T. M. WALKER.

Flour Bolt.

No. 113,226. Patented Mar. 28, 1871.

FIG. 1.

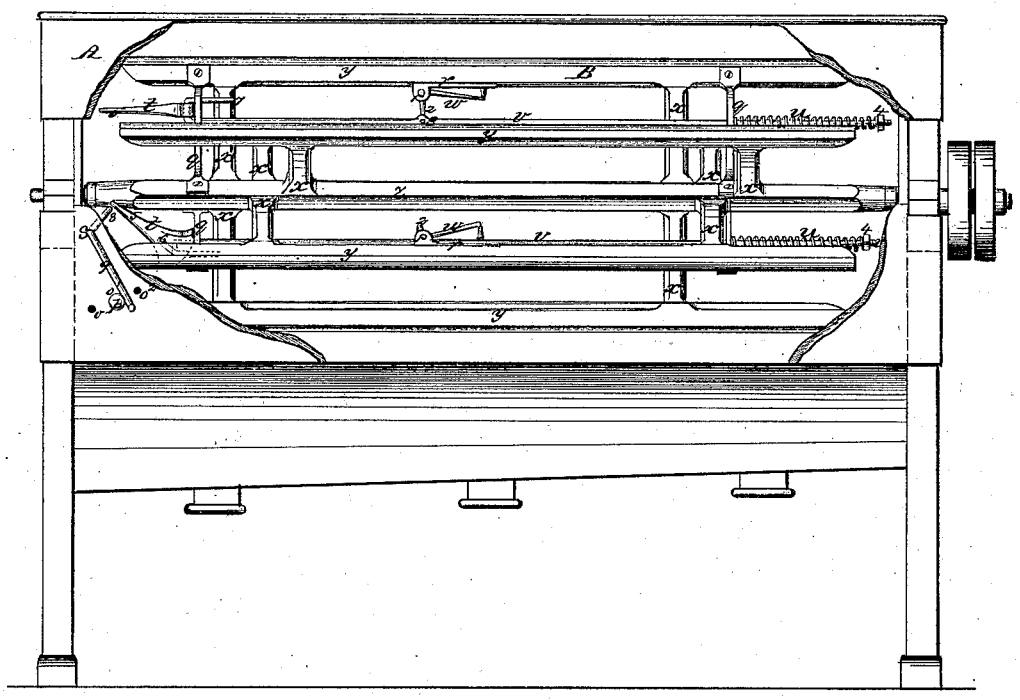


FIG. 2.

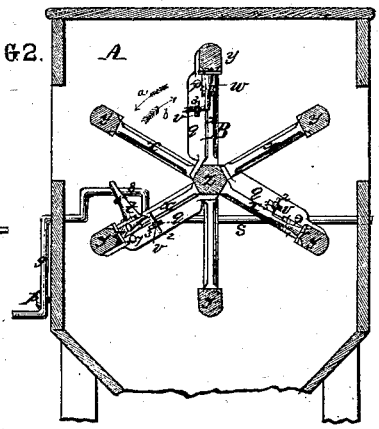


FIG. 4.

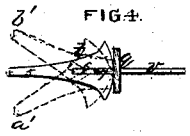
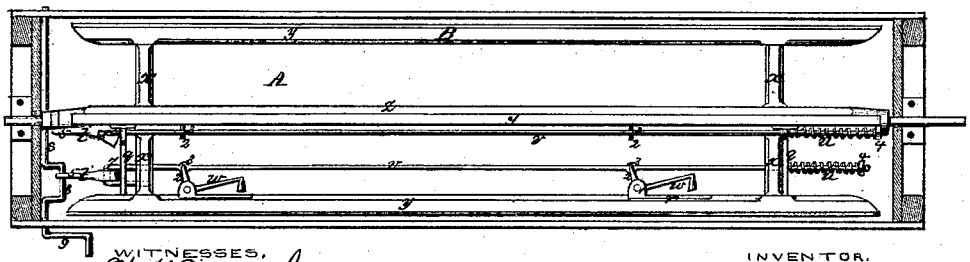


FIG. 3.



WITNESSES.

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THOMAS M. WALKER, OF BELLEFONTAINE, OHIO.

Letters Patent No. 113,226, dated March 28, 1871.

IMPROVEMENT IN FLOUR-BOLTS.

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

I, THOMAS M. WALKER, of Bellefontaine, in the county of Logan and State of Ohio, have invented an Improvement in Flour-Bolts, of which the following is a specification.

Nature and Objects of the Invention.

My invention relates to devices for knocking the ribs of the bolt to jar the flour through the meshes of the cloth.

Pivoted knockers are operated through pull-rods actuated by means of eccentrics and springs applied to their respective ends, the knockers being attached intermediately.

The actuating eccentrics engage with an adjustable tappet, by which they are rocked and operate similarly with the bolt turning in either direction. They are thus freed from liability to breakage by a reversal of the bolt.

The strain on the actuating rods being a longitudinal pull, they may be made of lightest metal.

The several parts and the couplings of the same are of simplest form.

Description of the Accompanying Drawing.

Figure 1 is an elevation of a flour-bolt illustrating my invention, a portion of the casing being broken away and the cloth removed.

Figure 2 is a vertical transverse section of the same.

Figure 3 is a horizontal section of a different bolt-reel and casing, also illustrating my invention.

Figure 4 is a face view of one of the knocker-operating eccentrics, showing its accessories, and illustrating the operation of the eccentric by dotted lines, indicating positions which it may assume.

Like letters of reference indicate corresponding parts in the several figures.

General Description.

The casing A, the reel B, and the covering of the latter may be of any approved construction, the said reel consisting, as usual, of a longitudinal shaft, *z*, and six (more or less) parallel ribs, *y*, supported at equal distance apart around the same by radial arms *x*.

In carrying out my invention I apply to the inner surfaces of one or more of the ribs *y* of the reel pivoted knockers *w*, as in some other arrangements.

Attached to these knockers *w*, as mediums for operating the same, are rods *v*, to the respective ends of which are applied springs *u* and slotted eccentrics *t*.

To the casing A, in proper position to engage with the said eccentrics *t*, a tappet, *s*, is applied.

I pivot the knockers *w* between lugs 1 on metallic striking plates *r*, which may be attached to the ribs *y* by means of screws or bolts.

The pull-rods *v* I support and guide by means of plates *q*, extending between the shaft *z* and ribs *y* of the reel, and attached to both by screws or bolts, or by means of supplementary radial wooden arms bolted to the ribs *y*.

The knockers *w* and pull-rods *v* are connected by wrists 2 on the former engaging with eyes 3 in the latter.

The springs *u* are applied behind screw-nuts 4 on the ends of the pull-rods *v*, and abut against one set of the guide-plates *q*.

The said nuts 4 afford means for regulating their tension.

The eccentrics *t* are constructed with axial lever-arms 5 and transverse axial slots 6, which latter receive the hooked ends 7 of the pull-rods *v*, and thereby attach the same.

They are arranged with their slots 6 as nearly as possible radial, and rock on the outer faces of the adjacent guide-plates *q*.

The said slots 6 allow the hooked ends of the pull-rods to be introduced.

The tappet *s* is made in the form of a crank-shaft, a wrist, 8, forming the engaging surface.

It is arranged parallel, or nearly so, with the adjacent end of the reel, and preferably horizontal; one end provided with an arm, 9, projecting through the casing.

A movable pin or screw, *p*, in a series of holes, *o* o^1 o^2, supports this arm, and holds therethrough the wrist or tappet proper 8 at a greater or lesser projection, and consequently varies its action.

I employ in a reel of ordinary size three sets of knockers, and three knockers in each set; but this and other details are variable.

Operation.

The reel B being in motion and revolving in the direction indicated by the arrow *a*, fig. 2, and the pin *p* at *o* or o^1, the lever-arms 5 of the several eccentrics *t* are consecutively brought in contact with the wrist 8, reflexed, more or less, in the direction *a'*, fig. 4, and released. The reflection of said eccentrics, as illustrated in fig. 4, pulls the rods *v* and lifts the heads of the knockers *w*.

On the release of the same the springs *u*, compressed by this action, forcibly return the knockers to contact with their striking plates *r*, thus causing the effective jar.

If the reel, by accidental reversal, rotates in the direction indicated by the arrow *b*, fig. 2, the tappet *t* will, if held as shown, turn back and no other effect be produced.

Should, however, the tappet be fixed, the eccentrics will yield in the direction *b'*, fig. 4, and the parts operate as in a forward movement of the reel.

An increased projection of the tappet-wrist 8 causes a corresponding increase of the elevation, and consequently the force of the blows of the knockers *w*.

The arm 9 of the tappet *t* being held at o^2, the tappet is supported out of the path of the eccentric arms and the mechanism is rendered inoperative.

Claims.

I claim as my invention—

1. The pull-rods *v*, springs *u*, rocking eccentrics *i*, knockers *w*, and tappet *s*, combined and operating substantially as represented and described, for the purpose set forth.

2. In combination with the trip-knocker on the reel, as herein described, the stationary tappet *s*, composed of a crank-shaft, adjustable by arm 9, pin or stop *p p*, and holes *o* o^1 o^2, substantially as represented and described, for the purpose specified.

Witnesses: THOMAS M. WALKER.

W. H. GRIBBLE,

T. B. FINLEY.