

(No Model.)

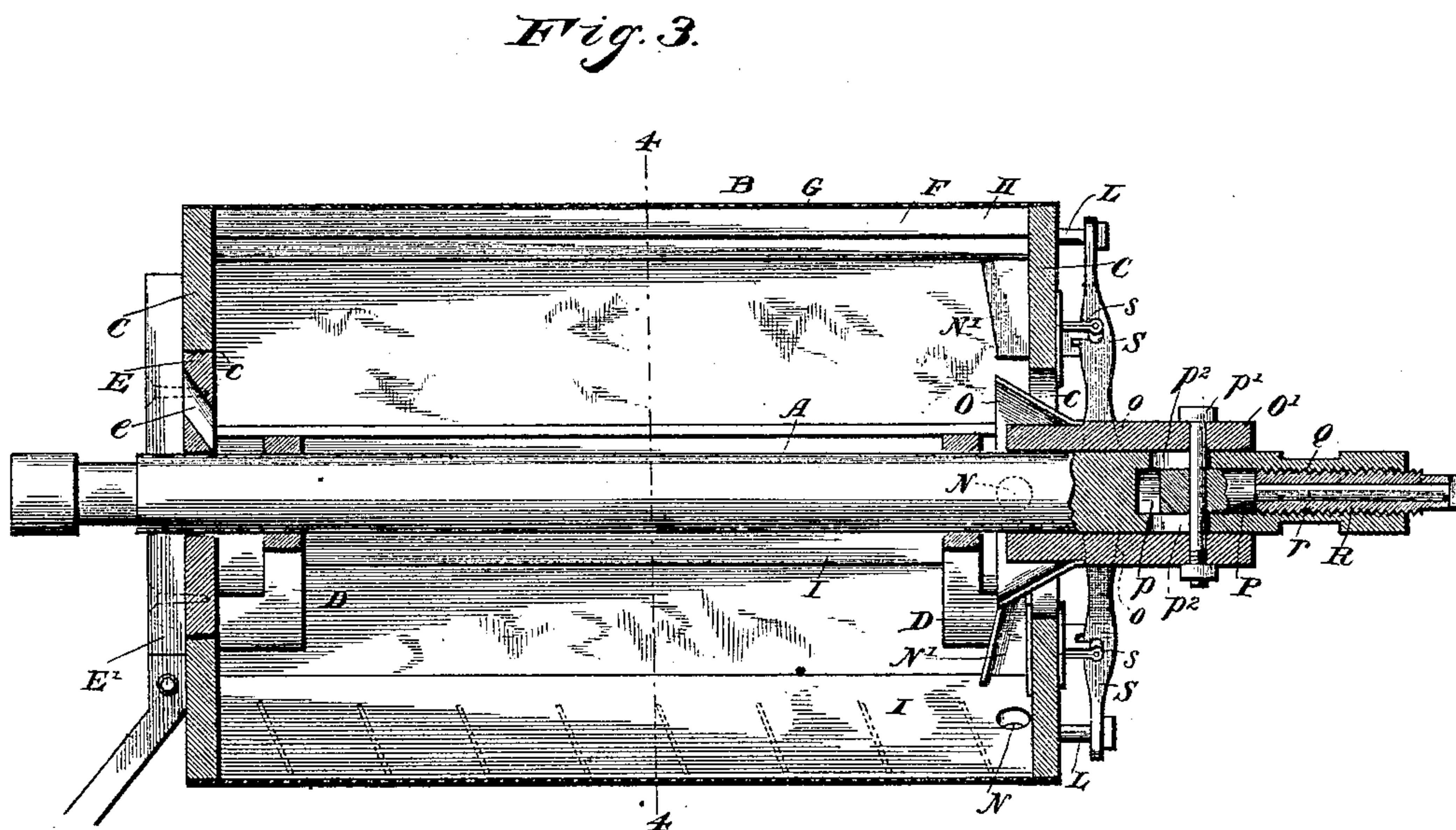
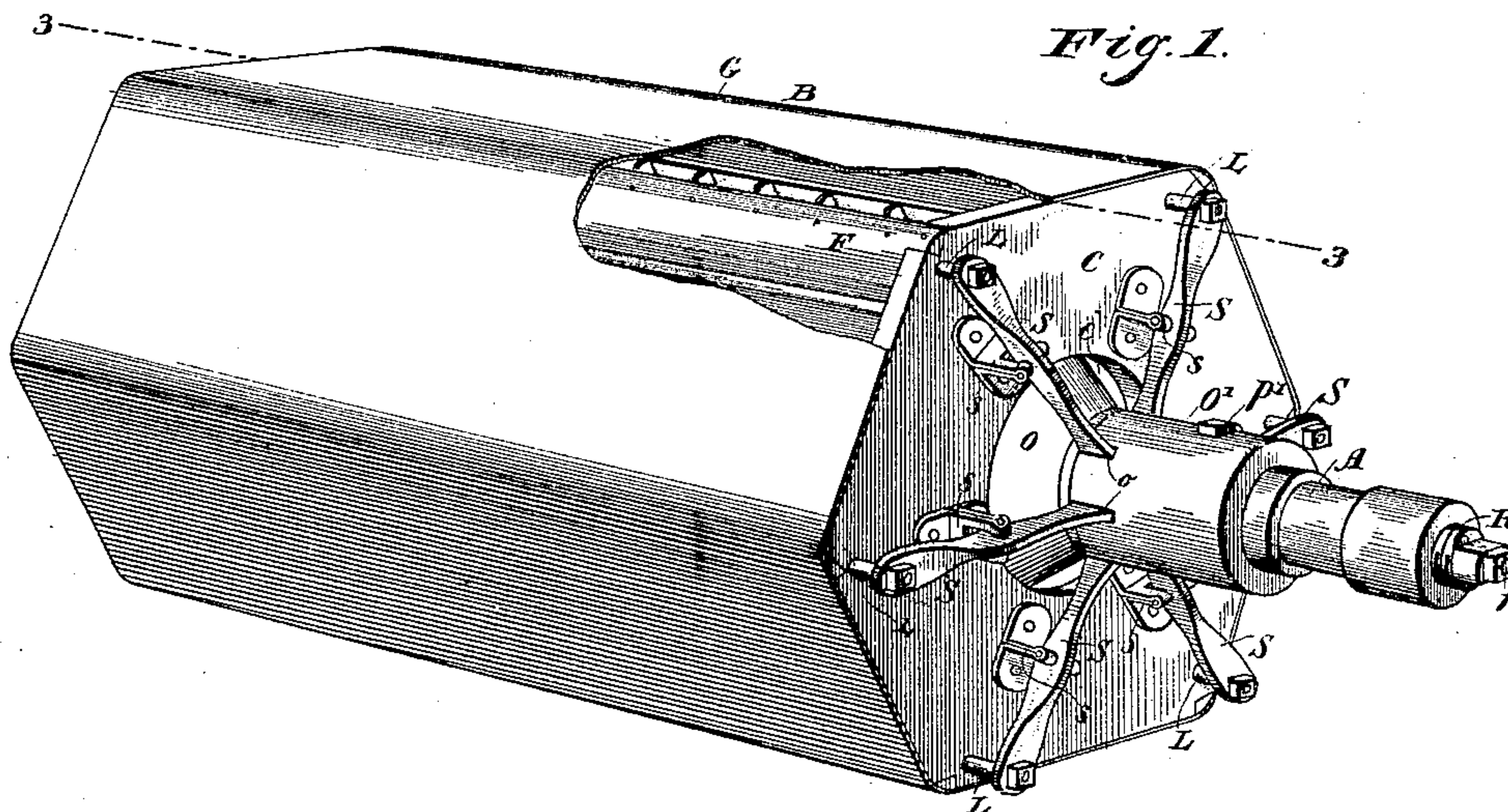
2 Sheets—Sheet 1.

B. F. REINBOLD.

BOLTING REEL.

No. 480,345.

Patented Aug. 9, 1892.



Witnesses;

*J. M. Theron.*  
*D. P. Walhausen.*

Inventor

*Benj. F. Reinhold.*

By *his* Attorneys,

*C. A. Snow & Co.*

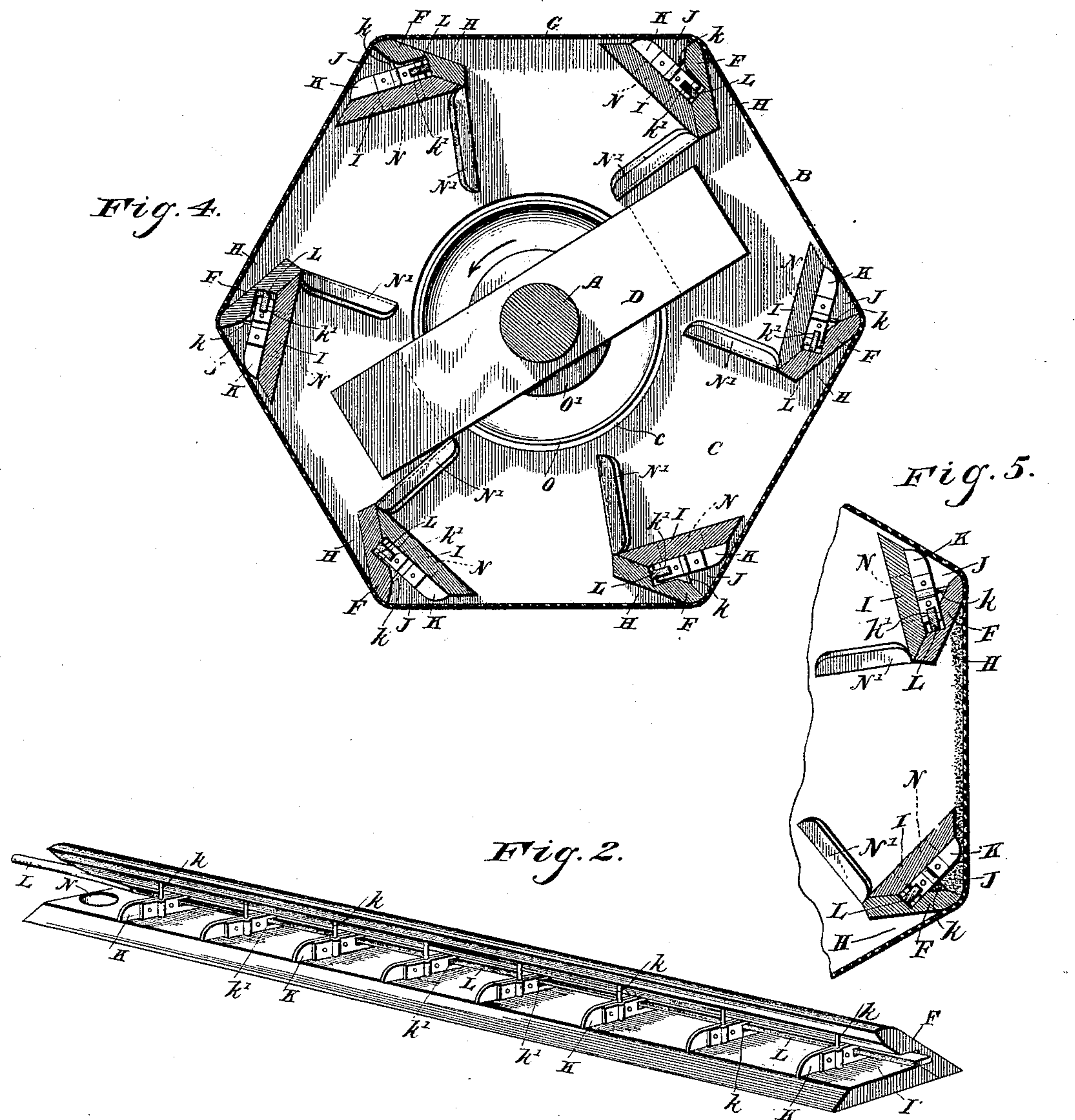
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*J. M. L. Thorne*  
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# UNITED STATES PATENT OFFICE.

BENJAMIN F. REINBOLD, OF LICKDALE, PENNSYLVANIA.

## BOLTING-REEL.

SPECIFICATION forming part of Letters Patent No. 480,345, dated August 9, 1892.

Application filed February 20, 1892. Serial No. 422,284. (No model.)

*To all whom it may concern:*

Be it known that I, BENJAMIN F. REINBOLD, a citizen of the United States, residing at Lickdale, in the county of Lebanon and State of Pennsylvania, have invented a new and useful Bolting-Reel, of which the following is a specification.

This invention relates to bolting-reels; and it has for its object to provide an improved bolting-reel used in connection with inter-elevator bolting-machines which bolt the grain successively from the elevator.

To this end it is the main object of this invention to provide an improved bolting-reel which on account of its construction will not only run very lightly, but will equally distribute the material to be bolted, and thus positively equalize the strain on the whole machine. By the peculiar construction of the reel the draft or feed of the reel can be accurately regulated, as desired, and also the material will be confined upon one section of the bolting-cloth from its ingress to its discharge from the reel, such points and many others being readily observed as the invention is more fully understood.

With these and other objects in view, which will be quite apparent to those skilled in the art, the invention consists in the novel construction, combination, and arrangement of parts, hereinafter more fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a bolting-reel constructed in accordance with my invention, part of the cloth being removed. Fig. 2 is an enlarged detail in perspective of one of the reel-buckets and feed-regulating or draft means therein. Fig. 3 is a vertical longitudinal sectional view of the reel on the line 3 3 of Fig. 1. Fig. 4 is a vertical transverse sectional view of the device on the line 4 4 of Fig. 3. Fig. 5 is an enlarged detail sectional view illustrating the proper side position of the receptacles and buckets.

Referring to the accompanying drawings, A represents the revolving reel-carrying shaft supported at each end upon suitable journals in the ordinary manner in a horizontal plane. Mounted on and carried by the shaft A is the bolting-reel B, having the opposite reel-heads C, provided with the large

circular openings *c*, and are connected rigidly with said shaft by means of the inner braces D, secured to the shaft within the reel and to the opposite heads. Located at one end of the reel is the stationary disk E, which fits snugly in one of the circular perforations *c* and loosely over the shaft A, so as to allow the shaft and reel to freely revolve thereover, the same being provided with an inlet-opening *e* for directing the flour or other material into the machine and held in its fixed stationary position by means of suitable braces E', connected therewith at suitable points of attachment. The said opposite heads C are polygonal in shape and are connected at their angles by the inclined connecting-ribs F. The outer edges of said ribs F meet the bolting-cloth G, placed around said ribs and the opposite heads, while the inner edges of said inclined ribs lie below the plane of each angle or section of the bolting-cloth and form the peripheral angular or V-shaped receptacles H to receive the flour when the reel has reached such a position as to cause the flour to slide into the same.

Meeting the inner edges of the inclined ribs F and extending at an angle therefrom toward the opposite section of the bolting-cloth are the flat bucket-boards I, which, with the ribs F, form a series of bolting-buckets J. As stated, the boards I terminate just below each angle or section of the bolting-cloth, and thus allow the flour or other material to slide into the buckets J when the reel has reached such a position as to allow the flour to slide over the section of cloth from the V-shaped receptacle H at the opposite corner of the same section of cloth. Now it will be readily seen that as the reel revolves the V-shaped receptacles and buckets will change positions with each other—that is, when the reel has reached one point the receptacle will lie above the bucket, and thus allow the flour to slide into the bucket, while when the opposite point is reached the bucket will be over the receptacle and the flour will fall back into said receptacle. Thus after entering the reel the flour will be distributed to the various faces or sections of the bolting-cloth and as the reel revolves will be confined to such section, sliding back and forth over the cloth between the adjacent buckets and opposite recepta-



cles, as will be noted, from its point of entrance into the reel to its discharge therefrom.

Pivoted in each of the buckets J is a series of draft or feed regulating wings K, which approximate the shape of the buckets and are pivotally mounted therein upon the screws or bolts  $k$  passing through the ribs and bottom boards. The inner ends of the wings K are bifurcated, as at  $k'$ , to receive the longitudinally-disposed operating-rods L, working through the opposite heads in the bottoms or apices of each bucket, so that as said rods are moved longitudinally the series of wings K may be set at any angle desired, so as to cause the flour to be fed from one end of the buckets to the other as fast as desired or deemed necessary. The said wings are set at an angle directed toward the discharging end of the reel. Now it will be apparent that as the flour in one movement of the reel slides from a receptacle into the then lower bucket the same will be directed by the inclined wings into the bottom of such bucket, and therefore that much nearer the discharge, according to the pitch of the wings. This advance movement is not lost, inasmuch as the flour thus advanced slides back into the receptacle from the next operation partly in a straight line; but the motion of the reel will necessarily throw a certain amount out of the bucket at an angle corresponding to the angle of the wings, so that the next succeeding wing will catch it when the reel again reaches its proper position. The bottom boards I of the buckets J are provided adjacent to the discharging end of the reel with the discharge-openings N, which after the flour has passed the last set of draft-wings receive the same and allow it to pass onto the discharging-chutes N', secured radially to the inner side of the discharging-head C and projecting over the conical flange O, secured to the inner end of the longitudinally-movable sleeve O', which is adjusted so that the said conical flange O may be moved in and out of the circular opening  $c$  in the discharging-head, so that the discharge of the flour may be regulated according to the deflection of the draft-wings, which are simultaneously regulated with said conical flange. The sleeve O' works loosely over one end of the shaft A and is provided with a series of recesses  $o$  and is connected with the sliding plug P, working longitudinally in the recess  $p$  in one end of the shaft, by means of the bolt  $p'$ , passing therethrough, the longitudinally-disposed slots  $p^2$  in said shaft end, and said plug. The outer recessed end of said shaft A is interiorly threaded, as at Q, to receive the threaded collar R, working over one end of the bolt  $r$ , carrying the plug P and engaging said interiorly-threaded end of the shaft. A radial series of operating-levers S is pivotally mounted on the brackets  $s$ , secured to the discharging-head of the machine, and are connected at their outer ends to the operating-rods L, while their inner ends loosely engage the recesses  $o$  in

the sliding sleeve O. It can be now readily seen that by adjusting the screw-collar R the draft or feed-regulating wings may be regulated simultaneously with the conical discharging-flange and the entire device placed under perfect control.

It has been noted how the flour is bolted in the reel and confined to one section of the cloth throughout the entire operation, and it is thought that the many advantages will be quite apparent to those skilled in the art without further description.

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

1. In a bolting-reel, the combination of the opposite receiving and discharging polygonal reel-heads, a series of inwardly-opening buckets connecting the opposite reel-heads at their angles and slightly below the bolting-cloth, and regulating devices in each bucket, substantially as set forth.

2. In a bolting-reel, the combination of the opposite polygonal reel-heads, the bolting-cloth covering the space between said heads, a series of inclined connecting-ribs connecting said heads at their angles to form a peripheral series of receptacles between the ribs and the bolting-cloth, a series of inclined bucket-boards meeting the inner edges of said ribs and extending therefrom at an angle to form a series of inwardly-opening buckets, and feed-regulating devices in each bucket, substantially as set forth.

3. In a bolting-reel, the combination of the opposite polygonal reel-heads, the bolting-cloth covering the space between said heads, a series of inwardly-opening buckets connecting the opposite reel-heads at their angles and projecting inwardly at an angle to form an opposite peripheral series of receptacles between the same and the bolting-cloth, and regulating devices in each bucket, substantially as set forth.

4. In a bolting-reel, the combination of the opposite polygonal reel-heads, a series of inwardly-opening buckets connecting the opposite reel-heads at their angles and opening below the bolting-cloth, a series of regularly-spaced draft or feed regulating wings pivoted in each bucket, and means for adjusting said wings in said buckets, substantially as set forth.

5. In a bolting-reel, the combination of the opposite polygonal reel-heads, a series of inwardly-opening buckets connecting the opposite reel-heads at their angles, a series of regularly-spaced draft or feed regulating wings pivoted in each bucket, longitudinally-movable operating-rods working in the apices of the buckets and connecting the wings in series, operating-levers connected to the ends of said rods, and means for operating said levers, substantially as set forth.

6. In a bolting-reel, the combination of the main horizontal shaft having an interiorly-threaded hollow end and a longitudinally-



disposed slot, the opposite reel-heads, inwardly-opening buckets connecting the opposite reel-heads at their angles, a series of draft or feed regulating wings pivoted in said buckets, operating-rods connected to the inner ends of said wings, a radial series of levers pivoted upon one of said heads and connected with said operating-rods, a longitudinally-movable sleeve working over one end of said shaft and receiving the other ends of said levers, a sliding block working in the hollow end of said shaft, a bolt passing through the slot in said shaft and connecting the sleeve with said block, and an adjusting screw-threaded collar loosely connected with said block and engaging the threaded end of said shaft, substantially as set forth.

7. In a bolting-reel, the combination, with the shaft, of a series of opposite polygonal reel-heads, a series of inwardly-opening buckets connecting the opposite reel-heads at their angles and provided at one end with dis-

charge-openings, a radial series of discharge-chutes secured to one of said heads beneath said discharge-openings, a longitudinally-movable sleeve working over said shaft and carrying a conical discharging-flange working through the head and beyond the ends of said chutes, regulating devices in each bucket, connected to said sleeves, and means for adjusting said sleeve, substantially as set forth.

8. In a bolting-reel, a series of inwardly-opening buckets opening below the bolting-cloth, a series of regularly-spaced draft or feed regulating wings pivoted in each bucket, and means for adjusting said wings in said buckets, substantially as set forth.

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

BENJAMIN F. REINBOLD.

Witnesses:

JOHN W. HARTMAN,  
ADISON G. MECK.