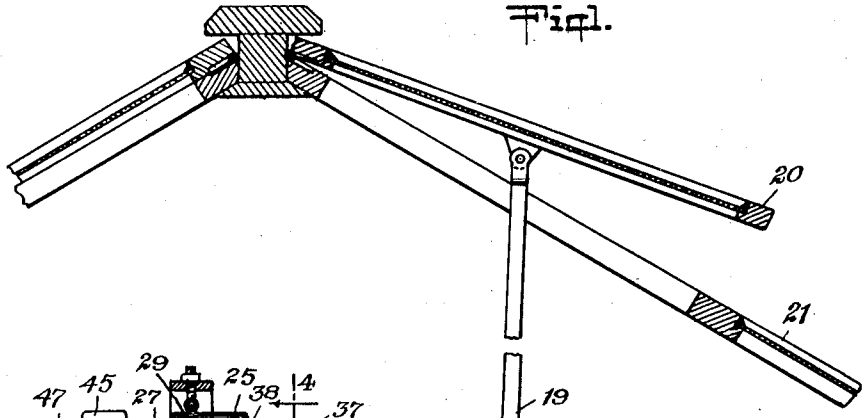
Sept. 13, 1949. W. B. EDDISON 2,481,989

MOTOR CONTROL

Filed Nov. 1, 1946

Fig. 1.



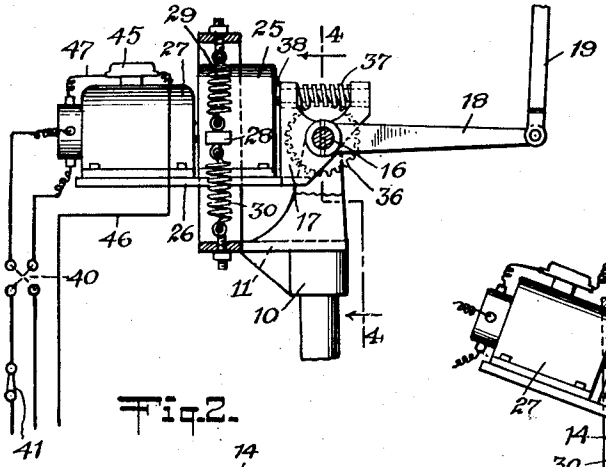


Fig. 2.

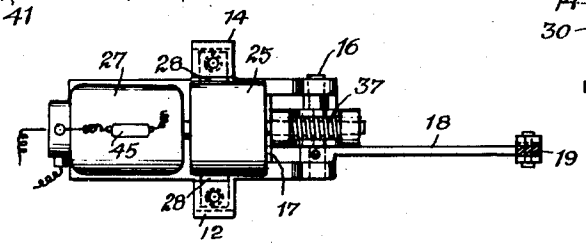


Fig. 3.

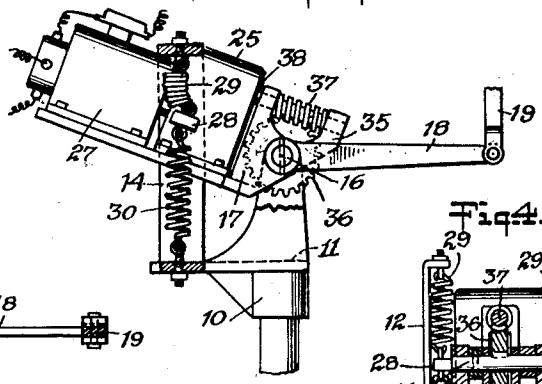


Fig. 4.

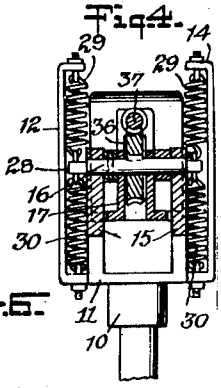


Fig. 5.

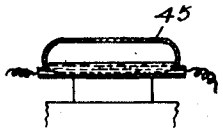
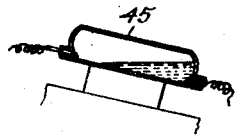


Fig. 6.



INVENTOR
William Barton Eddison
BY
Munn, Liddy & Glascum
ATTORNEYS

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MOTOR CONTROL

William Barton Eddison, Irvington, N. Y., assignor to Burnham Corporation, a corporation of New York

Application November 1, 1946, Serial No. 707,147

3 Claims. (Cl. 172—36)

1

This invention relates to motor controls and more particularly to the mounting of motors adapted to operate closures where the closures may be damaged by undue pressure thereon.

My invention is particularly adapted to the control of motors used to open and close greenhouse ventilators. This action may be automatically controlled by proper thermostatic means. However, there is a great breakage of ventilators due to obstructions such as ice forming on the ventilators and thus tending to prevent their closing. As the motors are so controlled that they will force the closing, damage is done to the ventilators and to the structure generally due to the excessive strain placed on the mechanism.

An object of this invention, therefore, is to provide a control which will prevent undue strain due to the causes mentioned but which at the same time will exert sufficient pressure to close the ventilators when the obstruction moves.

In the case of greenhouse ventilators where ice forms on the sash, my invention will exert sufficient pressure on the ventilators to cause them to close when the ice melts but will not exert undue pressure to damage the ventilators due to the presence of ice.

Referring more particularly to the drawings—

Fig. 1 is a side elevation of an installation embodying my invention.

Fig. 2 is a plan view thereof.

Fig. 3 is a view similar to Fig. 1 showing the manner in which my invention operates.

Fig. 4 is a cross-sectional view taken on the line 4—4 of Fig. 1.

Fig. 5 is a view of the mercury switch in normal operation.

Fig. 6 shows position of the mercury switch in an emergency operation.

While I have shown a particular arrangement of motor, gear, box, springs and the mounting therefor, this arrangement is shown purely for the purposes of illustration and it is to be understood that my invention is not limited to this particular arrangement.

Referring more particularly to the drawings, I provide a mounting 10 which can be of any desired construction such as the posts shown, upon which is a frame 11 having upwardly extending arms 12 and 14 and a yoke 15. Mounted in the yoke 15 is a shaft 16 to which is keyed the gear 17 and the arm 18. As shown in Fig. 1 the movement of the arm 18 will through the connecting arm 19 open and close the ventilator 20 in the greenhouse roof 21. In the structure illustrated

2

the reduction gear box 25 is mounted on a plate 26 which in turn mounts the motor 27. Lugs 28 are engaged by the springs 29 and 30 which in turn are fastened to the arms 12 and 14 to suspend the entire assembly consisting of a gear box 25, the plate 26 and the motor 27 on the mounting 10. Fastened to the plate 26 is a yoke 35 which is pivoted at 36 on the shaft 16. The yoke 35 carries the worm 37 on the shaft 38 extending from the gear box and engaging the gear 17. In a normal operation the motor is controlled by a reversing switch 40 and a manual switch 41 to open and close the ventilator 20 through the gear box 25 and the worm 37 driving the gear 16. Mounted on the motor 27 is a mercury switch 45 connecting the lead 46 and 47 to the motor.

Should ice form on the ventilator 20 or on the roof 21 so that the ventilator cannot open or close completely, the motor will continue to operate for a period normally sufficient to close the ventilator. Since the motor is freely mounted it will tend to assume the position shown in Fig. 3, riding up on the pivot 16 and extending the springs 30. This will cause the mercury switch 45 to assume a position similar to that shown in Fig. 6 and break the circuit. The motor will remain in that position until the ice melts or the other obstruction is removed when it can complete the closing. The action of the spring 30 is sufficient to accomplish this purpose. By the same token if for any reason the ventilator cannot be opened due to an unusual weight of snow or to the sticking of the ventilator the motor will exert pressure on the springs 29 and tilt on the pivot shaft 16 until the contacts of the lead 46 and 47 are exposed by the mercury switch and the circuit is broken. Should the difficulty be overcome the assembly will then be brought back to normal operating position and the circuit closed, thus preventing undue strain on the ventilators and connecting apparatus.

I claim:

1. A motor mounting including a fixed support, a shaft in said support, a base pivoted on said shaft, a motor on said base, and spring means on said fixed support yieldingly positioning said motor in a level position.

2. A motor mounting including a fixed support, a shaft in said support, a base pivoted on said shaft, a motor on said base, and spring means on said fixed support yieldingly positioning said motor in a level position, a source of current for said motor and a circuit breaker to interrupt

said source of current if said motor is moved out of a level position.

3. A motor mounting including a fixed support having a yoke at its upper end and a pair of horizontally extending arms, a shaft in said yoke, a base pivoted on said shaft, a motor on said base, and spring members supported by said upwardly extended arms yieldingly positioning the motor in a level position, a circuit supplying current to said motor and a circuit breaker to interrupt said circuit if said motor is moved out of a level position by undue strain.

WILLIAM BARTON EDDISON.

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