J. THURSTON.

Grain Winnower.

No. 5,410. Patented Jan'y 6, 1848.

Fig: 1.

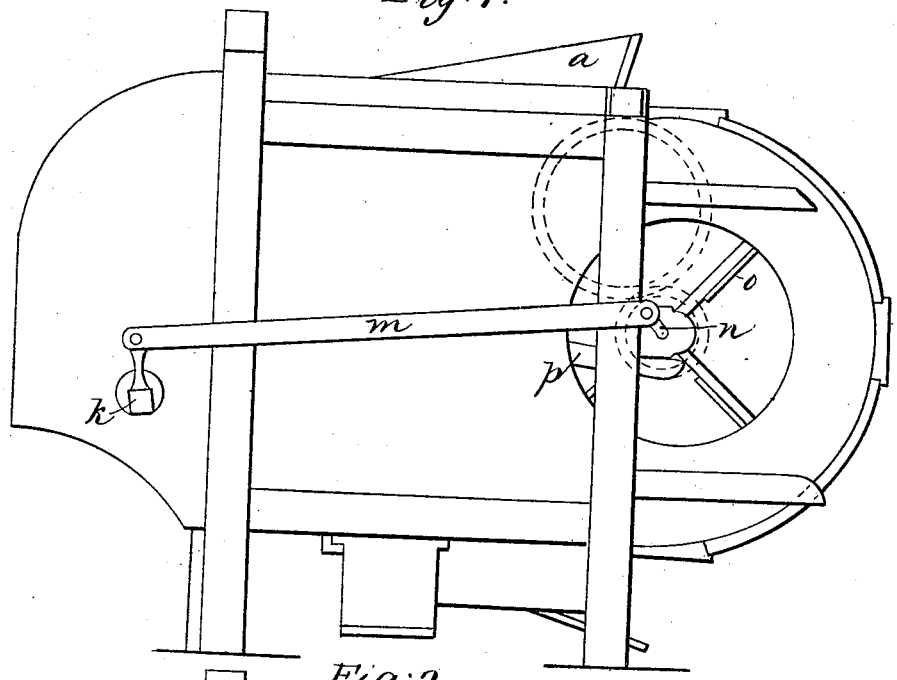
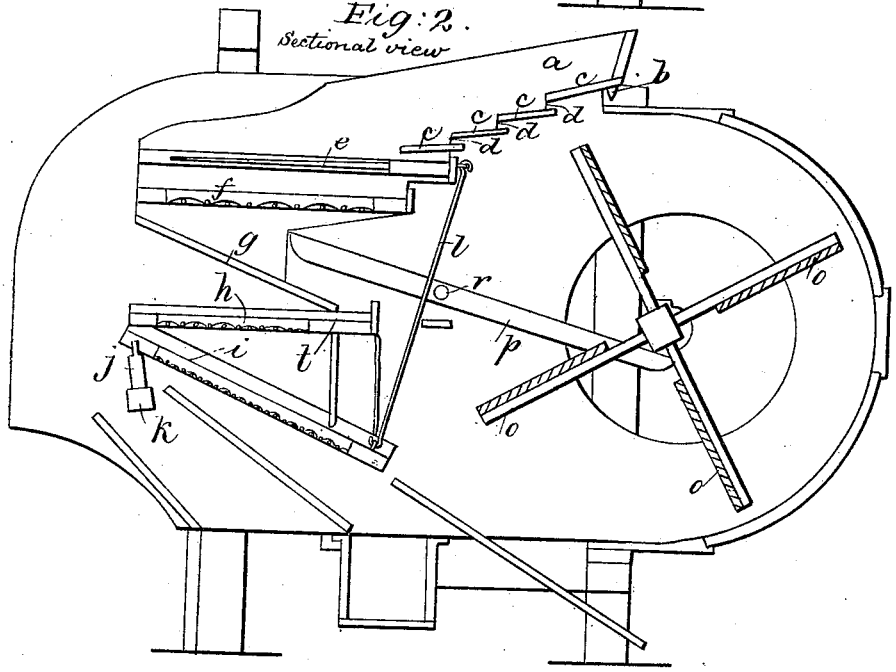


Fig: 2.
Sectional view



UNITED STATES PATENT OFFICE.

JOHN THURSTON, OF BATH TOWNSHIP, FRANKLIN COUNTY, INDIANA.

WINNOWING-MACHINE.

Specification forming part of Letters Patent No. 5,410, dated January 6, 1848; Reissued October 9, 1849, No. 148.

To all whom it may concern:

Be it known that I, JOHN THURSTON, of the township of Bath, in the county of Franklin, in the State of Indiana, have made new and useful Improvements in Fanning Mills; and I do hereby declare that the following is a full, clear, and exact description of their nature and construction, reference being had to the accompanying drawings, making part of this specification, in which—

Fig. 1 is a side elevation, and Fig. 2 a longitudinal section thereof.

The same letters indicate like parts in both figures.

The nature of my improvements consist, first, in constructing the feeder that receives the grain with three or more successive steps, composed of slats of wood, with openings between each one, which peculiar construction assists in feeding, by the blast created by the fan, being forced through said openings and driving off the loose straw, &c., which tends to obstruct the passage of the grain.

My second improvement consists in giving a vertical motion or shake to the feeder, and riddle attached thereto, by means of arms that are operated on by the shaft of the fan, said arms extending from the shaft and bearing up against the lower side of said riddle.

The general form of my machine is similar to others now in use but as will be evident from the accompanying drawings, the rear end of the feeder *a*, is hung upon stationary pins *b*, which project up from the cross piece that is above the casing which surrounds the fan, and the bottom is constructed with four or more wide slats of wood *c*, each one placed a little below the other, having openings *d*, between them; this arrangement it is believed will assist materially in the operation of feeding by the action of a portion of the blast through said openings upon the grain in its passage to the riddle. To this feeder are connected a rake *e*, and riddle *f*, (the latter inclined slightly downward toward the back) which are made to slide in grooves in the feeder; these, however, being of ordinary construction, need no further description. Below the above mentioned riddle *f*, I place an apron *g*, inclining downward and back at such an angle as shall cause the grain to fall near the back part and beyond the meshes of the second riddle. The second riddle *h*, is placed horizontally and is so made and arranged as that the grain in passing down the apron *g*, will not fall on the meshes, but on a wide piece at the back of the riddle frame, and will partake of its motion (to be hereafter described) before it passes through the meshes, which motion tends to loosen the caps and they pass off. This said riddle is permanently attached to a screen *i*,—the meshes of which are much smaller—inclining downward and back at an angle of about 22 degrees; below this screen there is another apron which conducts the clean grain down to a box at the bottom of the mill, which can be drawn out at pleasure. The triangular space between the lower riddle and screen should be inclosed with canvas or other proper material to prevent any portion of the grain from being forced out of its right channel.

The lower riddle and screen are hung at the front end on pins *j*, projecting up from a roller *k* (to be hereafter mentioned) the center and one end of which is made square as shown in the drawing, and by a strong wire *l*, placed in the center of the rear end and connected with the feeder by a hook or otherwise, by which arrangement the rear end of the lower riddle and screen receives a vertical motion, corresponding with that given to the feeder, as well as a horizontal motion, by means of the roller, which effectually clears the meshes and perfects the operation of cleaning. The roller *k*, above mentioned, is placed immediately below the front end of the lower screen having its bearings in the sides of the machine, one end projecting some distance out, to which is attached a rod *m*, which connects by a crank *n*, to the shaft of the fan *o*. This arrangement gives a regular horizontal motion to the lower riddle and screen.

The vertical motion of the feeder and upper riddle is produced by means of two long arms *p*, whose fulcrum is at *r*, the shorter ends bearing up against the lower part of said riddle, and the longer ends bearing up against the under part of the shaft of the fan, which is made square. It will be evident that as the fan is revolved, the shaft being square and revolving, will elevate the short end of said arms, and that the weight of the feeder and riddle will tend

as rapidly to depress them, hence a very quick vertical motion is given to the feeder and riddle, which greatly facilitates the operation. On the shaft of the fan, opposite to the crank *n*, which gives the horizontal motion to the lower riddle and screen, is a pinion which gears into a large cog wheel, represented by dotted lines which is turned by hand or other power as is most convenient.

Having thus fully described the nature of my improvements, what I claim as new therein, and desire to secure by Letters Patent, is—

1. Forming the feeder with slats of wood, one below the other, with openings between them for the purpose of facilitating the feeding operation in the manner herein made known.

2. I also claim in connection with the above the vertical motion given to said feeder and the upper riddle by means of the long arms acted upon by the shaft of the fan, whether arranged precisely as herein made known, or in any other manner the same in principle.

JOHN F. THURSTON.

Witnesses:
JOHN H. SHIRK,
GEO. BERRY.

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