

(No Model.)

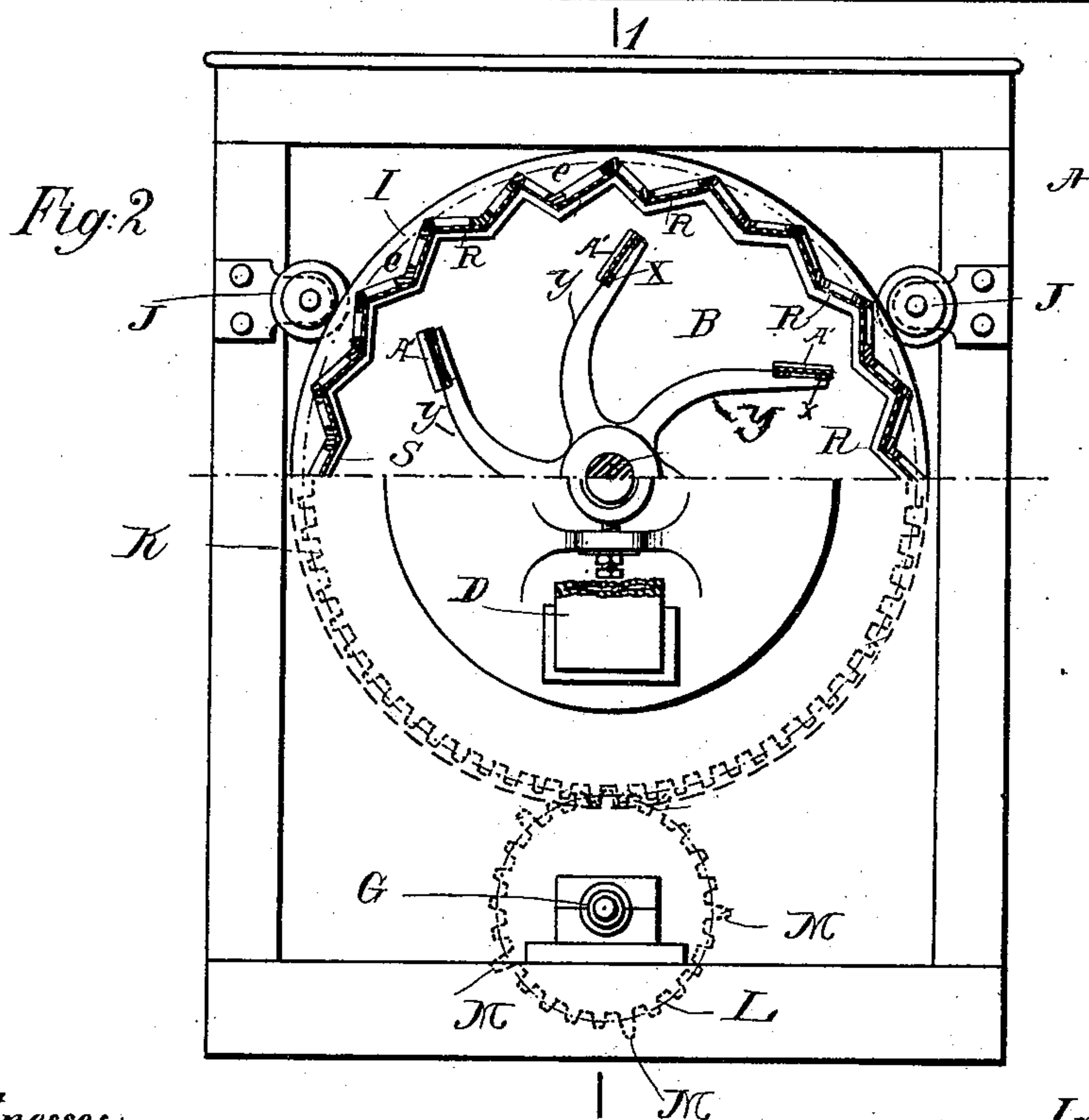
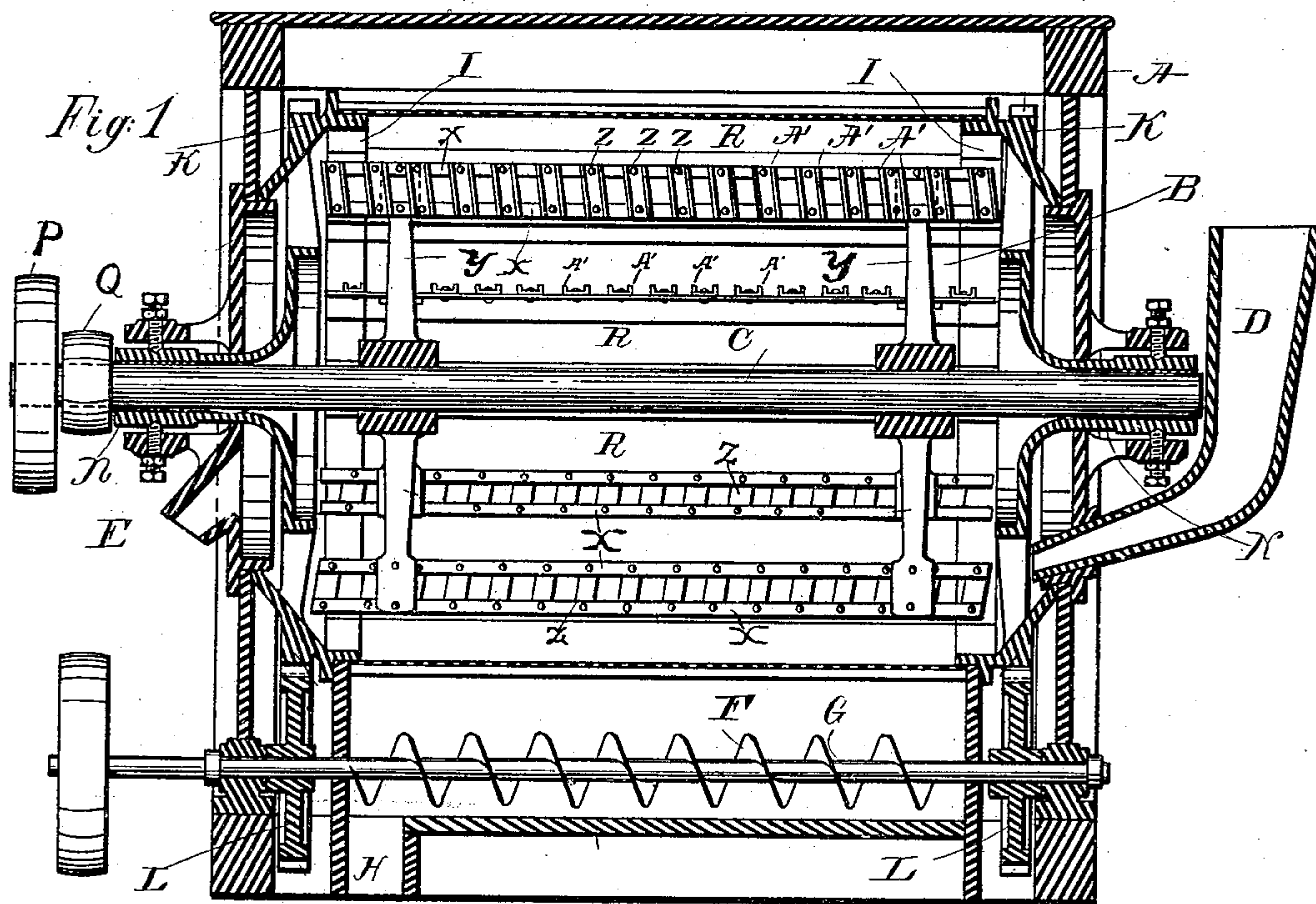
2 Sheets—Sheet 1.

C. O. DOST.

CENTRIFUGAL REEL.

No. 333,398.

Patented Dec. 29, 1885.



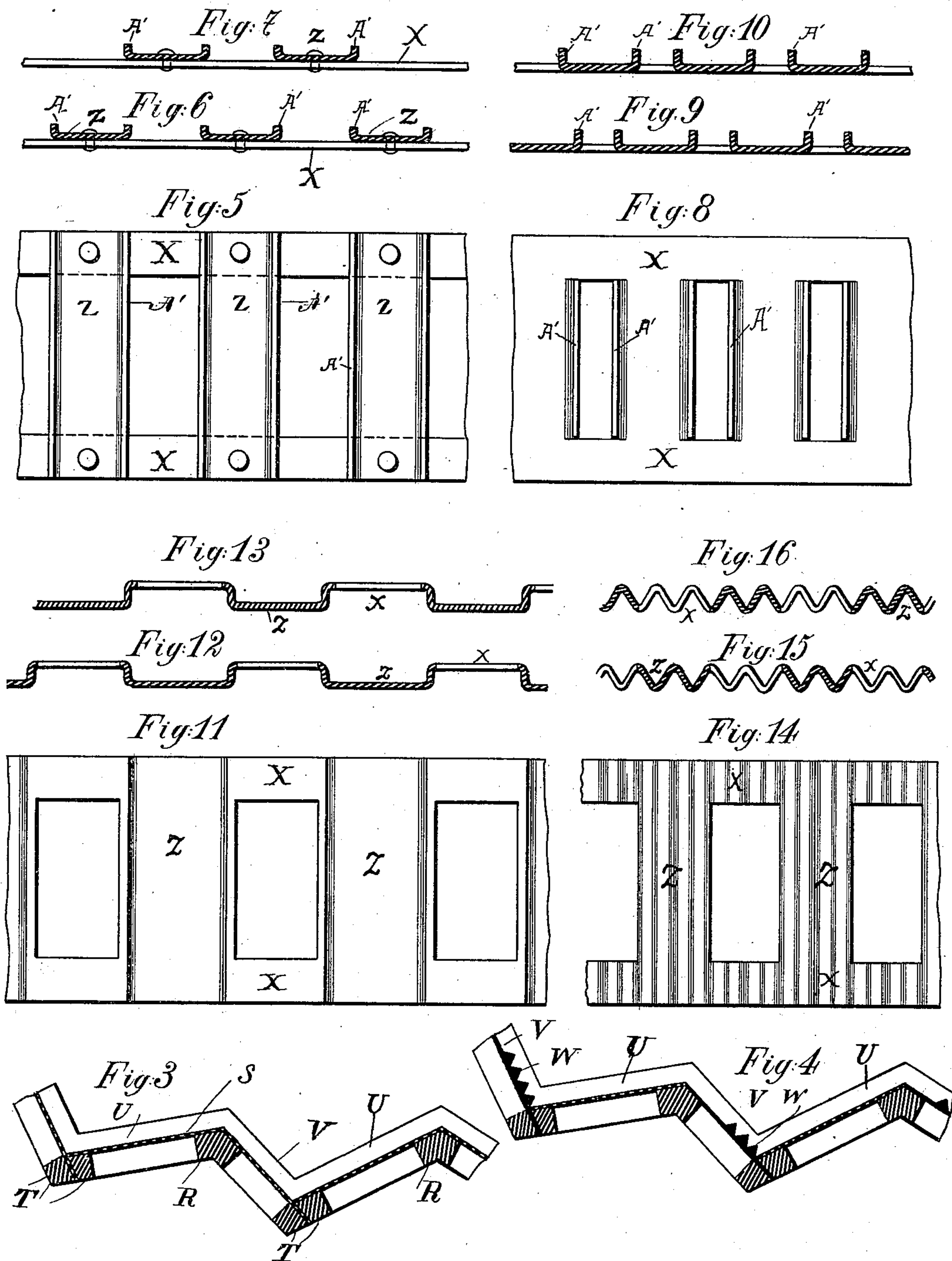
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Arthur E. Clifford.

Inventor:
Carl Otto Post,
By Louis Bragger & Co.
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UNITED STATES PATENT OFFICE.

CARL OTTO DOST, OF RAVENSBURG, GERMANY.

CENTRIFUGAL REEL.

SPECIFICATION forming part of Letters Patent No. 333,398, dated December 29, 1885. 

Application filed September 15, 1885. Serial No. 177,206. (No model.) Patented in Italy June 23, 1885, XXXVI, 326, and in Germany, August 26, 1885, No. 33,179.

To all whom it may concern:

Be it known that I, CARL OTTO DOST, a German subject, residing at Ravensburg, in the Empire of Germany, have invented certain new and useful Improvements in Centrifugal Reels, of which the following is a specification, and in which—

Figure 1 is a longitudinal vertical sectional view of my improved bolting-reel. Fig. 2 is an end view of the same, showing the upper half of the reel in vertical cross-section. Fig. 3 is a sectional detail view of a portion of the covered frame of the reel. Fig. 4 is a similar view of a modification of the same. Fig. 5 is a detail plan view of a portion of one of the beater-blades. Figs. 6 and 7 are sectional views of the same, showing the manner in which the apertures in the beater-blades alternate. Figs. 8, 9, and 10 are respectively a plan view and two sectional views of a modification of the beater-blades, and Figs. 11, 12, and 13, and 14, 15, and 16, are likewise, each set of figures, a plan view and two sectional views of two other modifications.

Similar letters of reference indicate corresponding parts in all the figures.

My invention has relation to centrifugal bolting-reels; and it consists in the improved construction and combination of parts of the frame and of the beaters, as hereinafter more fully described and claimed.

In the accompanying drawings, the letter A indicates the casing for the reel. B is the reel, which is mounted upon a shaft, C, journaled in the casing, and which is provided with an inlet spout, D, opening into an annular aperture in one head of the reel, while the other end of the reel has an annular aperture which opens out into a discharge-spout, E.

F is a discharge-screw, which is journaled, with its shaft G, in the lower end of the casing, and serves to convey the bolted flour to its discharge-chute H.

The heads of the reel are provided with smooth rims I, which travel upon balancing-rollers J, journaled around the periphery of the rims, the said rollers supporting the reel and guiding it in its revolutions, and outside of these smooth rims the reel has two cogged rims, K, which mesh with pinions L upon the conveyer-shaft, and these pinions, or the

cogged rims of the reel, may have longer cogs M, which will cause the reel to be jarred when these cogs strike the cogs of the wheel with which they mesh. The heads of the reel have tubular sleeves N N, in which turns the shaft C, upon which the beaters are secured, and one end of the beater-shaft is provided with band-pulleys P and Q, the former receiving motion from the power, while the latter transfers motion to the conveyer by means of a belt and pulley.

The frame of the reel consists in a number of longitudinal strips, R, secured with their ends in the heads in zigzag shape, so that the surface of the reel will be serrated, and the spaces between the strips are covered by strips of bolting-cloth S, secured as shown in Fig. 3, the edges of the strips of cloth being clamped between the halves T T of the strips at the outer points of the zigzag line. This construction will bring the faces U of bolting cloth at right angles to the direction in which the chop is thrown by the beaters, so that the chop will be thrown squarely against the cloth, and in falling from the surfaces as the wheel revolves the chop will strike the other bolting-surfaces, V, so that the chop will be brought against two surfaces by being once thrown by the beaters. The chop will be still more divided than it was when it entered the reel by striking the two sides standing at an angle, and for the purpose of retaining the chop for a still longer time and carrying it up upon the upwardly-moving side, so as to drop it upon the beaters and again be thrown against the bolting-surfaces, the surfaces V may be provided with longitudinal corrugations W, which will retain the chop and carry it upward upon the upwardly-moving side of the reel.

The beaters consist of longitudinal strips X, secured parallel in pairs upon the sides of the outer ends of the beater-arms Y, which project radially from the beater-shaft, and cross-strips Z, having their side edges bent upward, as shown at A', are secured at their ends upon these strips, either, as shown in Fig. 1, slightly inclined toward the discharge end of the reel, or straight, as shown in Fig. 5, the strips Z being secured upon the longitudinal strips X, with spaces or apertures between them. These apertures alternate with strips upon the sev-

eral sets of longitudinal strips, so that where one blade has apertures the following beater-blade has cross-strips, and vice versa, so that if any chop is drawn through the aperture of one blade it will meet a strip at the next blade and be thrown against the bolting-cloth. The outwardly-bent edges or flanges upon the cross-strips prevent the chop from sliding out and dropping over the sides of the strips into the spaces, and the construction shown in Figs. 8, 9, and 10 is substantially the same as the construction just described, with the exception that the cross-strips are integral with the longitudinal strips.

In the construction shown in Figs. 11, 12, and 13 transversely-corrugated strips are secured longitudinally upon the beater-arms, and the said corrugations are wide, and each raised portion of the corrugations has an aperture, the raised sides of the raised portions of the corrugations serving the same purpose as the flanges in the two formerly-described constructions.

In Figs. 14, 15, and 16 the strips are shown formed with a number of small transverse corrugations and having the apertures in the same manner as the former constructions, and the fine corrugations will retain the chop and keep it from sliding laterally, while it at the same time will serve to comminute the chop as it falls upon the corrugations and is again thrown off from them. It will be seen that these beaters will throw all the chop against the bolting-surface, the chop falling through the apertures in one beater being caught and thrown by the cross-strips of the following beater. The conveyer-shaft, which revolves slower than the beater-shaft, imparts a slow revolving motion to the reel by means of the pinions upon the conveyer-shaft and the cogged rims upon the reel, and the reel will be shaken or jarred at intervals by the long cogs upon the pinions striking the cogged rims with which they mesh, the said shaking or jarring serving to loosen any chop which may have settled upon the bolting-cloth. The chop enters the reel through the annular aperture in the head from the inlet-spout, and the bran and coarse particles of the chop pass out through the annular aperture in the other head and through the outlet-spout, while the bolted flour is collected in the bottom of the casing and carried to the outlet-chute by means of the screw-conveyer. By having the bolting-surface zigzag-shaped, or serrated, the surface in proportion to the radius of the bolt will be greater than by having the reel formed with a cylindrical or prismatical bolting-surface, and the chop will be thrown from one inclined surface to the other, thus subjecting it to more motion adapted to separate the finer particles

from the coarser, and exposing different sides of the layer of chop thrown upon the bolting-surface.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination, with a bolting-reel, of a beater consisting of a shaft, radiating arms secured thereto, transversely-apertured beater-blades secured to the outer ends of said arms and having their intermediate portions provided with bent edges, as and for the purpose set forth.

2. The combination, with a bolting-reel, of a beater consisting of a shaft, radiating-arms secured thereto, beater-blades secured to the outer ends of said arms, said blades being transversely apertured, and the intermediate portions having bent edges, and the apertures of one blade registering with the solid portions of the adjoining blade, as and for the purpose set forth.

3. The combination, with a bolting-reel, of a shaft, radiating arms secured thereto, and beater-blades secured to the outer ends of said arms, each of which blades consists of a series of cross-pieces secured at their ends to a pair of longitudinal strips with spaces between them, said cross-pieces having flanged edges, as and for the purpose set forth.

4. The combination, with a bolting-reel consisting of longitudinal bars secured in a zigzag line to the reel-heads, and the bolting-cloth secured thereto, of a revolving beater consisting of transversely-apertured beater-blades secured to the outer ends of radiating arms which are secured upon a shaft, as and for the purpose set forth.

5. In a bolting-reel, the combination of a reel having cogged rims upon its periphery, with a shaft receiving motion from the drive-shaft, and having pinions provided at intervals with cogs longer than the others and meshing with the cogged rims, as and for the purpose shown and set forth.

6. In a bolting-reel, the combination of a reel having circular flanges at its ends and cogged rims, guide-rollers journaled around the periphery of the flanges and having the flanges traveling upon them, and a shaft receiving motion from the beater-shaft and having at intervals cogs longer than the others and meshing with the cogged rims, as and for the purpose shown and set forth.

In testimony whereof I hereunto sign my name, in the presence of two subscribing witnesses, this 17th day of August, 1885.

CARL OTTO DOST.

Witnesses:

EMIL BLUM,
WILLIAM SCHNEIDER.