E. BLESS.

Fanning Mili.

No. 7,849. Patented Dec. 17, 1850.

Fig. 3

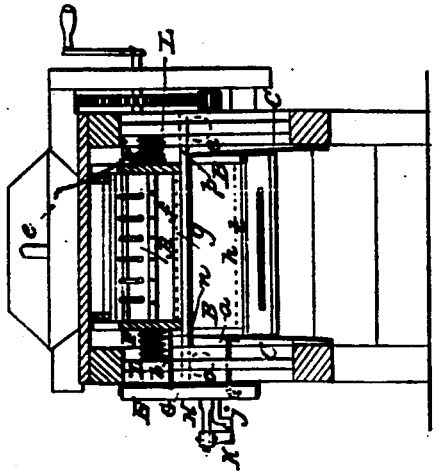


Fig. 2

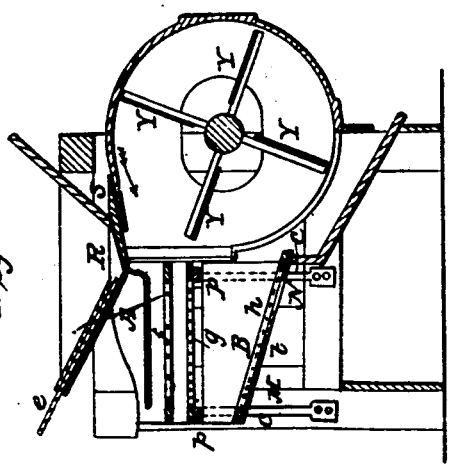
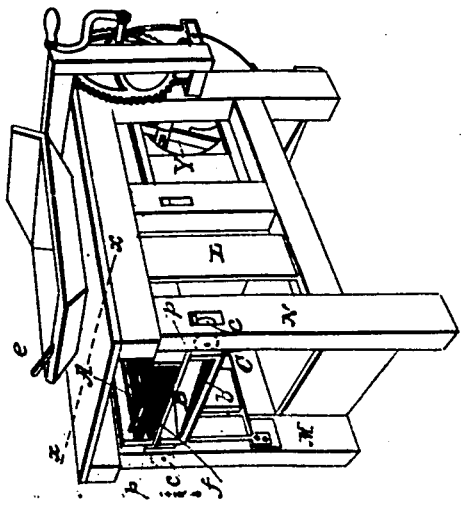


Fig. 1



UNITED STATES PATENT OFFICE.

E. BLESS, OF MINERVA, KENTUCKY.

FANNING-MILL.

Specification of Letters Patent No. 7,849, dated December 17, 1850.

To all whom it may concern:

Be it known that I, ELEAZAR BLESS, of Minerva, in the county of Mason and State of Kentucky, have invented sundry new and useful Improvements in the Fanning-Mill; and I do hereby declare the following to be a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1, is a perspective view, and Fig. 2, a longitudinal vertical section of my improved fanning mill, and Fig. 3, is a vertical transverse section in the line *x x* of Fig. 1.

Similar letters indicate like parts in all the figures.

My first improvement to the fanning mill, consists in placing only the riddles, or sieves, *f*, *g*, and the straw separator *e*, in the shoe A, and supporting and operating the shoe in such a manner as to impart to it a smooth reciprocating horizontal movement, without the slightest tremor or vertical action, for the purpose of preventing the dancing of the kernels of grain upon the riddles, and thereby enabling them to pass through the same, in less than half the time that would be required for the grain to pass through riddles or sieves having the usual tremulous vibrating movement imparted to them.

My second improvement, consists in placing the screen *h*, in a light auxiliary frame B, located under the shoe, and confined to elastic supports, for the purpose of enabling the greatest possible amount of reciprocating and tremulous motion to be imparted to it, and thereby causing the grains, seeds, or other substances that fall upon it, to rebound therefrom and dance upon the screen, by which the blast of air from the fanners is enabled to take hold of and carry off every substance and impurity that is lighter than the kernels of grain, or seed to be cleansed.

My third improvement, consists in causing the blast of air to strike obliquely upon the upper and under sides of the sieves in the shoe, and upon the upper side of the screen, when respectively arranged in my improved manner; for the purpose of enabling me to so combine the sifting, screening, and winnowing operations, as to perfectly clean wheat, or seeds, by passing them only once through the mill.

The supporting frame-work of my improved fanning mill, is of the form represented in the drawings, and is constructed in any well known or usual manner.

The shoe A, is supported and reciprocated as follows: *p*, *p*, are transverse bars made fast to the under side of the shoe, the ends of which pass through openings in the posts M, N, and rest upon friction rollers *c*, located therein, as shown in Fig. 1.

A uniform reciprocating movement is imparted to the shoe from the crank on the fanning shaft, through the medium of the vertical shaft E, (secured in bearings to the side of the mill,) from which project the arms G, H, J; the arm G, projecting rearward, being connected to the shoe, by the rod *b*; and the laterally projecting arm H, being connected to the fanning shaft, crank by the pitman K, as represented in Fig. 3.

All vertical and tremulous motion of the shoe upon its bearings is prevented, by the action of the springs F, made fast to the sides of the shoe and to the sides L, of the mill, as represented in Fig. 3; the said springs being so arranged and inclined as to press inward with a sufficiently downward inclination, to prevent the shoe from rising from its bearings, however rapidly it may be reciprocated; thereby preventing the shoe from making a noise when operated, and causing it to move so smoothly that it does not impart the least motion to the frame of the mill, which advantages, are in addition to the more important one above referred to, of causing the grain to pass through the riddles, placed in a shoe when thus arranged, with double the rapidity that it can be made to pass through riddles which have the ordinary tremulous vibratory motion imparted them.

The screen B, rests upon the four elastic supports, C, C, C, C, made fast to the sides of the mill and to the corners of the screen; the screen is placed in such a position, and at such an inclination, that the portion of the blast thrown tangentially from the fanning wings Y, Y, will strike the centers of the screen.

The screen is connected to the arm J, projecting forward from the shaft E, by the connecting rod *a*, which reciprocates the

screen back and forth, antagonistically to the movements of the shoe A.

The fanning or wind wheel is driven in the direction of the arrows, producing what is called an over blast; a portion of the blast is thrown upon the upper sides of the riddles, or sieves *f*, *g*, in the shoe, by the guiding board S, placed over the discharging opening from the fan box, as shown in Fig. 2. A portion of the blast is also directed upward against the under side of the riddles or sieves, by the inclined board *t*, placed in the position represented in Fig. 2.

The sides B, B, of the screen frame, rise as near to the sides of the shoe, as they can without coming in contact, for the purpose of preventing the escape of air between the two.

The uniform reciprocating motion given to all parts of the screen *h*, combined with its tremulous vibrations upon its elastic bearings, cause the desired violent agitation of the kernels of grain, seeds, cheat, cockle, &c., as they fall upon it, to enable the blast to carry off every substance that is lighter than the kernels of grain, or seeds, that the blast, sieves, and screen, have been previously adjusted to clean.

The gate *e*, that regulates the discharge of the grain from the hopper to the riddles, I protect by the casing R, for the purpose of enabling me at all times to be able to operate it.

Having thus fully described the construction and operation of my improved fanning mill, what I claim therein as my invention and desire to secure by Letters Patent, is—

The supporting and regulating the motion of the sieves *g*, *f*, by means of the rollers *c*, *c*, or their equivalents, and the spiral springs F, F, so arranged as to press the shoe, or sieve frame A, down upon the rollers, steadying its motion, and to a certain extent preventing any jar at the end of each vibration, substantially in the manner and for the purpose as herein set forth.

E. BLESS.

Witnesses:
Z. C. ROBBINS,
WM. D. WASHINGTON.