



# UNITED STATES PATENT OFFICE.

ANDREW MURDOCH, OF HESPELIER, CANADA.

## STOP-MOTION FOR FULLING-MILLS.

SPECIFICATION forming part of Letters Patent No. 639,424, dated December 19, 1899.

Application filed July 7, 1899. Serial No. 723,091. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW MURDOCH, a subject of the Queen of Great Britain, residing at Hespelier, in the Province of Ontario and Dominion of Canada, have invented certain new and useful Improvements in Stop-Motions for Fulling-Mills, of which the following is a specification.

My invention relates to fulling-mills for the treatment of cloth, and more particularly to stop mechanism for automatically stopping the operation of the mill when a knot or other obstruction passes between the feed-rolls thereof.

The invention consists in automatic belt-shifting mechanism, as hereinafter fully described, and defined in the appended claims.

The accompanying drawing, forming a part of this specification, shows a front elevation of a part of a fulling-mill with my improvement applied thereto.

The frame of the mill consists of parallel standards 1, connected at their upper ends by a cross-bar 2.

3 designates a roller supported in bearings of the frame-standards, and above this roller 3 is located a lever 4, fulcrumed on a bracket 5, secured to the outer side of one of the brackets 1. The inner end of the lever 4 is supported in a loop or keeper 6, depending from the cross-bar 2 of the frame, and upon the lever is mounted a roller 7, which is normally parallel to the roller 3. The outer end of the lever 4 extends beyond the framework and is connected pivotally to the upper end of a rod 8, the lower end of which is pivotally secured to one end of a latch-bar 9. This latch is centrally pivoted to the outer end of an arm 10, the inner end of which is pivotally secured to a bracket 11, projecting from the adjacent standard 1.

Below the arm 10 a bracket-arm 12 projects from the standard, and to the end of the arm 12 is fulcrumed a bell-crank lever 13, the short arm of said lever having a weight 14 attached thereto or formed thereon. The long arm of the bell-crank lever terminates in a handle 15, and below the handle a lug or catch 16 projects from the lever in position to be engaged by the free end of the latch 9. This lug 16 is of a length equal to the combined thickness of the bar 9 and arm 10, so

that the latter will rest upon the lug after the latch-bar has been disengaged therefrom.

17 and 18 respectively designate a fast pulley and a loose pulley mounted on a suitable shaft 19 and connected by a belt 20 to the driven mechanism of the mill. (Not shown.) A fork 21 is secured to the fulcrum-point of the bell-crank lever, and its fingers are adapted to engage the edges of the belt to shift the latter from one of the pulleys to the other.

Suspended from the pivoted arm 10 is a weight 22, which serves to hold the latch 9 in contact with the lug 16 of the shifting-lever.

The numeral 23 designates the usual guide, through which the cloth passes to the rollers.

The operation of the mechanism constructed as above described is as follows: The cloth passes from the guide 23 to the rollers 3 and 7 and from thence to the mill for treatment. As long as no knots, kinks, or other obstructions are encountered the rollers revolve and the parts of the mechanism retain the positions shown by the full lines in the drawing. If, however, the cloth contains a knot or kink, the passage of such obstruction between the rolls will cause the lever 4 to tilt on its pivotal support to the position shown in the dotted lines, thus depressing the connecting-rod 8 and the outer end of the latch 9 and disengaging the inner end of said latch from the lug 16. As soon as the latch is disengaged the weight 14 throws the shifting-lever outward, causing the fork 21 to shift the belt from the fast pulley to the loose pulley to stop the mill. At the same time the arm 10 drops against the lug 16, which supports it until the parts are restored to their normal position. After the obstruction has been removed the parts are returned to their normal position and the operation of the mill is resumed.

It will be apparent that the action of the stop mechanism is entirely automatic and that the simplicity of the mechanism renders it durable and effective.

I claim—

1. In a stop mechanism for fulling-mills, the combination with a supporting-frame, and a roller supported therein: of a tilting lever fulcrumed upon the frame, and carrying a roller: a weighted belt-shifting lever, provided with a catch-lug: a latch engaging



said lug: a weighted arm pivoted at one end to the latch, and a rod connecting the outer ends of the latch and tilting lever.

2. In stop mechanism for fulling-mills, the  
5 combination with a supporting-frame and a roller mounted therein: of a tilting lever fulcrumed on the frame: a roller mounted on said tilting lever: a support for the inner end of said tilting lever, which permits a vertical  
10 movement thereof: a weighted belt-shifting lever provided with a catch-lug: an arm pro-

jecting from the frame: a latch-bar pivoted upon said arm and adapted to engage the lug or lever, and a connection between the latch and tilting lever.

In testimony whereof I affix my signature  
in presence of two witnesses.

ANDREW MURDOCH.

Witnesses:

IDA BIETH,

EDMUND SLICHTER.