

(No Model.)

2 Sheets—Sheet 1.

R. L. HAWKINS.
FLOUR BOLT.

No. 438,287.

Patented Oct. 14, 1890.

FIG. 2 -

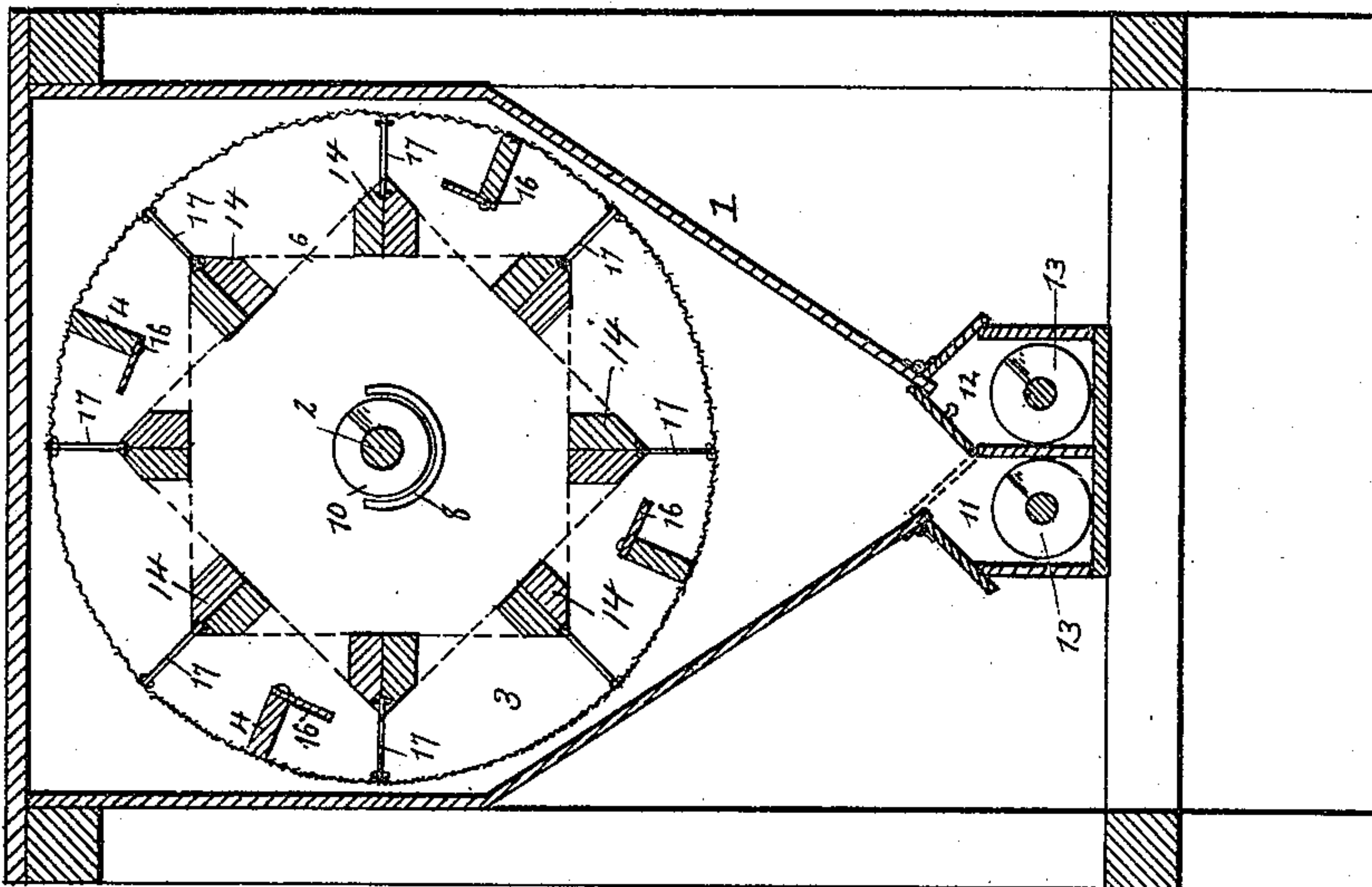
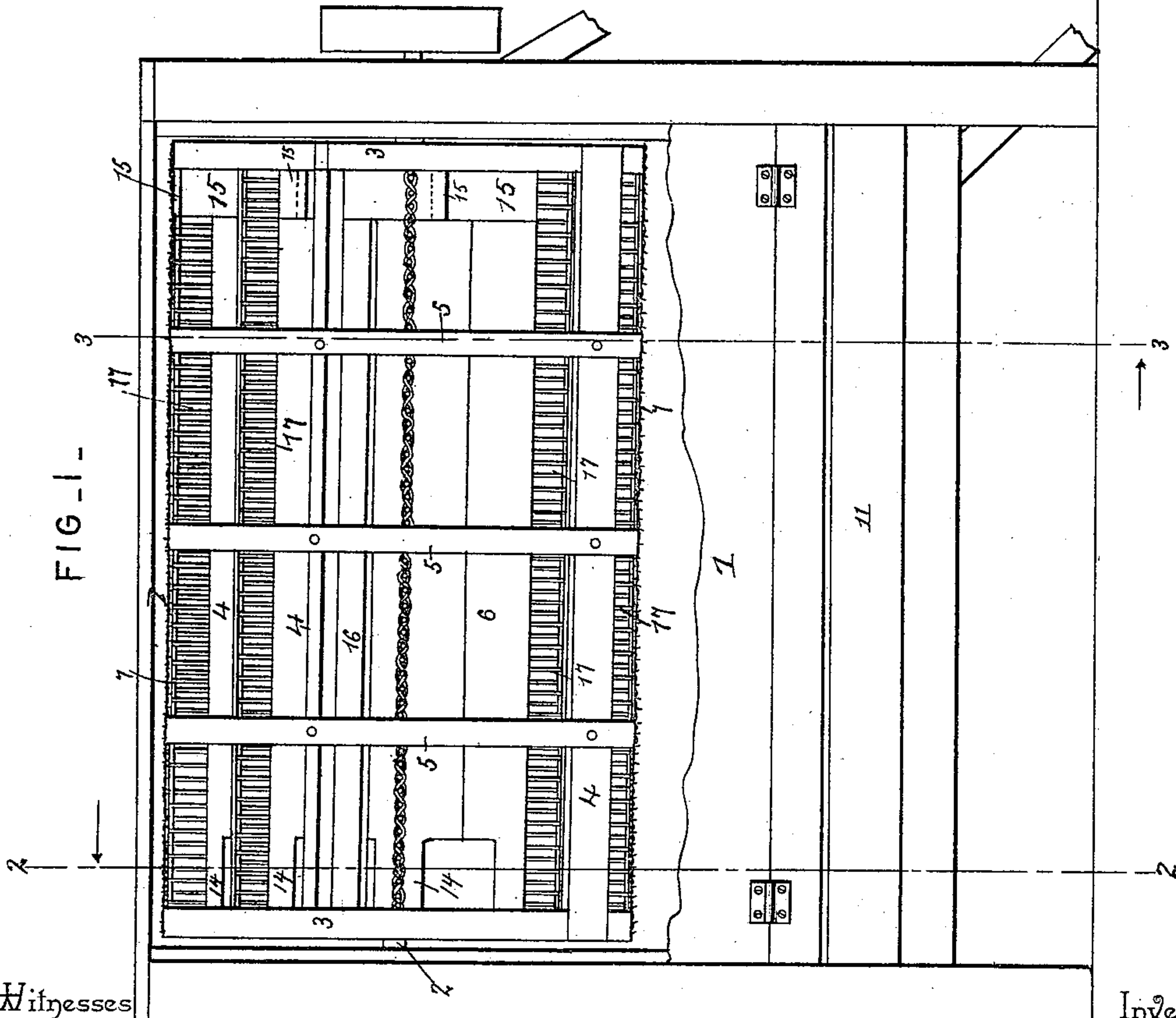


FIG. 1 -



Witnesses

Inventor

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Wm. Baggett

By his Attorneys,

Robert L. Hawkins

C. A. Snow & Co.

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FIG. 3 -

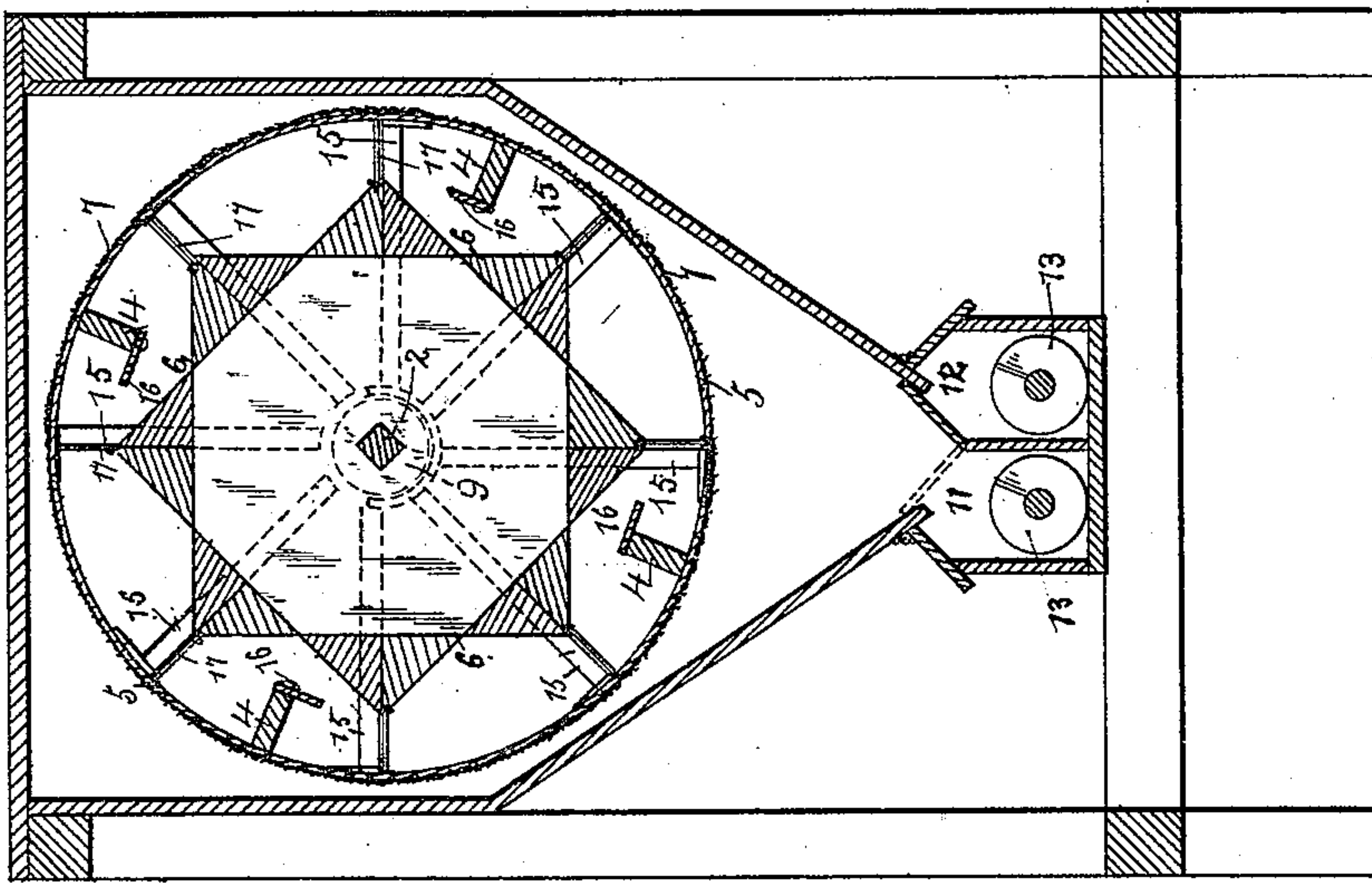
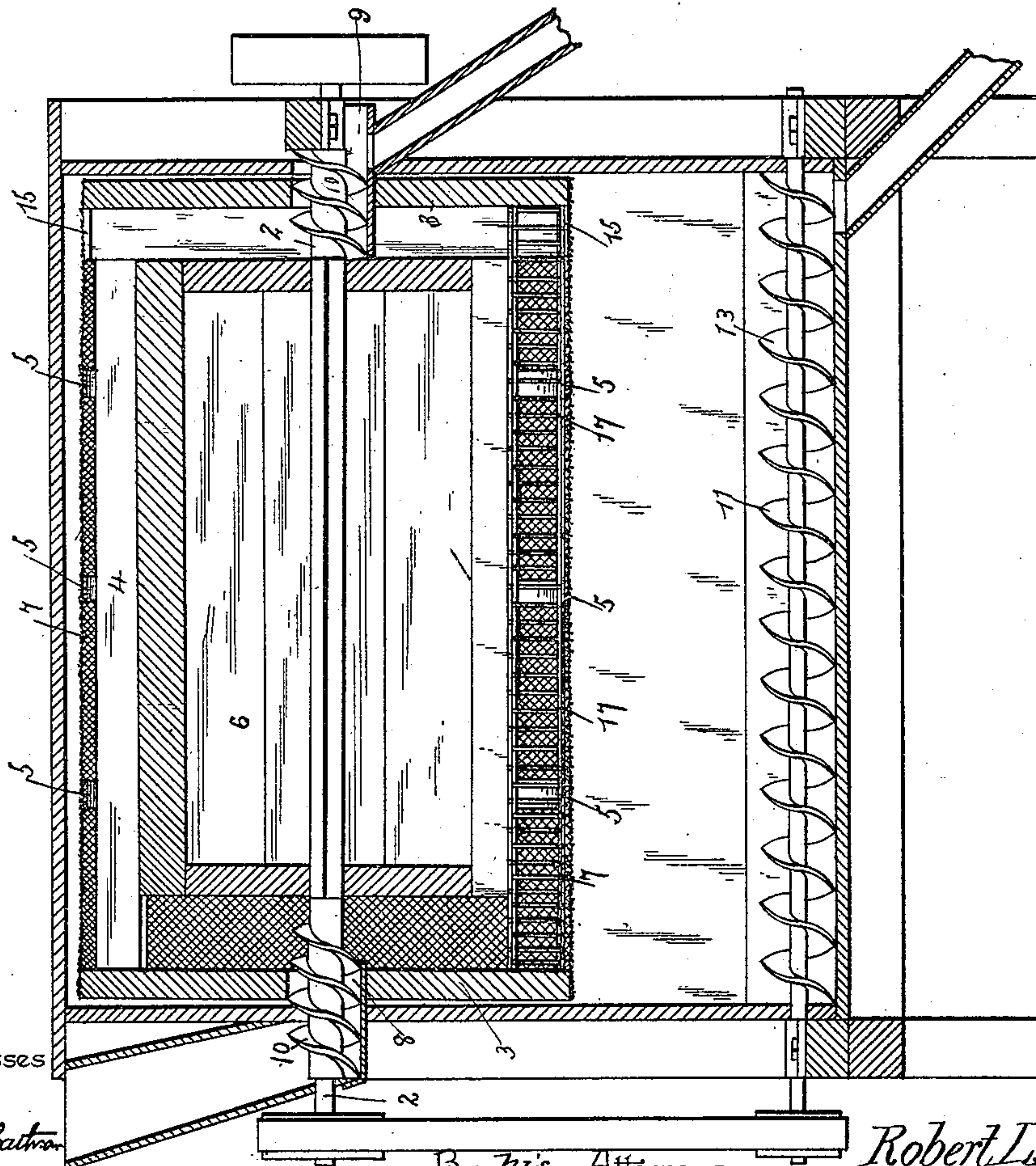


FIG. 4 -



Witnesses

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Inventor

UNITED STATES PATENT OFFICE.

ROBERT L. HAWKINS, OF DADEVILLE, MISSOURI.

FLOUR-BOLT.

SPECIFICATION forming part of Letters Patent No. 438,287, dated October 14, 1890.

Application filed May 9, 1890. Serial No. 351,147. (No model.)

To all whom it may concern:

Be it known that I, ROBERT L. HAWKINS, a citizen of the United States, residing at Dadeville, in the county of Dade and State of Missouri, have invented a new and useful Flour-Bolt, of which the following is a specification.

This invention relates to flour-bolts; and it has for its object to provide a device of this class which shall be simple in construction, and by means of which the flour, while in the process of being bolted, shall be thoroughly stirred and agitated, thus causing all of the flour particles to pass through the bolting-cloth.

A further object of the invention is to so construct the reel as to avoid any violent concussion of the chop.

With these ends in view the invention consists in the improved construction, arrangement, and combination of parts which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of a bolting-reel equipped with my improvements, part of the casing having been broken away for the purpose of exposing the construction of the reel. Fig. 2 is a transverse sectional view taken on the line 2 2 in Fig. 1. Fig. 3 is a transverse sectional view taken on the line 3 3 in Fig. 1. Fig. 4 is a longitudinal sectional view.

Like numerals of reference indicate like parts in all the figures.

1 designates the frame or casing of the reel, the ends of which are provided with bearings for the shaft 2, which is provided with heads 3 3, connected by longitudinal ribs 4, to the outer sides of which the hoops 5 are secured, said hoops being sunk in recesses or mortises in the outer sides of said ribs, so as to be flush with the latter.

6 designates a solid drum or body, which is mounted securely upon the shaft 2 intermediately between the heads 3 3. Said drum or body is made, preferably, of a shape of an eight-rayed star in cross-section, as shown in the drawings hereto annexed, and the longitudinal ribs 4 are preferably four in number. The bolting-cloth, which is designated by 7, is tacked or otherwise secured to the heads or ends and to the ribs, said cloth being stretched from the head to the tail end of the machine,

so as to avoid the objectionable twisting of the cloth which frequently occurs in reels of this description.

The casing 1 is provided at one end with an inlet-spout 8 and at the other end with an outlet-spout 9, and the shaft 2 is provided with spiral conveyers 10, extending through the said spouts to feed the chop into the bolting-reel and to convey the middlings away from the latter. The bottom of the casing is divided into two separate compartments, (designated by 11 and 12,) in each of which a spiral conveyer 13 is located. The compartment 11 receives the flour as it passes through the bolt, and the compartment 12 may be suitably connected with the discharge end of the reel to receive the middlings, which may thus be re-conveyed to the front end of the machine for the purpose of subjecting the same, if desired, to a repetition of the operation.

The star-shaped drum or body of the reel is provided at the inlet end with arms 14, extending to the adjacent head 3. At the discharge end of the reel between the drum 6 and the adjacent head 3 are placed the buckets or radial plates 15, by means of which the middlings are conveyed into the discharge-spout.

Each of the longitudinal ribs 4 of the reel is provided on its inner side with a plate or flange 16, forming a cap or bucket, by means of which the contents of the reel is lifted on the upward movement and discharged upon the bolting-cloth on the down side.

The drum or body 6 of the reel is provided with a series of agitators 17, extending longitudinally through the entire length of the reel from the head 3 at the inlet end to the bucket-plates 15 at the opposite end, said agitators consisting of strips of coarse wire-cloth or coarse radial wires interwoven with finer wires, as clearly shown in the drawings. These devices serve to thoroughly stir and agitate the contents of the reel during the operation of the device.

The operation and advantages of my invention will be readily understood from the foregoing description taken in connection with the drawings hereto annexed.

The chop is delivered from the inlet-spout 8 into the space between the drum 6 and the adjacent head 3, and it naturally drops down

into the lower part of the reel, the arms 14 serving to break the fall and to distribute the chop as it drops. By the rotation of the latter its contents will be thoroughly stirred and kept in constant movement by the agitators 17. The caps or buckets 16 upon the longitudinal ribs 4 serve to lift or elevate the contents of the reel and to discharge it upon the buckets formed by the recesses in the sides of the star-shaped drum, and thence onto the bolting-surface, along which it slides, thus being thoroughly bolted or sifted. The advantage of the star-shaped drum or body will be readily understood, the sides of the same forming buckets to receive the chop from the buckets 16, the chop being thus not only thoroughly agitated, but also discharged upon the bolting-surface less violently and in a better condition for sifting through than would otherwise be the case. When the contents of the reel reaches the discharge end, the buckets 15 will elevate and discharge it into the spout 9, the spiral conveyer in which serves to discharge it.

The construction of my improved bolting-reel, as will be seen in the foregoing description is very simple and inexpensive, and it has proven in practice to be exceedingly useful and efficient.

Having thus described my invention, I claim—

1. The combination of the cylindrical reel, the interiorly-arranged star-shaped drum or body, and the longitudinal ribs having caps or flanges on their inner sides, substantially as and for the purpose set forth.

2. The combination of the cylindrical reel, the interiorly-arranged star-shaped drum or body, the longitudinal ribs having caps or flanges on their inner sides, and the longitudinally-arranged agitators, of coarse wire-cloth or analogous material, substantially as set forth.

3. The combination, with the cylindrical reel, of the interiorly-arranged star-shaped drum or body having arms extending to the head at the inlet end, the radial plates or buckets arranged between said drum or body and the head at the outlet end, and the longitudinally-arranged agitators, of coarse wire-cloth, substantially as set forth.

4. The combination of the casing, the inlet and outlets spouts, the cylindrical reel mounted upon the shaft, having spiral conveyers extending through said spouts, the star-shaped drum or body arranged within the reel and having arms extending to the head at the inlet end, the plates or buckets arranged between the drum or body and the head at the outlet end, the plates or flanges secured upon the inner sides of the longitudinal ribs of the reel, and the longitudinally-arranged agitators, of coarse wire-cloth or analogous material, all combined and arranged substantially as and for the purpose herein set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ROBERT L. HAWKINS.

Witnesses:

ELMER R. WHITE,
CHARLES S. CANNADY.