2 Sheets—Sheet 1.

G. T. RICHEY.

Flour-Bolts.

No. 209,193. **Patented Oct. 22, 1878.**

Fig. 1.

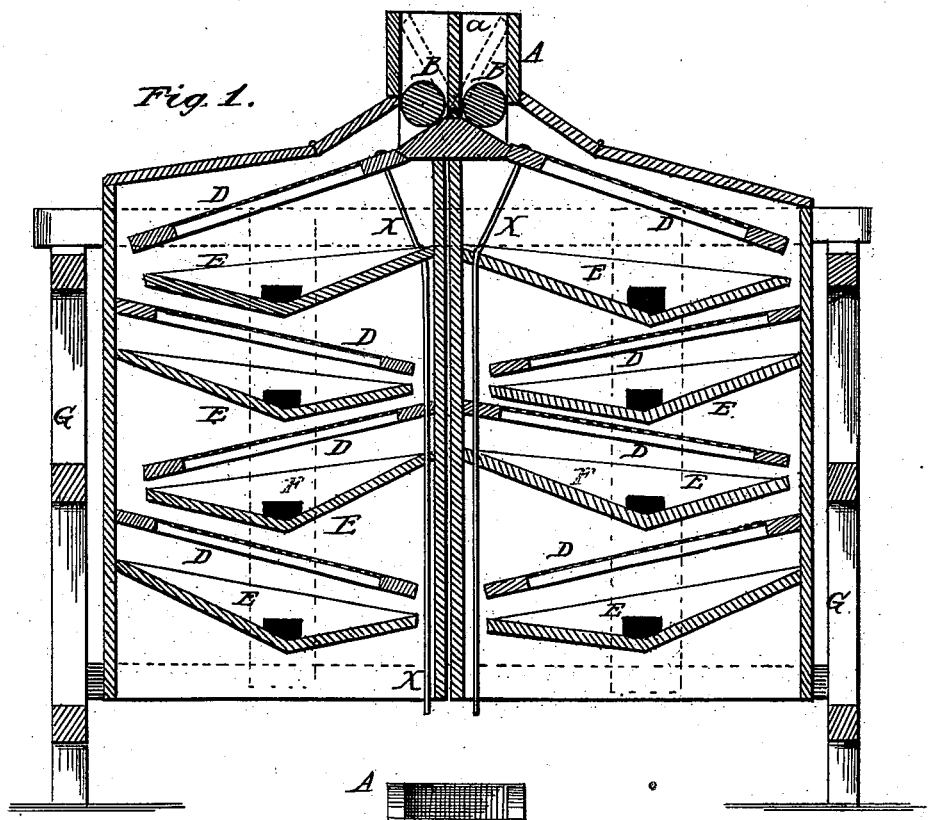
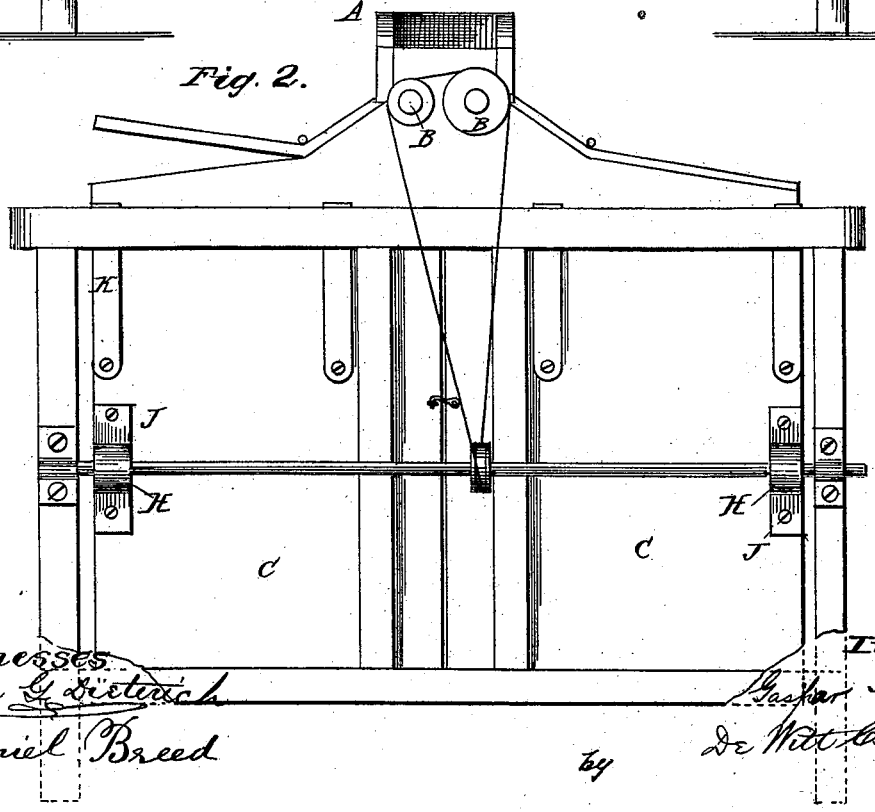


Fig. 2.



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2 Sheets—Sheet 2.

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Fig. 3

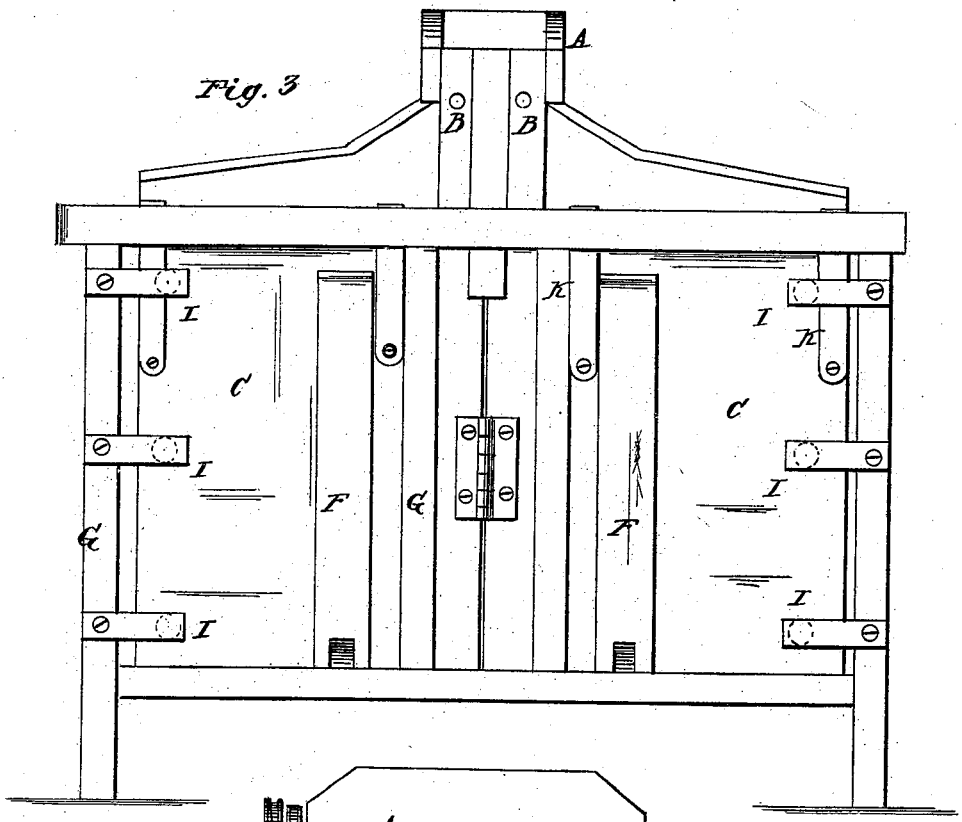
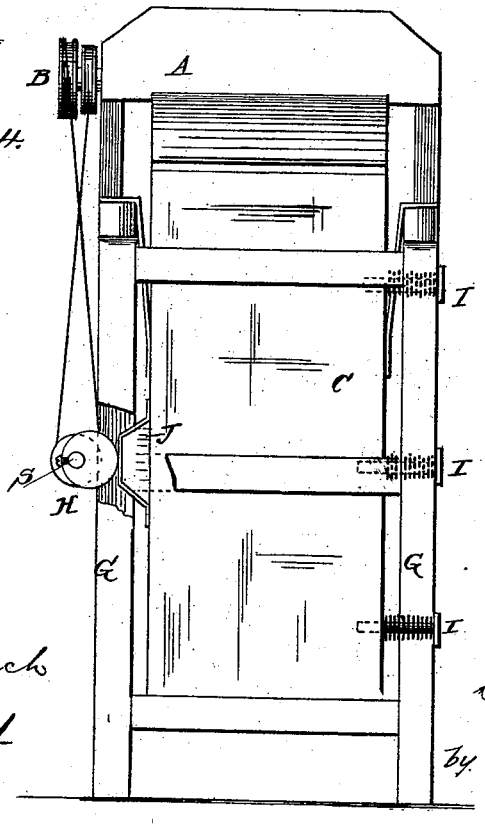


Fig. 4.



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UNITED STATES PATENT OFFICE.

GASPAR T. RICHEY, OF HASTINGS, ASSIGNOR TO OSCAR S. HADLEY AND LOYAL E. KNAPPEN, OF SAME PLACE, AND WILLIAM J. STUART, OF GRAND RAPIDS, MICHIGAN, ONE-FOURTH TO EACH.

IMPROVEMENT IN FLOUR-BOLTS.

Specification forming part of Letters Patent No. **209,193**, dated October 22, 1878; application filed March 7, 1878.

To all whom it may concern:

Be it known that I, GASPAR T. RICHEY, of Hastings, Barry county, in the State of Michigan, have invented a new and useful Improvement in the Construction of Bolts for Flouring-Mills, of which the following is a complete specification, reference being had to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a longitudinal sectional view of my improved machine; Figs. 2 and 3, opposite side views of the same; Fig. 4, an end view.

Like letters represent like parts in drawing and specification.

A is a hopper, into which the material to be bolted is conducted, and which is provided with a pivoted division-board, *a*, by means of which the material can be cut off from either one of the flour-chests C when desired.

B B are rollers for passing the material into the bolt. C C are flour-chests containing the sieves, &c., for bolting.

D D are sieves, any number of which are set obliquely in the flour-chests C C, the first or uppermost of which slants outward and the next inward, and so on alternately. These sieves may be set in grooves, or may rest upon pivots, or may be held by any other device, and may be so arranged as to make them capable of being drawn out and changed or reversed, so as to provide for sieves of different degrees of fineness, or for any other purpose. They may be constructed of a frame covered with bolting-cloth.

E E are chutes or cant-boards, placed one under each sieve in such a manner as to convey the flour bolted through it to the spout or conductor F, whence it is conveyed to any desired part of the mill.

Sieves D D are so placed that the upper end of each shall rest against the side of the chest C, and are made short enough to leave a space between the lower end and the other side of the chest, for the purpose of permitting the unbolted material to pass from one sieve to the other, and finally off from the last one. These two flour-chests C C are fastened together by two of their corners being hinged to an upright standard and to each other, or to each other only, by hinge, strap, or other device, and are placed in a frame, G, in such a position that the edges, when viewed from above, shall form an acute angle. They are suspended from the top of frame G by means of straps or springs, or may be supported from beneath upon springs or rollers, or may be held by any other device which will secure the requisite mobility.

Upon the side of flour-chests C C, opposite the hinge or angle mentioned above, is a shaft or shafts, S, running the entire length of the frame G, upon which are eccentrics H H, or a series of such eccentrics, for the purpose of agitating flour-chests C C, which are held against eccentrics H H by means of springs I I or other similar device.

Eccentrics H H may be made to operate upon bearings J J or directly upon the chests, having leather or other substance placed at the point of contact to prevent friction. These eccentrics H H may be placed, by any suitable known means—as a set-screw—at any angle to each other, so as to produce, when only one chest is used, or when the two are fastened firmly together, as they may be by any suitable known means—as a hook and pin—any complex motion desired.

The inclination of sieves D D may be adjusted to any angle from any portion of the mill desired by means of adjusting-rods X X, which raise and lower one end of the sieves at the same time by a simple upward or downward movement, or may be made to act upon sieves D D by means of screw-threads so made as to be alternately right and left screws, and to adjust all the sieves simultaneously to a greater or less angle at the same time by simply turning the adjusting-rods X X to right or left.

The advantages of my invention are these: That the machine occupies only about one-sixth the space of an ordinary bolt to do the same work, and that it can be constructed at less than one-fifth the cost in labor and material of an ordinary bolt, and will bolt two or more kinds of material at the same time.

I claim as my invention and desire patented—

1. In a flour-bolting machine, the combina-

tion, with the suspended flour-chests C C, hinged together and provided with suitable bolting mechanism, of the shaft S, provided with the adjustable eccentrics H H, or their equivalents, substantially as and for the purpose specified.

2. In a flour-bolting machine, the combination of the suspended flour-chests C C, hinged together, and each provided with a series of sieves, D, intermediate chutes E, and side conductor F, the stationary frame G, having a hopper provided with feed-rolls B B, and communicating with said flour-chests, and the shaft S, provided with the adjustable eccentrics or their equivalents, the several parts constructed and relatively arranged to operate substantially as herein shown and described.

GASPAR T. RICHEY.

Witnesses:
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W. D. HAYES.