L. S. REYNOLDS.

Flour Mill Bolt.

No. 23,394. Patented March 29, 1859.

Fig. 2

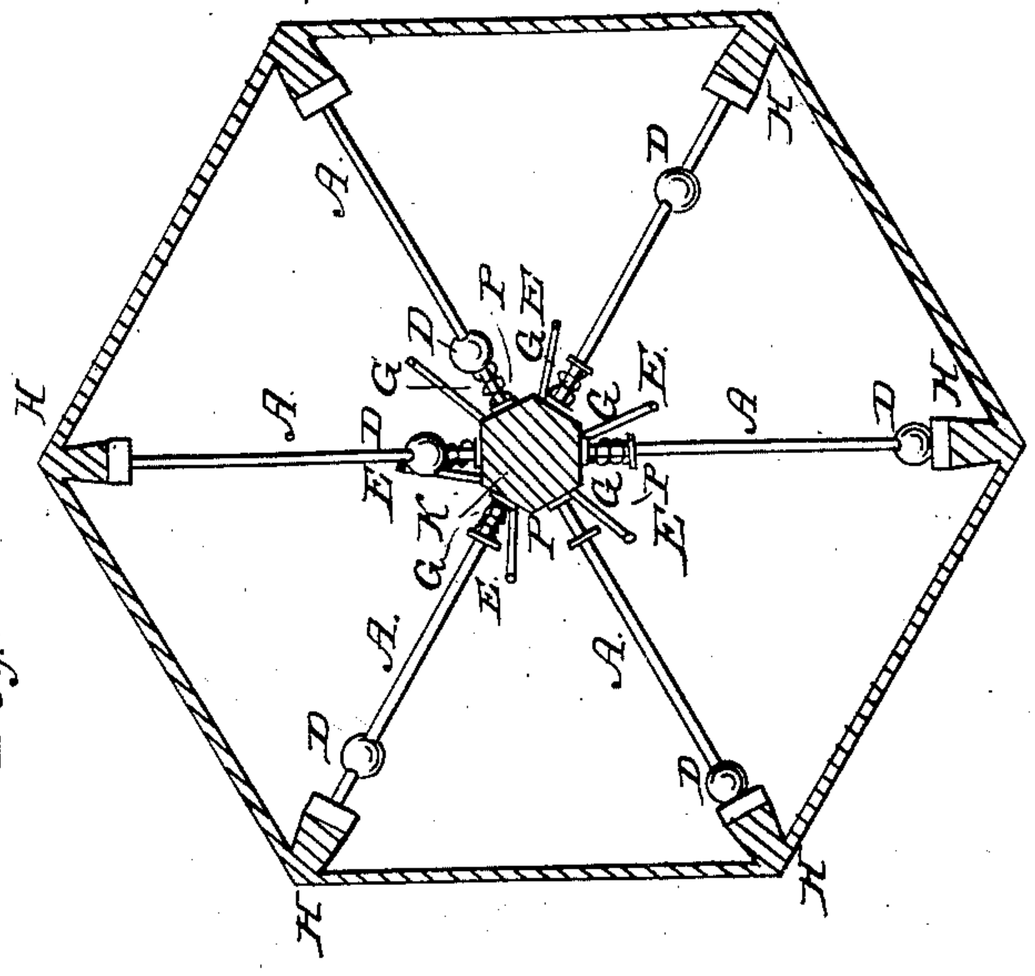


Fig. 1.

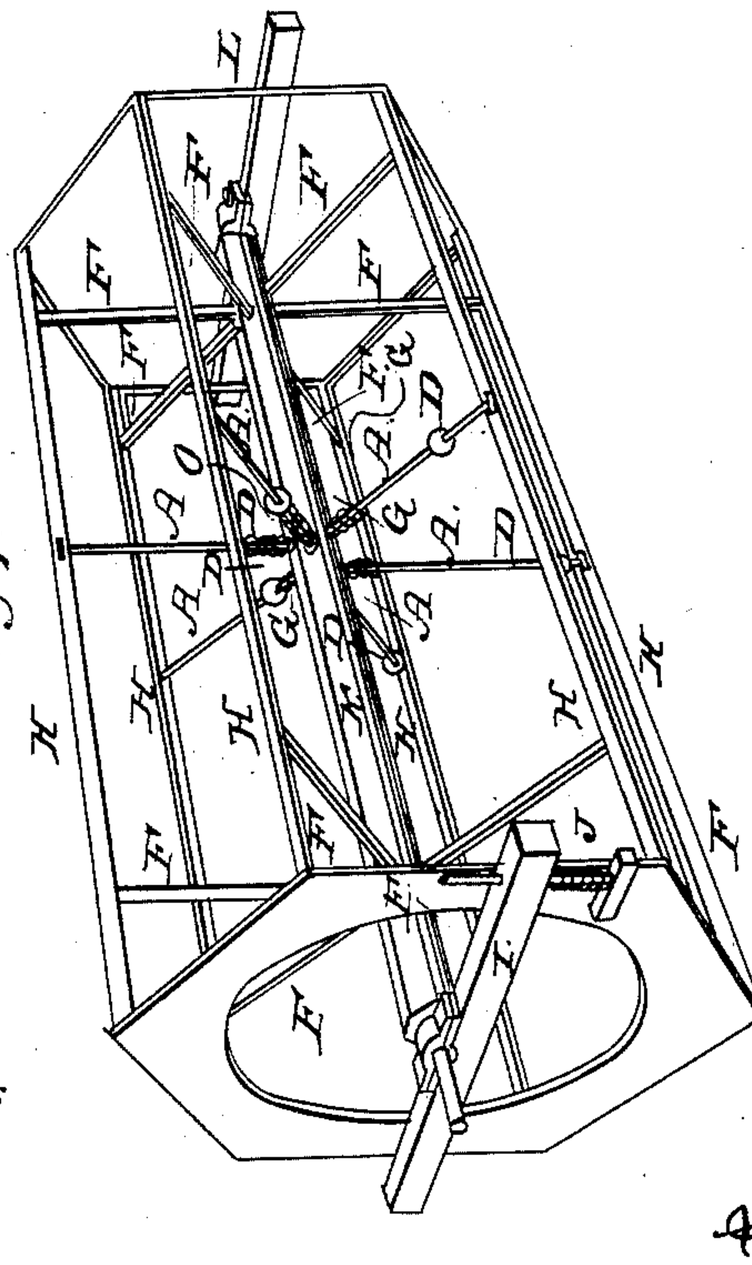
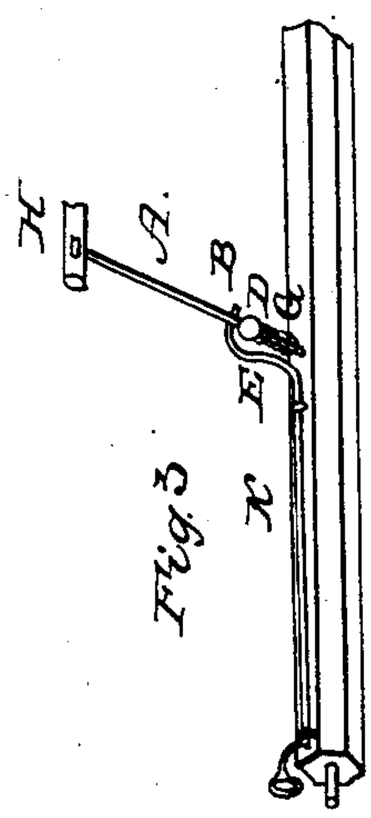


Fig. 3



Witnesses

J. L. Ridout

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UNITED STATES PATENT OFFICE.

L. SIMPSON REYNOLDS, OF INDIANAPOLIS, INDIANA.

FRICTION-BOLT FOR FLOUR-MILLS.

Specification forming part of Letters Patent No. 23,394, dated March 29, 1859; Reissued March 31, 1863, No. 1,443.

To all whom it may concern:

Be it known that I, LEVI SIMPSON REYNOLDS, of Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Improvement in Flour-Bolts, known as "Reynold's Universal Portable Friction-Bolt," of which the following is a full and exact description, reference being had to the accompanying drawings and the letters marked thereon.

Figure 1 is a perspective and Fig. 2 a sectional view of the reel showing the construction and operation of the same. Fig. 1 is a perspective and Figs. 2 and 3 sectional views of a bolting reel.

A, A, A, A, A, A, are arms constructed of half inch rod iron, and reaching through the shaft K are held by the nuts or taps P, P, P, they are also secured to the ribs H H H H H H by taps which are let into the ribs to avoid the necessity of the end of the arm passing clear through the bolt rib H, &c. The metal balls or beads D D D D D D are designed to slide freely upon the arms A A A A A A. The rods E, E, E, E, E, E, extend along the shaft K and are operated from the opening in the end of the reel. The hook at the end being turned over the balls upon the arms A, A, A, A, A, A, hold the same when not required to be used, F, F, F, F, F, F, F, F, F, F, F, F are wooden arms similar to those used in other bolts.

G, G, G, G, G, G, are springs designed to neutralize the effect of or prevent concussion by the falling of the balls upon the shaft K.

The ribs H, H, H, H, H, H are the reverse of those used in the common reel, the inside being five eighths of an inch broader than the outer edge of the same in a full sized reel, the object of which will be shown.

I and L, are bridge trees upon which the journals of the shaft K rest.

J is a spring designed to give elasticity to the bolt, and make it more sensitive to the effect of the balls D, D, D, D, D, D, upon the same.

In my experiments for the purpose of ascertaining the best mode of placing the rods A, A, A, A, A, A in the reel I placed them as braces from the ribs H, H, H, H, H, H, connecting them alternately. This formed a strong elastic reel but did not produce the same effect as that of the present arrangement from the fact that the jar of the falling ball was felt more universally throughout the reel instead of in one section or part of the reel. I allude to this for the purpose of showing the advantage of this particular arrangement the operation of which will be shown.

The following is the operation of the bolt: The flour being fed into the bolt in the usual mode is carried as the reel revolves to an elevation equal to the top of the reel or highest part of its revolution, being held upon the sides of the ribs H, H, H, H, H, H which is effected by their peculiar shape which has been described. The flour then falls from them over the shaft, striking the bolting cloth just after the action of the balls or knockers D, D, D, D, D, D has cleared the section or part upon which it falls of all the gummy flour, thereby allowing the clear raspy meshes of the cloth as the offal fall forcibly upon the same to dust the bran, thereby saving the necessity of a bran duster. When the action of only a part of the balls D, D, D, D, D, D is required, any number of them may be stopped by confining them with the rods E, E, E, E, E, E.

The advantages of my improvement are seen in the fact (which numerous experiments have shown) that I am enabled by it to accomplish more work upon a fine grade of cloth using the same sized reel, and it is a fact well known to millers that in order to produce an extra quality of flour fine cloth must be used. It is necessary when bolting by the ordinary mode to use different parts of the bolt or different kinds of bolting cloth in dry and wet weather, as well as for wheat possessing different degrees of moisture. In my improvement it will be seen that I can use the finest cloth at all times regulating its operation by the balls D, D, D, D, D, D, the effect being increased or diminished in proportion to the number used, I am also enabled to make a better quality of flour by taking out the fine round middlings at the head of the reel or through the superfine cloth, while there is no danger of specking the flour. By the use of the rods E, E, E, E, E, E the bolt may be regulated without stopping the mill.

Another advantage which this bolt possesses is that it requires less bolting reel,

hence taking up less room in a mill, at the same time that it produces more flour from a bushel of wheat and of a better quality than that produced by the common bolt.

What I claim and desire to secure by Letters Patent is—

1. The sliding knockers D, D, D, D, D, D in combination with the shaft K, ribs H, H, H, H, H, H and rods E, E, E, E, E, E, when constructed and operated substantially as and for the purposes set forth.

2. The springs G, G, G, G, G, G in combination with the knockers D, D, D, D, D, D, when operated, substantially as and for the purposes set forth.

3. The elastic bridge tree I, when used substantially as and for the purposes set forth.

L. SIMPSON REYNOLDS.

Witnesses.

H. B. HARVEY,

L. D. WATERMAN.

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