J. H. FAIRCHILD.

Grain Separator.

No. 53,735. Patented April 3, 1866.

FIG. 1.

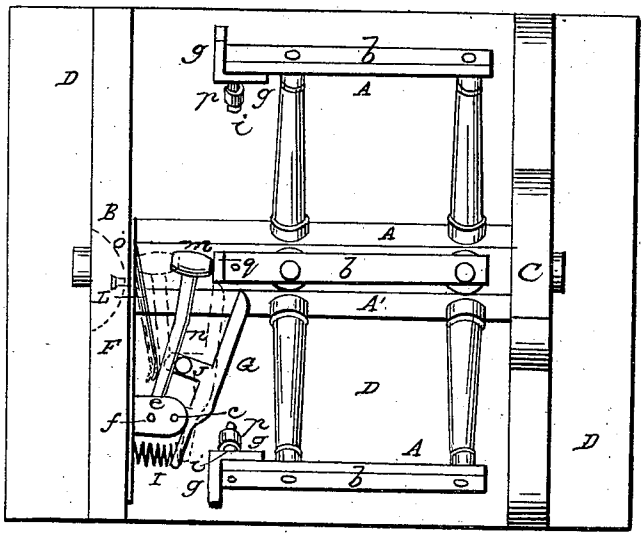

FIG. 2.

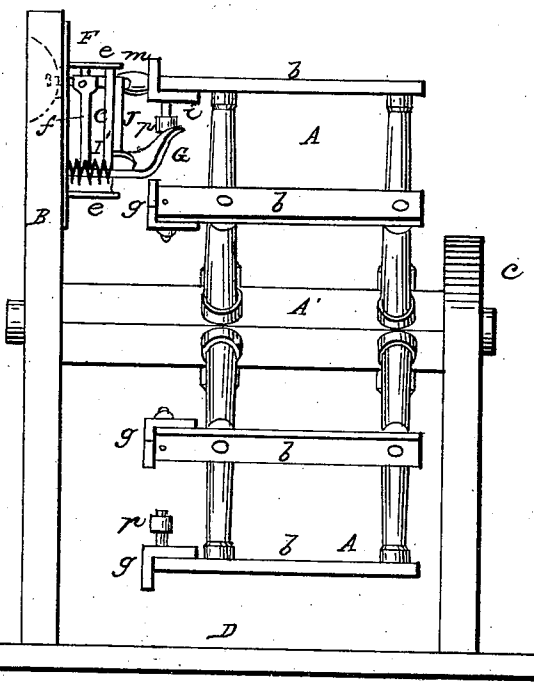

FIG. 3.

WITNESSES:

W. H. Burridge

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INVENTOR.

J. H. Fairchild.

UNITED STATES PATENT OFFICE.

J. H. FAIRCHILD, OF EAST HIGHGATE, VERMONT, ASSIGNOR TO HIMSELF AND GEORGE L. HAYWARD.

IMPROVEMENT IN GRAIN-SEPARATOR.

Specification forming part of Letters Patent No. **53,735**, dated April 3, 1866.

To all whom it may concern:

Be it known that I, J. H. FAIRCHILD, of East Highgate, in the county of Franklin and State of Vermont, have invented certain new and useful Improvements in a Machine for Sifting, Screening Grain, &c.; and I do hereby declare that the following is a full and complete 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 plan view of the machine. Fig. 2 is a side elevation. Fig. 3 is a detached section.

Like letters of reference refer to like parts in the views.

My improvement relates to a machine for screening, sifting grain, &c., that consists in the manner of agitating or jarring the meshes of the sieves, screens, or cloth, so that the meshes will be moved crosswise or longitudinally, changing their position alternately, thereby preventing them from getting filled up or clogged when in use, and which may be applied to flour-bolts, as hereinafter described.

A represents a reel on a shaft, A′, that has its bearing in the end frames B and C extending up from a platform, D. To the reel sieves, screens, or bolt-cloth may be connected in the usual way.

On the inner side of the frame B there is secured a plate, F, from which lugs *e* project. G is a bent lever, shaped as represented in Figs. 1 and 2, pivoted by means of a shaft, *c*, to the lugs *e*. The shaft forms a part of the lever, and is inserted at the upper and lower ends in the lugs, in which it has its bearing.

To one end of the lever is connected a spring, I, that is attached to the plate F. At the middle of the lever extends up an arm, J, the upper end of which comes against the handle *n* of a hammer, *m*. The handle *n*, by means of a shaft, *f*, is pivoted to the lugs *e*, in which it vibrates.

L, Fig. 1, is the mainspring attached at one end to the plate, and the other end presses against the handle *n* of the hammer, as shown in Fig. 1. *o* is a set-screw, screwed through the plate F, as indicated by the dotted lines *o′*, against the spring L, whereby the tension of the spring is regulated by turning it more or less against the spring.

On one end of the arms *b* of the reel are secured lugs *g*, as represented, and to the inner part of each of these lugs is attached a pin, *i*, on which there is arranged a friction-roller, *p*, that moves against the side of the lever as the reel revolves. One of these lugs is represented detached in Fig. 3, showing the end, in which there is leather or other elastic packing, as at *j*, to receive the stroke of the hammer, to ease the action of the hammer and prevent it from making so much noise.

In practical operation, the sieves, screens, or bolt-cloth being connected to the reel and the grain or flour received in it in the usual manner, by turning the reel the roller *p* at the end of each of the arms *b* comes against the side of the lever and moves it toward the plate F, into the position indicated by the dotted lines in Fig. 1, which moves the hammer *m* also, as indicated, the springs I and L allowing them to move in this manner. When the roller on the end of the arm passes off the end of the lever the tension of the spring L causes the hammer to fly back at once and strike against the end of the lug. The hammer is a little in advance of the end of the lever, as seen in Fig. 1, so that as the roller passes off the end of the lever the hammer will have time to vibrate back and strike directly against the lug. The packing *j* in the end of the lug eases its action and prevents the noise that would otherwise be produced. The spring I, attached to the end of the lever, prevents the spring L from moving out the lever and hammer too quick and too far, and thus prevents the hammer from striking against the ends of the arms of the reel. The reel, being jarred or moved in this manner by the strokes of the hammer, causes the meshes of the bolt-cloth to change their position, working crosswise on each other, as they are of a diamond form, moving first in one direction and then in the other, back and forth alternately, as it receives the blows of the hammer on the ends of each of the arms as the reel revolves, thereby opening the meshes and preventing them from getting filled or clogged up. The blows of the hammer may be either light or heavy, any degree between, or none at all, these variations being produced by adjusting the set-screw *o*, as before stated, increasing or decreasing the tension of the spring L. The lugs *g* can be

set farther in or out on the ends of the arms for increasing or decreasing the force of the blows. The meshes are opened or worked in this manner by the blows or jarring being produced on the end or longitudinally. If received on the side no such effect would be produced. Consequently the desired effect would not be produced as it is now.

What I claim as my improvement, and desire to secure by Letters Patent, is—

1. The lever G, hammer *m*, and springs L I, in combination with the packing *j* and roller *p*, when arranged and operating substantially as and for the purpose set forth.

2. The adjusting-screw *o*, spring L, shafts *f c*, arm or wrist J, in combination with the hammer *m*, hung to the shaft *f*, lugs *g*, and reel, as and for the purpose substantially as described.

J. H. FAIRCHILD.

Witnesses:
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