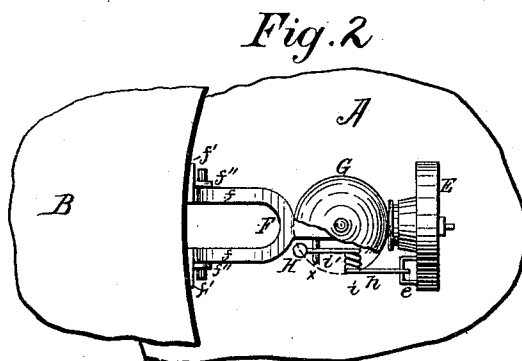
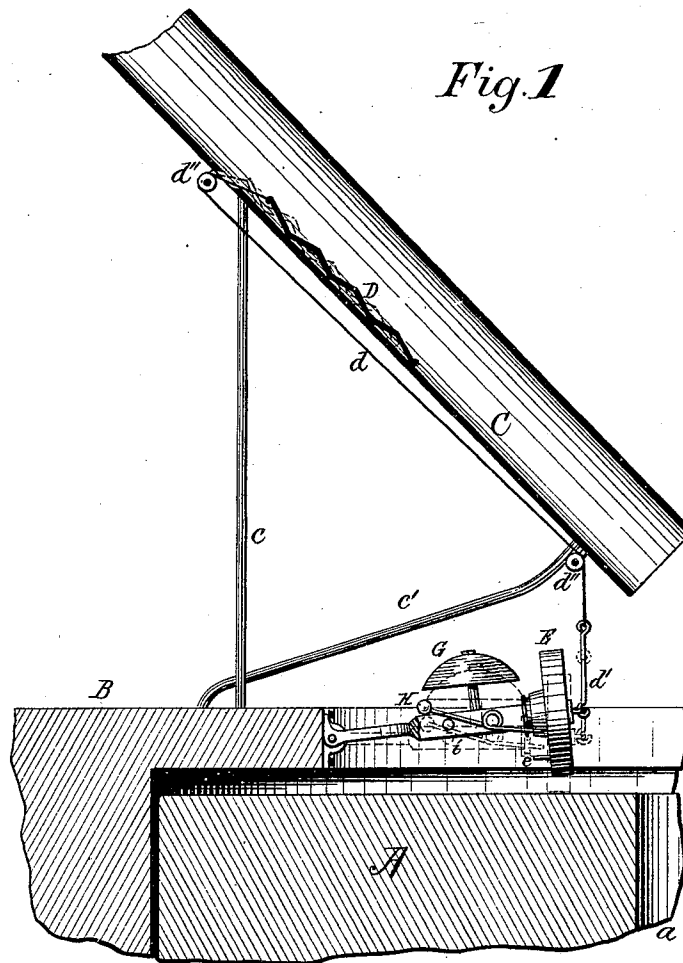


D. T. WILLIAMS.

GRIST-ALARM.

No. 170,614.

Patented Nov. 30, 1875.



Attest:
J. Mason Gossler
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Inventor:
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By *Norton Crawford*
Att'y.

UNITED STATES PATENT OFFICE.

DAVID T. WILLIAMS, OF HENNEPIN COUNTY, MINNESOTA.

IMPROVEMENT IN GRIST-ALARMS.

Specification forming part of Letters Patent No. **170,614**, dated November 30, 1875; application filed October 13, 1875.

To all whom it may concern:

Be it known that I, DAVID T. WILLIAMS, in the county of Hennepin, in the State of Minnesota, have invented certain Improvements in Alarms for Flouring-Mills, to indicate when the grain is exhausted from a bin, and it is necessary for the miller or the person in charge to change the spouting to another bin to supply the hopper of the grinding-mill with grain; and it consists in the construction of the device, as will be fully hereinafter described.

In the drawings, Figure 1 is a side view of the device, and Fig. 2 a top view.

A represents the runner-stone of the grinding-mill, and *a* the eye of the stone. B represents the curb or hoop around and partially over the outer part of the stone A, as is usual in grinding-mills, having an open center above and around the eye of the stone of considerable diameter. C is a grain-spout, inclined downward to allow the grain to feed itself down, by its own specific gravity, from the bin to the hopper or grinding-mill. *c* and *c'* are the supports to the spout. D is a corrugated metal valve within the spout or grain-tube C, and upon which the grain passing in the spout or tube bears, and holds it down to the lowest limit of the cord that holds it. *d* is a cord or wire secured to the upper end of valve D; thence upward a distance, and through a small opening in the under side of the spout; then over the pulleys *d'' d''* to the eye in the upper end of link *d'*, where it is secured. Link *d'* has an eye or hook at its lower end, to be attached to an eyebolt or pin in the end of an axle. E is a wheel fitted upon an axle, and free to revolve when caused to do so by any circumstance. *e* is a staple or projection upon the outside of wheel E. F is a bifurcated hinged axle for wheel E to revolve on its inner end. *f f* are the two legs of the axle, which have right-angled outwardly projecting journals *f' f'*, that hinge in staples or eyebolts *f''*, that are secured in the edge of the cover of curb B, as seen in Fig. 2. G is a gong or bell secured to and to be above axle F. H is a hammer or ball to strike the gong or bell, and is attached or secured to the hammer rod or arm *h'*, that is, about midway

of its length, coiled around a projecting pin, *i*, that is fast in axle F, and then extends from the pin *i*, so that its inner end *h* is near to the outside edge of wheel E, and so that the staple or projection *e* will, when the wheel E revolves, strike the end of the arm *h*, which, being coiled around pin *i*, forms a spring.

The following is the operation: When the grain is in full flow through the spout or tube C the valve D is forced, by the weight of the grain, to be in the position shown in full line in Fig. 1, the cord *d* being drawn so tight as to lift and hold up the wheel E from contact with the revolving millstone A; but when the grain has ceased, from any cause, to bear upon the valve D, then the weight of the wheel and axle will cause the wheel E to fall down and bear upon the top surface of the revolving stone A, and the valve is drawn upward in the spout, as seen in Fig. 1 in broken lines. As soon as the wheel E touches the stone it is made to rapidly revolve, and as it revolves causes the projecting staple *e* to strike against the arm *h*, and carry it up until it slips off the staple with force, while the hammer end is kept from falling down too low by the rest or pin *x*, that projects horizontally from the axle F; and as the arm *h* slips off the staple it will cause the hammer to rise suddenly and strike the gong or bell at every revolution of wheel E, which gives notice to the miller or person in charge that the grain-supply is exhausted, or the flow of grain is stopped by some cause, and needs attention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of the pallet D and cord *d* with the wheel E on hinged axle F, constructed to operate as described.

2. The combination of the pallet D, cord *d*, wheel E, with staple *e*, and millstone A with the hammer H and gong G, and their intermediate actuating parts, substantially as described.

DAVID T. WILLIAMS.

Witnesses:

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