No. 876,269. PATENTED JAN. 7, 1908.

C. FISH.

SAFETY DEVICE FOR CLEANING MACHINES OR RUMBLES.

APPLICATION FILED JUNE 17, 1907.

2 SHEETS—SHEET 1.

Fig. 2.

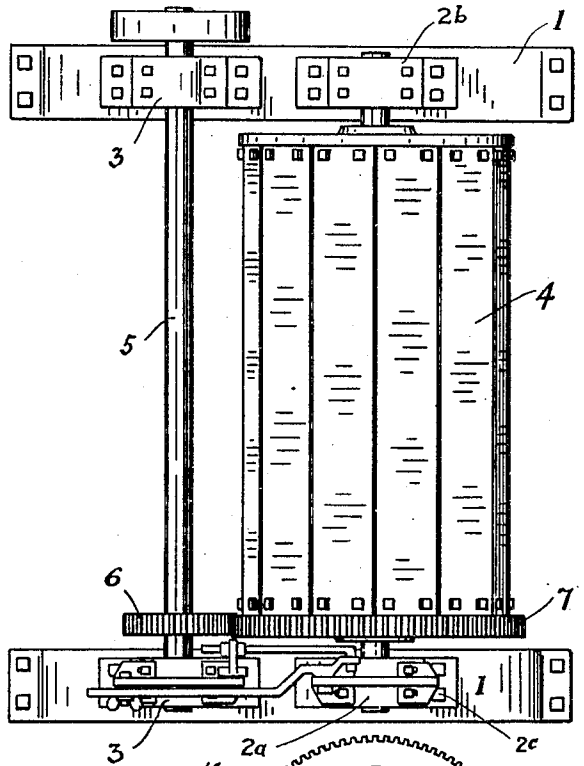
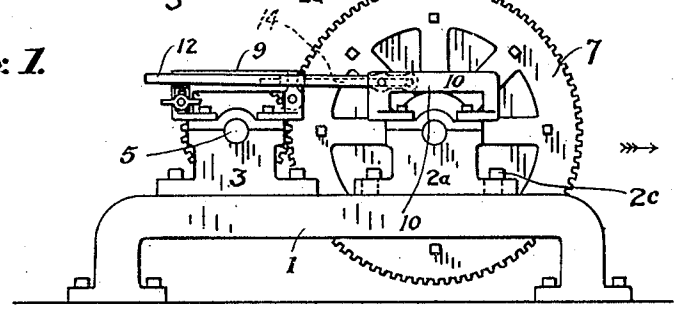


Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 3.

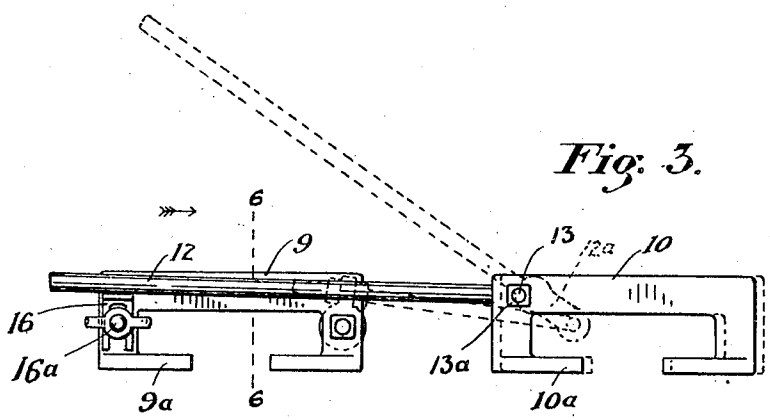


Fig. 4.

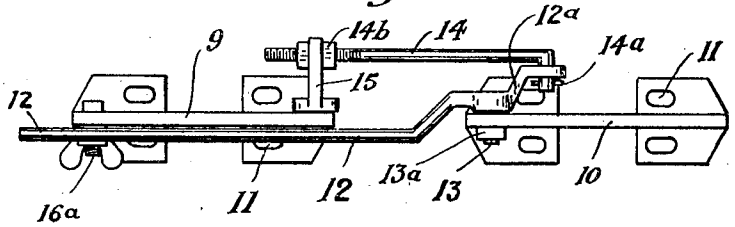


Fig. 5.

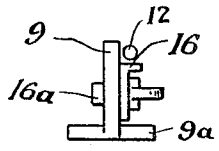
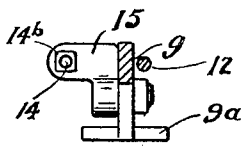


Fig. 6.



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SAFETY DEVICE FOR CLEANING-MACHINES OR RUMBLES.

No. 876,269. Specification of Letters Patent. Patented Jan. 7, 1908.

Application filed June 17, 1907. Serial No. 379,370.

To all whom it may concern:

Be it known that I, CHARLES FISH, a citizen of the United States, and a resident of the city of Muncie, Delaware county, Indiana, have invented a new and useful Safety Device for Cleaning-Machines or Rumbles, of which the following is a specification.

In the accepted form of construction and mode of operation of rumbles, or cleaning-machines for castings commonly referred to as "rattlers", the rumble is provided on its end with a gear-wheel of large diameter and is revolubly mounted in suitable pillow-blocks and so arranged and supported on frame standards that one of said pillow-blocks is movable whereby the rumble may be free to be shifted out of normally true alinement, thus disengaging or throwing out of mesh said large gear-wheel and a smaller gear-wheel secured to a shaft journaled properly adjacent to said rumble and to which shaft the driving power is applied. Breakage of the slabs frequently occurs which permits a casting or castings being carried in the rumble, to project and impinge on the shaft of the driving gear, which often results in injury to the machine and to the casting or castings as well.

This invention has for its object to provide a device whereby the rumble will be automatically thrown out of actual engagement with the driving gear, in case of accidental stoppage or undue hindrance of the normal movement of the rumble, and whereby the rumble may at any time be easily shifted into or out of normal position by the operator.

Further objects are to provide a device of this kind which will be economical of manufacture, reliable and durable.

The objects of my invention are accomplished by the mechanism described in this specification, illustrated in the accompanying drawings, and clearly designated in the appended claims.

In the drawings, similar characters of reference refer to corresponding parts throughout the several views, in which—

Figure 1 is an end view and Fig. 2 is a top plan view of a rumble equipped with my invention. Fig. 3 is an end view and Fig. 4 is a top plan view of my improved device complete. Fig. 5 is an end view, and Fig. 6 is a transverse sectional view of the standard 9 taken on the line 6—6 Fig. 3.

In Figs. 1 and 2 are shown a rumble, or cleaning-machine of well known form and construction. Mounted on the substantial frames 1 are the suitable pillow-blocks 2^a and 2^b in which are journaled the bearings of the box 4. In the similar pillow-blocks 3 are journaled the shaft 5 upon which is secured the small gear-wheel 6 adapted to mesh with the large gear-wheel 7 suitably secured to the end of the box. The surrounding exterior of the box is composed of slabs having their ends suitably bolted, as shown, to the end-sections of the box.

The pillow-block 2^a is provided with oblong holes in its bottom so that while it is held properly in position by the bolts 2^c passed therethrough, it is free to be moved in the direction of the arrow as shown in Fig. 1, when the disengagement of the gear-wheel 7 from the gear-wheel 6 is necessary. The journal-bearing in the pillow-block 2^b is sufficiently loose so that there is no undue strain imposed thereat.

The essential features of my invention consist of members adapted to be easily secured to said pillow-blocks 2^a and 3, and connecting members between them, and the lever so arranged that by manipulation of said lever the gear-wheels are caused to be retained and held in position of engagement, and at the same time, in the event of excessively abnormal strains being imposed upon the gears, they may separate.

My invention is carried out and embodied in the mechanism described herein.

9 and 10 designate standards of substantial construction and suitable form, having the base-flanges 9^a and 10^a.

11 designates oblong holes provided in these base-flanges so that these standards may be secured to the pillow-blocks 2^a and 3 as shown. The transverse distance apart of these holes may be varied so that the standards may be readily applied to any ordinary size or style of pillow-blocks.

12 designates a lever having the stud 13 provided thereon and journaled in a suitable hole therefor in the standard 10, and retained by the nut 13^a. This lever has the short-arm 12^a. The connecting bar 14 having its one end turned at a right angle, pivoted in the end of the short-arm 12^a and there retained by the cotter 14^a, is of suitable length and threaded on its end and secured adjustably by the set-nuts 14^b to the swivel 15 suitably secured to the standard 9. This swivel

15 is angle-shaped as shown in Fig. 6, and has a stud thereon threaded and adapted to pass through and be held in position on the standard 9. The purpose of this swivel or pivotal connection for the connecting-bar will be obvious in the description hereinafter, of the operation of my invention.

16 designates a set-clip of the form as shown in Fig. 5 and is retained adjustably on the standard 9 by the set-bolt 16^a, the vertical leg of the set-clip being slotted so that it may be adjusted to varied positions vertically. It will be observed in Fig. 4 that the lever 12 is of such form transversely that when the standards 9 and 10 are in correct alinement the free end of the lever will be normally at rest in position on the set-clip 16.

My invention in complete form in readiness for application to use, appears as shown in Figs. 3 and 4. The approximately correct distance apart of the standards, for the connection of my invention to the cleaning-machine or rumble, is obtained by the adjustment of the set-nuts 14^b. The standards 9 and 10 are then secured rigidly to the pillow-blocks 2^a and 3 respectively, then the positions of the set-nuts 14^b and the set-clip 16 are so adjusted, that when the gear-wheels of the rumble are in mesh, the longitudinal center lines of direction of the connecting-bar 14 and the lever 12, are substantially the same, the adjustment of the set-clip however being such that the center-line of the free end of the lever will be slightly above that of the connecting-bar, as shown plainly in Fig. 1. The invention thus is in proper form to perform its functions.

If during the operation of the rumble so equipped, a slab should by accident be broken, or disengaged from its fastenings, and the slab, or casting or castings which would immediately project from the revolving box should impinge upon the shaft 5, or if for any reason the normal revoluble motion of the box should be hindered, the tendency of the gear-wheels under such abnormal strain imposed thereon would be to separate or pull apart which strain if unrelieved would result in stripping of the gear-wheels or some other breakage of the machine, however with my invention applied as shown, the powerful tensile strain so imposed will cause the short-arm 12 to draw downwardly, thereby immediately unlocking the standards whereby the pillow-block 2^a will move a sufficient distance so that the gear-wheels will become disengaged and the operation of the rumble will have been terminated. The parts of my device then occupy the positions as shown in dotted lines in Fig. 3. By manipulation of the set-clip 16 the normal position to be occupied by the lever 12 may be varied, to accord properly with reference to the centers of the shafts of the gear-wheels, also the size or capacity of the rumble to which the device is attached, and the amount or gage of the "pull" necessary to be exerted before the short-arm 12^a should move.

In large establishments wherein the cleaning of great quantities of castings is necessary, a great many rumbles are employed and they are generally arranged in a part of the establishment or plant, removed from other machinery, and after the rumbles are properly "loaded" they are then started, and caused to be operated for a certain period of time. Owing to the fact that the condition of the inner portions of the slabs cannot always be known, and that failure of same is common, and that the bolts retaining the slabs frequently shake loose, injury and accidental stoppage to rumbles are liable to occur at any time. It is very desirable that the necessity of an employee or employees to attend the rumbles, may be dispensed with. By the use of my invention the necessity of care and attention to the rumbles after the same have been started to operate, is dispensed with, for, in case of accident as aforesaid the rumble affected will be automatically and speedily rendered inoperative, as hereinbefore described.

By simply the manipulation of the lever 12 by the attendant the pillow-block 2^a may be brought to its proper position and the gear-wheels into mesh. Thus is obtained a device whereby the manipulation of the rumble in the regular course of business or use is greatly facilitated, and whereby the rumble will be caused to automatically be thrown into inoperative status in event of accident thereto.

What I claim as my invention and desire to secure by Letters Patent, is—

1. A device of the kind described comprising a frame, a fixed pillow-block and a movable pillow-block mounted on said frame, gears journaled on said pillow-blocks and adapted to mesh with each other, members secured to the said pillow-blocks, a bar pivotally connected to one of said members and a lever fulcrumed on the other member and pivotally connected to the said bar, substantially as described.

2. A device of the kind described comprising a frame, a fixed pillow-block and a movable pillow-block mounted on said frame, gears journaled on said pillow-blocks and adapted to mesh with each other, members secured to the said pillow-blocks, a bar adjustable in length pivotally connected to one of said members and a lever fulcrumed on the other member and pivotally connected to the said bar, substantially as described.

3. A device of the kind described comprising a frame, a fixed pillow-block and a movable pillow-block mounted on said frame, gears journaled on said pillow-blocks and adapted to mesh with each other, mem-

bers secured to the said pillow-blocks, a bar adjustable in length pivotally connected to one of said members and a lever fulcrumed on the other member and pivotally connected to the said bar, means to support the free end of said lever in positions varied vertically.

4. A device of the kind described comprising a frame, a fixed pillow-block and a movable pillow-block mounted on said frame, gears journaled on said pillow-blocks and adapted to mesh with each other, members secured to the said pillow-blocks, a bar adjustable in length pivotally connected to the member secured to the fixed pillow-block, a lever fulcrumed on the member secured to the movable pillow-block pivotally secured to the said bar, means to sustain the free end of said lever in positions varied so that the center-line of said lever may be on a plane common or at an angle to the center-line of the said connecting bar.

5. A device of the kind described comprising a frame, a fixed pillow-block and a movable pillow-block mounted on said frame, gears journaled on said pillow-blocks and adapted to mesh with each other, members secured to the said pillow-blocks, a bar adjustable in length pivotally connected to the member secured to the fixed pillow-block a lever fulcrumed on the member secured to the movable pillow-block pivotally secured to the said bar, a device connected to the member that is secured on the fixed pillow-block and adapted to support the free end of said lever in positions varied vertically.

6. A device of the kind described comprising a frame, a fixed pillow-block and a movable pillow-block mounted on said frame, gears journaled on said pillow-blocks and adapted to mesh with each other, members detachably secured to said pillow-blocks, a connecting-bar adjustable in length and pivotally connected to the member that is secured to the fixed pillow-block, a lever fulcrumed on the member that is secured to the movable pillow-block and pivotally connected to said connecting-bar, means to vary and maintain the normal position of the lever with reference to the position of the connecting-bar.

7. A device of the kind described comprising a frame, a fixed pillow-block and a movable pillow-block mounted on said frame, gears journaled on said pillow-blocks and adapted to mesh with each other, a standard adapted to be secured on the fixed pillow-block, a swivel pivotally connected to said standard, a connecting-bar having its end adjustably secured in said swivel, another standard adapted to be secured on the movable pillow-block, a lever fulcrumed on this last-named standard having its end pivotally secured to said connecting-bar, a device connected to said first-named standard to sustain the free end of said lever and adapted to be adjusted and to be maintained in varied positions vertically, substantially as described.

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

CHARLES FISH.

Witnesses:
RALPH D. MCNICKLE,
ETHEL L. LISTER.