A. & A. LOMAX.

Grain Winnower.

No. 1,592. Patented May 8, 1840.

Fig. 1

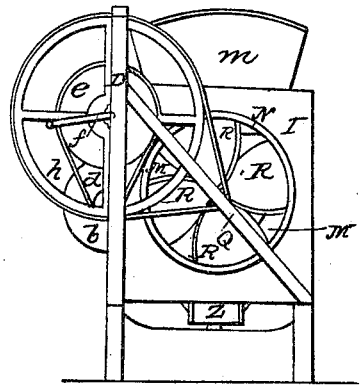


Fig. 2

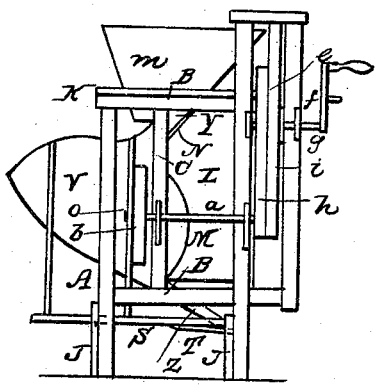


Fig. 3. Section

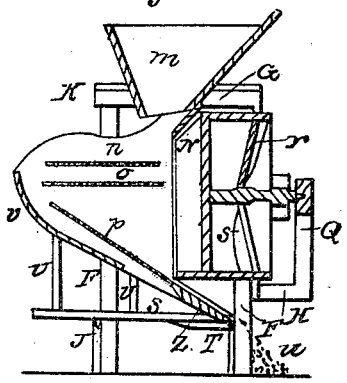
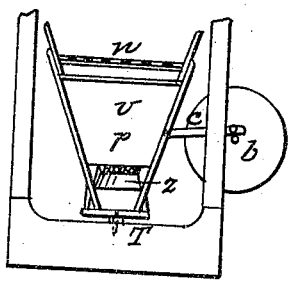


Fig. 4



UNITED STATES PATENT OFFICE.

ABEL LOMAX AND ASAHEL LOMAX, OF CLINTON COUNTY, OHIO.

MANNER OF CONSTRUCTING WINNOWING-MACHINES.

Specification of Letters Patent No. 1,592, dated May 8, 1840.

To all whom it may concern:

Be it known that we, ABEL LOMAX and ASAHEL LOMAX, of the county of Clinton and State of Ohio, have invented new and useful Improvements on Winnowing-Mills; and we do hereby declare that the following is a full and exact description thereof.

The nature of our invention is such that it contracts the winnowing-mill to a much smaller compass than usual, enabling the mechanic to build it at a much less expense, and still facilitate the winnowing operation. The body or framework of our machine is constructed of two side-frames, connected together by the front-board, top-lining, and the two foot-boards. The frame timber except pieces otherwise specified is 3 by 3 inches square.

That we may conveniently describe our frame, we call one sideframe the near and the other the opposite one. That on which the crankwheel is hung we call the near one, which is constructed of two upright posts, A, A, Figure 2, one $3\frac{1}{2}$ and the other $4\frac{1}{2}$ feet high, which are framed together by two cross ties B, B. One two feet long is framed on the top of the lower post and into the side of the high post 1 foot from the top. The other $2\frac{2}{3}$ feet long is framed into the lower post 1 foot from its base, and by halving it 8 inches from the other end, and halving the high post 1 foot from its base, they are connected, the cross tie projecting 8 inches beyond the post. Into these cross ties 6 inches from the low post we frame a stud C, to which the balance wheel is hung. On the projecting end of the cross tie we frame a stud D, 2 by 3 inches square, extending up to the top of the high post where they are connected by a cap piece E. The opposite sideframe is constructed of two upright posts F, F, Fig. 3, $3\frac{1}{2}$ feet high, which we frame together by means of two cross ties G, H. One 2 feet long we frame on the top of each post, and the other $2\frac{2}{3}$ feet long we frame into the side of one post 1 foot from its base, and by halving it 8 inches from the other end, and halving the other post 1 foot from its base they are connected, the end of the cross tie projecting 8 inches beyond the post; as represented at H. The front-board, I, Fig. 1, is one inch thick and about $2\frac{1}{2}$ feet square, nailed on the sideframes, so that their projecting cross ties stand out in its front as represented at H, H, Figs. 2 and 3. The top lining K, K, we nail on the top of the frame leaving an aperture of suitable size for the hopper to rest in. The two foot boards, J, J, J, J, Figs. 2 and 3, we nail on the lower ends of the four upright posts. Thus the whole frame is connected together.

To form the cylinder, L, we cut a circle in the front-board two feet in diameter in which we nail thin boards, having them to project 2 inches on the front side and 1 foot on the other. To make the inward end of the cylinders fit the shoe so that the air may be directed into it to the best advantage, we level the two sides and the top, drawing the opening to the form represented in Fig. 1.

M, M, M, Figs. 1 and 2, represent the boards nailed on the two side bevels, with their lower ends nearest together, and becoming wider apart as they ascend upward. N, Fig. 1, represents the board nailed on the top bevel. The form which this top-bevel gives the cylinder may be seen at N, N, Figs. 2 and 3. The side-bevels draw in the sides in the same manner and reduce them to straight lines, so that they fit the side linings of the shoe.

Near the inward end of the cylinder we place a small upright stud, P, Fig. 3. One end or journal of the fan wheel O, Fig. 3, runs in this stud. The other end runs in a timber Q, Fig. 1 and 3, one end of which we frame to the opposite projecting cross tie, and from there it passes obliquely upward crossing the center of the cylinder and is fastened to the upright stud D, Fig. 1.

The wings R, R, R, R, Fig. 1, are framed on the shaft at an angle of about 35 degrees from a right line. The edge of the wings going forward, are, by this angle extended near the front end of the cylinder as represented at *r*, whereas the after edge is inclined toward the backward or inward end of the cylinder as represented at *s*, Fig. 3. The wings thus obliquely crossing the shaft are inclined by the motion of the fan wheel, to propel or rather glance the air directly through the cylinder parallel with its length.

The shoe has a board S, Figs. 2 and 3, for its base which is about $2\frac{1}{2}$ feet long and 12 or 15 inches broad. This board lies level under the center of the cylinder, and is fastened to the front footboard by a small block of timber, T, which is nailed on the under side of the base-board, and has a journal on its end which works in the front foot-board. Just where the base-board passes over the other foot-board there is a pin passed

through it, which stands on a block in the foot-board. This pivot and journal permit the board to have a rocking motion.

In the base-board we set four studs or posts U, U, U, U, Figs. 2 and 3. These posts are set two on each side of the planks or base-board, leaning outward that the shoe may be wider at the top than the bottom. The two first are set about 3 inches from the inward end of the cylinder, and the other two 12 inches from them, near the outward end of the board. On the insides of the posts we nail thin lining.

V, represents the near side of the lining. A portion of this lining projects over the top-bevel of the cylinder as represented at Y, Fig. 2. On the under side of this projecting portion of the side-board we fasten a thin board, which receives the grain from the hopper and conducts it into the shoe. This board is pretty plainly represented at N, Fig. 3.

The riddles are arched or rounded upward. The first *n* is placed about 5 inches below the board above described and the fine riddle *o* 4 inches below it. The screen, *p*, is placed immediately under the fine riddle, and conducts the wheat into that portion of the way marked Z, Figs. 1, 2, and 3, which conducts it down before the front foot-board represented at *u*, Fig. 3. Below the screen we fasten a board *v*, which extends partly around the end of the shoe. This board separates the wheat which may pass over the riddles, from the chaff, and conducts it under the fan.

The shaking gear we frame thus: A bar of iron, *a*, Fig. 2, $\frac{1}{2}$ inch square with two journals turned on it is hung to the high post and the upright stud, C, each end projecting $2\frac{1}{2}$ inches beyond the timbers to which it is hung. On the end which projects beyond the upright stud C, we hang a balance wheel, *b*. One inch from the center of this balance wheel we place a wrist on which a pitman works. *c*, Fig. 2, represents the end of this pitman. The other end of the pitman works in the near upright stud of the shoe, which in the drawings, Fig. 2, appears to be just beyond the left-hand side of the balance-wheel. The shoe being thus connected to the balance-wheel, has, from the turning of the balance-wheel its vibratory motion. On the other end of the iron shaft, *a*, we place a whirl or pulley *d*, Fig. 1, around which a trap passes from the small strapway of the crank-wheel, which gives the balance-wheel the necessary motion.

The crank-wheel, *e*, Fig. 1, is made in any manner convenient to have two strapways, one 16 and the other 24 inches in diameter. An iron shaft, *g*, is passed through the crank-wheel, which has two journals turned on it, by which it is hung to the high post and upright stud, D. On this shaft we have an iron crank, *f*. On the smaller strapway we have a strap *h*, passing around a whirl *d*, on the balance-wheel shaft; and on the larger strapway we have one *i*, passing around a whirl on the fanwheel-shaft. Thus the required motion is given to each portion of the mill.

The hopper *m*, is made by nailing four boards together not very dissimilar to those now in common use.

The above described winnowing-mill may be made either larger or smaller than herein described and possess all the advantages of its form.

The advantages of our machine consists in, first, the fanwheel and cylinder which very much contract its dimensions; second, the form of our shoe presents very great advantages by giving the most room for the grain while it is the most gross; third, the rocking motion of the shoe which gives equal motion to both ends of the riddles and greater motion to the upper than the lower part; fourth, the rounded form of our riddles.

The parts of the herein described machine which we claim as our invention and for which we wish to secure Letters Patent are specified as follows:

1. We claim the adapting of one end of the cylinder to the shoe and thus having the air to pass from its end directly into the shoe.

2. We claim the mode of arranging the shoe by which we are enabled to communicate a greater motion to the upper than the lower part of it.

ABEL LOMAX.
ASAHEL LOMAX.

Witnesses:
JOHN M. HARLAN,
JOHN CARMAN.