W. F. STIMPSON.

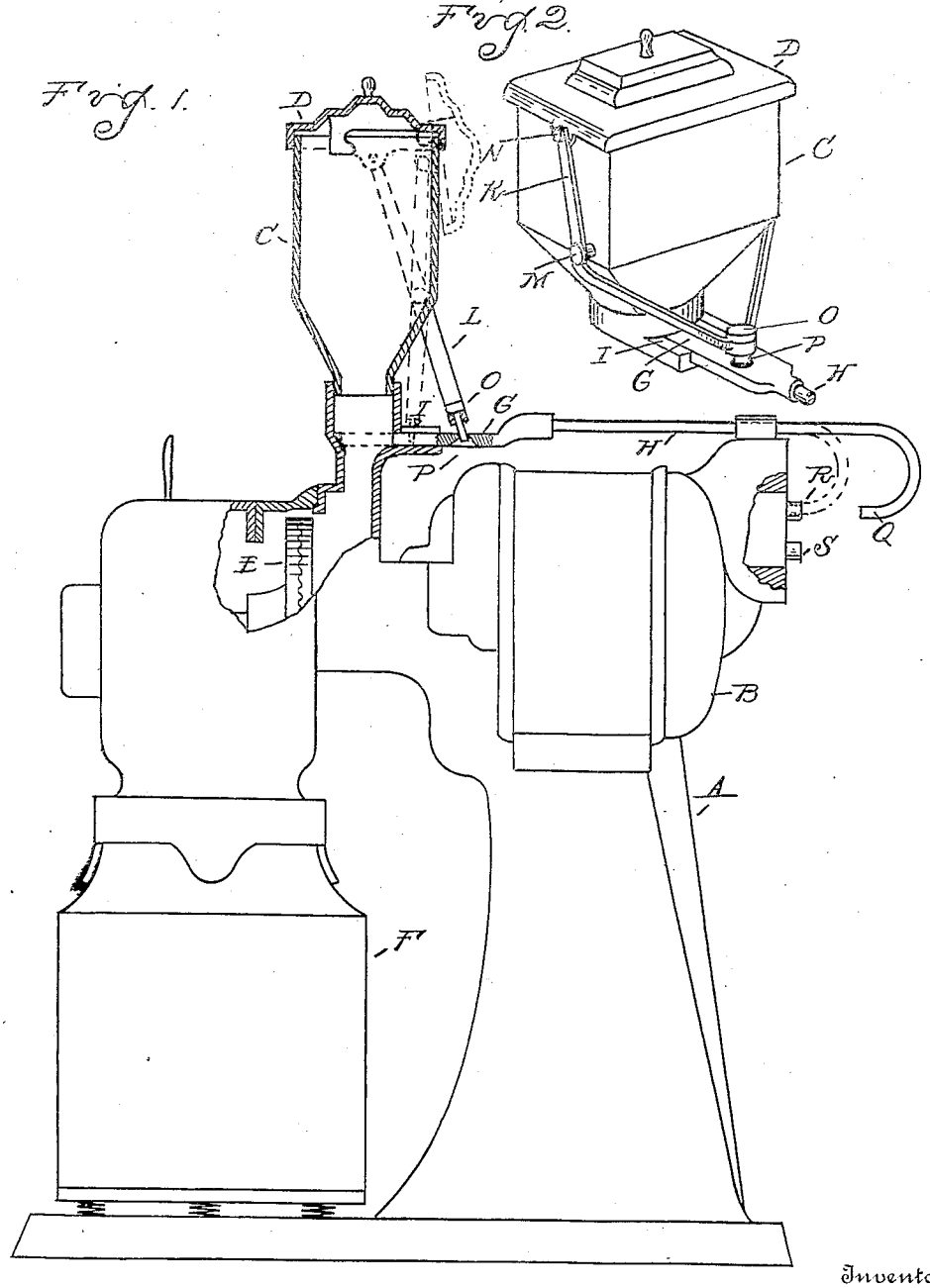
MILL.

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Fig. 1.

Fig. 2.



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UNITED STATES PATENT OFFICE.

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MILL.

1,205,285. Specification of Letters Patent. Patented Nov. 21, 1916.

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To all whom it may concern:

Be it known that I, WALTER F. STIMPSON, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Mills, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to mills, and more particularly to mills driven by electric or other motors.

The invention has among the objects thereof to provide a construction which will effect the starting of the motor and allow the latter to obtain a proper operating speed before the material is fed to the grinders; to provide a construction which will insure the hopper being closed by the cover when the mill is not in operation, so as to keep out dust, flies or the like; and to provide a structure in which the cut-off for the feed hopper and the motor control are operated through the medium of the cover for the hopper.

Other objects of the invention will more fully hereinafter appear.

The invention resides in the novel construction, arrangement and combination of the various parts as herein set forth.

In the drawings,—Figure 1 is a sectional side elevation of a mill embodying the invention; and Fig. 2 is a perspective view of a portion of the mill.

A designates the frame of the mill and B a motor, which in the structure shown, is of the usual electric type.

C is a hopper having a cover D, E are the grinders and F is the receiving pen adapted to be supported below the grinders.

The parts just referred to may be of any suitable construction, the mill illustrated being adapted for grinding coffee, though the invention is applicable to mills for other uses.

If the material to be ground is fed to the grinders before the motor obtains substantially full operating speed, the motor is very liable to be injured. I have therefore, provided for the turning on of the motor in advance of the feeding of the material to the grinders. In the preferred form of the invention there is associated with the cover for the hopper, mechanism which will—upon the opening of the hopper cover—close the valve governing the discharge end of the hopper and also actuate the switch controlling the motor circuit.

Referring more in detail to the one embodiment of the invention shown, G is the valve controlling the discharge end of the hopper C, and H is an operating handle for this valve. The valve G is shown as of the sliding type and is arranged in a guide I, while the rear of the handle H has a sliding engagement with a bearing J supported upon the casing for the motor.

K and L are arms pivoted to the hopper casing at M and pivotally connected at their upper ends at N to a cover. The lower ends of the arms K and L are pivotally attached at O to a stud P rigidly connected to the slide or valve G.

As shown in Fig. 1, the outer end of the handle H is return-bent to form an arm Q, and this arm is adapted to contact with and operate a button R of a switch controlling the electric circuit for the motor. This switch is of the usual two button type, the button indicated by R being adapted to turn on the circuit, while the button indicated by S is for turning off the circuit.

With the structure just described, when the parts are as shown in Fig. 1, the mill is inoperative. When it is desired to grind material the operator moves the cover to the position shown in dotted lines in Fig. 1. In moving the cover to the position shown in Fig. 2, the arms K and L are rocked about their pivots M, causing the valve G to be moved inward to close the discharge end of the hopper. Since the member H is rigidly attached to the valve G, inward movement of the valve will cause the arm Q to be moved inwardly to depress the button R, which as before stated, closes the motor circuit and starts the motor. Since the discharge end of the hopper is closed while the cover is off the material will not be fed to the grinders until the cover is replaced, thereby giving the motor sufficient time to obtain full or substantially full operating speed before the discharge end of the hopper is opened. As will be readily understood, when the cover is replaced the valve G is moved to open position and the arm Q will be moved away from the button R. The button R will remain in its inward position until the operator depresses the button S to break the circuit to the motor.

The arrangement described not only is highly advantageous since it avoids entry

to the motor by a careless operator, but also as the operator must replace the cover in order to allow the material to discharge from the hopper to the grinders, it insures the hopper being kept closed. This prevents dust, flies or the like collecting in the hopper.

My improvement is, of course, not only applicable to various types of mills, but also may be embodied in various specific constructions and therefore, I do not wish to limit my protection to the one embodiment illustrated.

What I claim as my invention is:—

1. In a mill the combination of a grinder, a motor for operating the grinder, a hopper for feeding material to the grinder, means for controlling the motor, means controlling the discharge end of the hopper, and a connection for operating one of said means from the other.

2. In a mill the combination of a grinder, a motor for operating the grinder, a hopper for feeding material to the grinder, a valve for controlling the discharge from the hopper, a control for the motor, and means connected to said valve for operating said control to start the motor upon the closing of the valve.

3. In a mill the combination of a grinder, an electric motor for operating the grinder, a hopper for feeding material to the grinder, a valve for controlling the discharge from the hopper, a switch for controlling the electric motor, and means connected to said valve to operate the switch to start the motor upon the closing of the valve.

4. In a mill the combination of a grinder, a motor for operating the grinder, a hopper for feeding material to the grinder, a cover for the hopper, and means for closing the discharge end of the hopper and starting the motor upon the opening of the cover.

5. In a mill the combination of a grinder, a motor for operating the grinder, a hopper for feeding material to the grinder, a cover for the hopper, and means for closing the discharge end of the hopper and starting the motor upon the opening of the cover, said means effecting the opening of the valve upon the closing of the cover.

6. In a mill the combination of a grinder, an electric motor for operating the grinder, a hopper for feeding material to the grinder, a cover for the hopper, a control for the discharge end of the hopper, an electric switch for controlling the motor, a connection between the cover and the hopper control for effecting a closing of the discharge end of the hopper upon the opening of the cover, and mechanism operated by said control for actuating the electric switch to turn on the motor.

7. In a mill the combination with the grinder, a hopper for feeding material to the grinder, a valve controlling the discharge end of the hopper, a member connected to said valve, an electric motor for operating the grinder, a switch for controlling said motor positioned in the path of movement of said member, a cover, and a lever connection between said cover and said valve for closing the valve upon the opening of the cover, said member being adapted to actuate the switch to start the motor upon the closing of the valve.

8. In a mill, the combination of a grinder, a hopper for feeding material to the grinder, a valve controlling the discharge end of said hopper, a cover for said hopper, an arm pivoted upon the hopper having one end connected to said valve and having the other end connected to the cover, said arm being adapted to close the valve upon the opening of the cover and to open the valve upon the closing of the cover, an electric motor for operating said grinder, a switch controlling said motor, and means connected to actuate said switch to start the motor upon the closing of the valve.

9. In a mill, the combination of a grinder, a hopper for feeding material to the grinder, a slide valve controlling the discharge end of the hopper, arms pivotally connected to the hopper upon opposite sides thereof, a connection between one end of each arm and the slide valve, a cover for the hopper, a pivotal connection between the cover and the other end of said arms, a rod connected to move with the valve, a bearing in which said rod slides, an electric motor for operating said grinder, and a switch positioned in the path of movement of said arm.

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

WALTER F. STIMPSON.

Witnesses:
WM. J. BELKNAP,
JAMES P. BARRY.