

B. C. WHITE.
Mill Bolt Reel.

No. 111,501.

Patented Jan. 31, 1871.

Fig. 1.

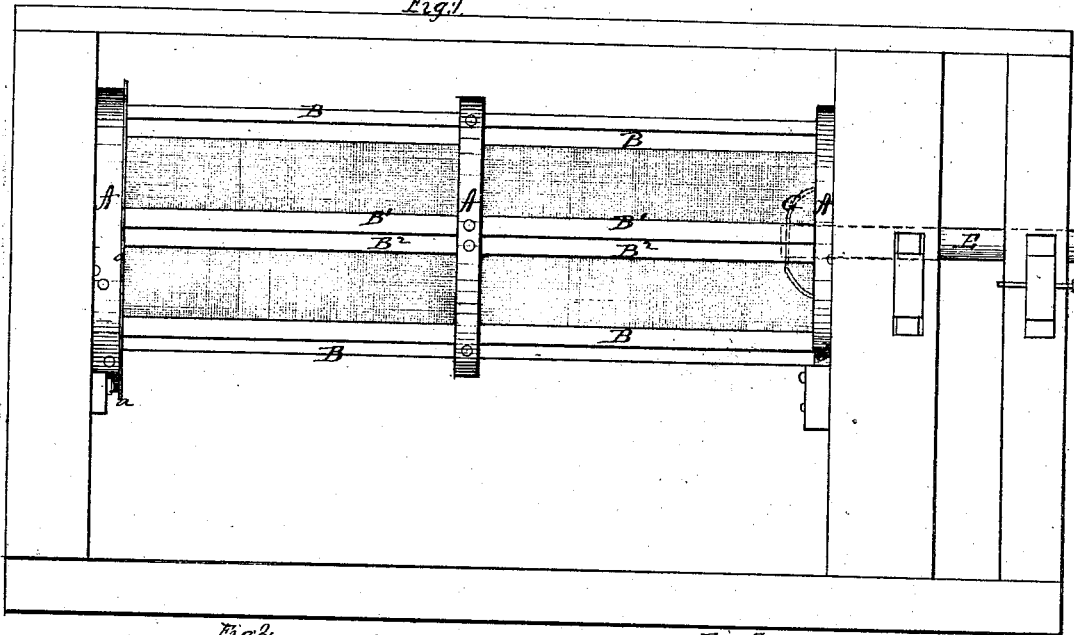


Fig. 2.

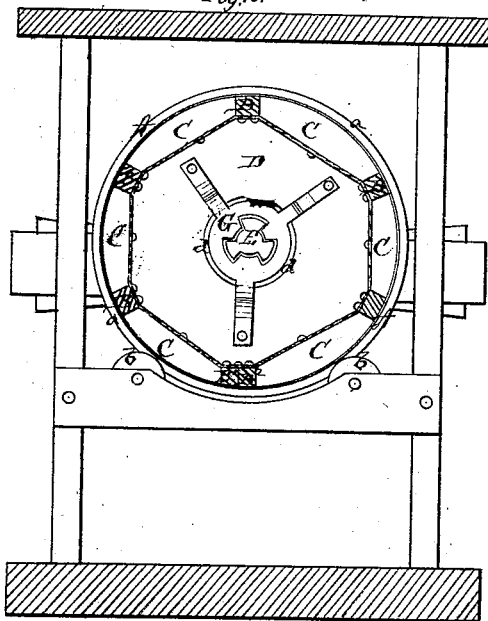
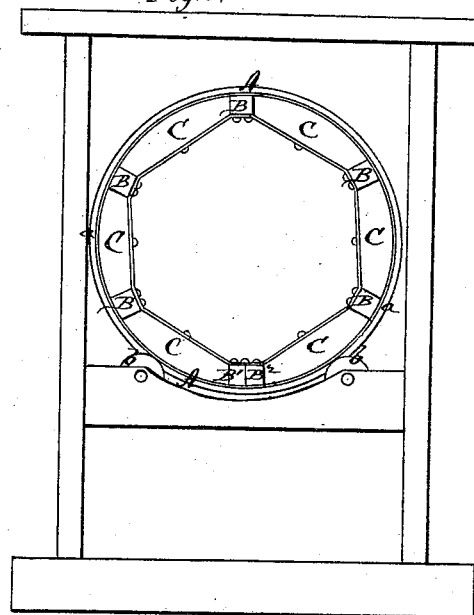


Fig. 3.



Witnesses.

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BENJAMIN CLAYTON WHITE, OF DES MOINES, IOWA.

Letters Patent No. 111,501, dated January 31, 1871.

IMPROVEMENT IN BOLT-REELS.

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, BENJAMIN CLAYTON WHITE, of Des Moines, in the county of Polk and in the State of Iowa, have invented certain new and useful Improvements in Bolt-Reels; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The nature of my invention consists—

First, in the construction of a cylindrical bolt-reel for mill-bolts with metallic bands, to which are screwed or bolted the single ribs, or ribs put up in sections, in place of the usual reel-shaft and spokes for supporting the ribs;

Second, in the use of friction-rollers for running bolt-reels;

Third, in the manner of driving bolt-reels by a clutch-gear arrangement placed on the inside of the reel-head, and in the manner of throwing the reel in and out of gear; and

Fourth, in the plan of nailing the bolting-cloth on the inner edge of the ribs and closing up the reel with double ribs.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a side elevation of my bolt-reel;

Figure 2 is a transverse vertical section of the same, showing the inner side of the reel-head; and

Figure 3 is an end view, showing the tail end of the reel.

My bolt-reel is constructed in the following manner:

I use bands A A, of iron, brass, or other suitable metal, of the proper diameter to suit the size of reel desired to be made, and of proper width and thickness to insure sufficient strength to support the ribs from springing.

The bands used at each end of the reel are made with a flange, *a*, like a car-wheel, and wide enough on the face or flat part of the band to run on the friction-rollers *b b*, that the reel has to run on when placed in the bolting-chest, the intermediate bands to be made the same size in diameter as the end bands, but no flange is required on them.

On a twenty-foot reel it would be well to use five bands, two with flanges and three plain bands, but any desired number may be used, although in the drawing I have only represented three bands in all.

The end bands, with the flanges, should be turned true on the outside or face, so that they will run smoothly on the friction-rollers *b b*. These holes are drilled in them at the proper distances apart to fasten the ribs on the inside of each band.

The bands are set at the proper distances apart along the rib B, say one at each end, and the others divided equally along the ribs between the end bands.

Owing to the length of reel required, the bands should be let into the ribs the thickness of the bands in order to more firmly brace the reel, and lugs may be cast on the inside of the bands to receive the ribs, which would give additional strength.

The ribs B B are firmly bolted or screwed to the inside of bands at the proper distance apart to form six or eight square when the cloth is tacked onto the inner edge of bolt-reel.

I use a double rib, B' B', at one side of this reel, in order to nail the cloth on the last rib in the following manner:

First, nail the cloth on one-half B' of the double rib, and then on all the other ribs B B, until we arrive at the starting point. Then loosen or unbolt the half-rib B', and let it fall down out of the way while the cloth is nailed on the other half-rib B'.

After that is done, bring the first half-rib B' back to its place, and bolt it alongside of the other half-rib B'. Then bolt the two half-ribs securely together to prevent any leakage between them.

Between the ends of the ribs B are placed braces C C, as shown in figs. 2 and 3, to which braces the cloth is also nailed.

The head of the reel is closed up with a solid head, D, with hole *d* in the center of it, of proper size to admit conveyer-box.

The driving-shaft E extends a short distance into the head of the reel and connects with a spider, G, fastened on the inside of the head D, as shown in fig. 2.

The clutch on the end of the shaft E connects with a clutch in the spider inside of reel-head, and is so constructed that if it is desired to stop the reel to examine or repair the cloth the reel can be moved a few inches endwise and thrown out of gear.

If the upper reel of a double chest, it must be moved toward the head of chest; if the return reel, it must be moved toward tail of chest, each in opposite directions to the way the reel inclines for discharge of stuff out of the tail of reel.

The friction-rollers, for supporting and revolving bolt-reels on, may be used in several different ways and different numbers.

In the drawing I have represented two rollers at each end of reel, but I may use one large roller under each end and two smaller rollers half way up the sides of the reel, to steady the reel on the large one below.

The ribs may be put on the inside or outside of the bands, as desired, owing to the way the cloth may be desired to be put on the ribs, inside or outside.

In the drawing I have shown the ribs put on the inside of the bands, which I believe to be preferable,

as that places the ribs where the cloth can be put on the inside of ribs, and removes all obstructions and makes a continuous lining of bolting-cloth, and insures an even bolting-surface, and enables the miller to get more No. 1 flour to the bushel of wheat than in the old way of bolting.

In another application for patent for mill-bolt, I described the ribs around the reel divided into sections and put together forming the reel. Such sections may be used with bands, the same as above described.

Spiders with gudgeons can be used as well as friction-rollers, on which revolves my cylindrical bolt-reel. The end-bands can be cast with spider and gudgeon all in connection, if desired, for tail end of either flour or return reels.

Having thus fully described my invention,

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

1. The combination of the bolting-cloth, the single ribs B, and the double rib B¹ B², when said parts are constructed and arranged together in the manner herein shown and described.

2. The improved arrangement of the metallic bands A A, the ribs B B, and B¹ B², the bolting-cloth, and the friction-rollers b b, when all these parts are constructed as shown and described, for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 28th day of October, 1870.

BENJAMIN CLAYTON WHITE.

Witnesses:

C. A. DUDLEY,
WM. CONNOR, Jr.