Nov. 12, 1929. J. E. HUEY 1,735,761

AUTOMATIC SWITCH

Filed March 31, 1927

Fig. 1.

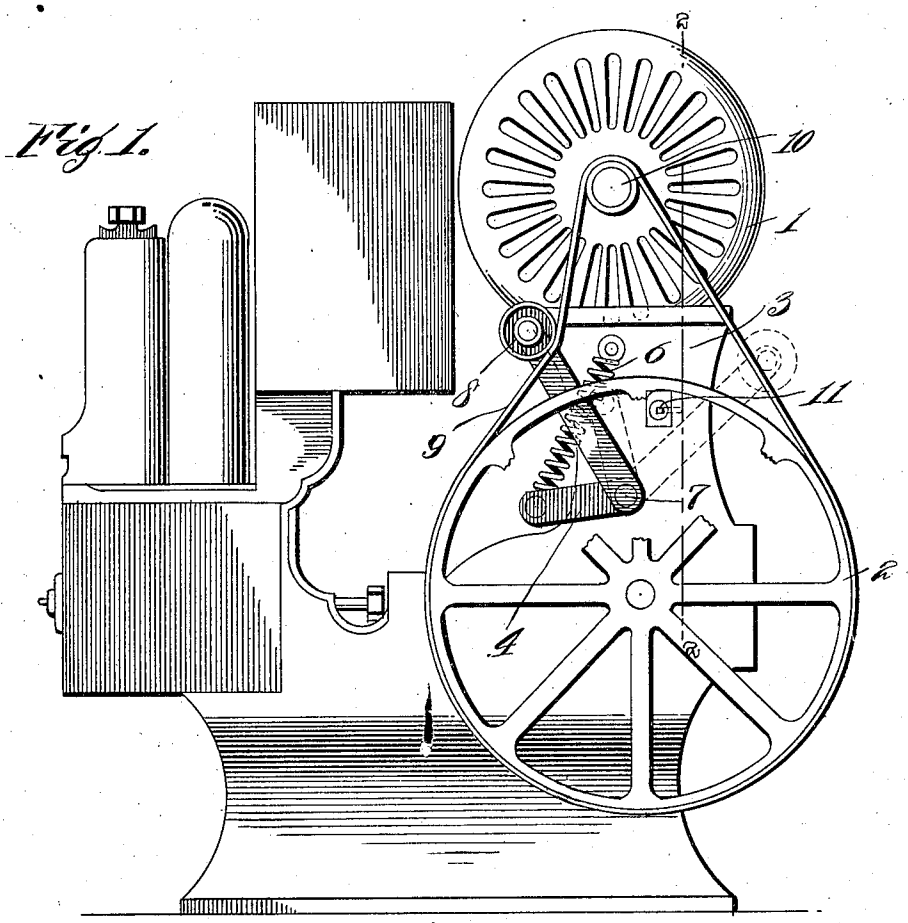


Fig. 3.

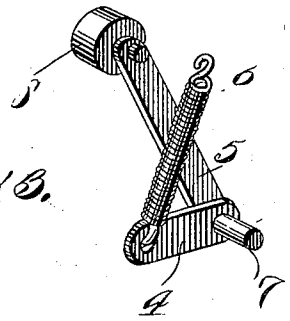
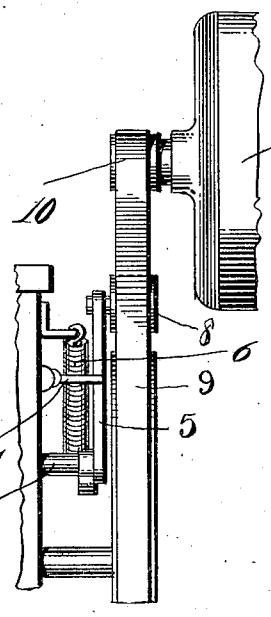


Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE

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AUTOMATIC SWITCH

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This invention relates to an automatic switch for the purpose of breaking the circuit through an electric motor, to assure the breaking of the circuit in the event of an accident occurring in the machinery driven by the motor which stops the operation of the said machinery but does not stop the running of the motor. The device herein described is applicable to any motor provided with an idler.

More specifically, the invention relates to a safety switch for a motor driving a given piece of machinery by means of a belt or a like propelling medium, and provides a means for the stopping of the motor in the event that the mechanism which the motor is driving is interrupted in its operation.

In the operation of a pump, for example, the motor operates the pump by a belt, and sometimes considerable trouble is experienced with the belt either by its breaking or coming off. When this happens, the motor runs until it is stopped. Between the intervals of the advent of the trouble, and the discovery thereof, there may be serious consequences arising due to the overheating of the motor and this invention seeks to avoid the possibility of the motor running until damage occurs. The device forming the subject matter of the present invention offers a positive means for shutting off the motor immediately upon the interruption of the mechanism being driven, as herein indicated.

The safety switch of the present invention comprises a contact, as will be obvious, and an automatic means for breaking the contact, this automatic means being specifically an idler held under spring tension against the belt which the motor operates. In the event of breakage of the belt, the spring pulls the idler over into the opposite position, the motion of the idler striking the contact and breaking the same, thereby cutting off the supply of current to the motor and stopping the same.

In the drawings,

Figure 1 illustrates a perspective view of the invention attached to a pump of standard construction,

Fig. 2 is an end view taken along the line 2—2 of Fig. 1 in the direction of the arrows, and

Fig. 3 shows a perspective view of the switch making device in detail.

Referring to the drawings more in detail, reference numeral 1 designates a motor of standard construction, provided with driving means 10 over which the belt 9 is fastened. The belt 9 passes around the wheel 2 operating as shown, a pump of standard construction. Contacting with the belt is a pulley or bearing surface 8 which is carried by an idler composed of two members 5 and 4 respectively, this idler being mounted upon the casing 3. The switch is indicated at 11 and is also supported upon the casing 3.

In the event of the breakage of the belt 9 or in the event that the belt 9 flies off the wheel 2, the idler being under tension of the spring 6 is thrown in the position of the dotted lines and the motion of the idler causes the breaking of the contact of the switch 11. The motor is thereby instantly stopped.

Modifications of the above may be obviously made, the illustration being as an example only, the scope being defined by the appended claim.

I claim:—

In a device of the class described, an electric motor, an endless belt drive operatively connected to said motor, a control switch for said motor, a lever pivotally supported at one end adjacent said endless belt, an idler carried by said lever at its other end and normally engaged with said endless belt in a manner that the lever is tensioned thereby in a position of readiness to operate an arm extending in angular relation from the pivoted end of said lever, and a normally tensioned contractile member connecting said arm in a manner to oppose the tensioning effect of the endless belt on said lever and adapted to swing the latter on its pivot and thereby cause it to strike said control switch to stop said motor when an accidental stoppage of the belt occurs.

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