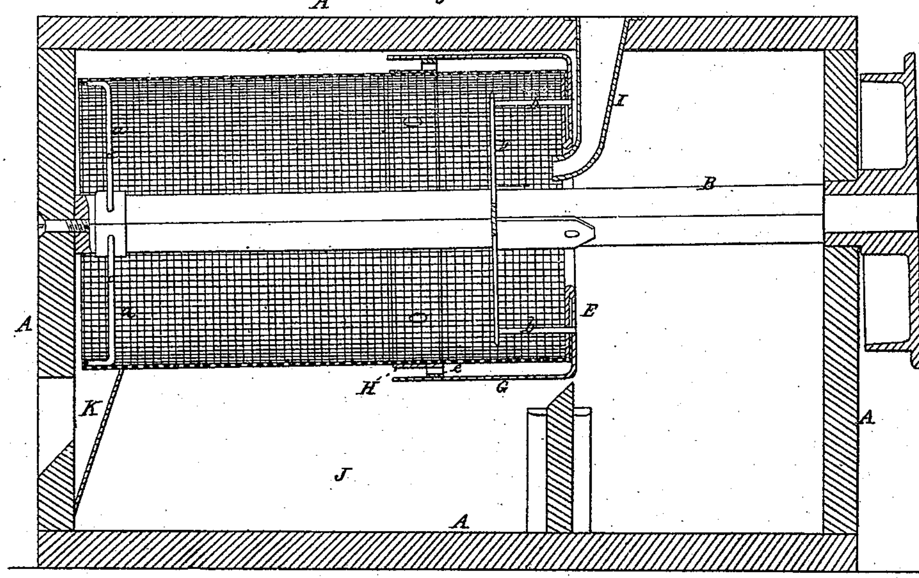
Sheet 1
2 Sheets.

S. A. Smith.
Flour-Bolt.

No. 75307 Patented Mar. 10, 1868.

Fig. 1.



WITNESSES.

Wm. Albert Steel

J. Parker

S. A. Smith
By his Atty
H. Howson

Sheet 2.
2 Sheets.

S. A. Smith.

Flour-Bolt.

No. 75307 Patented Mar. 10, 1868.

Fig. 2.

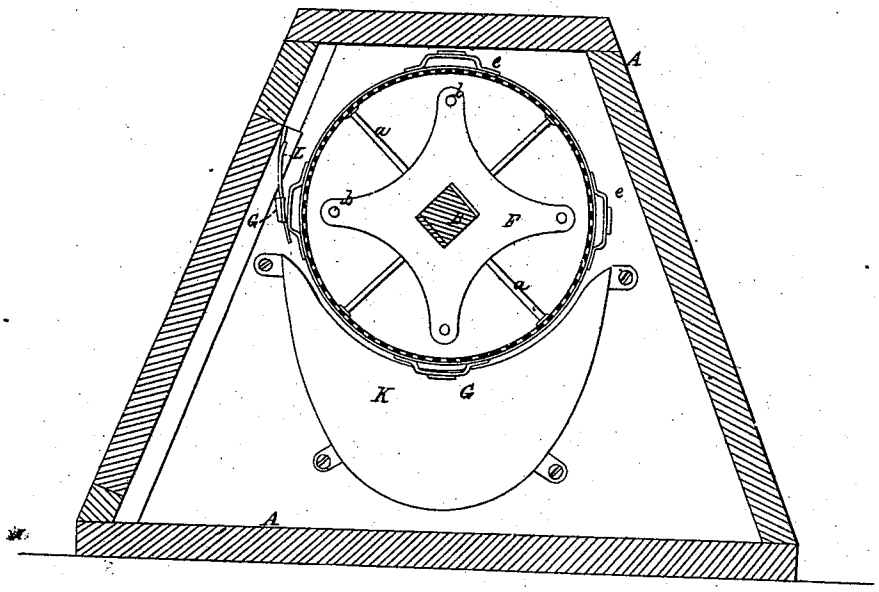


Fig. 3.

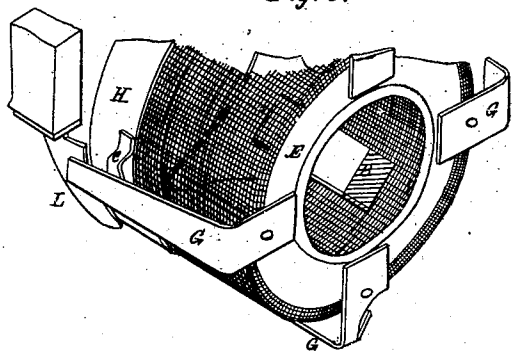
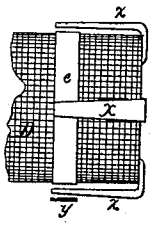


Fig. 4.



WITNESSES.

Wm. Albert Stuart

J. Parker

S. A. Smith

By his Attys

J. Howson

United States Patent Office.

SCOTT A. SMITH, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO CRESSON AND SMITH, OF SAME PLACE.

Letters Patent No. 75,307, *dated March* 10, 1868.

IMPROVEMENT IN FLOUR-BOLTS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, SCOTT A. SMITH, of Philadelphia, Pennsylvania, have invented certain Improvements in Flour-Bolts; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention consists, firstly, of a bolt, unsupported excepting at its opposite ends, and having a belt arranged for being struck by recoiling springs or other equivalent devices, all substantially as described hereafter, so that, owing to the general elasticity of the bolt, the blow struck the same will impart throughout it a tremor, which will act most efficiently in facilitating the clearance of the meshes and the passage of the flour through the same; secondly, in the combination, with the said bolt, of a spring or springs secured to the bolt, or to the frame containing the same, substantially as described hereafter, so as to obtain a spring percussion, which has a better effect for clearing the bolt than a blow from a rigid object.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a vertical section of my improved flour-bolt.

Figure 2, a transverse section.

Figure 3, a perspective view of part of the bolt; and

Figure 4, a diagram illustrating a modification of my invention.

A is the box containing the bolt, and B is a shaft, one end of which projects through and turns in one end of the box, and is furnished with a pulley, C, the other end of the shaft turning on a suitable bearing, secured to the inside of the opposite end of the box. D is the bolting-cloth, of wire gauze, fitted loosely at one end to arms *a a*, projecting from the shaft, and secured at the opposite end to an annular plate, E, which is attached, by a number of rods, *b*, to the spider F, the latter being also secured to the shaft. The bent ends of four or other suitable number of springs, G, bear against the annular plate E, without exerting any strain on the same, however, as the springs are secured to the spider F by the same rods *b* which serve to secure the annular plate to the said spider. An elastic belt, H, of thin metal, passes round and is secured to the bolt, and on this belt are a number of staple-like projections, *e*, one projection for each spring G to strike against.

As the bolt revolves, the ground grain is introduced into it through a curved spout, I, the flour passing through the meshes of the bolt into the receptacle J within the box, the bran passing from the end of the bolt into the pocket K, and thence from the box through a suitable opening into the same. During the movement of the bolt, the outer end of each spring is drawn away from the same, (once in every revolution in the present instance,) by coming in contact with a stationary cam, L, secured to the box. The spring, however, on leaving this cam, suddenly recoils, and strikes one of the projections on the elastic bolt H with a sharp percussion, which is imparted to the bolt, and facilitates the passage of the flour through the meshes of the wire gauze.

It will be observed that the bolt is without the usual rigid frame for supporting the cloth, the latter being exposed between the points where it is held, excepting where the belt occurs, and this is so elastic as not to detract from the general elasticity of the whole bolt.

A blow imparted by recoiling springs, or other equivalent devices, has a very different effect on a bolt supported by a rigid frame to that imparted to an elastic bolt. In the former case, a percussion with a limited local effect is produced, while in the latter, a general tremor is imparted to the whole bolt.

A single spring, attached to the box, may be used, and this spring operated by four stationary arms, secured to the bolt, as illustrated in the diagram, fig. 4, where *x x* represent the arms on the bolt D, and *y* a transverse spring secured to the box. Each arm, as the bolt revolves, draws away the spring from the bolt, but suddenly releases it so as to strike the belt H. In this case there is the same advantage of a spring percussion as in the former instance, where the springs are secured to the bolt.

I claim as my invention, and desire to secure by Letters Patent—

1. The bolt, unsupported, excepting at its opposite ends, and having a belt arranged for being struck by recoiling springs or other equivalent devices, all substantially as and for the purpose herein set forth.

2. In combination with the above, I claim a spring or springs secured to the bolt, or to the box containing the same, and operated substantially in the manner herein set forth, and for the purpose specified.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

SCOTT A. SMITH.

Witnesses:

H. HOWSON,

W. J. R. DELANY.