

(No Model.)

W. D. WATROUS.

ROTARY BOLT.

No. 248,242.

Patented Oct. 11, 1881.

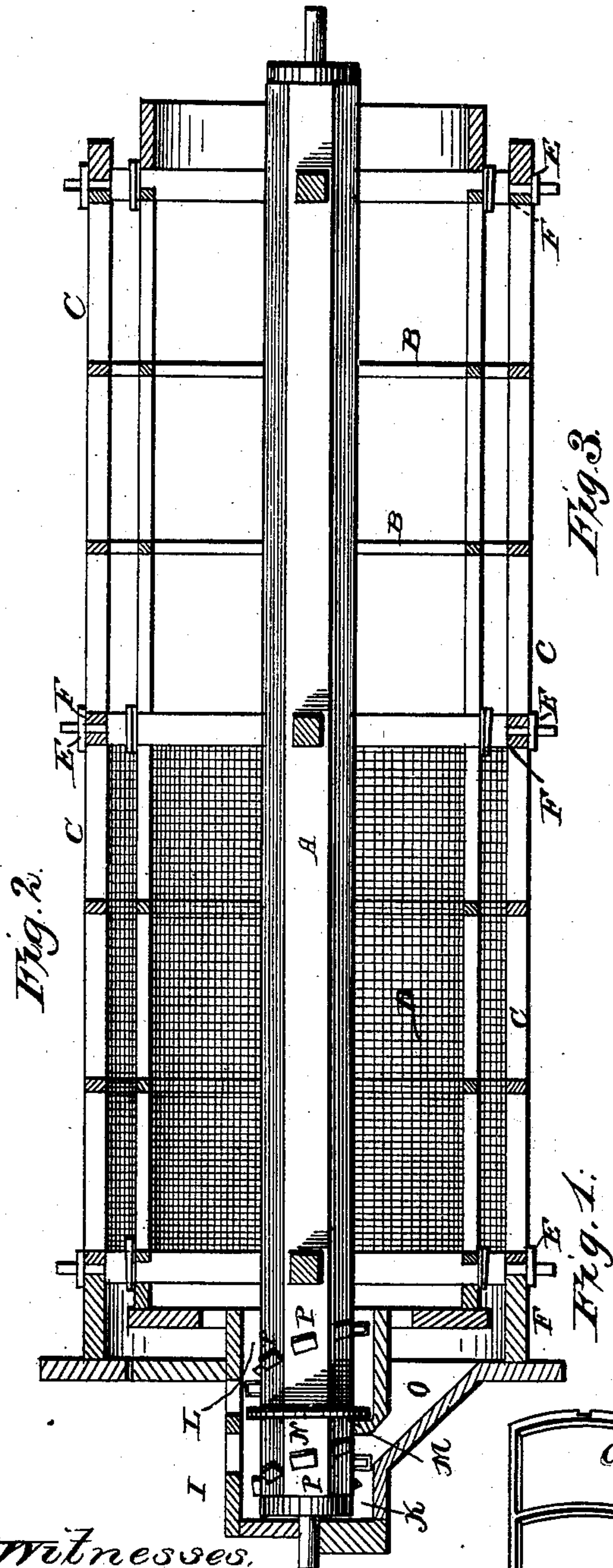
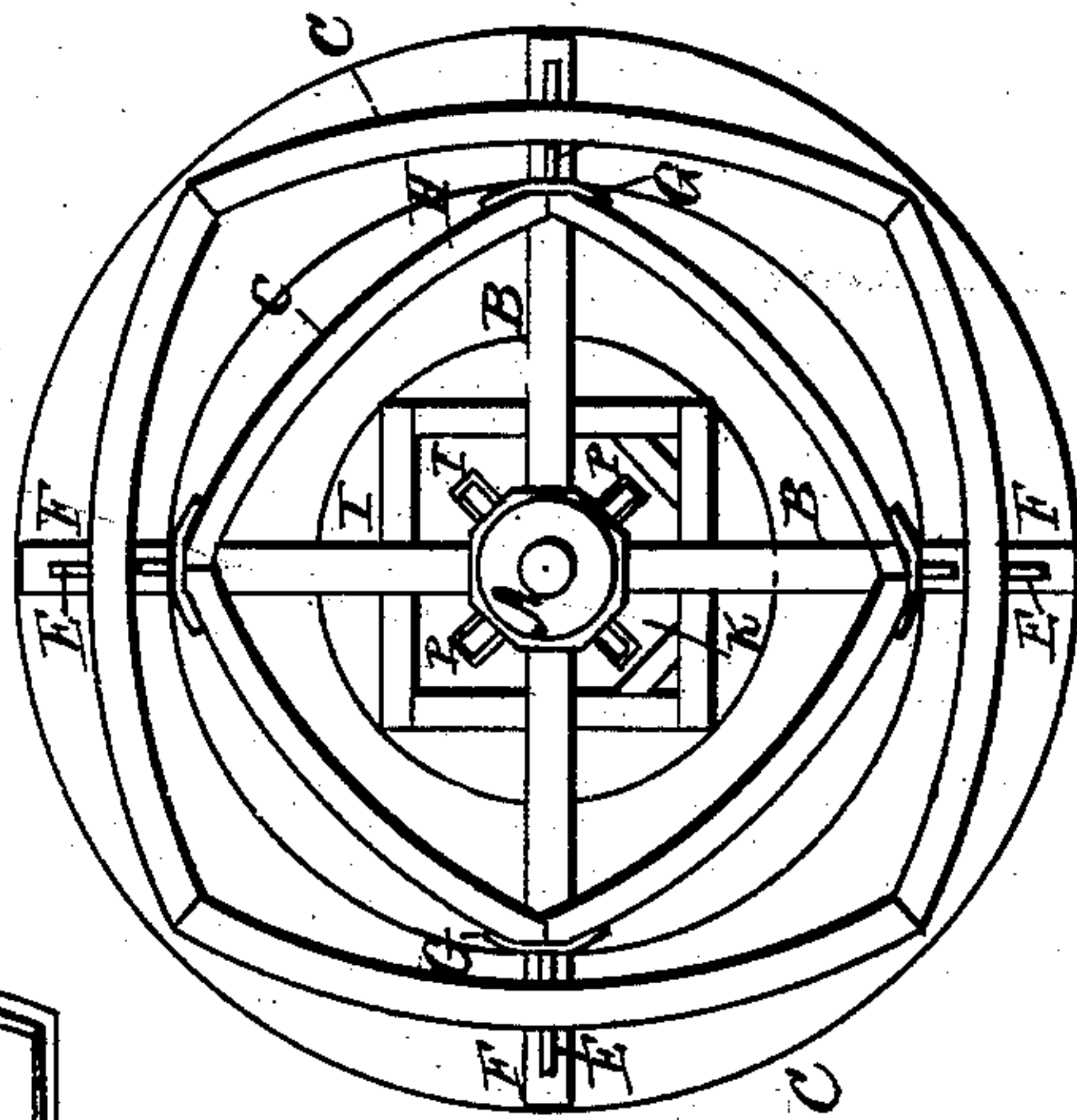
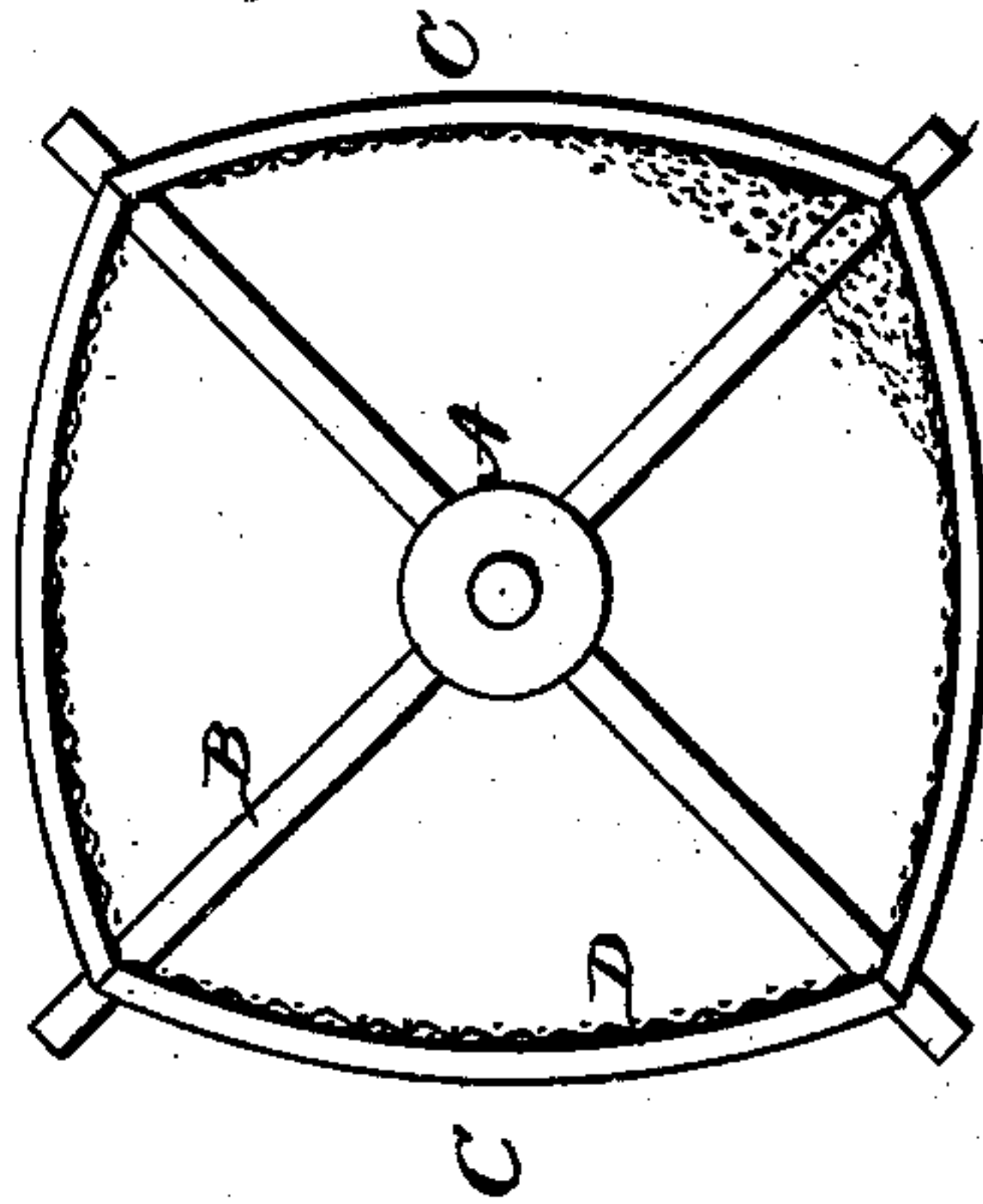
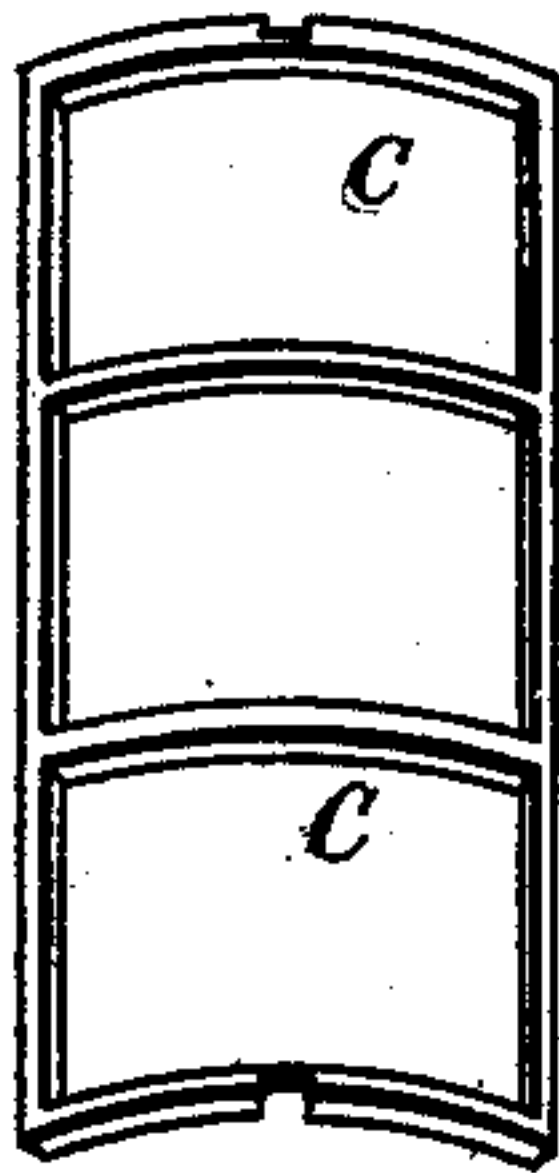


Fig. 3.



Witnesses,
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Fig. 4.



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UNITED STATES PATENT OFFICE.

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ROTARY BOLT.

SPECIFICATION forming part of Letters Patent No. 248,242, dated October 11, 1881.

Application filed April 13, 1881. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM D. WATROUS, of Cedar Rapids, in the county of Linn, and in the State of Iowa, have invented certain new and
5 useful Improvements in Bolting-Screens; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon,
10 making a part of this specification.

My invention relates to certain novel improvements in bolting-screens, which will be understood from the following description and the annexed drawings, in which latter—

15 Figure 1 represents an end view of my improved bolting-reel. Fig. 2 represents a longitudinal vertical section of the reel with a portion of the bolting-cloth removed. Fig. 3 represents an end view of a screen constructed
20 with curved sides. Fig. 4 represents a view of one of the sections composing the frame of my improved reel.

The letter A indicates the central longitudinal shaft of the reel, which is journaled in suitable
25 bearings in the frame of the apparatus.

The letter B indicates a series of radial arms secured to the shaft A, and supporting the screen-sections C. The said sections are curved,
30 as indicated in Figs. 1, 3, and 4, and are joined at their longitudinal edges, as shown.

The letter D indicates the bolting-cloth, which is of the ordinary description, and is secured to the inner sides of the screen-sections in any convenient manner. The sections are
35 confined to the arms by means of the wedges E, which pass through suitable slots in the arms, the arms being shouldered, as indicated by the letter F, to form seats for the sections.

In Figs. 1 and 2 of the drawings the screen
40 is represented as constructed with double walls of bolting-sections, which are arranged with respect to each other as indicated in Fig. 1, the inner sections being secured to the arms by means of the slotted clamps G and wedges.
45 The inner screen extends from near the front end of the outer screen and projects a short distance beyond its rear, so that the contents of the two may discharge into separate receptacles.

50 The letter I indicates a feed-hopper, which

extends into the forward end of the reel at its center. The hopper is divided into two compartments, K L, by means of a partition, M, and a collar, N, the latter being secured to the shaft and rotating with it. The forward com-
55 partment leads into the outer reel by means of a chute, O, and the other into the inner reel directly.

The letter P indicates a series of conveyer-blades secured to the shaft, to carry the ma-
60 terial into the respective reels.

The tailings or bran pass off at the rear end of the reel in the usual manner.

The flour may be rebolted in the outer reel while the initial bolting is going on in the in-
65 ner one, thus condensing in one machine the operations which previously required several.

The screens being made in sections, it is evident that any grade of bolting-cloth from the coarsest to the finest may be readily employed
70 by simply changing the sections, and that by thus changing them repairs can be conveniently made.

The screen as thus constructed will, owing to the curvature of the sides, cause the middlings
75 to lie close to the sides, as indicated in Fig. 3, and not be thrown off as the screen rotates, as in the ordinary method of construction.

By the arrangement of the inner curved screen-sections so that their angles of meeting
80 in the bolt-frame lie between the angles of meeting of the outer screen-sections, as shown in Fig. 1, the material which passes through the inner screen will fall upon the broad concave surfaces of the outer screen-sections, between
85 the angles thereof. Consequently the material will not be liable to clog in the angles of the outer screen, but will be distributed nearly uniformly over the surfaces thereof, and a more equable screening action will result. For this
90 reason I consider my arrangement of the two screens, when formed of concave sections, a valuable improvement in bolts.

I am aware that bolts have been constructed of cylindrical form, having sections covered in-
95 teriorly with bolting-cloth, and therefore I lay no claim to bolts of such form and construction. It will be seen that when taken in cross-section my bolt is quadrangular and not cylindrical, and that it is formed of four removal-
100

ble frames or sections of a concavo convex form, which are eccentric to the axis of the shaft A when they are confined in their places. By this form of bolt I combine all the advantages of the well-known square or hexagonal bolts, with the advantages of having the concave bolting-surfaces.

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

1. In combination with the feed-hopper leading to the two screens, the partition located in said hopper, the shaft and its collar, and the conveyer-blades on the shaft, the whole arranged to operate substantially as described.

2. A quadrangular bolting-reel having a series of removable and interchangeable con-

cavo-convex screen-frames arranged eccentric to the axis of the shaft A and secured to the frame of the reel, substantially as described. 20

3. The bolting-reel composed of concavo-convex interchangeable sections arranged eccentrically about the shaft A, the inner sections being disposed so that their meeting angles break joints with the corresponding angles of the outer sections, as shown and described. 25

In testimony that I claim the foregoing I have hereunto set my hand this 25th day of March, 1881.

WILLIAM D. WATROUS.

Witnesses:

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