(No Model.)

J. E. WELCH

BOLTING REEL.

No. 405,973. Patented June 25, 1889.

Fig. I.

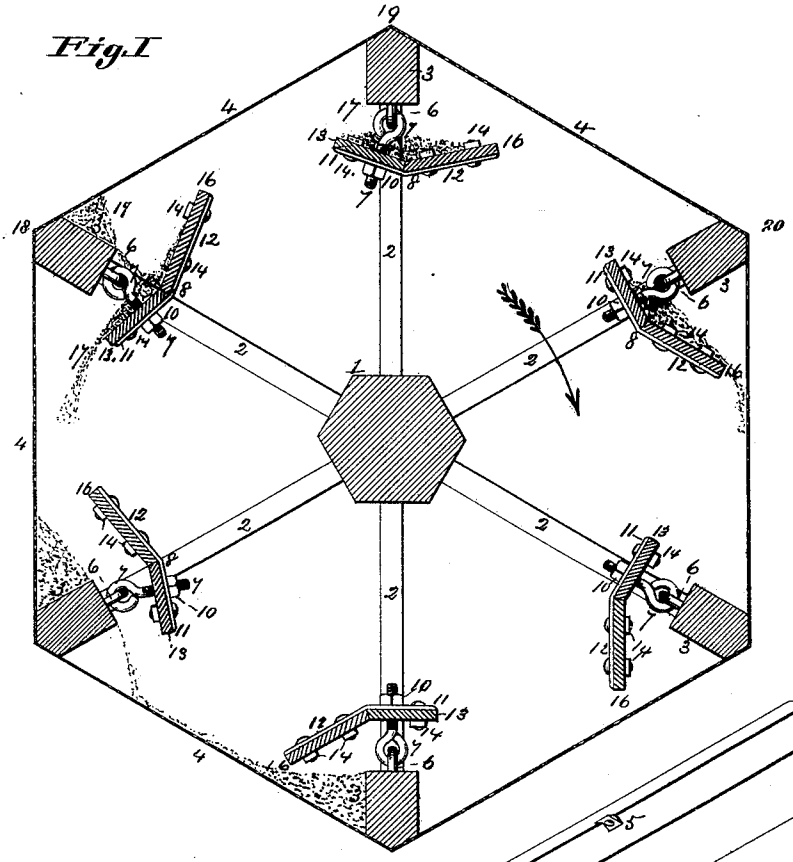


Fig. II.

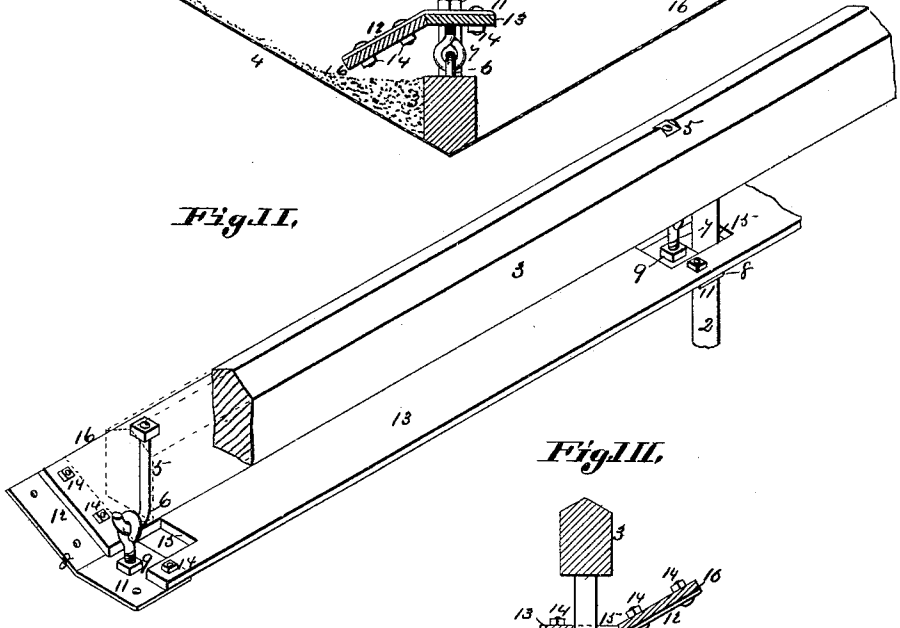


Fig. III.

Attest;
E. Arthur
G. E. Cruse

Inventor;
James E. Welch.
By Knight Bros.
Attys.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JAMES E. WELCH, OF PETERSBURG, ILLINOIS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF ONE-THIRD TO DEDRICH FISHER AND THOMPSON W. McNEELY, OF SAME PLACE.

BOLTING-REEL.

SPECIFICATION forming part of Letters Patent No. 405,973, dated June 25, 1889.

Application filed August 6, 1888. Serial No. 282,082. (No model.)

To all whom it may concern:

Be it known that I, JAMES E. WELCH, of Petersburg, in the county of Menard and State of Illinois, have invented a certain new and useful Improvement in Bolting-Reels, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My improvement relates to a shoe which is connected to each of the longitudinal ribs of the frame to receive the meal which is carried up by the ribs and slips therefrom as the reel revolves.

The novel features are set forth in the claims.

Figure I is a transverse section of a reel with my improvement applied thereto. Fig. II is a detail perspective view showing part of one of the ribs and part of a shoe. Fig. III is a detail transverse section in the plane of one of the arms.

The reel has or may have the ordinary or any suitable construction of a prismatic reel, no novelty being claimed in the reel *per se*. An ordinary six-sided reel is shown.

1 is the shaft. 2 are spokes or arms. 3 are the ribs to which the bolting-cloth 4 is attached. All these features (1, 2, 3, and 4) are as usual.

5 are screw-bolts fixed in the ribs, and having a hook or eye 6 at the inner side of the rib.

7 is an eyebolt, whose eye engages the hook or eye 6, so as to be capable of swinging thereon.

8 is a bracket-plate, through which the bolt 7 passes. Upon the screw-threaded part of the bolt 7 are two nuts 9 and 10, bearing against the opposite sides of the bracket-plates 8. The bracket-plates are bent in an obtuse angle at or near the middle, having two parts 11 and 12 on different planes.

13 is a strip running parallel with the rib and lying flat upon the parts 11 of the brackets and extending the whole length of the reel. The strip may of course be made in one, two, or more pieces. It is attached to the brackets by screw-bolts 14 or other suitable means. The strip 13 has apertures 15 for the passage of the arms 3, said apertures being made larger in a transverse direction than the spokes, so as to allow the transverse oscillation of the shoe upon the joints 6 6.

16 is a strip which is attached to the parts 12 of the brackets by bolts 14 or other means, the strip lying flat on this part of the brackets, so that the two strips 13 16 form a trough-shaped shoe, their edges being closely fitted together. The strip 16, like that 13, may be made of one, two, or more pieces. Where the strips 13 16 are made in more than one piece a broad bracket 8 is preferred, as shown at the left in Fig. II.

The positions of the shoe as the reel rotates are shown in Fig. I. The ribs carry up a quantity of meal, which is shown at 17. As the reel turns, some of this meal runs off and falls directly to the cloth beneath; but a large quantity is carried up to the position marked 18, where the shoe is beneath the deposit of meal upon the rib, and as the rib passes from the position at 18 to the position 19 all the meal drops from the rib and is received upon the shoe. When the rotation of the reel has carried the rib to the position 20, the meal has begun to run freely from the shoe and fall upon the sides of the reel beneath. Thus both sides of the reel are used for bolting, doubling the capacity of the reel, for it will be seen that without the shoes only one side of the reel would be in use, as the meal would have all dropped from the ribs before they passed the position 19, and consequently no part of the meal would be upon the descending side of the reel.

The shoes act as knockers, as the sides of the apertures 15 impinge against the line of arms twice for each shoe during each rotation of the reel. This serves to shake both the cloth and the shoe and prevents the lodgment of meal upon either of them.

The adjustable means of connection between the shoes and the ribs is important, as it enables the reel to be arranged for the bolting of a larger or smaller quantity of meal, for where the quantity is increased the distance between the rib and the shoe should be also increased.

I claim as new and of my invention—

1. The combination, with a bolting-reel, of a shoe composed of strips parallel with the

ribs and hinged thereto and set angularly to each other, so as to form a trough with its concave side toward the reel, and having apertures for the passage of the arms of the reel longer transversely than the diameter of the arms, substantially as and for the purpose set forth.

2. The combination of the eyebolts 5, adapted for attachment to the rib of a bolting-reel, eyebolts 7, hung to eyebolts 5 and carrying adjustable nuts 9 and 10, angular bracket-plates 8, through which the bolts 7 pass, and strips 13 and 16, secured to the brackets, substantially as and for the purpose set forth.

3. The combination of the eyebolts 5, adapted for attachment to the ribs of a bolting-reel, eyebolts 7, hung to eyebolts 5 and carrying nuts 9 10 for adjustable attachment, bracket-plates 8, through which the bolts 7 pass, and strips 13 and 16, secured to the bracket-plates and having apertures for the passage of the reel-arms, substantially as and for the purpose set forth.

4. The combination, in a bolting-reel, of eyebolts 5, attached to the ribs 3, eyebolts 7, hung upon the bolts 5, bracket-plates 8, attached to the bolts 7 by nuts 9 10, bearing against the opposite sides of the bracket-plates, and strips 13 16, attached to the bracket-plates, forming a trough with apertures 15 for the passage of the arms and of greater transverse length than the diameter of the arms, substantially as and for the purpose set forth.

JAS. E. WELCH.

Witnesses:
D. FISHER,
E. D. ROBERTSON.

Correction in Letters Patent No. 405,973.

It is hereby certified that in Letters Patent No. 405,973, granted June 25, 1889, upon the application of James E. Welch, of Petersburg, Illinois, for an improvement in "Bolting-Reels," an error appears requiring correction, as follows: In the grant, and also in the head of the printed specification it is stated that said Welch has assigned "one-third" of his right, title, and interest to Dedrich Fisher and Thompson W. McNeely of same place, whereas it should have been stated that he had assigned *two-thirds* to said parties; and that the Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 23d day of July, A. D. 1889.

[SEAL.]

CYRUS BUSSEY,
Assistant Secretary of the Interior.

Countersigned:

C. E. MITCHELL,
Commissioner of Patents.