

# E. Clark. Mill Bolt.

N<sup>o</sup> 20,329.

Patented May 25, 1858.

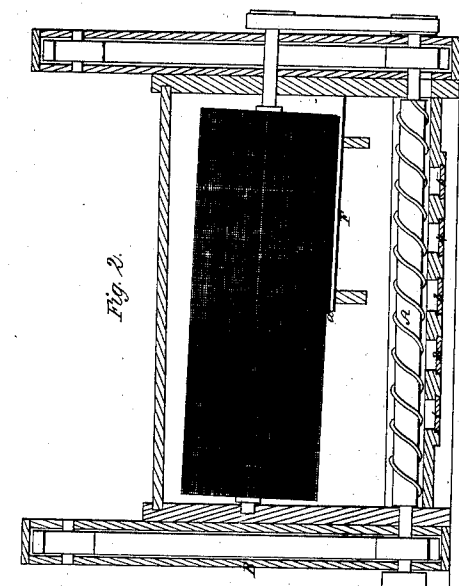


Fig. 2.

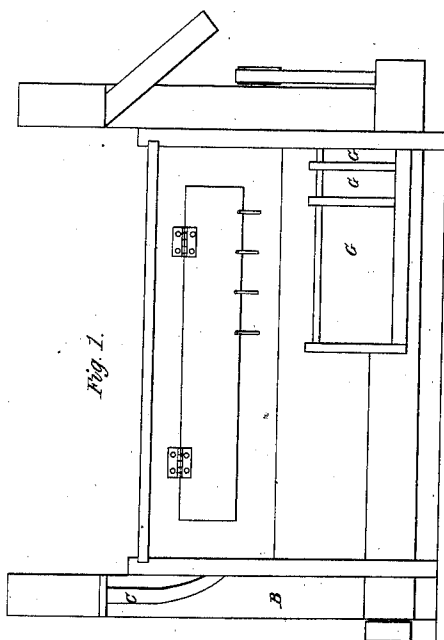


Fig. 1.

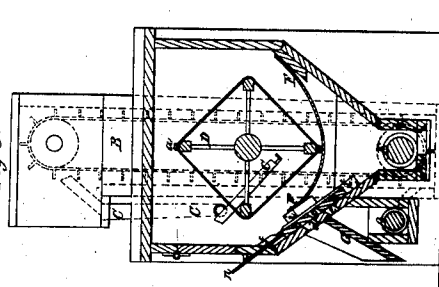


Fig. 3.

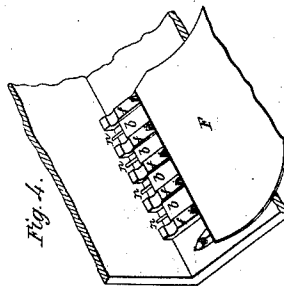


Fig. 4.

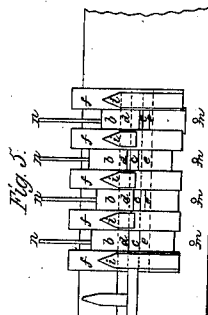


Fig. 5.

# UNITED STATES PATENT OFFICE.

EDWIN CLARK, OF LANCASTER, PENNSYLVANIA.

## FLOURING-MILL.

Specification of Letters Patent No. 20,329, dated May 25, 1858; Antedated February 2, 1858.

### *To all whom it may concern:*

Be it known that I, EDWIN CLARK, of Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in the Bolting Apparatus of Flouring-Mills; and I do hereby declare the following to be a full, clear, and exact 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, represents a front elevation of the bolting apparatus, Fig. 2, represents a vertical longitudinal section through the same, Fig. 3, represents a vertical cross section, Figs. 4 and 5, represent detached portions of the apparatus, not distinctly seen in the other figures.

Similar letters of reference where they occur in the several figures denote like parts of the apparatus in all of them.

The nature of my invention relates to the more perfect separation of the different qualities of the ground material, which may be afterward mixed to suit the operator, or consumer; or may be rebolted, or reground and rebolted, and again separated, as may be required.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

A, is a conveyer in front of the bolting chamber, into which the ground material from the mill is introduced. This conveyer is open at its top, so as to cool the flour by exposure to the air, and also for the purpose of receiving and returning such portions of the material as are to be rebolted, as will be hereafter explained. The flour is delivered from this conveyer A, into the trunk B, in which works an elevator of the usual well known construction, that carries up the flour to and delivers it into a spout C, that conducts it into the end of the bolt D. The conveyer E, underneath the bolt, receives the flour that falls from the bolt; and the different qualities of extra, and superfine flour, are carried forward and discharged by this conveyer, through apertures in the bottom of the conveyer box—which apertures are provided with slides or covers 1, 2, 3, 4, 5, Fig. 2. The fine flour, middlings, and offal, fall upon the supplemental bottom F, which

is of a circular form, and it is carried up on said circular bottom or division by means of vanes *a, a* on the bolt D, and is discharged through its appropriate openings, or returned to the conveyer E as the particular qualities to be made may require.

Under that end of the bolt D, where the circular bottom F, is placed, are arranged in succession the several sliding perforated valves *b, b, b, b*, each having an opening *c* through them, which make said valves applicable to the delivery of the separated material at the openings *d, e*, or, cause it to be returned to the conveyer E, whence it is carried to the stones to be reground. When the opening *c*, in the valve *b*, is opposite the opening *d* in the bolting chamber, the separated flour will pass out of *d*, and fall onto the spout or inclined board G, and thence into any proper receptacle. When said opening *c*, is opposite the opening *e* in the bolting chamber the material will pass through *e*, and fall into the conveyer box (A), and be carried by said conveyer back to the trunk B, and thence to the bolt D, to be rebolted. When the said opening *c*, is arranged as seen in Fig. 3, between the openings *d, e*, then the material passes into the other conveyer E, and is by it returned to the stones to be reground, so that whether the flour or ground material be of proper quality to be taken from the bolt, or is of such quality as to require either to be rebolted, or reground and rebolted, a simple setting of the perforated valve *b*, accomplishes either result, and the exact point at which the several qualities may be divided so as to take them to their respective places, may, and can be designated by the series of valves represented.

Between the valves *b*, are divisions *f*, which have grooves cut in them, into which said valves slide; and over these divisions *f*, and between them and the circular bottom and division, are also placed inclined planes *i*, (double or single), for the purpose of conducting that portion of the fine flour and middlings which fall upon the said spaces, into the apertures in the valves, and thus prevent the different qualities that may be discharged at each special valve from commingling, the object being to make a perfect separation, and keep the qualities separate, unless desired to be mixed, which can be done, but every separation, or delivery, or

mixing, is positive and under the control of the operator, and not subject to run one into the other without his ability to control it.

Rods or wires *n*, are attached to the valves *b*, which may have notches in them, to catch over or on a point or projection on the frame (as seen in Fig. 3) to hold them at their properly adjusted places for the special purpose to which they are to be applied, whether to deliver the material out of the bolting chamber into the inclined board *G* or into either of the conveyers *A*, *E*, as may be desired.

*m*, are stops which catch and hold the valve at its lowest position.

The operation is as follows: The extra and superfine flour as it falls from the bolt, may be taken out of the conveyer *A*, at the openings 1, 2. Whatever falls upon the interior circular division *F*, is raised up by the vanes *a*, placed on the bolting reel *D*, and is discharged through one of the apertures *d*, *e*, in the bolting chamber, or conducted by the valves *b*, and the inclined bottom of the bolting chamber into the conveyer *E*. Whatever quality of fine flour, middlings, or offal, is to be run off is discharged through the apertures *d*, and conveyed by the inclined board *G*, into any proper receptacle. Whatever quality of the fine flour, or middlings, that is to be rebolted is discharged through the apertures *e*, and falls into the conveyer *A*; and that which is to be reground is conveyed into the conveyer *E*—the valves *b*, *b*, &c., being adjusted for either one of these objects, as described—that is to make or break the communicating passage to either, and thus any quality may be separated and run off, and any quality may be rebolted without regrinding, or reground and re-

bolted both, giving the miller all the facilities for making such qualities of flour as may be required, either by distinct separations, or by the mixing of the separated qualities, and this too without allowing one grade of flour to mix with another unless so desired.

As I believe myself to be the first to introduce the inclined plane or planes between the divisions *f*, so as to conduct each special quality to its special transit through or out of the bolting machine, without allowing the different qualities to mix or run one into the other, I should consider the substitution of any other device for the plane or planes *i*, that will effect the same object, as a mere modification of my general plan, and as fully covered by my invention.

Having thus fully described the nature and object of my invention, I would state that, I am aware a series of valves, and a circular division, has been used in bolting machines. These I do not claim; but

What I do claim as new and desire to secure by Letters Patent is,—

1. The valve, or series of valves *b*, with their perforations *c*, in combination with the apertures *d*, *e*, in the bolting chamber, so as to make said valves common to the three different transits of the ground material substantially as described.

2. I also claim in combination with the circular division *F*, the inclined planes *i*, for properly conducting that portion of the material that falls upon the space between them, into its proper channel as set forth.

EDWIN CLARK.

Witnesses:

WILLIAM FRICK,  
JAMES COLVIN.