

(No Model.)

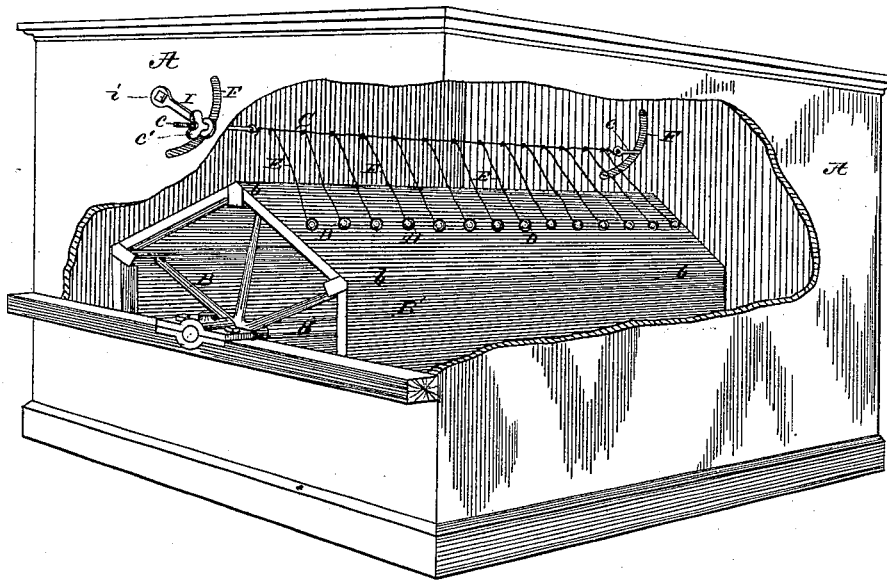
H. C. McKEEN.
BOLT CLEANER.

2 Sheets—Sheet 1.

No. 266,177.

Patented Oct. 17, 1882.

Fig. 1.



WITNESSES—

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2 Sheets—Sheet 2,

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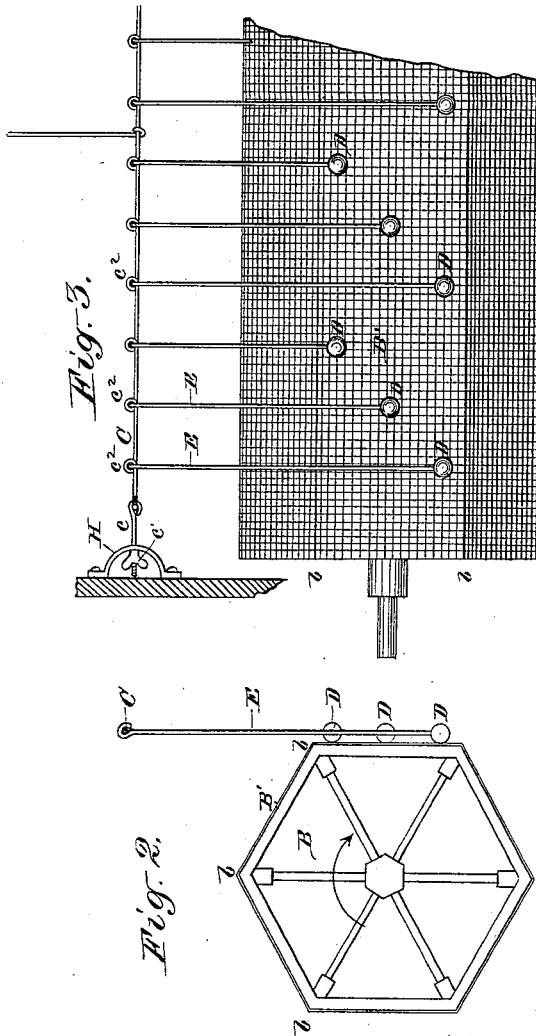


Fig. 4.



Fig. 5.

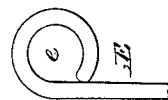
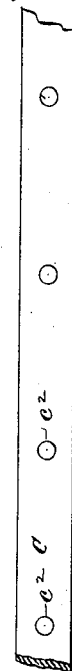


Fig. 6.



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UNITED STATES PATENT OFFICE.

H. CLAY MCKEEN, OF TERRE HAUTE, INDIANA.

BOLT-CLEANER.

SPECIFICATION forming part of Letters Patent No. 266,177, dated October 17, 1882.

Application filed August 23, 1882. (No model.)

To all whom it may concern:

Be it known that I, H. CLAY MCKEEN, of Terre Haute, in the county of Vigo and State of Indiana, have invented certain new and useful Improvements in Bolt-Cleaners; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to devices for clearing the cloth of rotating bolts or reels for flouring-mills; and it consists in the matters hereinafter set forth, and pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of a hexagonal bolting-reel mounted horizontally in a chest, of which parts are broken away to reveal the features of my invention. Fig. 2 is an end view of a hexagonal reel detached from its housing, and having the balls applied thereto in a peculiar manner. Fig. 3 is a side elevation of the bolting-reel, having the balls suspended in the same relation therewith as shown in Fig. 2. Figs. 4 and 5 are details, and Fig. 6 is a modification, of the main suspending device.

A represents a bolting-chest of the usual construction, and B a hexagonal bolting-reel frame mounted therein. B' is the bolting-cloth secured to said frame.

C is a horizontal wire rod or cord, stretched from end to end of the chest above and in line with the reel; and D D are a series of balls suspended from the cord C by the connections E, preferably of copper wire, flexibly joined to the cord C, but allowably of cord or other flexible material. The balls D are hung in position to bear or rest on or against the surface of the cloth B', as shown, and as the reel B is rotated said balls are thrown outward by the projecting angles *b b* of the reel. When said angles have passed the balls the latter return with some force against the next plane surface of the reel-cloth and jar the cloth sufficiently to detach any material which may clog the meshes of the latter. In order to secure the most effective action, I prefer to make the balls D D of elastic rubber, say, about an inch in diameter, or thereabout. Such

balls are disposed to bound after striking the face of the cloth by the tenseness of such cloth, but also by their own elasticity, so that they each produce a succession of blows, which more thoroughly jars the cloth and clears its meshes. When the balls are of rubber they are, moreover, thrown outward farther by being struck by the angles of the reel, and their subsequent blows on the face of the cloth are thereby made more severe and numerous. Balls of wood or other substance may, however, serve a good purpose, and are intended to be included under my general claim.

The suspending-cord C is shown in Fig. 3 as being of wire, having the eyes *c*² formed therein at proper intervals by bending, and the wires E as being connected in said eyes by suitable closed hooks, *e*, formed on their ends. The wires E may be fastened to the balls D by being passed through them centrally and clinched or headed at their emerging ends in a familiar manner not necessary to be illustrated.

In Fig. 6, C is an alternative form of the suspending-cord, consisting of a strip of thin metal having apertures *c*² punched therein to receive the connecting-wires E, and adapted therefore to be rolled into small compass. The tension of the suspending-cord C is made variable by means of a threaded end piece, *e*, provided with a thumb-nut, *c'*, and passed through the chest, as shown in Fig. 1, or through an interior, fixed, and accessible bracket, H, as shown in Fig. 3. By varying the tension of the suspending-cord the force and effect of the blows struck by the balls will also be varied.

In Fig. 1 the position of the suspending-cord C is vertically adjustable by means of two arms, I, having the cord C connected with their free ends, and at their opposite ends pivoted at *i* to the outside of the chest A, suitable curved slots, F, being cut through the chest-walls in the arc of a circle about the pivotal points *i* to allow the cord or its connecting-piece *c* to move vertically the distance required in the adjustment mentioned. By means of these devices the vertical adjustment of the cord may be made independently of that of its tension.

In Fig. 1 the balls D D are shown resting

upon one of the upper faces of the reel-cloth, while in Fig. 2 they are shown as hanging in contact with one of the side faces. Either arrangement will serve my purpose. In Figs. 2 and 3 the balls are also shown as hanging at different elevations by wires E of unequal length. An advantage of this construction is to cause one ball to strike a given face of the reel in advance of another, by which means the jarring thereof is more continuous.

I am aware that flexible wipers have been suspended in position to rub the face of the reel, and to thereby in some degree clear the meshes of the cloth. This is not my invention, which is restricted to balls so arranged and suspended as to be thrown outward by the angles of the reel, and calculated by their nature and mode of suspension to bound on striking the cloth, either by the resiliency of the latter or by that of the balls themselves. By the rubbing action of the wipers described a wearing effect is produced on the reel-cloth, which is obviated in the use of balls hung free, as shown, whereby they bear lightly at single points and bound from side to side, as influenced by the presence of particles on the cloth.

I claim as my invention—

1. The combination, with a rotating horizontal bolting-reel, of a ball or balls, D, hung in position to be struck by the angles of the reel, and adapted to swing freely against the faces of the reel, substantially as described.

2. The combination, with a rotating horizontal reel, of one or more elastic rubber balls, D, hung in position to be struck by the angles of the reel, and adapted to swing freely against the following face of the reel, substantially as described.

3. In combination with a rotating horizontal bolting-reel, a series of flexibly-suspended balls arranged in irregular order, so as to be successively struck by the angles of the reel, substantially as described.

4. In combination with the chest A, rotating horizontal bolting-reel B, balls D, connections E, the horizontal suspending device C, and means for adjusting its vertical position, substantially as described.

5. In combination with the reel-chest A, rotating reel B, main suspending-cord C, flexible connections E, attached at one end to the cords C, the balls D, attached to the free ends of the connections E, and means for adjusting the tension of the cord C, substantially as described, and for the purposes set forth.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

H. CLAY McKEEN.

Witnesses:

J. VAN EATON, Jr.,
D. S. BELL.