(No Model.)

N. W. HOLT.

FLOUR BOLT.

No. 299,790. Patented June 3, 1884.

Fig. 1.

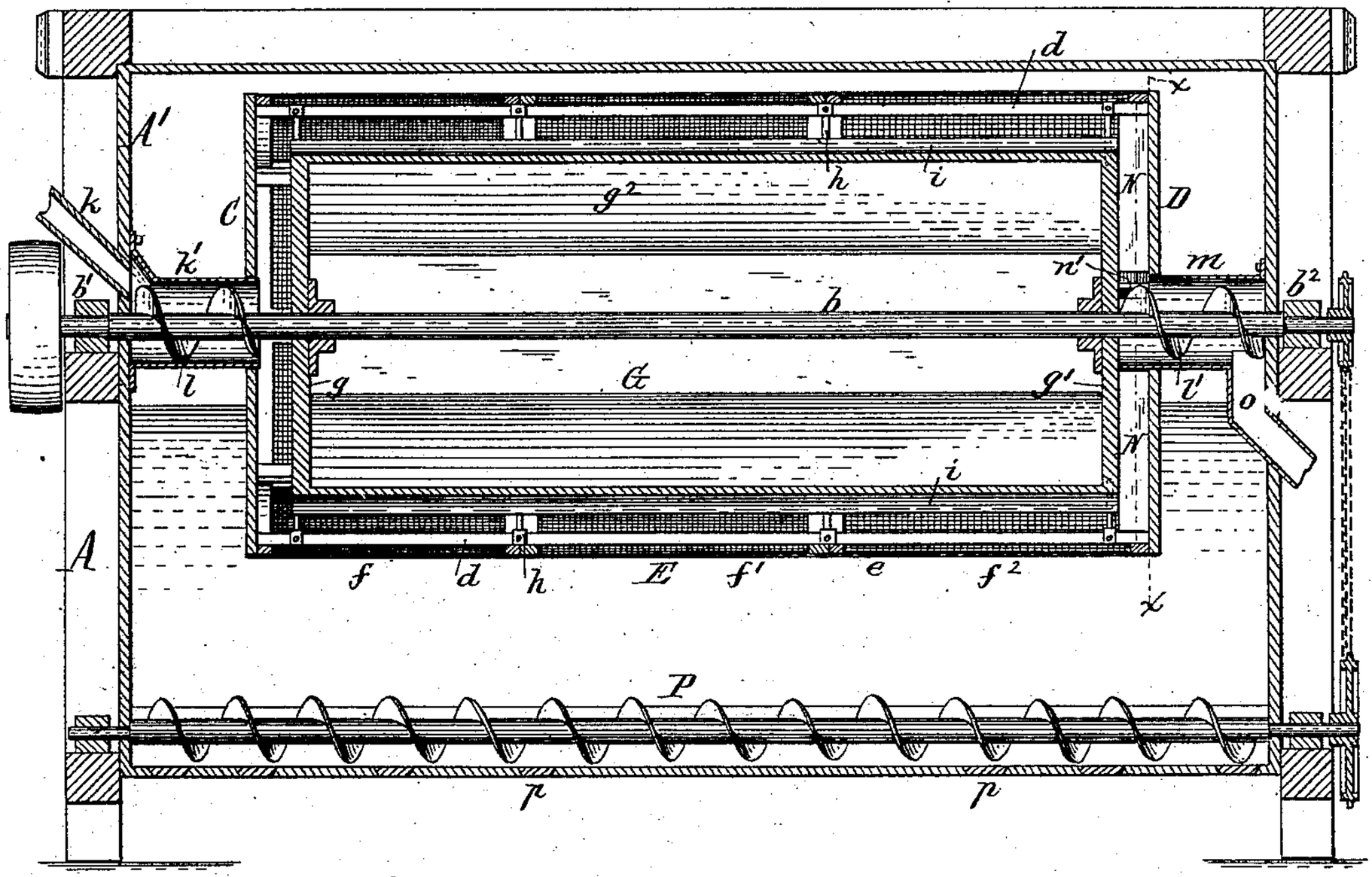


Fig. 2.

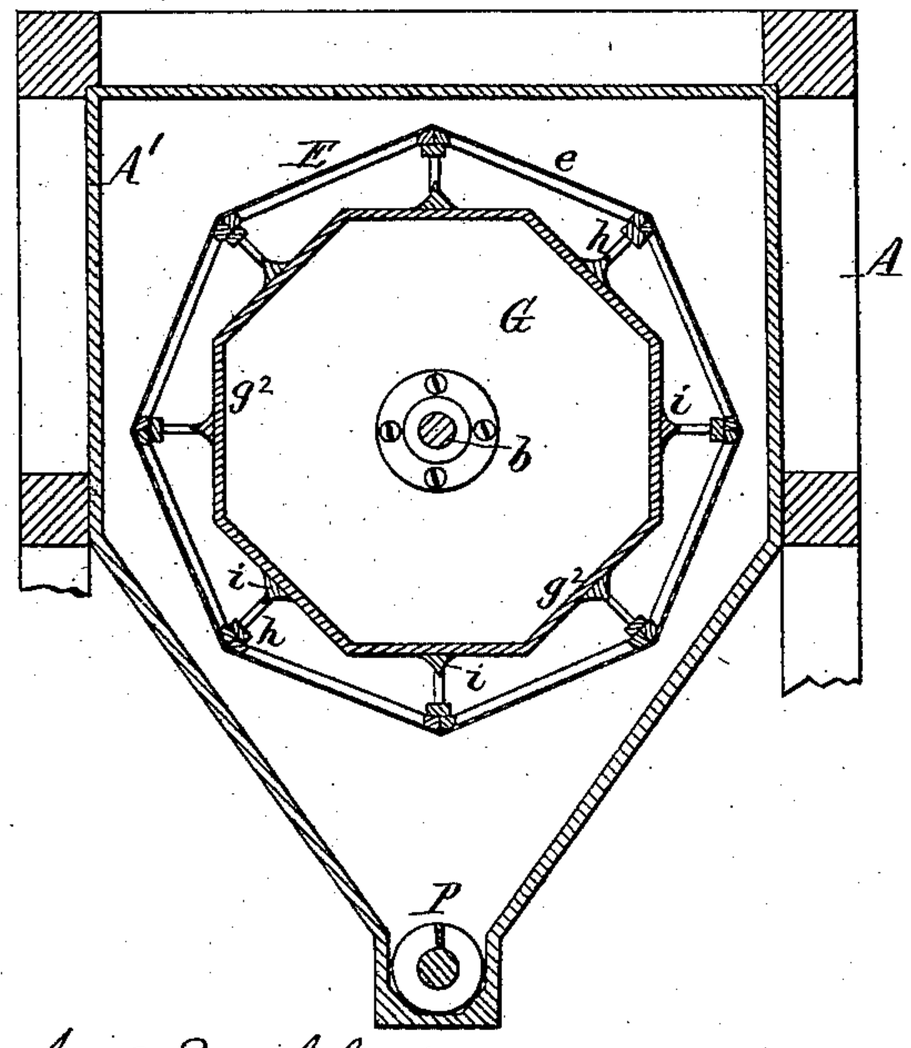
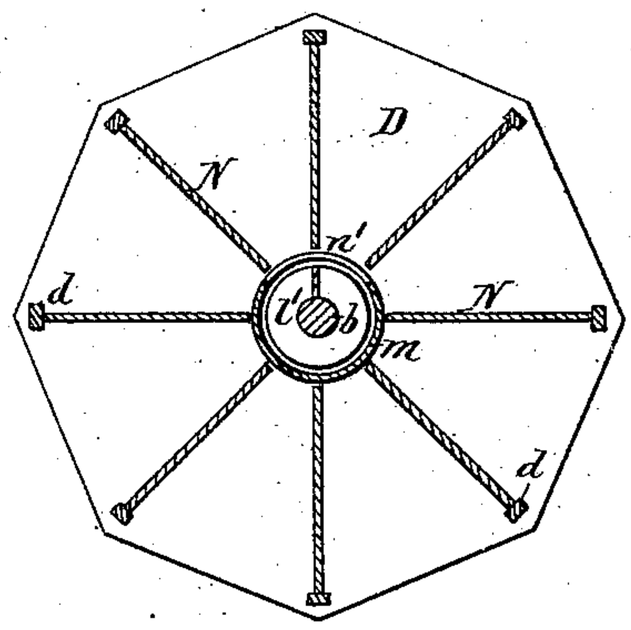


Fig. 3.



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FLOUR-BOLT.

SPECIFICATION forming part of Letters Patent No. 299,790, dated June 3, 1884.

Application filed March 11, 1884. (No model.)

To all whom it may concern:

Be it known that I, NOAH W. HOLT, of the city of Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Flour-Bolts, of which the following is a specification.

This invention relates to an improvement in that class of flour-bolts which consist of a revolving reel covered with bolting-cloth, through which the material is bolted by the rotation of the reel. In this class of flour-bolts the operation of bolting takes place principally while the material descends, and occurs, therefore, at intervals during the rotation of the reel, so that the latter performs no work during a considerable portion of the time.

The object of my invention is to increase the bolting capacity of this class of machines, and to cause the material to be bolted more uniformly and continuously, and to otherwise improve the construction of the machine.

My invention consists of the improvements which will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal section of a bolting-reel provided with my improvements. Fig. 2 is a cross-section thereof. Fig. 3 is a cross-section in line *x x*, Fig. 1.

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

A represents the stationary frame of the machine, and A′ the inclosing casing or chest secured thereto.

b represents the reel-shaft, which is supported in bearings b' b^2, secured to the frame A.

C represents the head of the reel, arranged at its feed end, and D the head arranged at the discharge end, the heads C and D being connected together by longitudinal ribs *d*. The heads C and D are preferably octagonal in shape, as shown, and as many longitudinal ribs as there are sides in the heads C and D are employed, thus forming an eight-sided reel, though a reel having a less number of sides may be employed, if desired.

E represents the bolting-cloth, which is secured to removable frames *e*, which fill the spaces between the longitudinal ribs and the heads of the reel. The frames *e* are secured to the ribs *d* by screws or otherwise, so that they can be readily removed from the reel when desired. A suitable number of such frames are arranged side by side in each space between two longitudinal ribs and the head and tail of the reel. As shown in Fig. 1 of the drawings, each side of the reel is composed of three sections, f f' f^2. These sections are covered with bolting-cloth having different degrees of fineness, the coarser cloth being preferably arranged on the section f^2 at the tail end of the reel. The size or number of mesh of the reel-covering can be regulated as required by the character of the material to be bolted by the removable sectional frames, in an obvious manner.

G represents a closed drum arranged within the bolting-reel, and secured to the shaft *b* by tight heads g g'. The periphery of the drum G has preferably as many sides as the reel, and its sides g^2 are arranged at an angle to or not parallel with the sides of the reel, as clearly shown in Fig. 2. This relative arrangement of the sides of the drum to the sides of the reel causes the material sliding from the sides of the drum to impinge against the bolting-cloth at a higher point than it would otherwise, and also assists in elevating the material on the ascending side of the reel.

h are braces or rods which connect the drum G with the bolting-reel, and whereby the latter is caused to revolve with the drum. The rods *h* extend from the sides g^2 of the drum, and are secured to the longitudinal ribs *d* of the reel, and form braces for the latter.

i are longitudinal ribs or buckets projecting from the sides g^2 of the drum.

k represents the feed-spout whereby the material to be bolted is introduced into the machine, and k' is a cylinder or tube which surrounds the shaft *b*, and which receives the material from the feed-spout *k*. The tube k' is firmly secured to the inclosing-case A′ of the machine at one end, and its opposite end extends into the reel through a central opening formed in the reel head C.

l is a screw-conveyer secured to the shaft *b* within the tube k' in such manner as to propel the material from the tube into the bolting-reel.

l' is a similar conveyer secured to the shaft *b* at the tail end of the machine, and surrounded

by a tube or cylinder, *m*, secured to the casing of the machine. The inner end of the tube *m* extends through a central opening formed in the head D of the reel, and abuts against the outer side of the head *g'* of the drum G.

N are radial ribs secured to the inner side of the head D, between the latter and the outer side of the head *g'* of the drum, and extending from the tube *m* to the longitudinal ribs of the reel. The material which reaches the inner side of the head D is lifted by the ribs N and delivered through the opening *n'* into the tube *m*, from which it is discharged by means of the screw-conveyer *l'* into the spout *o*. The material which is fed through the conveyer *l* falls into the space between the head *g* of the drum and the reel-head C onto the bottom of the reel. As the reel rotates the material is gradually elevated on the ascending side of the reel until the inclination of that portion of the reel on which the material rests becomes so steep that the material descends over the inclined bolting-surface, whereby the fine material is separated from the coarse parts. As the material accumulates on the ascending side of the reel, part of it is carried by the buckets *i* and the drum G. to the opposite or descending side of the reel, where the material escapes from the buckets and descends over the inclined bolting-surface. In this manner a portion of the material is bolted on the descending side of the reel. As the space between the drum G and the bolting-reel is comparatively small, the material is retained near the bolting-surface at all times, thereby increasing the efficiency of the bolting-surface.

P is a screw-conveyer arranged in the bottom of the chest or trough which receives the bolted material, and which may be provided with a suitable number of openings controlled by slides *p*, through which different portions of the material may be drawn off at desire.

I claim as my invention—

1. The combination, with a bolting-reel, of a drum, G, secured within the reel, to revolve at the same speed and in the same direction with the reel, and having its sides g^2 arranged at an angle to the sides of the reel, substantially as set forth.

2. The combination, with a bolting-reel, of a drum, G, having tight heads *g g'*, and secured within the reel, to rotate in the same direction and with the same speed as the reel, and longitudinal ribs or buckets *i*, secured to said drum and projecting toward the inner surface of the reel, whereby some of the material is elevated and carried from the ascending side to the descending side of the reel, substantially as set forth.

3. The combination, with the shaft *b*, of the reel-heads C D, longitudinal ribs *d*, secured to said heads, drum G, provided with tight heads *g g'*, and secured to the shaft, and braces *h*, connecting the ribs *d* with said drum, substantially as set forth.

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