E. S. SNYDER.

Bolting Flour.

No. 4,490. Patented May 2, 1846.

Fig. 3

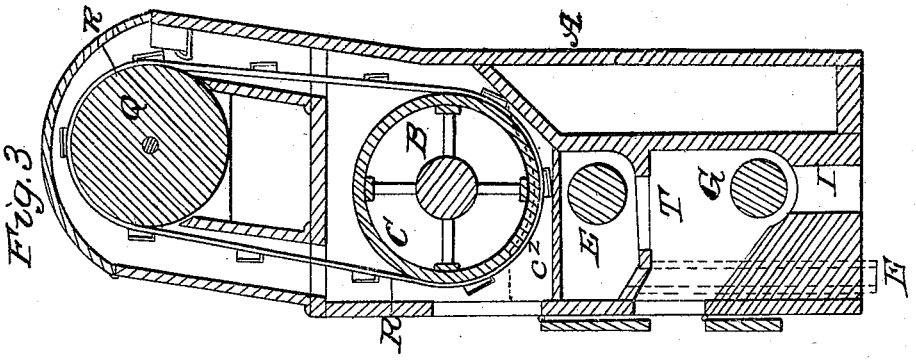


Fig. 2

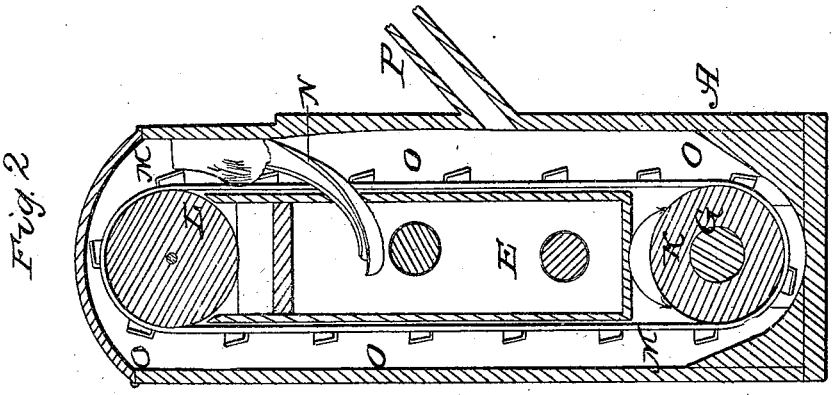
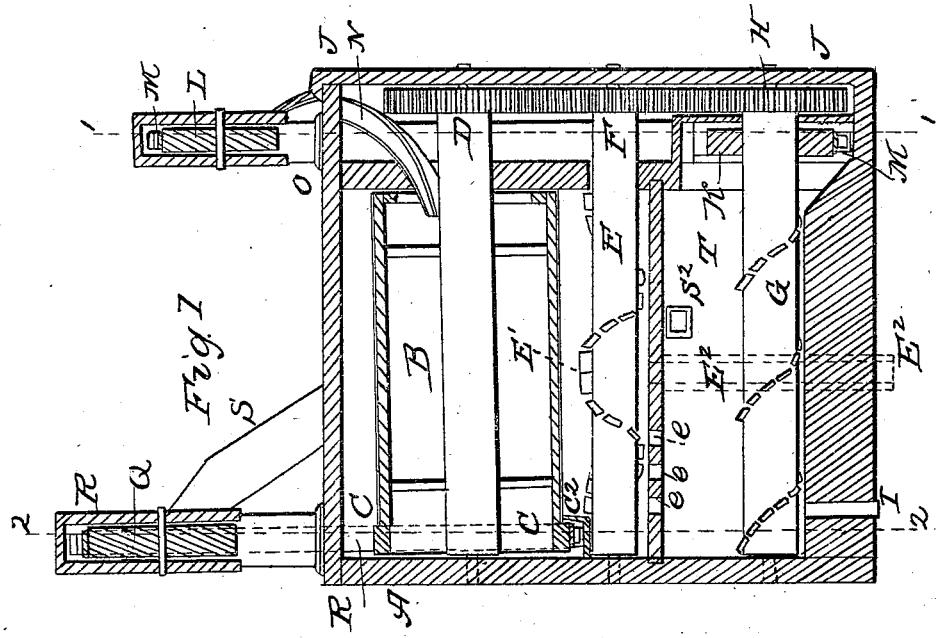


Fig. 1



UNITED STATES PATENT OFFICE.

ELISHA S. SNYDER, OF CHARLESTOWN, VIRGINIA.

BOLTING FLOUR.

Specification of Letters Patent No. 4,490, dated May 2, 1846.

To all whom it may concern:

Be it known that I, ELISHA S. SNYDER, of Charlestown, Jefferson county, State of Virginia, have invented a new and useful Improvement in Machines for Bolting Flour, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a longitudinal section of the machine. Fig. 2 is a transverse section at the line 1, 1, of Fig. 1. Fig. 3 is a transverse section at the line 2, 2, of Fig. 1.

The frame of this machine (lettered A) is made of sufficient size, strength, and material to contain the several parts hereafter described.

B is the revolving polygonal flour sieve, or bolting cloth, made in the usual manner having a suitable inclined shaft in the center of the same, on one end of which there is a pulley C for the purpose of giving motion to an endless elevator R and on the opposite end a cog wheel D which meshes into another cog wheel constituting a part of the usual gearing.

E is a revolving shaft arranged immediately under the sieve B having upon its periphery a spiral contrary conveyer E′ for conveying the flour from the ends toward the center of the shaft, the spiral wings of said conveyer beginning from near the ends of said shaft and running in contrary spirals to its center for the purpose of dividing the qualities of flour or for the purpose of conveying one half or more of the flour that falls from the sieve B (by closing one of the openings in the bottom of the trough) through a vertical spout E^2. This flour, thus conveyed, is finished and ready for use—it being that portion that first falls into the trough from the sieve and is discharged by a portion of the contrary spiral through a vertical spout E^2. The contrary spiral is also for the purpose of discharging the unfinished flour through openings *e e e* in the bottom of the trough in which is revolves, said openings being provided with valves for opening or closing one or more, or all of them, as may be desired.

F is a second cog wheel on the outer end of the shaft of the conveyer and meshing into the first mentioned cog wheel D.

G is a second conveyer of the usual construction, serving to convey the unfinished flour that falls from the first mentioned conveyer, and the bran that passes through the sieve to keep it from clogging by the natural moisture of the flour into the lower part of the elevator box. H is a third cog wheel on the outer end of said last mentioned conveyer, and meshing into the cog wheel of the first mentioned conveyer.

I is an aperture in the bottom of the frame through which the middlings that fall from one of the openings above pass from the lower trough.

J is a vertical post into which the axles of the sieve and conveyers work, their opposite ends being supported in suitable boxes in the frame.

K is a pulley on the lower conveyer shaft, in the elevator box, around which passes an elevating band leading to another pulley L in the top of the elevator box.

M is the elevator band for raising the flour and bran from the bottom of the elevator box, and discharging it into a winding spout N whence it passes into the sieve to be operated on in the manner described.

O is a continuous elevator box, having a spout P leading from behind and about midway the same, through which the flour to be bolted is received from the grinding stones. On the opposite end, and upon the top of the frame, are two spouts in the top of which is placed a pulley Q around which the endless elevating band R leading from the pulley C on the sieve passes to lift the bran from a small trough C^2 and convey it over the upper pulley Q to discharge it into an inclined spout S on the back part of the frame. This spout leads into the lower trough at S^2.

Operation: The machine being put into operation by applying the power to the cogged gearing, the flour is conveyed through the spout P to the chest *o* in which the endless elevator revolves and descends to the bottom thereof, from whence it is carried by the elevators to the winding spout N into which it is discharged and thence passes into the revolving sieve, through the meshes of which the flour passes and descends to the trough immediately below it in which the contrary conveyer E revolves, the finished flour descending into that portion of the trough immediately under the higher end of the sieve, from whence it is conveyed to the vertical spout E^2 which conducts it to the receiver. The middlings pass through the meshes of the bolt-

ing cloth or sieve next the lower end thereof and are conveyed thence by the contrary conveyer to the opening *e e e* through which they descend to the lower conveyer G which conveys them to the meal chest *o* whence they are again elevated by the elevators to undergo another operation. The bran passes through the lower open end of the sieve into the trough C^2 in which the endless belt R and elevators revolve, whence the bran is again elevated and discharged into the spout S that conveys it to the lower trough S^2, from whence it is conveyed to the meal chest T and mixed with the flour to be bolted. This bran is designed to keep the meshes of the sieve open and free from obstructions.

What I claim as my invention and desire to secure by Letters Patent is the before described improvement in the machine for bolting flour—that is to say—

The combination of the bran trough C^2 elevator R and spouts S, S^2, with the contrary conveyer E and spouts E^2 *e e e* for separating the finished flour from the middlings and conducting the flour to the discharge spout E^2 by the contrary conveyer E and the latter to the meal chest T through the openings *e*, whence it is again elevated by the elevators O and subjected to another operation in the revolving sieve B, while the bran is at the same time mixed with the middlings and flour, being first received into the trough C^2 and elevated thence by the additional elevators R to the spout S, which conducts it to the meal chest T by means of the spout S^2, where it is mixed with the middlings and flour and elevated to the sieve B by the elevators O, by which the bran is made to repeat its office of keeping the meshes of the bolting cloth open as described.

ELISHA S. SNYDER.

Witnesses:
WM. P. ELLIOT,
A. E. H. JOHNSON.