

(No Model.)

2 Sheets—Sheet 1.

K. DOUGAN.

FLOUR BOLT.

No. 343,761.

Patented June 15, 1886.

Fig. 1.

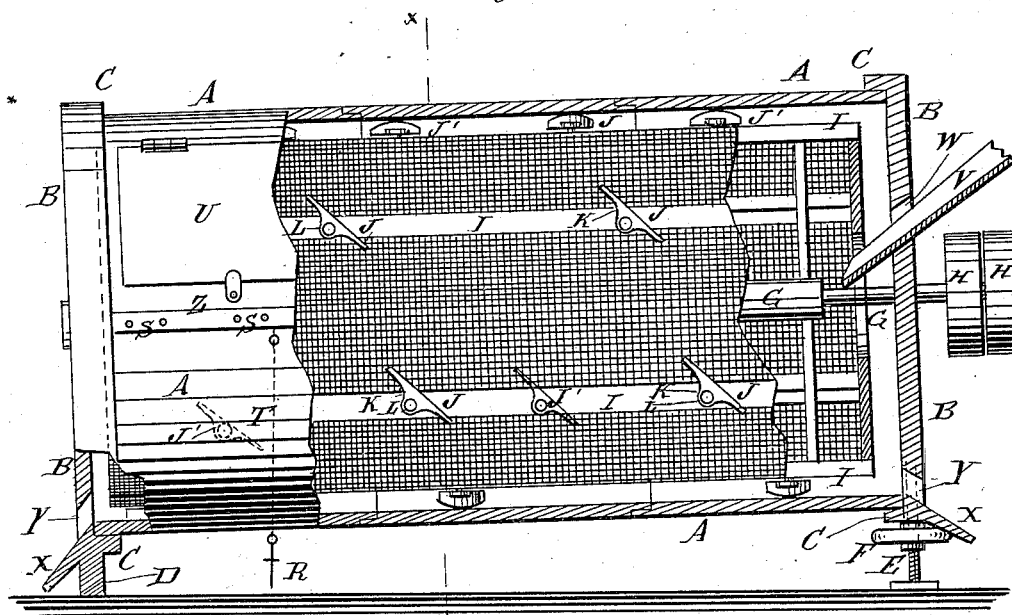


Fig. 3.

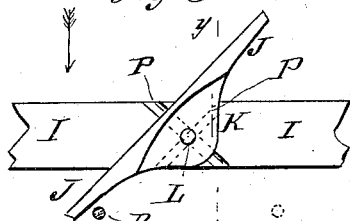


Fig. 4.

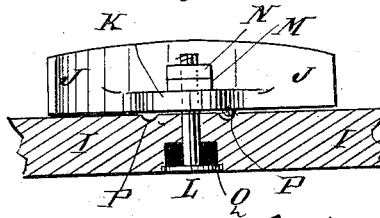
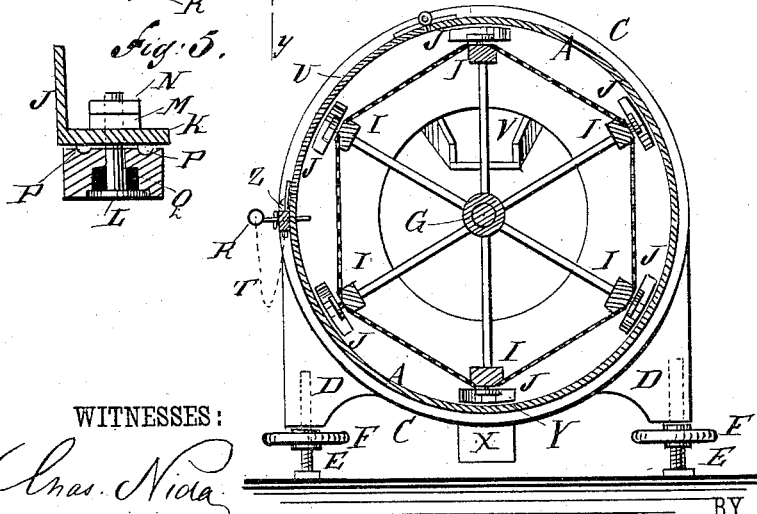


Fig. 2.

Fig. 6.



WITNESSES:

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INVENTOR:

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ATTORNEYS.

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Fig. 7.

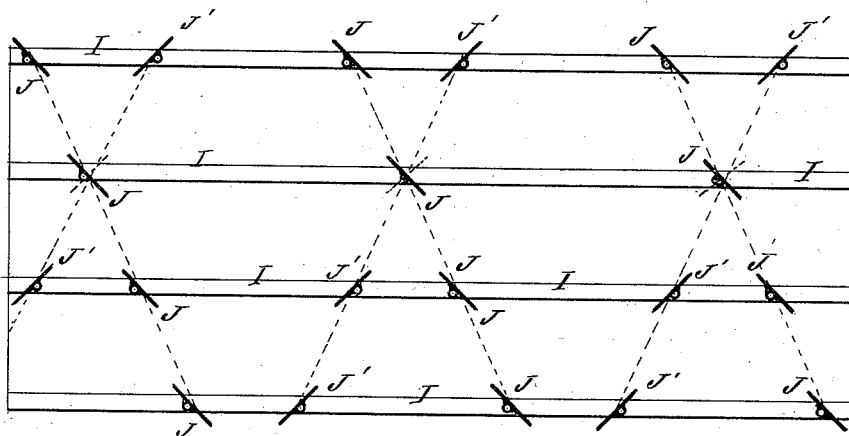
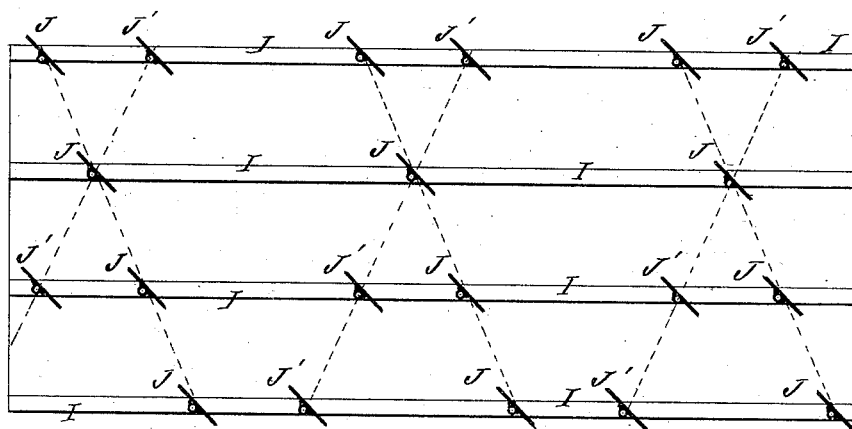


Fig. 8.



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UNITED STATES PATENT OFFICE.

KENNEDY DOUGAN, OF CALWOOD, MISSOURI.

FLOUR-BOLT.

SPECIFICATION forming part of Letters Patent No. 343,761, dated June 15, 1886.

Application filed September 18, 1885. Serial No. 177,454. (No model.)

To all whom it may concern:

Be it known that I, KENNEDY DOUGAN, of Calwood, in the county of Callaway and State of Missouri, have invented a new and useful Improvement in Flour Bolts, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of one of my improved flour-bolts, partly in section, parts being broken away. Fig. 2 is a sectional end elevation of the same, taken through the line xx , Fig. 1. Fig. 3 is a plan view of one of the conveyer-wings and a part of the bar to which it is secured. Fig. 4 is a front elevation of the same, the bar being shown in section. Fig. 5 is a sectional elevation of the same and its bar, taken through the line yy , Fig. 3. Fig. 6 is an under side view of one of the conveyer-wings. Figs. 7 and 8 are diagrams illustrating the arrangement of the two sets of wings.

The object of this invention is to simplify the construction of flour-bolts, lessen the cost of their manufacture, and economize space.

The invention consists in the constructions and combinations of parts, which will be hereinafter fully described, and then pointed out in the claims.

A represents the body or shell, and B the ends, of a bolt-chest. The body or shell A is made of galvanized sheet-iron or other suitable material, is cylindrical in form, and is preferably made in sections, as indicated in Fig. 1. The ends B are made of cast-iron, and have annular flanges C upon their inner sides, within which the outer ends of the shell A are placed, and to which the said shell is secured by bolts or other suitable means. The ends B are cast with feet D, in which are formed vertical holes to receive the screws E. The heads of the screws E are made square, and are designed to be set in square mortises in the floor to hold the said screws from turning.

Upon the screws E are placed hand-nuts F, upon which the feet D rest, so that greater or less inclination can be given to the bolt by turning the said hand-nuts F up or down.

The screws E and the hand-nuts F can be applied to the feet D at one or both ends of the bolt.

In the centers of the ends B are formed bearings for the reel-shaft G, to one journal of which are attached pulleys H, to receive the driving-belt.

To the shaft G is attached an ordinary bolt-reel, I, to the bars of which, or to bars attached to the said reel-bars, are pivoted conveyer-wings J. The wings J have flanges K upon their lower edges, projecting at right angles with the planes of the said wings, to receive the pivoting-bolts L. The bolts L have square heads, which are let into the reel-bars to hold the said bolts from turning, and upon their outer ends are placed nuts M, to hold them in place, and jam-nuts N, to prevent the nuts M from working loose.

Across the middle of the under side of each of the flanges K, and at right angles with the plane of the said wing, is formed a rib, O, to engage with groove P, formed in the outer side of the bars of the reel I, to which the said wings are secured. The grooves P cross each other at the holes for the bolts L, and are at right angles with each other, and at an angle of forty-five degrees (45°) with the lengths of the bars to which they are attached. The reel-bars are countersunk around the bolt-holes and beneath the heads of the bolts L, and in the countersinks thus formed are placed springs Q, of rubber or other suitable material, to hold the wings J to their places, and to allow the ribs O to rise out of the grooves P when the said wings are to be adjusted, and to force the said ribs into the other grooves P when the said wings have been turned through one-quarter of a revolution. The wings J are arranged spirally around the reel I, so as to serve as a conveyer-screw to move the material that has passed through the bolt-chest toward the end of the bolt-chest. A second set of wings, J', is attached to the reel-bars and so arranged in connection with some of the wings of the first set as to form a second screw-conveyer for conveying the material toward the other end of the bolt-chest.

By adjusting the wings J J' parallel with each other, as illustrated in the diagram, Fig. 8, the material will be carried toward one end

of the bolt-chest, and by turning all the wings J J' one-quarter around the material will be carried toward the other end of the bolt-chest.

By adjusting the wings J of one set in one direction and the wings J' of the other set in the other direction, as illustrated in the diagram, Fig. 7, the material will not be carried in either direction, the wings of the two sets counteracting each other.

The wings J J' at the two end parts of the bolt can be adjusted in opposite directions, so that part of the material will be carried toward one end of the bolt-chest and part toward the other end.

The wings J can be adjusted or changed in position while the reel I is in motion by inserting pins R in holes S in the front of the chest-cylinder I, as indicated in Figs. 1, 2, and 3.

The pins R are provided with cross-pins, as shown in Figs. 1 and 2, to prevent them from being pushed in so far as to be struck by the bars of the reel I, and the said pins are connected with the body or shell of the bolt-chest by short chains T, to prevent them from being lost. Two holes are formed in the shell A upon the opposite sides of the path of the pivoting-bolt L of each wing J, so that the said wing can be turned in either direction, as may be desired.

In the upper part of the front of the shell A are formed doors U, to give access to the interior of the said shell when required.

The material is introduced into the reel through a spout, V, inserted in an opening, W, in the upper part of the head end B, and is discharged through one or the other or through both of the spouts X, secured in openings Y in the lower parts of the ends B.

The part of the shell A through which the holes S are formed is strengthened and additional support is given to the pins R, when

struck by the wings J, by bars Z, of wood or other suitable material, attached to the said shell.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In a flour-bolt, the combination, with the cylindrical chest having an inlet-opening and exit-openings in both ends, of the reel having a series of reversible conveyer-wings pivoted to its exterior, and means for holding the wings in their several positions, substantially as set forth.

2. In a flour-bolt, the combination, with the bars of the reel I, having grooves P, and the wings J J', having flanges K and ribs O, of the bolts and nuts L M N and the springs Q, substantially as herein shown and described, whereby the inclination of the wings can be readily changed, and the said wings will be held securely in place, as set forth.

3. In a flour-bolt, the combination, with the shell A, having pairs of perforations S, the reel having pivoted conveyer-wings on its exterior, and means for holding said wings in position, of the pins R and the strengthening-bars Z, substantially as herein shown and described, whereby the inclination of the reel-wings can be changed while the said reel is in motion, as set forth.

4. The combination, with the cylindrical chest having inlet and outlet openings, of the reel within the same, a series of vertically-lying pivots on said reel, and conveyer-wings mounted on said pivots, the adjacent surfaces of the wings and reel having projections and recesses constructed to hold the wings in position, substantially as set forth.

KENNEDY DOUGAN.

Witnesses:

L. S. BARNES,

JAS. T. HOLLAND.