have a tendency to prevent a perfect separation of the grain. I do not confine myself, however, to the

precise arrangement of the parts herein shown and described, for they may be modified in various ways and the same end obtained. I propose to have the lever J provided with an adjustable fulcrum if a straight lever be used, and a movable eccentric if a bent lever be used, so as to vary the degree of shake of the screen B as occasion may require.

I would state that in certain cases it may be desirable to have the screens E placed in pairs in separate frames, or each placed in a separate frame operated separately, but all having the same relative position one with another, as described. This modification admits of the screens being moved or shaken in reverse directions, which would require a less violent or rapid shake motion and render the separating process more thorough.

I would further remark that, instead of having the hangers C C and standards D D elastic, they may be rigid and connected to the framing A by joints. The spring M will admit of this modification.

N is a feed-spout, which is slightly inclined, and extends transversely across the elevated end of the screen-frame B, a short distance above it. The bottom *j* of this feed spout is perforated with holes *k* at suitable distances apart, the holes gradually increasing in size from the feed end of the spout to its opposite end, as shown in Fig. 2. By this means the grain is discharged uniformly over the whole width of the upper screen, E, as each hole is rather larger than the one immediately above it, and the increased capacity of the lower holes compensates for the scarcity of grain toward the

lower part of the spout, the holes of smaller diameter at the upper part of the latter preventing a too free flow or discharge of grain at the upper part.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The securing of the pendants C C and standards D D of the screen-frame B to the framing A by means of screws *a* passing through oblong vertical slots *b* in the pendants and standards and into the framing, to admit of the varying of the inclination of the screen-frame, substantially as shown and described.

2. The screens E, formed with beveled lower edge, provided with a flange or lip, *d*, and with spouts F, and arranged or disposed within the frame B, and with a blast-spout, G, to operate in the manner substantially as and for the purpose set forth.

3. The inclined feed-spout N, provided with a bottom, *j*, having perforations of different sizes, substantially as and for the purpose set forth.

4. The introduction of a lever, either straight or bent, between the eccentric and the sieve-frame, the straight lever to have a movable fulcrum and the bent lever to be operated by a movable eccentric, substantially as and for the purpose set forth.

JULIUS TOMLINSON.

Witnesses:

HERMAN VICK,
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