

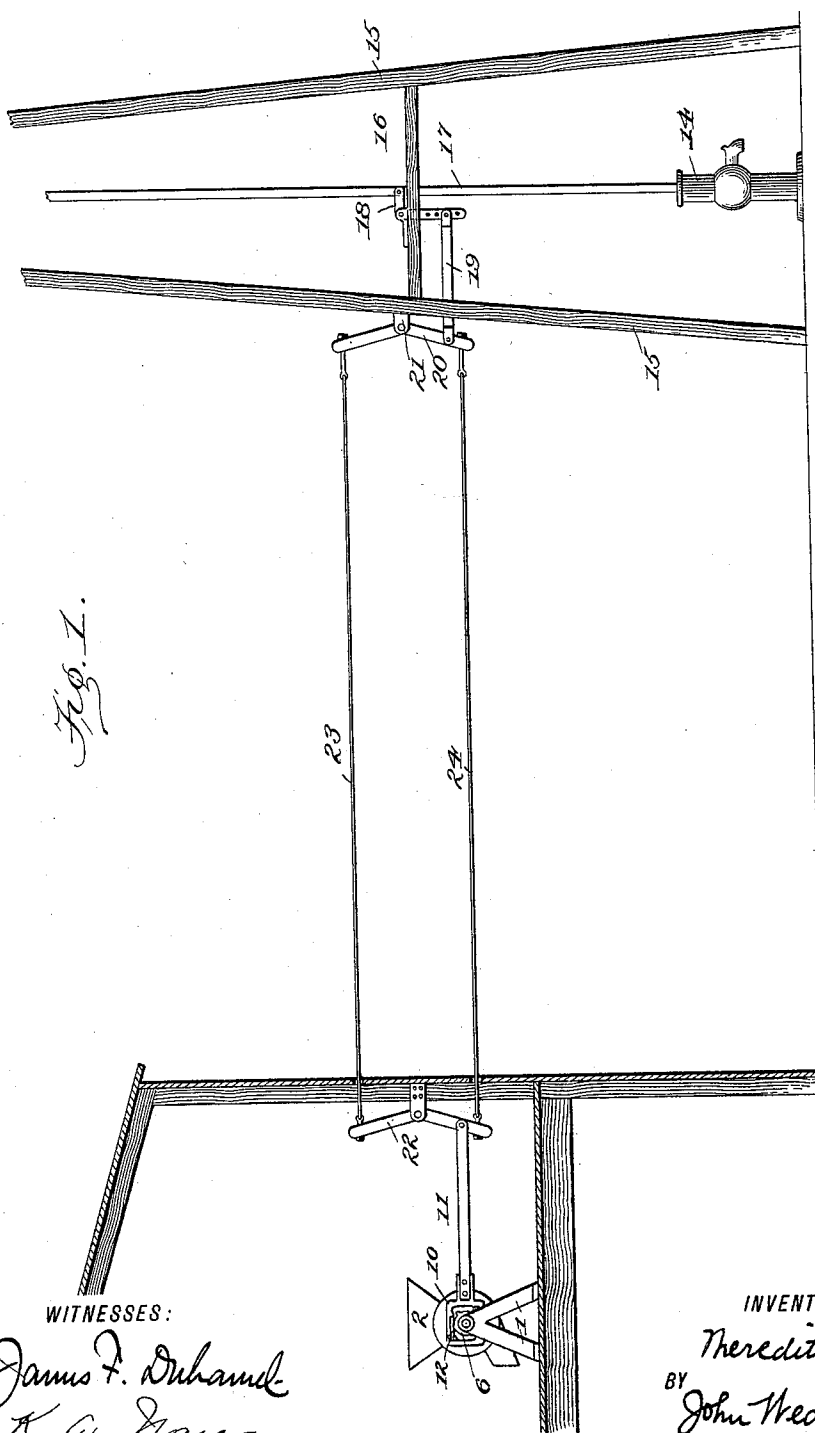
(No Model.)

2 Sheets—Sheet 1.

M. A. THORNTON.
MECHANICAL MOVEMENT.

No. 596,291.

Patented Dec. 28, 1897.



(No Model.)

2 Sheets—Sheet 2.

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MECHANICAL MOVEMENT.

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Fig. 2.

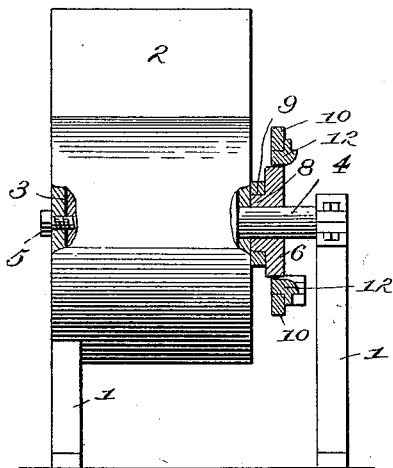


Fig. 3.

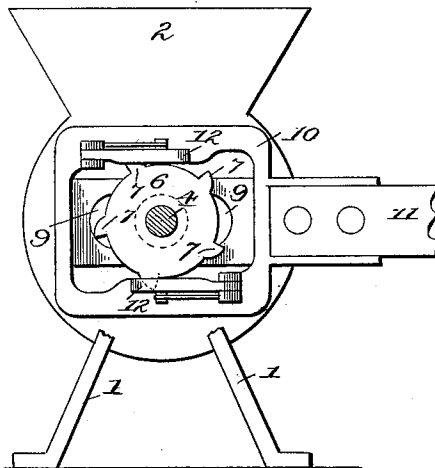


Fig. 4.

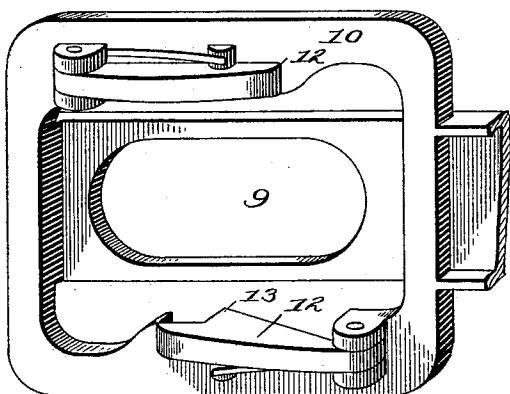


Fig. 5.

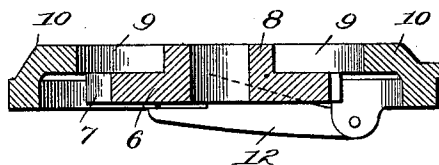
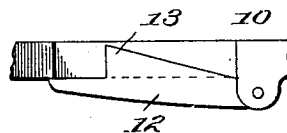


Fig. 6.



WITNESSES:

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UNITED STATES PATENT OFFICE.

MEREDITH A. THORNTON, OF GIBSON, ILLINOIS.

MECHANICAL MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 596,291, dated December 28, 1897.

Application filed June 22, 1896. Serial No. 596,448. (No model.)

To all whom it may concern:

Be it known that I, MEREDITH A. THORNTON, a citizen of the United States, residing at Gibson city, in the county of Ford and State of Illinois, have invented certain new and useful Improvements in Mechanical Movements; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in feed-grinding mills and windmill attachments therefor by means of which the feed-mill may be operated from a distance.

The object of the invention is to provide a feed-grinding mill which can be operated by a reciprocating rod or bar connecting the moving parts of said mill at any desired angle.

The invention consists of the construction, combination, and arrangement of parts which will be hereinafter more fully described and claimed.

In the drawings forming part of this specification, Figure 1 represents a side elevation of my improved grinding-mill, showing the connections between it and the windmill for operating the same. Fig. 2 is a vertical section through the grinding-mill with the sliding box thereon. Fig. 3 is a side elevation of the same, parts being broken away. Fig. 4 is a detail perspective view of the sliding box and the ratchet-wheel connected therewith. Fig. 5 is a longitudinal section through the same. Fig. 6 is a detail view of one of the operating-pawls.

Like reference-numerals indicate like parts in the different views.

My improved grinding-mill is supported upon the uprights or standards 1 1 and has the usual feed-hopper 2, and a revolving grinding wheel or bur 3, secured to or formed integral with the main drive-shaft. A bolt 5 passes through one side of the casing and engages the rear end of the shaft 4 for the purpose of tightening or loosening said grinding-bur. The opposite end of the shaft 4 has secured to it a ratchet-wheel 6, having a series of teeth 7 thereon. The hub 8 of the ratchet-wheel projects through an elongated slot 9 in

a sliding box 10, which is connected at its outer end to a pitman 11. As the sliding box 10 is located beneath the ratchet-wheel 6, said ratchet-wheel serves as a stop for preventing the disconnection of said box therefrom and also as a guide which permits of the movement of said box in a vertical plane. On the outside of the box 10 are pawls 12, which are provided at points near their outer ends with shoulders 13, which are adapted to engage the teeth 7 of the ratchet-wheel 6 during opposite movements of said sliding box. It will be observed that the pivotal points of the pawls 12 are at opposite ends of the box 10, in which the ratchet-wheel 6 rotates. By this construction it will be seen that during the forward movement of the sliding box 10 one of the pawls 12 will engage one of the teeth 7 on the ratchet-wheel and rotate the main drive-shaft 4 a partial revolution, and upon the return stroke of said box the pawl on the opposite sides of the slot 8 will engage one of the teeth 7 on the opposite side of the ratchet-wheel 6 and continue the rotation of the main drive-shaft 4 in the same direction.

The reciprocation of the sliding box 10 may be effected in any suitable way; but I prefer to do it through an ordinary windmill, as shown in Fig. 1. In this figure the grinding-mill is shown located inside of a barn or other building and the windmill situated some distance therefrom.

14 represents an ordinary pump located between the uprights 15, constituting the windmill-frame, which are connected, as shown, by a cross-bar 16. This pump is operated through the usual reciprocating rod 17, which has pivoted to it one arm of a bell-crank lever 18, fulcrumed in the cross-bar 16 of the windmill-frame. The other arm of said bell-crank lever is connected through a pitman 19 with a bell-crank or rocking lever 20, fulcrumed in a bracket 21 on the side of one of the uprights 15, constituting the windmill-frame. The pitman 11 heretofore referred to is pivoted at its outer end to one arm of the bell-crank or rocking lever 22, fulcrumed in a stationary part of the building in which the grinding-mill is located. The upper arms of the rocking levers 20 and 22 are connected

through the rod or wire 23, and the lower arms of said levers are connected through a similar wire 24.

By this construction it will be seen that during the reciprocation of the rod or shaft 17 motion will be transmitted through bell-crank lever 18, pitman 19, rocking levers 20 and 22, and rods or wires 23 and 24 to the pitman 11 and to reciprocate the sliding box 10 and operate through the mechanism described the main shaft of the grinding-mill. By reason of the double connection between the rocking levers 20 and 22 power will be transmitted to the grinding-mill during both the upward and downward strokes of the driving-shaft 17, thereby utilizing all the power of the windmill, and, furthermore, the said grinding-mill may be operated by a windmill located at any distance therefrom by simply lengthening or shortening the wires 23 and 24. The said mill may be also operated at whatever angle in a vertical plane the power is received from the windmill, the sliding box 10 being free to be moved upon its axis and adapted to engage the teeth of the ratchet-wheel 6 at whatever position it may be adjusted.

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

1. In a grinding-mill, the combination with the drive-shaft thereof, of a ratchet-wheel secured to said shaft having a hub of smaller

diameter thereon, a sliding box having an elongated slot therein through which the hub of said wheel projects, the said box adapted to bear against the inner surface of said ratchet-wheel and be guided thereby, pawls on said box adapted to engage the teeth on said ratchet-wheel, and means for operating said box, substantially as and for the purpose described.

2. In a grinding-mill, the combination with the main shaft thereof, of a ratchet-wheel secured to said shaft, a sliding box having an elongated slot therein through which the hub of said ratchet-wheel projects, means for operating said box, and a pair of spring-actuated pawls having shoulders near their outer ends, pivoted to said box on opposite sides of said slot and extending in opposite directions from their pivotal points, the said pawls being adapted to engage the teeth of said ratchet-wheel to rotate the same in the same direction during both movements of said box, and said box itself being capable of an oscillatory movement in a vertical plane, substantially as and for the purpose described.

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

MEREDITH A. THORNTON.

Witnesses:

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W. A. CAMERON.