

(No Model.)

2 Sheets—Sheet 1.

L. BARTHOLOMEW.
GRAIN CLEANING MILL.

No. 456,077.

Patented July 14, 1891.

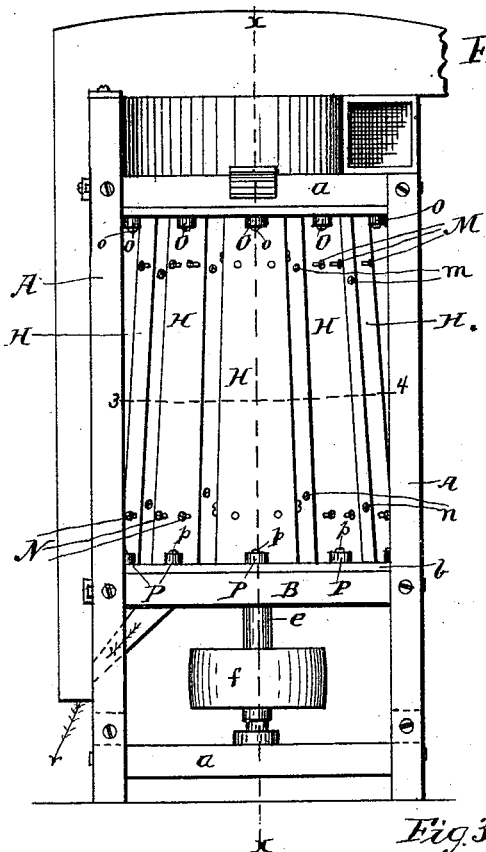


Fig. 1.

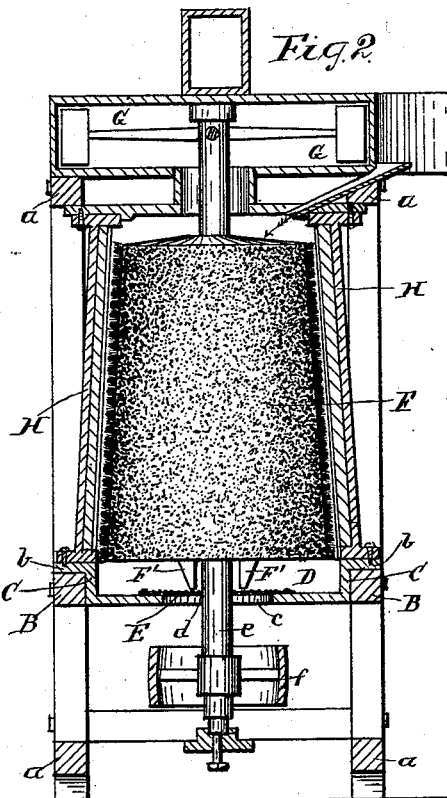


Fig. 2.

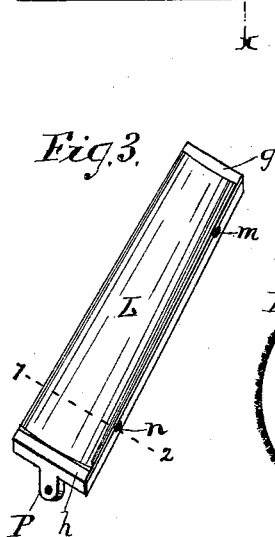


Fig. 3.

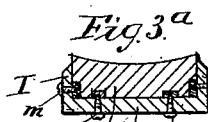


Fig. 3a.

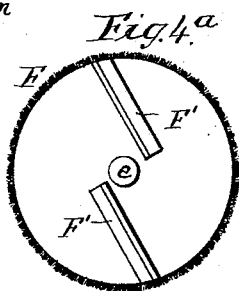


Fig. 4a.

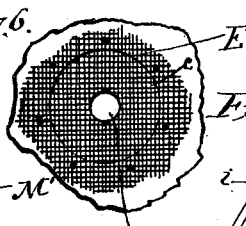


Fig. 4.

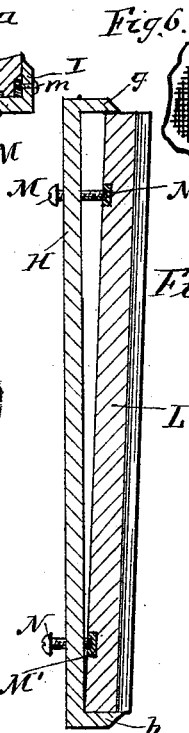


Fig. 5.

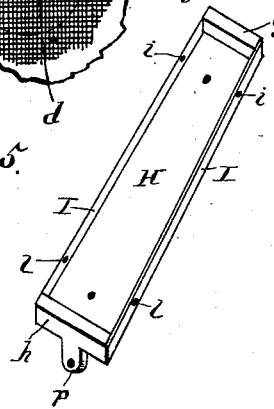


Fig. 6.

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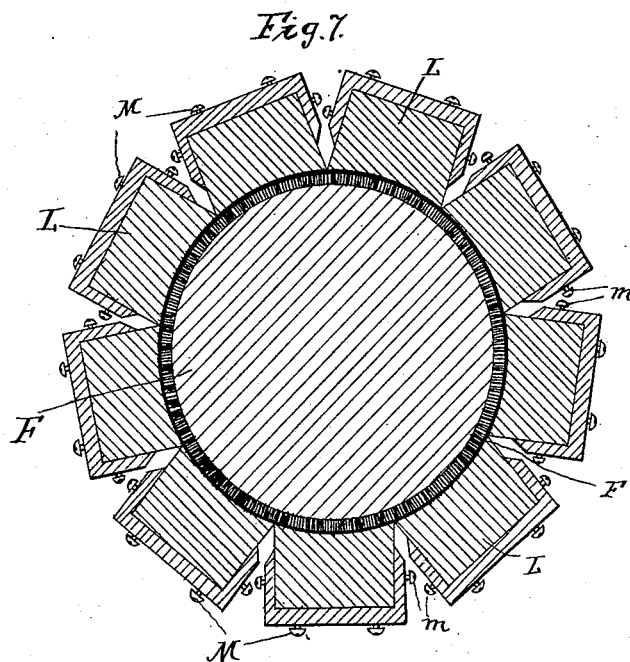
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2 Sheets—Sheet 2.

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GRAIN CLEANING MILL.

No. 456,077.

Patented July 14, 1891.



Witnesses
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UNITED STATES PATENT OFFICE.

LEWIS BARTHOLOMEW, OF PHILADELPHIA, ASSIGNOR OF ONE-HALF TO
DAVID J. WALLER, OF BLOOMSBURG, PENNSYLVANIA.

GRAIN-CLEANING MILL.

SPECIFICATION forming part of Letters Patent No. 456,077, dated July 14, 1891.

Application filed January 16, 1891. Serial No. 377,988. (No model.)

To all whom it may concern:

Be it known that I, LEWIS BARTHOLOMEW, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Grain-Cleaning Mills, of which the following is a specification.

This invention relates to mills, and particularly to the class of mills for scouring and cleaning grain wherein a conical brush and a composition of stone are employed.

The object of the invention is to provide a mill which will take more refuse from the grain and leave it cleaner by constructing a casing of staves around a conical brush having some different material, such as stone, adjustably contained therein, so as to graduate the space between such material and the brush, according to the size of the grain to be operated upon.

A further object of the invention is to provide a grain scouring or cleaning mill with a casing constructed of a series of hollow staves, each filled with a slab of stone or similar material adjustably secured therein and surrounding a conical brush, so as to render the partly-worn portions of such brush capable of being used, the said staves being so arranged separate from each other and from the bottom and top of the casing that any one or more of the staves may be removed without disturbing the remaining staves.

It has been found by practical experience that it is impossible to obtain material of which to construct a conical brush for this purpose of uniform quality and durability, in consequence of which some parts of the brush become worn before other parts, and to prevent the perfect or good parts of the brush from doing all the work in an inferior manner and to render the worn or imperfect portions useful until the entire brush is worn out or dispensed with is a still further object of my invention.

The invention consists in the novel arrangement and construction of parts, as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings,

forming part of this specification, Figure 1 is a side elevation of my improved mill. Fig. 2 is a vertical section thereof on the line xx of Fig. 1, showing the shaft and conical brush in elevation. Fig. 3 is an enlarged perspective view of one of the staves with a block of stone contained therein ready to be applied to the mill. Fig. 3^a is an enlarged cross-section thereof, taken on the plane indicated by the line 1 2 of Fig. 3. Fig. 4 is a perspective view of one of the staves. Fig. 4^a is a bottom plan view of the brush, showing the grain-spreaders. Fig. 5 is an enlarged vertical section of one of the staves with the stone adjusted therein for a worn brush. Fig. 6 is a top plan view showing part of the bottom or floor of the chamber with the sieve secured thereon. Fig. 7 is a cross-section of the casing taken on the line 3 4, Fig. 1.

The same letters of reference denote the same parts throughout the several figures of the drawings.

Although a frame of any suitable construction may be used, I prefer to employ four uprights or standards A , secured and connected together at their top and bottom by cross-bars a . At a suitable distance from the bottom cross-bars a are located a like set of cross-bars B , and on these cross-bars B is firmly secured the bottom or bed C of the brush or mill casing. The bed or bottom C has a flange b , extending entirely around it, which rests on the cross-bars B , and a central circular aperture c , which opens into a larger circular-chamber D . Over this aperture c is secured a sieve or screen E , which is the only sieve or screen employed in this mill. It has a central aperture d , through which passes the spindle or shaft e of the conical brush F . This shaft extends downwardly, is provided with a pulley f , and the end thereof is journaled in a bearing in the usual way. From the top of the conical brush F the shaft e extends upwardly and is provided with a fan G , above which it is again journaled.

The top of the brush F is made to taper downwardly from its center, so that the grain which falls thereon may more readily roll off. The bottom of the said brush is provided with two parallel strips F' , secured thereon dia-

metrically opposite each other, so as to spread the grain to the outside edge of the sieve and render such sieve always clear and open.

H denotes the staves, being wedge-shaped, and having top and bottom flanges *g h*, respectively, and the side flanges I, which are beveled on their outer side or edge, as particularly shown in Figs. 3^a and 5. These flanges, with the main body of the staves H, form the receptacle for the stone L, which is concaved on its face and also wedge-shaped and of sufficient thickness to a little more than fill the receptacle of the stave, or they may be put in flush with the edge of the said flanges and be adjusted in accordance with the size of grain to be scoured or cleaned after the mill is put in position ready for operation.

The staves H have screw-threaded apertures *i* near their top and similar screw-threaded apertures *l* near their bottom to accommodate set-screws M and N. Set-screws *m* and *n* are provided on the side flanges I to hold the stone L in whatever position it is placed by the set-screws M and N. The stones L are provided with set-screw seats M' for the purpose of protecting said stone from the wear of the several set-screws.

The top and bottom of the staves H are provided with outwardly-projecting lugs O and P, respectively, which have apertures to receive bolts or set-screws *o* and *p* for securing the staves H to the top and bottom of the mill-casing. It will be observed that these several staves form the casing of the mill, any one or more of which may be removed for cleaning or repairing without disturbing the remaining staves, and by the stones L being adjustably arranged in the staves H the grain-space or the space between the stones and the conical brush may be readily graduated to suit the size of grain to be operated upon.

Should the brush become more worn at the top than at the bottom, the set-screws *m* and *n* are loosened, and the set-screws M and N have simply to be moved so as to force the stones into the desired position. To regulate the grain-space, the several set-screws are operated until the desired space is acquired.

It will also be observed that by my arrangement and construction of the staves and the stone therein a continuous surface of stone is presented to the brush, as the beveled flanges I allow the edges of the stone in one stave to come in direct contact with the blocks of stone contained in the staves on either side thereof, so as to avoid having an interval or space between any of the said blocks of stone.

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

1. In combination with a grain-scouring mill, a casing consisting of a series of wedge-shaped staves provided with beveled edge flanges, substantially as shown and described, and for the purpose set forth.

2. In a grain-scouring mill, the conical brush, the grain-spreaders secured to the bottom thereof on either side of the shaft of the brush, in combination with the top of the mill, and a fan adapted to be operated therein by the revolution of the brush, the bottom having an aperture which opens into a chamber, and a sieve located between the aperture and the chamber, substantially as and for the purpose set forth.

3. In a grain-scouring mill, the combination of the conical brush and a casing therefor, composed of wedge-shaped staves having beveled flanges and the set-screws M and *m*, with the concave blocks of stone secured in the staves and provided with metal seats for the set-screws, the stones arranged to project out of the staves beyond the flanges thereof, so as to form a continuous stone surface, substantially as set forth.

4. In a grain-scouring mill, the combination of the brush and the staves surrounding the same, the stone blocks having a concave scouring-surface, and a series of metal set-screw seats, substantially as shown and described, and for the purpose set forth.

In witness whereof I hereunto set my hand in the presence of two witnesses.

LEWIS BARTHOLOMEW.

Witnesses:

M. E. PERRY,

J. M. BALDWIN.