J. MALLIN.

Flour Bolt.

No. 107,935. Patented Oct. 4, 1870.

Fig. 1

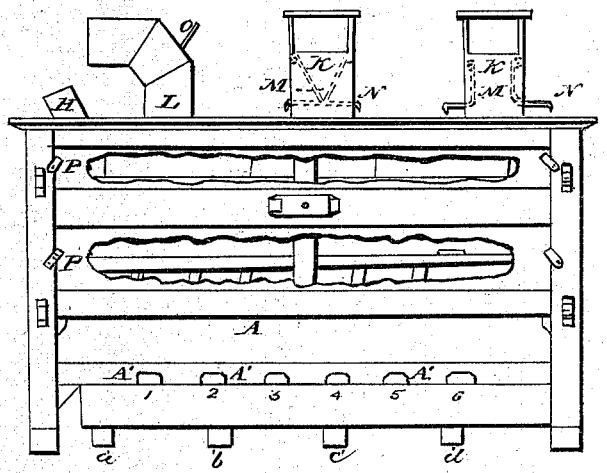


Fig. 2

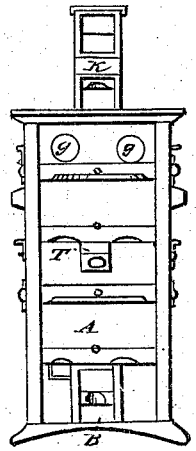


Fig. 3

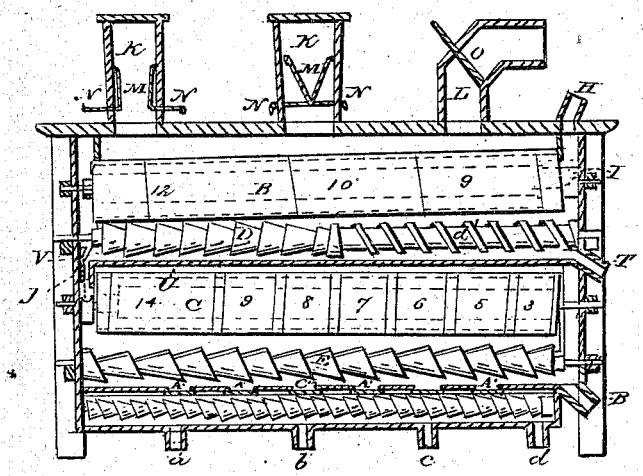
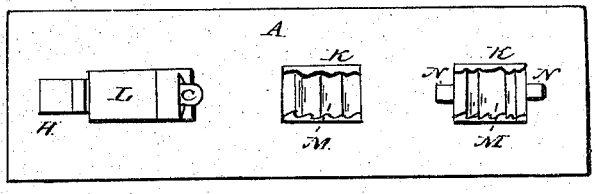


Fig. 4



Witnesses
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JOHN MALLIN, OF CHICAGO, ILLINOIS.

Letters Patent No. 107,935, dated October 4, 1870.

IMPROVEMENT IN FLOUR-BOLTS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JOHN MALLIN, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Flour-Bolts, of which the following is a full and complete description, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a side view of the bolting-chest.

Figure 2 is an end view.

Figure 3 is a longitudinal vertical section.

Figure 4 is an end view.

Like letters of reference refer to like parts in the several views.

The nature of this invention relates to a flour-bolting apparatus. The object thereof is to produce from middlings one or more grades of flour, without regrinding, and by one process of bolting.

It has further a second object in view, viz.: A more full and complete separation of the flour or meal from the middlings, for regrinding, thereby producing from said middlings several better grades of flour than can be made in the ordinary way, as hereinafter more fully shown and described.

In the drawing, fig. 1—

A represents the bolt-chest, in which the bolting-reels B C and conveyers D, E, F, &c., are arranged and operated.

It will be observed that the upper reel B is covered with three grades of cloth, viz.: Nos. 9, 10, and 12, and that the flights of the conveyer D run in opposite directions from the center.

It will also be observed that the lower reel C is covered with several grades of cloth, ranging in fineness from the right hand G upward, and that the flights of the conveyer E immediately under the reel have one common direction. So also have the flights of the conveyer F, the purpose of which will presently be shown.

H, fig. 1, is a conductor, through which the middlings are conveyed into the reel. The lower end of said conductor projects into the end of the reel, by means of an elbow, L, fig. 3.

A similar elbow-conductor, J, conveys the middlings into the reel C. Said reels are made to fit closely, but not tightly around the intruded end of the conductors.

In the top of the chest are arranged ventilators K L, fig. 1.

In the ventilators K are hinged valves M, operated from the outside by the rods N, attached to the valves for that purpose.

In the ventilator L is fitted a slide, O, whereby it can be opened or closed, and the draught regulated, as may be necessary.

The sides of the chest are partially inclosed by doors P, fig. 1. Said doors consist of a frame, covered with fine bolting-cloth, a portion of which is represented as being broken away, in order that the inside of the chest may be seen. Said doors allow a free induction of air into the chest, whereby it is kept cool, and dampness prevented, and the dust and light particles of bran carried off from the chest.

Q, fig. 2, are openings in the end of the chest for the admission of air. Said holes are also covered with bolting-cloth, as are the doors above referred to.

The practical operation of this bolting-chest is as follows:

The middlings are conveyed into the chest; thence into the bolting-reel B, fig. 1, through the conductor H. The meal or finest part of the middlings falls through the sections of the reel covered by Nos. 9 and 10 cloth, which is then conveyed back by section *d'* of the conveyer D, the flights of which discharge the flour to the outside of the chest, through the head spout T, figs. 2 and 3, whereas the second grade is carried onward by the motion of the reel, and bolted by No. 12 cloth, and which is then conveyed by the flights of the conveyer D to the tail of the reel, and discharged therefrom through the slide U onto properly-arranged cant-boards, whereas the bran is discharged to the outside, through a spout for that purpose.

By this means two grades of flour are obtained from the middlings, without regrinding; the first, a good white flour; the second, a little coarser, but, being free of bran, will, when reground, produce a good grade of white flour. In the event that only one grade of flour is required from the middlings, for the purpose of regrinding, and therefrom produce several grades of flour, then the flights of the upper conveyer must all range in one direction, instead of ranging each way from the center.

In this machine, all flour from the reground middlings must pass through the meshes of the cloth, as the middlings pass on from one number of cloth to another, for dividing or separating the grades of flour or meal from the middlings and the coarse refuse material. Each number of cloth performs a certain duty of dusting out the pure, white, heavy particles of flour from the middlings, as it is conducted on by the reel's motion, and which is conveyed off to each ones respective place or bin by the conveyers E and F.

The flour that falls from the upper reel and head of the lower reel, if so desired, can be taken from the chest through the slide No. 1 and spout *a*, under No. 14 cloth. The second slide is closed, and the third one opened, conducting pure white flour from Nos. 9 and 8 cloths into spout *b*. The fourth slide is closed, and the fifth one opened for middlings proper from Nos. 7 and 5 cloths, whereas the sixth slide is opened to take away brown or coarse middlings from No. 3 cloth, last number for taking out the rejected fine bran, &c., it being so light that it remains upon the top and

comes over the several grades of cloth to No. 3, and is discharged through the spout B'.

The slides A' referred to are so arranged that, on pushing them in in one direction, they close the opening in the partition C, dividing the conveyers E and F from each other. Said openings are shown in fig. 3.

In the slides are openings corresponding in size to those in the partition, which, when the slides are pushed in, are brought in open relation to those in the partition, thereby allowing the flour to pass through from the upper conveyer to the lower one.

By establishing a current of cool air through the chest from the outside by means of the cloth doors P, and the ventilators K L, the flour is thereby kept cool, and all moisture, dust, and light particles of bran are carried off, so that no dampness or specking of the flour can take place within the chest.

The current of air thus conveyed through the chest is graduated by the valves M, which may be opened or closed, as shown in figs. 1 and 2; also by means of the ventilator L and slide O.

By the use of the ventilators above described, and the conductors J and I, whereby the flour is conveyed into the bolting-reels, is avoided the speckling of flour; hence, the speck-boxes used for the avoidance of such speckling is dispensed with in my bolting-chest, and all speckling wholly avoided.

This arrangement of reels clothed with several numbers of cloth, and also the arrangement of the conveyers and ventilators, &c., is equally applicable to single, half, or full chest of bolts.

Claim.

What I claim as my invention, and desire to secure by Letters Patent, is—

The arrangement and combination of the reels B C, conductors J I, conveyers F, E, and D, slides U A', spouts *a b c d*, and chest A, when such chest is constructed as described, with ventilators R L, and cloth doors P, substantially in the manner as set forth and for the purpose specified.

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Witnesses:
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