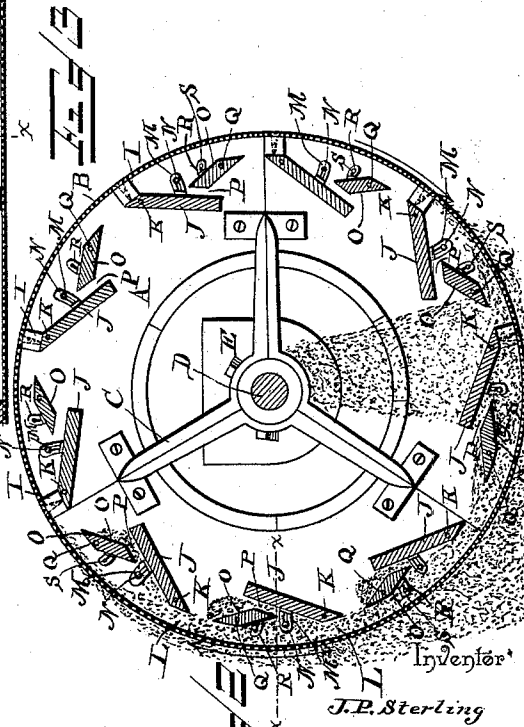
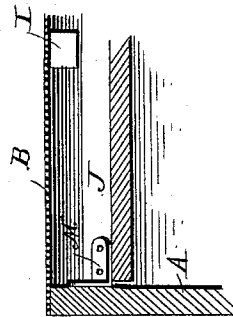
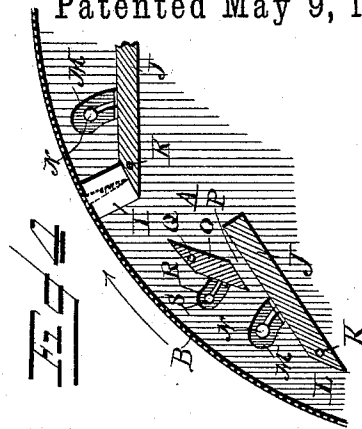
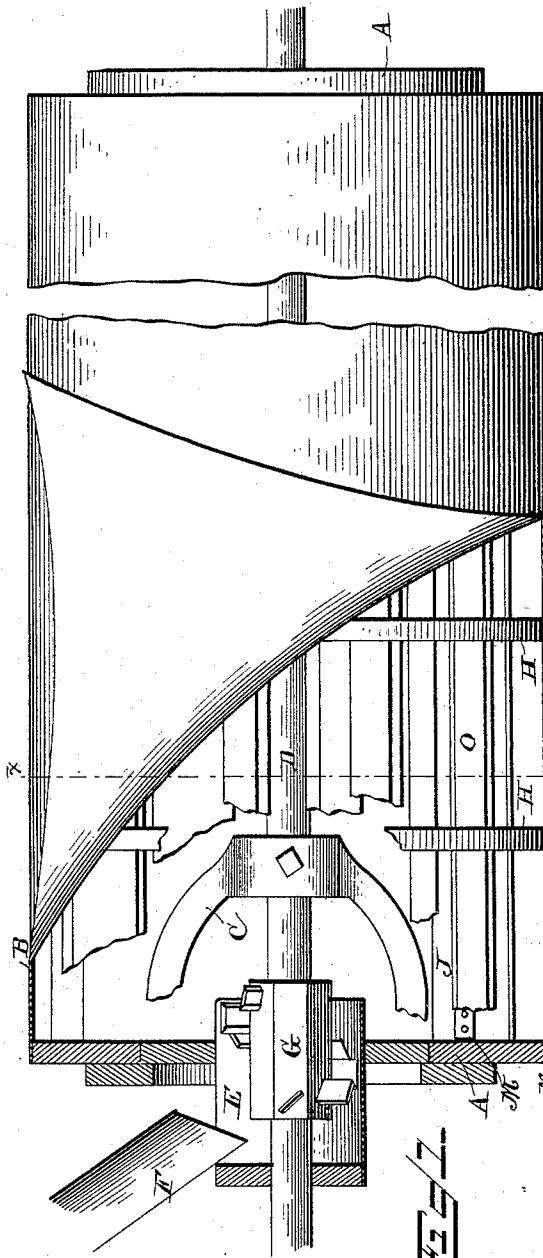


(No Model.)

J. P. STERLING.
BOLTING REEL.

No. 497,220.

Patented May 9, 1893.



Witnesses

W. E. Schneider.
S. P. Holchaupter.

By his Attorneys,

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

JOHN P. STERLING, OF LEMARS, IOWA.

BOLTING-REEL.

SPECIFICATION forming part of Letters Patent No. 497,220, dated May 9, 1893.

Application filed January 16, 1893. Serial No. 458,464. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. STERLING, a citizen of the United States, residing at Lemars, in the county of Plymouth and State of Iowa, 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 construction of bolting reel, whereby the stock is held out against the cloth without the use of the ordinary drum and beaters, which are ordinarily employed, and which not only complicate and render more expensive the machines, but also in most cases are too severe and harsh to secure a fine gentle bolting of the stock.

To this end the invention primarily contemplates improved devices used in connection with a bolting reel, whereby the stock is held out on the bolting cloth to a point some distance above the center thereof, in order to increase the capacity of a reel, and to secure clearer flour with less power, owing to a reduction in the number of working parts of the reel.

With these and other objects in view which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts, hereinafter more fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is an elevation partly in section of a bolting reel constructed in accordance with this invention. Fig. 2 is a central transverse sectional view thereof, on the line $x-x$ of Fig. 1. Fig. 3 is a detail sectional view on the line $x-x$ of Fig. 2. Fig. 4 is an enlarged detail sectional view of a portion of the bolting reel showing more clearly the lifting and distributing devices thereof.

Referring to the accompanying drawings, A A represent the opposite reel heads, over which are stretched the opposite ends of the ordinary bolting cloth B. The said reel heads A are connected by the spiders C, to the reel shaft D, from which motion is imparted to the reel head in the direction indicated by the arrow in Fig. 2, in order to carry on the operation of bolting. Arranged in one of the heads A, is a stationary feed box E, into

which the stock is fed from the spout F, and in which revolves the feed screw or conveyer G. The feed screw or conveyer G, is mounted on the shaft D, so as to feed the stock into one end of the reel, while at the other end is arranged the usual tail discharge. At suitable intervals inside of the bolting cloth B, the same is stretched and held in a true circular shape by means of the shaping rings or hoops H, attached to a series of spaced and suitably arranged attaching blocks I.

Having the general construction of the reel in mind the specific devices for elevating and distributing the stock will now be described. Extending horizontally from head to head is a regular series of angularly disposed distributing boards J. The angularly disposed distributing boards J are arranged in any suitable number inside of the bolting cloth, and are pivoted at their ends to the reel heads A, on the pivot pins K. The other, inner edges of the boards J, are thus rendered adjustable, so that the same can be moved to and from the bolting cloth, in order to increase or decrease the space between the same and such bolting cloth. The pivoted outer edges of the distributing boards J, are disposed near to, but out of contact with, the bolting cloth, so as to leave fall passages L, through which the stock falls as it slides over the cloth on the "up side" of the reel. The adjustment of said distributing boards is secured by means of the slotted adjustment plates M, secured to one end thereof, and held in the adjusted position to one of the reel heads by means of the adjustment bolts N.

Arranged inside of the space formed between the inner edges of the distributing boards J and the bolting cloth, is a series of angularly disposed elevator or lifting boards O. The said elevator or lifting boards O, are out of contact with the bolting cloth as well as with the distributing board, so that between the same and the distributing boards are formed slide spaces P, through which the stock is slid out to the bolting cloth, by reason of centrifugal force as will be described. The said elevator or lifting boards O, are pivoted at their ends to the opposite reel heads on the pivot pins Q, so that their inner edges next to the distributing board can be adjusted

with respect to the latter, so that the obtuse angle, which the elevator or lifting boards form with the distributing boards, can be increased or diminished as the mesh of the cloth or the size of the reel requires. The inner edge of the boards O, is adjusted to any set position by means of the slotted adjustment plates R, and the adjustment bolts S, passing through such plates and one of the reel heads. Now it is thought that the operation of the herein described reel will be readily apparent to those skilled in the art.

In the first place it must be borne in mind that the elevator or lifting boards O, are always at an obtuse angle to the distributing boards J, and that taken together the stock is always held out to the cloth without falling into the center of the reel again, and without the use of drums and beaters.

As clearly illustrated in Fig. 2 of the drawings, it will be seen that as the reel revolves in the direction indicated by the arrow, the elevator or lifting boards, owing to their obtuse disposition, catch up a quantity of the stock at the bottom of the reel and commence to elevate it on the "up side" of the reel. Now as the elevator boards ascend, the inner faces thereof assume a position which would tend to allow the stock to slide therefrom, but, owing to the centrifugal action of the reel, the stock originally caught up by such elevator or lifting boards, is held thereto and carried to a point of from six to ten or twelve inches above the center of the reel, at which point the centrifugal force has not power enough to hold the stock onto said elevator boards and therefore allows it to slide therefrom into the slide spaces P. The stock which slides off of the elevator boards at this point is again caught up by the centrifugal force, and is slid or distributed gently from the said distributing boards out to the cloth, and slides down the "up side" of the same through the fall spaces or passages L, thereby securing a gentle, yet effective, bolting of the stock.

It will of course be understood that the adjustments of the boards J and O, are to be varied as occasion may demand, and also that slightly different constructions may be employed, for I will have it understood that changes in the form, proportion and minor details of construction may be resorted to without departing from the principle or sac-

rificing any of the advantages of this invention.

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

1. The combination in a rotary bolting reel carrying a peripheral cloth; of a series of angularly disposed distributing boards pivoted at their outer edges near to the cloth, a series of elevator or lifting boards arranged at an angle in the space between the distributing boards and the cloth, and also pivoted at their outer edges, and means for adjusting the free edges of both the distributing and the elevator or lifting boards to vary the angles at which they are set, substantially as set forth.

2. In a bolting reel, an inner peripheral series of pivoted distributing boards having their outer pivoted edges away from the bolting cloth to leave fall passages, means for adjusting the inner edges of said boards, and adjustable elevator or lifting boards arranged at an obtuse angle to the distributing boards between the same and the bolting cloth and spaced from the distributing boards to leave slide spaces or passages, substantially as set forth.

3. In a bolting reel, a series of adjustable distributing boards pivoted at their outer edges near to the bolting cloth and having their inner edges disposed at an angle within the reel, and a series of elevator or lifting boards pivoted at their outer edges away from the bolting cloth, to leave their inner edges adjacent to the distributing boards and to form variable obtuse angles therewith, substantially as set forth.

4. In a bolting reel, an inner peripheral series of adjustable distributing boards disposed at an upward angle from their outer edges with respect to the rotation of the reel, and a series of elevator or lifting boards arranged between the distributing boards and bolting cloth and disposed at an obtuse angle to said distributing boards, 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.

JOHN P. STERLING.

Witnesses:

JOHN H. SIGGERS,
BERNICE A. WOOD.