Elbridge V. Easley.

Imp.d Flour Bolt.

117395

PATENTED JUL 25 1871

Figure 1.

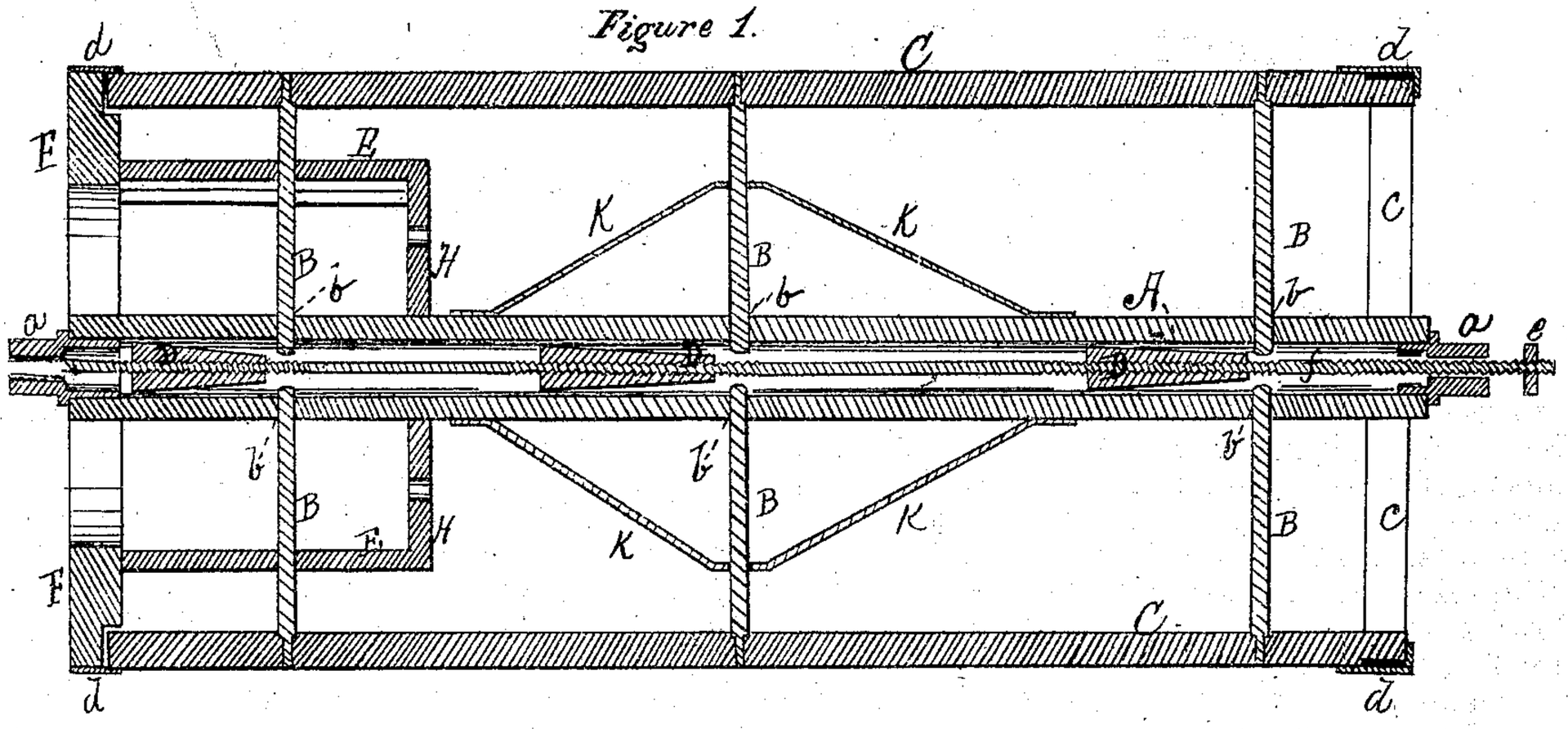


Figure 2.

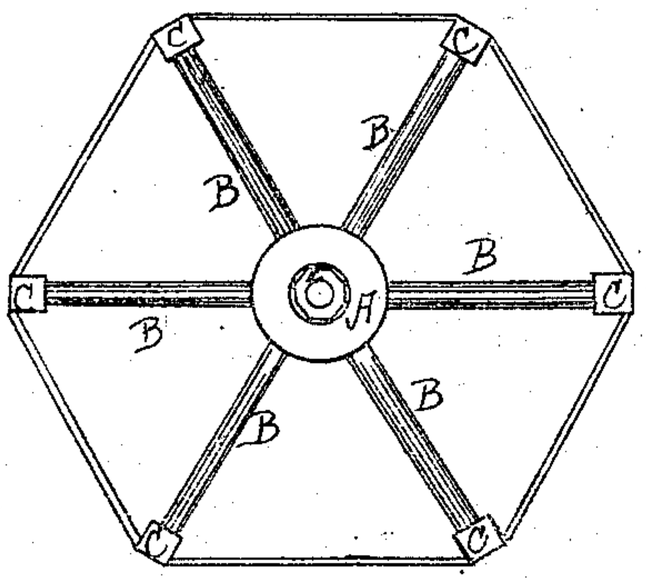
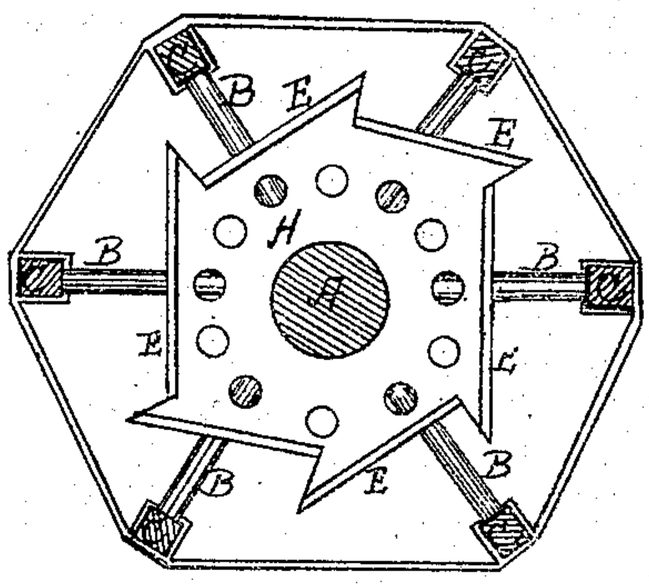


Figure 3.



Witnesses:

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Inventor:

Elbridge V. Easley.

by his Attorney

James L. Norris.

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117,395

UNITED STATES PATENT OFFICE.

ELBRIDGE V. EASLEY, OF JOHNSON CITY, TENNESSEE.

IMPROVEMENT IN FLOUR-BOLTS.

Specification forming part of Letters Patent No. 117,395, dated July 25, 1871.

To all whom it may concern:

Be it known that I, ELBRIDGE V. EASLEY, of Johnson City, Washington county and State of Tennessee, have invented an Improvement in Flour-Bolts and the Method of Expanding the Bolting-Cloth; and I do hereby declare that the following is a full, clear, and exact description thereof, sufficient to enable others skilled in the art tomake and use the same, reference being had to the accompanying drawing forming part of this specification.

My invention relates to certain improvements in flour-bolts, and especially in the method of equally forcing outwardly the ribs or bars of the reel, whereby the bolting-cloth is uniformly and reliably stretched its full extent; and to this end the invention consists essentially in arranging within a hollow central shaft a loose shaft or rod, upon which is rigidly mounted a series of conical-shaped wedges, which, acting upon a series of arms which radiates out from sockets formed in the said central shaft, forces it outwardly against the bars or ribs of the reel, by which means the circumference of the reel is increased and the bolting-cloth stretched or expanded. It further consists in the arrangement of the flour-boards, by which the heavy fall of the flour against the bolting-cloth is prevented, at the same time securing a gentle circulation of air from the center of the bolt outward against the cloth, causing the flour to bolt more freely, and prevent what is termed "specking;" and, finally, it consists of the combination of certain parts, as will hereinafter more fully be set forth.

Like letters of reference indicate corresponding parts in each figure.

Figure 1 is a central longitudinal section of the improved flour-bolt with the flour-cloth removed. Fig. 2 is a front end view. Fig. 3 is a back end view.

In the drawing hereto annexed, A represents a hollow cylindrical shaft, formed of wood or metal, the ends of which are formed or provided with journals, *a a*, which have their support in suitable bearings. B B are sets of arms fitted in sockets *b* of the central shaft A, so as to permit of their having an inward or outward movement from the axis of the said shaft A, from which they radiate like the spokes of a wheel. On the outer ends of these arms are rigidly fastened the longitudinal bars or ribs C C of the reel, which support the bolting-cloth. At either end of the reel, and connecting contiguous ends of the ribs or bars C C, are cross-bars or pieces *c c*, fitting loosely in sockets formed in any suitable manner in the ends of the ribs, the object being to support the ends of the bolting-cloth, and being loose in their sockets they permit of the expansion and contraction of the reel. Over these cross-pieces, and encircling each end of the reel, are elastic bands *d d*, which, by their tension, draw together and contract the reel when they are permitted to act. D D are metallic or wooden wedges, preferably of a conical shape, through the center of which passes the rod *f*, and to which they are firmly fastened. The rod *f* is continued either way through the gudgeons or journals *a a*, and is secured by nuts *e e'* or equivalent fastenings. The office of the conical wedges D D is to force out the radiating arms B B against the bars or ribs C, by which means the circumference of the reel is evenly increased; hence uniformly expanding the bolting-cloth, causing the flour to bolt more freely. To accomplish this the nut *e* of the rod *f* is loosened when the nut *e'* is screwed up. This draws the wedges between the ends of the radiating arms, causing or forcing the said arms to move outwardly, as before stated. E E represent a series of flour-boards arranged longitudinally within the reel a greater or lesser distance, as may be desired. They are arranged concentrically around the central shaft A, their edges alternately overlapping, leaving an intermediate space between each. These flour-boards are rigidly secured at one end to the head-board F, and at the other are fastened to the edges of the polygonal-shaped frame or board H, having a central opening, through which the shaft A passes, said board or frame being supported upon the shaft. The use of these flour-boards is to prevent the flour from falling too heavily against the bolting-cloth, which would give it a tendency to speck, and as they revolve with the reel, owing to their relative positions, they draw and force the air outwardly, creating a gentle current against the bolting-cloth, and thereby rendering its action more efficient. It will be noticed that the polygonal-shaped board H is perforated with a series of openings which aid in increasing the current of air. K K are double braces fastened at their ends to the shaft A, and having at their centers openings through which the central set of

the radiating arms B passes. They are designed to prevent the longitudinal swaying of the outer shell or bars of the reel, which might otherwise result from the insecurity of the supporting-arms. The ends of the reel are provided with heads as usual. The bolting-cloth is of the ordinary kind, with the exception that the ends of the cloth surround and are secured to metallic strips *g g*, which are each formed with a hook and eye so as to engage and interlock with each other.

A bolting-reel provided with my improvements will enable the bolting-cloth to be stretched and tightened evenly and uniformly, dispensing with the labor, expense, and delay of removing the same from the reel for the purpose of tightening, as is now the custom. Another great advantage, and one which I deem of great novelty and importance, is that the mechanism for operating the radiating arms, to increase the circumference of the reel and tighten the bolting-cloth, is completely protected by being arranged within the shaft A; hence there is no danger of their not operating by being interfered with by accumulation of particles of flour.

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

1. The rod *f* arranged within the hollow shaft A, and carrying a series of conical wedges, D D, in combination with the radiating arms B B and ribs C C of the bolting-reel, whereby the bolting-cloth is expanded or contracted as the conical wedges are operated, substantially as and for the purpose set forth.

2. The conical wedges D D, rod *f*, hollow shaft A, and arms B B, in combination with the ribs or bars C and cross-bars *c c*, and the bolting-cloth, substantially as described.

3. The flour-boards C C overlapping each other, arranged concentrically within the flour-bolt and having their bearings on the head F, and perforated board H, substantially as and for the purpose set forth.

To the above I have signed my name this 24th day of June, 1871.

Witnesses: ELBRIDGE V. EASLEY.

J. M. JOHNSON,

K. T PEOPLES.