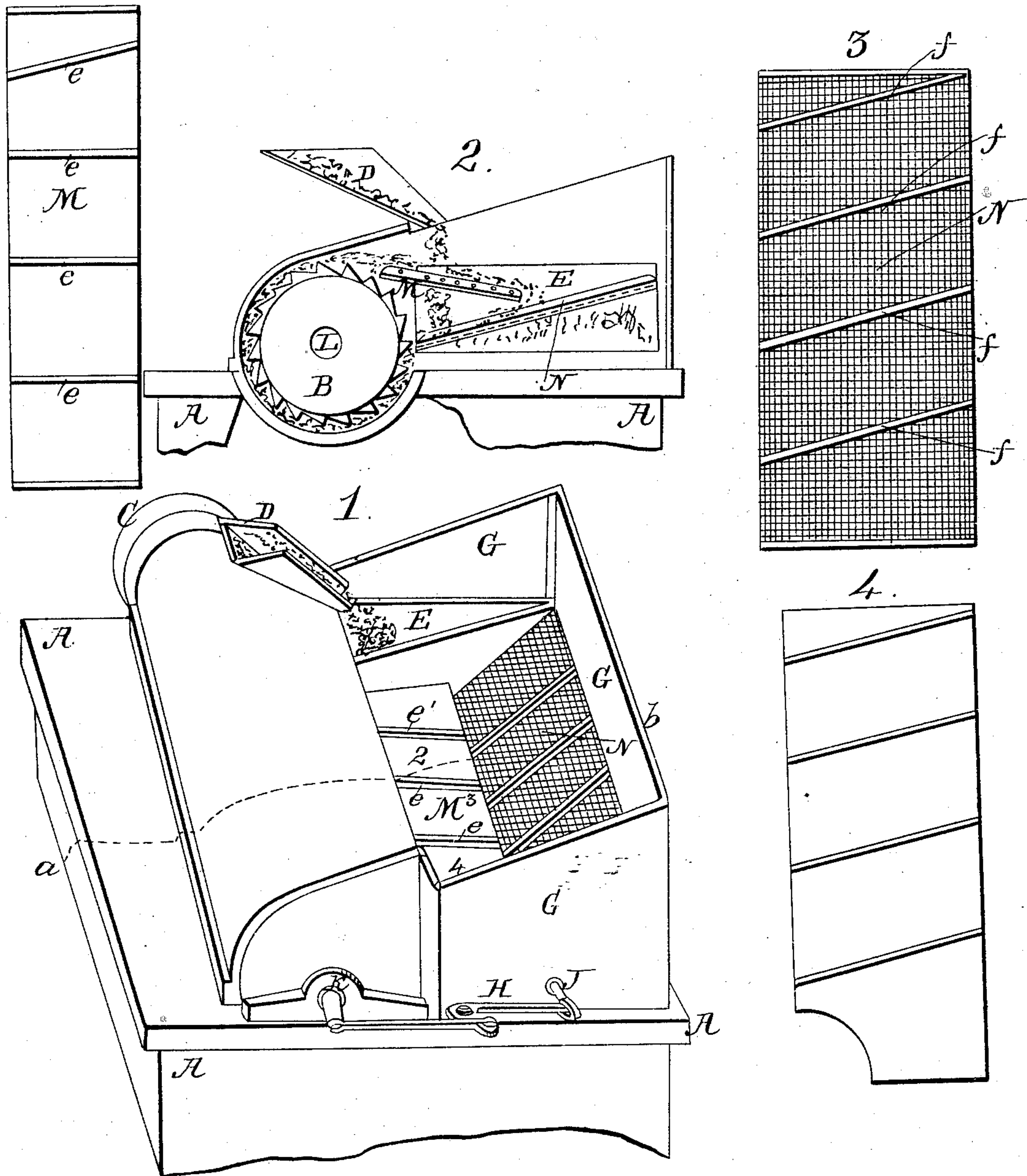


# FITCH & SHARP.

Mill Bolt.

No. 16,383.

Patented Jan. 13, 1857.



Witnesses.

*Paul Van der Wilt*  
W. C. Miller

Inventors.

*Sanford E. Fitch*  
*Theodore Sharp*



# UNITED STATES PATENT OFFICE.

SANFORD E. FITCH AND THEODORE SHARP, OF GREENBUSH, NEW YORK.

## IMPROVEMENT IN FLOUR-BOLTS AS APPLIED TO GRINDING-MILLS.

Specification forming part of Letters Patent No. **16,383**, dated January 13, 1857.

*To all whom it may concern:*

Be it known that we, SANFORD E. FITCH and THEODORE SHARP, of Greenbush, Rensselaer county, State of New York, have invented certain Improvements in the Construction of Portable Mills for Grinding Grain; and we declare the following specification, with the drawings hereto attached as part of the same, to be a full and perfect description thereof.

Figure 1 is a perspective view of the mill with the hopper and shoe removed and the bolting apparatus uncovered, showing our improvements. Fig. 2 represents a section of the mill in the line of *a b*, Fig. 1. Fig. 3 represents the plan of the shelf and bolter.

Similar letters in the figures denote the same parts of the apparatus.

The mill is similar in form and arrangement to that known as the "Felton mill," which was patented in January, 1855.

A A is the frame; B, Fig. 2, the grinding-cylinder tapering from the end nearest the spectator to the farthest end; C, the pulley by which the cylinder is turned round.

D is the spout conveying the grain from the shoe to the cylinder; G, a box in rear of the cylinder containing the bolt E, being a square box arranged on slides, so that it can be vibrated a short distance across the box G by means of the bell-crank lever H, pivoted to the rod J, which projects from the bolter E through the sides of G, the bell-crank being operated by a crank K upon the shaft L of the cylinder. The box G has within it two shelves M and N.

M is a solid shelf extending from near the top of the cylinder B, so as to catch the meal thrown up and around by its action. It inclines backward and downward and is wide enough to deliver the meal to the rear of the middle of the shelf N. It is divided into compartments by strips of wood *e*, running parallel with the sides of box G or obliquely thereto, as experience shall find best.

N is the bolter, its bottom being made of bolting-cloth or wire sieve. It extends from the back of G to near the cylinder E and slopes downward and forward, so as to deliver into the cylinder any meal that may not have passed through the bolt. It is divided into

compartments corresponding to those of M by strips of wood *f*, running obliquely across the surface of the bottom in the direction shown in the drawings.

In the ordinary mills the corn passes through the whole length of the cylinder, when the meal runs into the bolt, through which the fine meal having passed the coarser particles run out of the bolter and must be rehandled and carried back to the hopper to be reground. This passage of the meal through the entire length of the cylinder often produces clogging of the mill, requiring greater power to do the grinding, as well as heating and injury to the meal.

Our improvement is in introducing the shelf M and bolter N and placing them in their peculiar relative positions and slopes in reference to each other and the cylinder, the effect of which is that M, receiving the meal as it is thrown out from the part of the cylinder nearest the supply end into division 1, carries it upon the first division of bolt N, from which place particles not running through the sieve or bolt pass by the oblique slats *f* into the mill to be reground, this operation being repeated in reference to each successive division of the shelf M and bolt N, compelling the unbolted particles which in ordinary mills pass off through the bolt entire to pass into the cylinder a second time or oftener for regrinding.

In grinding some kinds of grain it is not desirable to bolt the meal. In that case for the bolter N we substitute a shelf of wood, Fig. 4, of the same size and with oblique slats upon it precisely as in the case of the bolter. The object of this is to divide, distribute, cool, and convey the meal as it comes up from the cylinder and so prevent its clogging the mill, which it frequently does in the common process of grinding.

Disclaiming any arrangement of the oblique ribs for the purpose of returning the material being ground, or part of the same, to the mill for regrinding, other than that specifically set forth in the above specification,

We claim—

The employment of the shelf M and bolter N, constructed and arranged in reference to

each other so as to take the meal from the mill and bolt it in successive and graduated portions, so as to prevent the finer portions of the meal from continuing unnecessarily in the mill, while the coarser particles return to the cylinder to be reground, or in certain cases the substitution of a shelf in place of the

bolter, for the purposes and in manner and form as set forth in the within specification:

SANFORD E. FITCH.  
THEODORE SHARP.

Witnesses:

RICHD. VARICK DEWITT,  
W. C. MILLER.