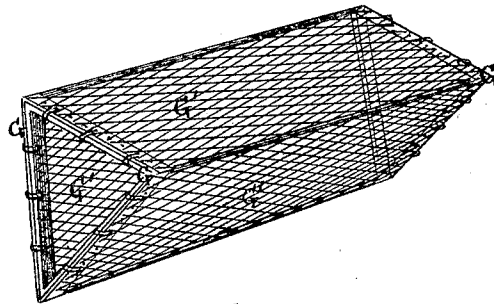
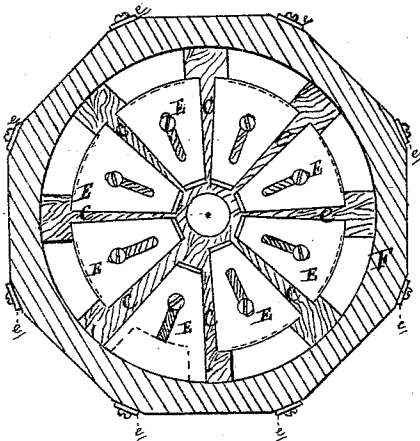
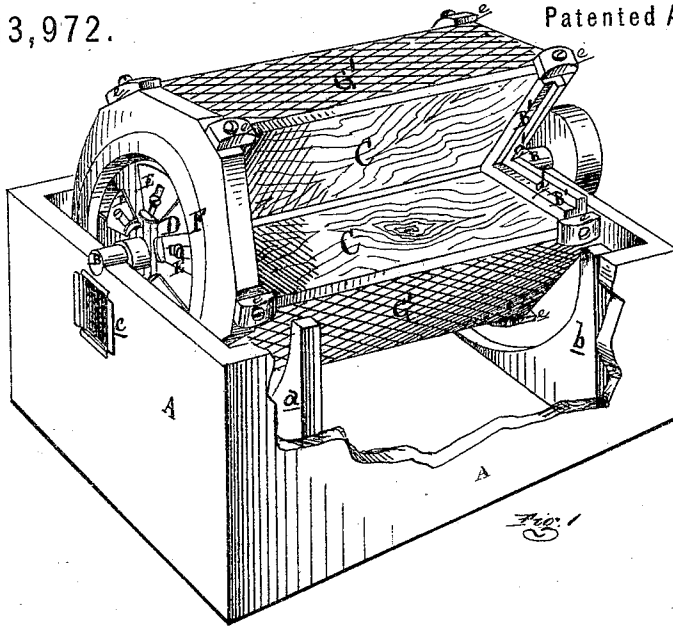


Improvement in Flour-Bolts and Reels.

Patented April 25, 1971.



ATTEST.

H. F. Ebers
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INVENTOR

John R. Bradfield
per Attorney.
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JOHN R. BRADFELD, OF ADA, MICHIGAN.

Letters Patent No. 113,972, dated April 25, 1871.

IMPROVEMENT IN FLOUR-BOLTS AND REELS.

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

To whom it may concern:

Be it known that I, JOHN R. BRADFELD, of Ada, in the county of Kent and State of Michigan, have invented a new and useful Improvement in Sectional Flour-Bolts and Reels; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon and being a part of this specification, in which—

Figure 1 is a perspective view of the lower half of a bolting-chest and the reel, with one of the bolt-sections removed and a portion of the chest broken away;

Figure 2 is a perspective view of one of the bolt-sections; and

Figure 3 is an elevation partly in section of the reel-head.

Like letters indicate like parts in each figure.

This invention has for its object an improvement in the construction of flour-bolts and reels, whereby, in a reel of a given length, the meal is subjected to the action of a much greater area of bolting surface, and is more frequently turned over than in a reel of the same length constructed in the usual manner.

The invention consists in dividing the reel into longitudinal chambers by radial partitions extending from the arms at the head to those at the foot of the reel, and in each chamber so formed placing a frame of corresponding shape covered on all sides with bolting-cloth, leaving a space for the passage of the flour between the internal faces of the bolt and the adjacent partitions; also in the general construction of its various parts, as more fully hereinafter set forth, the said improvements being equally applicable to all rotating screens used for the separation and cleaning of grain and seeds.

In the drawing—

A represents a bolting-chest provided with the diaphragms *a b* at the head and foot of the reel, respectively, the former for preventing flying specks from reaching the flour which passes down the central compartment, and the latter the admixture of the bran discharged at the foot of the reel with the flour.

c is the feed-chute through the upper end of the chest.

B is the reel-shaft journaled in the ends of the bolting-chest, and slightly inclined from head to foot.

The shaft is rotated by belt or gearing from any convenient source of power, and is provided, near the ends of the chest, with radial arms *B*, preferably six at each end.

C are partitions radiating from the shaft and extending from the arms at the head to those at the foot of the reel, dividing the reel into six triangular compartments in the direction of its length.

D is a head secured to the shaft against the upper reel-arms to close the upper ends of the compartments.

In the head is a series of feed-openings, one opening into each compartment, and provided with a regulating-slide, *E*.

On the head D is secured an internally-inclined or beveled flange, *F*, into which the end of the feed-spout *c* projects.

G are triangular frames, covered on the sides with bolting-cloth *G'*, resting at each end on ledges *d* at the ends of the partitions C, so as to leave a space between the internal faces and apexes and the adjacent partitions.

The frames are secured in their compartments by buttons *e*, or by any other suitable means, so that they may readily be removed.

The operation of my improved bolting apparatus is as follows:

The meal enters successively each compartment as it reaches the lowest point of the periphery, falling on the outer face of the triangle; as it proceeds up it falls against one of the inner faces of the triangle until that face is tangent above the horizontal plane, when it is thrown to the other inner face, and so on in the continued rotation of the reel.

It is evident that the greater area of bolting surface presented to the meal, (three times that of a reel encircled with it in the usual manner,) and the frequency with which it is turned over, must insure a rapid and thorough separation of the flour from the bran and its discharge from the bolt.

The flour which passes through the interior faces of the bolt-sections falls on the partitions and is by them discharged to the conveyer, while the bran is discharged from the ends of the bolt-sections in the usual manner.

It is not necessary that the reel shall be hexagonal in form, nor the bolt-sections to be triangular in section, only that the former shall be polygonal, and that the sections of bolting-frames shall approximately correspond thereto.

This improvement is equally applicable to the reels of all grain and seed-cleaners and separators.

The discharge of the meal through the bolt-sections depends upon the pitch of the reel-shaft.

The reel and bolt so constructed can be of less than one-half the length of one having the cloth encircle it and do the same amount of work, and requires less power to drive it, as the reel is more nearly in balance as it has meal in all the sections at once, while in the ordinary reel the entire weight of the meal is at the bottom; the reel and case being much shorter occupy less room and cost less to build, and when repairs to

the cloth are necessary the section needing such repairs only need be removed to make them, while the reel may continue in use by closing the slide of the empty compartment.

In reels of the ordinary construction where the bolting surface has always the same area, where they cannot be fed with meal fast enough, from lack of power to grind, the flour is apt to be "specky."

With my improved apparatus, from low water or from any other cause, I am enabled to obviate this difficulty by shutting off one or more sections, and thus limit the bolting capacity to the volume of meal delivered to it.

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

1. A bolting-reel divided into longitudinal compartments, in each of which is placed a frame covered with a bolting fabric or screening material, substantially as and for the purpose set forth.

2. The construction and arrangement of the perforated head D, slides E, flange F, and the partitions C in a bolting-reel provided with separate and independent bolts, substantially as described, for the purpose specified.

JOHN R. BRADFIELD.

Witnesses:

H. F. EBERTS,
JAS. O'BRIEN.