(No Model.)

L. I. ZIEGLER.

FLOUR BOLT.

No. 446,503. Patented Feb. 17, 1891.

Fig. 2.

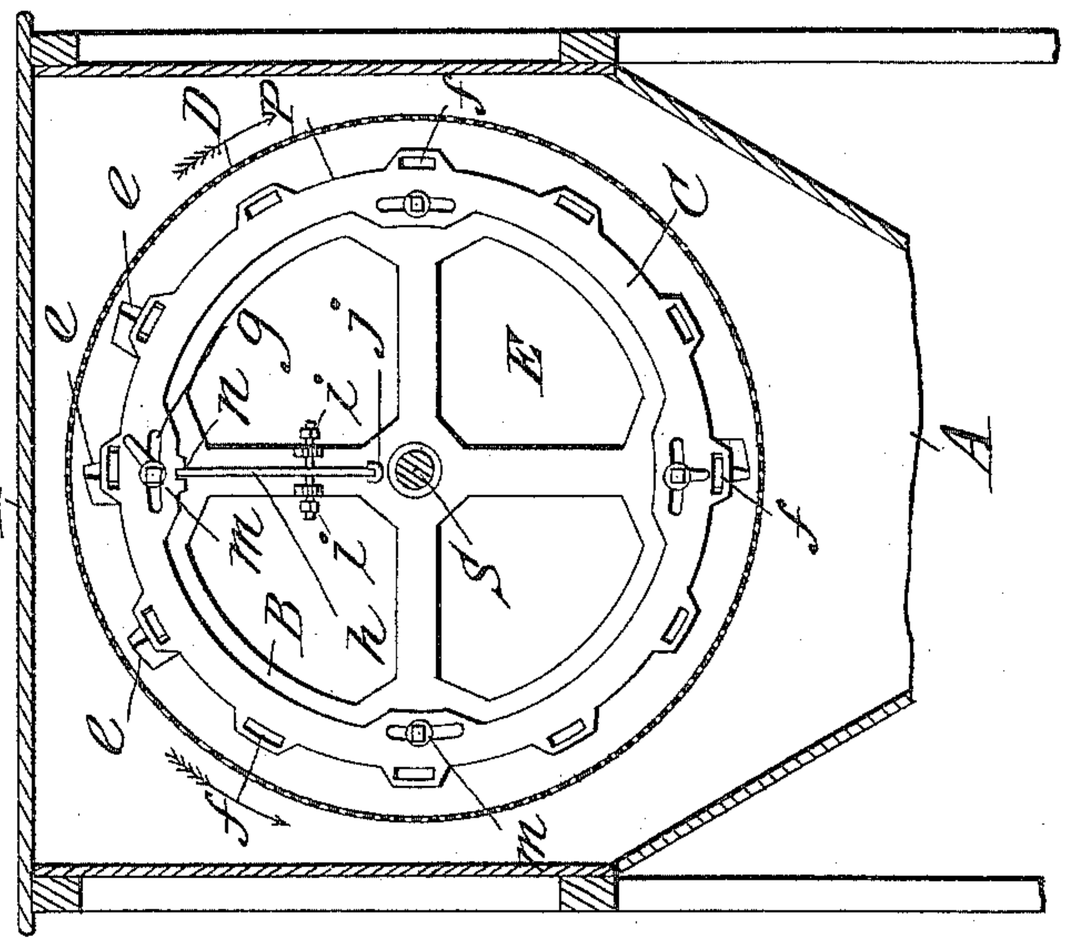
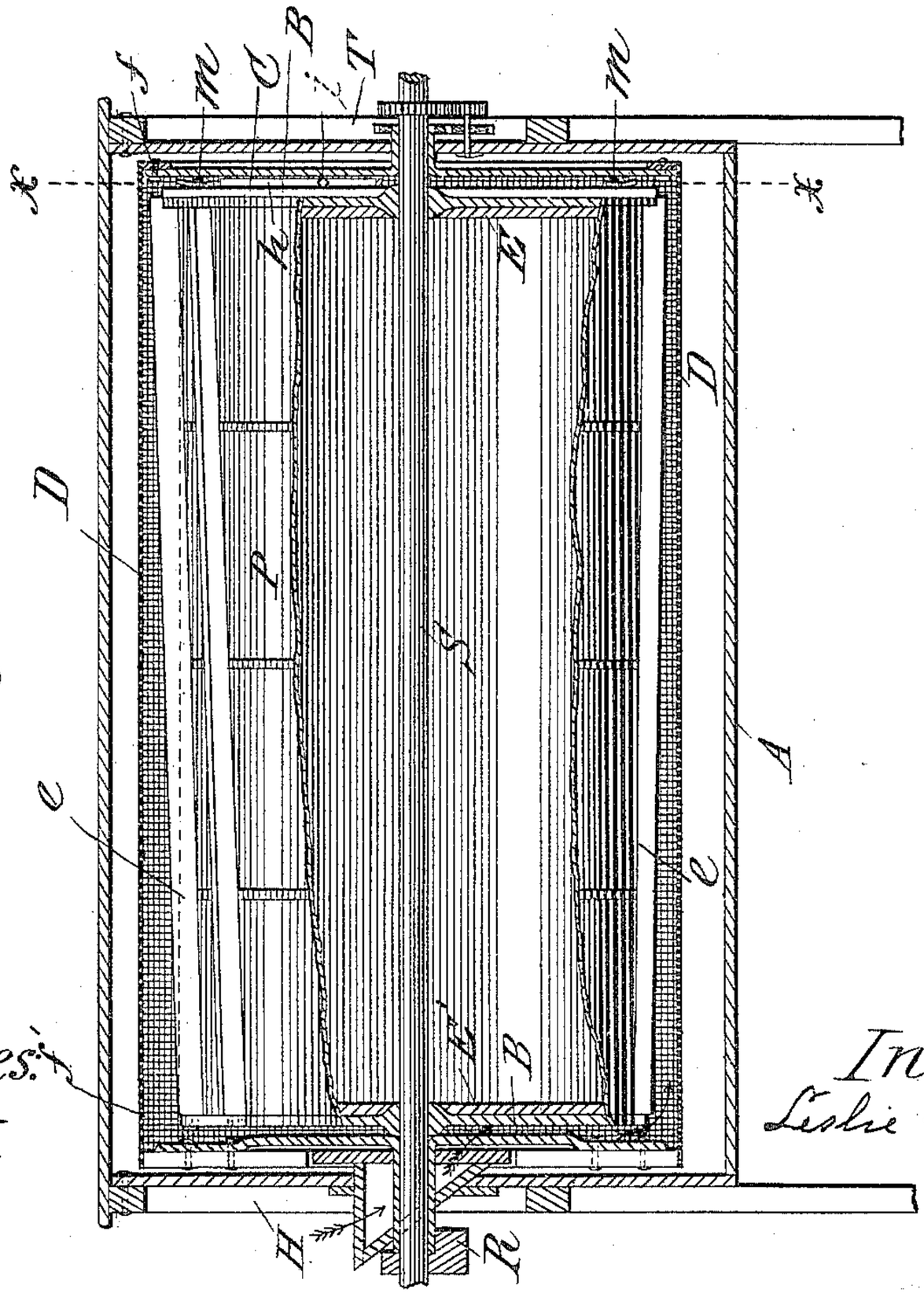


Fig. 1.



Witnesses:
L. D. Coulter
Anna M. Praeter

Inventor:
Leslie I. Ziegler
per H. B. Swarts
Atty.

UNITED STATES PATENT OFFICE.

LESLIE I. ZIEGLER, OF CINCINNATI, OHIO.

FLOUR-BOLT.

SPECIFICATION forming part of Letters Patent No. 446,503, dated February 17, 1891.

Application filed June 19, 1890. Serial No. 356,030. (No model.)

To all whom it may concern:

Be it known that I, LESLIE I. ZIEGLER, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Flour-Bolt, of which the following is a specification.

My invention relates to flour-bolts, and particularly to that class which are constructed with a double cylinder—viz., one cylinder with a series of beaters or elevator-cups longitudinally mounted thereon revolving within an outer cloth-cylinder. Its object is to provide improved means for simultaneous lateral movement or shifting of the beaters at one end over the surface of the inner cylinder, either at will or automatically, for the purpose of increasing or diminishing or entirely reversing the spiral trend of the beaters, whereby the feed of material is regulated or the direction of rotation of reel reversed at pleasure.

It consists of certain novel details of construction and combination of parts hereinafter fully described, and stated in the claims.

My invention is illustrated by the accompanying drawings, in which similar letters of reference indicate like parts.

Figure I is a longitudinal sectional view of a flour-bolt embodying my invention. Fig. II is a vertical sectional view on the line *x x*, Fig. I, which illustrates particularly the improvements I claim.

As the reel is in all other respects constructed like those in common use, a full description of parts not claimed by me is unnecessary.

Referring to the drawings, A is the outer wooden case of an ordinary flour-bolt.

H is the head end of the bolt, and T the tail end of the same, and the flour enters the bolt, as shown by the arrows, Fig. I.

S is the shaft which operates the cylinders.

D is the outer cylinder, which is formed of bolting-cloth supported in the usual way. The outer cylinder is geared with the shaft of the inner cylinder, as heretofore.

C is an adjustable metal ring secured upon the spider B by means of bolts *m*.

E are closed ends of the inner cylinder, to which the spider B is solidly attached. The longitudinal surface P of this inner cylinder is covered with sheet metal in the usual and well-known way. The circular iron ring C at the end of the cylinder is constructed with a series of openings *f* to receive the extended ends of flat metal strips, which secure the elevator-cups *e* rigidly in position upon the surface of the cylinder. The bolts *m* and the slots *g* secure the circular rim in any desired position, the slots admitting of lateral movement in the direction of the arrows. The elevator-cups extend along the cylinder to its opposite end, where they are rigidly secured in like manner, either with or without lateral movement.

h is a spring-bar, which is rigidly secured at its base *j* to the hub of the spider. A notch *n* in the under surface of the ring C receives the upper end of the spring. This spring is secured in lateral position by opposite thumb-screws *i i*, as shown. The nuts *m* being loosened to free the circular ring C, it is apparent that the same will operate backward and forward upon this spring *h*, and the normal position desired may be secured by means of the thumb-screws *i*. It is further apparent that by shifting the circular ring C upon the spider B a greater or less spiral twist may be given to the longitudinal direction of the elevator-cups, and they may be made to pass diagonally from left to right or from right to left upon the surface of the cylinder and be thus secured in any desired position to convey the material with greater or less rapidity to the tail end of the bolt or permit the cylinder to be turned in either direction at will. Automatic movement of the series of elevator-cups from right to left or from left to right is accomplished by the means aforesaid, by the weight of the material within the bolt upon the elevator-cups. The increased weight, operating against the spring *h*, causes the circular ring C to shift its position automatically upon the spider B, giving greater or less spiral twist to the elevator-cups, whereby the movement of material is hastened or retarded (as the case may be) and the bolt adjusted to suit the demand.

I am aware that a series of longitudinal beaters or elevator-cups and an adjustable ring connected therewith to give the beaters a rotary movement upon their axes simultaneously is not new, and such I do not claim.

It is the object of my invention to avoid the rotary movement aforesaid and to adapt the

ends of the elevator-cups to be shifted laterally in either direction simultaneously while their vertical or radial position remains unchanged, as aforesaid.

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

1. In a flour-bolt having an inner cylinder and a series of longitudinal beaters or elevator-cups mounted thereon, the combination, with the cylinder B, of the annular rim C, movably secured thereto, and the series of elevator-cups, said rim fitted to engage the ends of the elevator-cups to simultaneously shift the same laterally over the surface of the cylinder to vary their spiral trend across the cylinder at pleasure, substantially as shown and described, and for the purpose specified.

2. In a flour-bolt having an inner cylinder and a series of elevator-cups mounted thereon and movably secured thereto at one end, as shown, the combination, with the end of the cylinder B, of the spring-bar *h* and the adjustable ring C, securing the extended ends of the elevator-cups *e*, said spring actuating the said annular ring C to regulate and control the lateral movement of the elevator-cups over the surface of the cylinder automatically, substantially as shown and described, and for the purpose specified.

LESLIE I. ZIEGLER.

Witnesses:
E. S. ULEN,
ALPHONSO C. GROSKORDT.