

Sept. 17, 1957

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2,806,689

ELECTRIC OPERATOR FOR VERTICAL JALOUSIES

Filed Dec. 6, 1955

2 Sheets-Sheet 1

Fig. 1

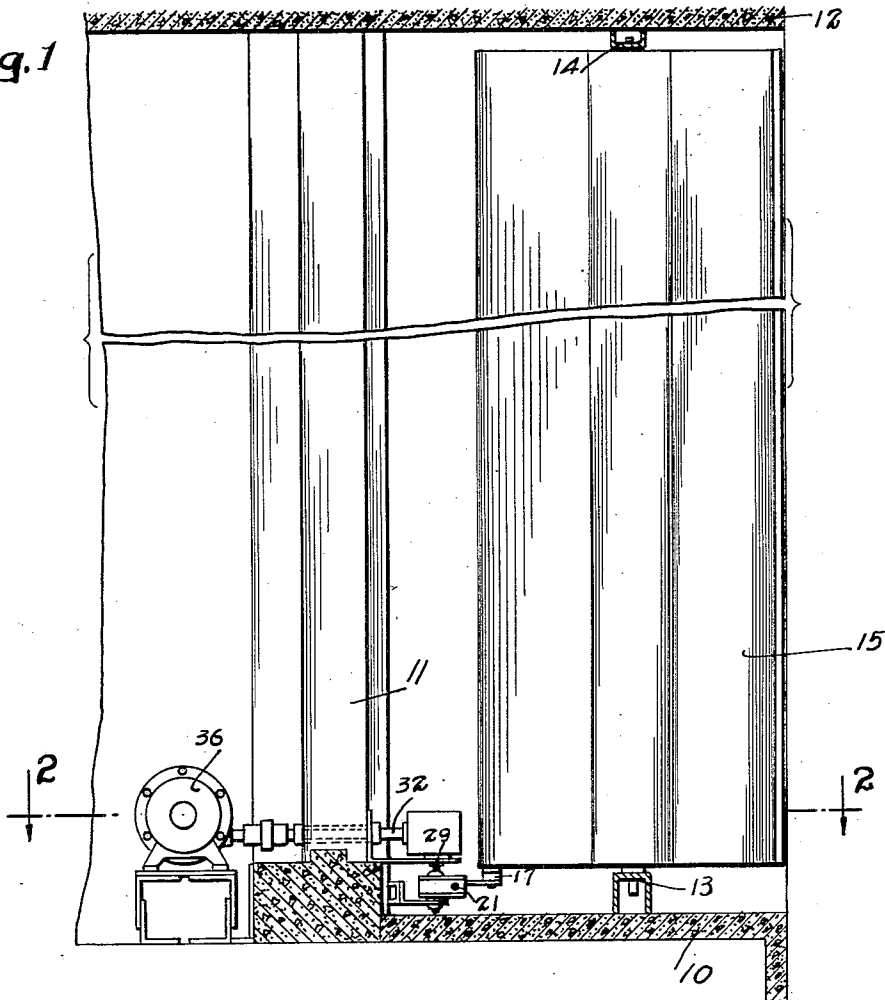
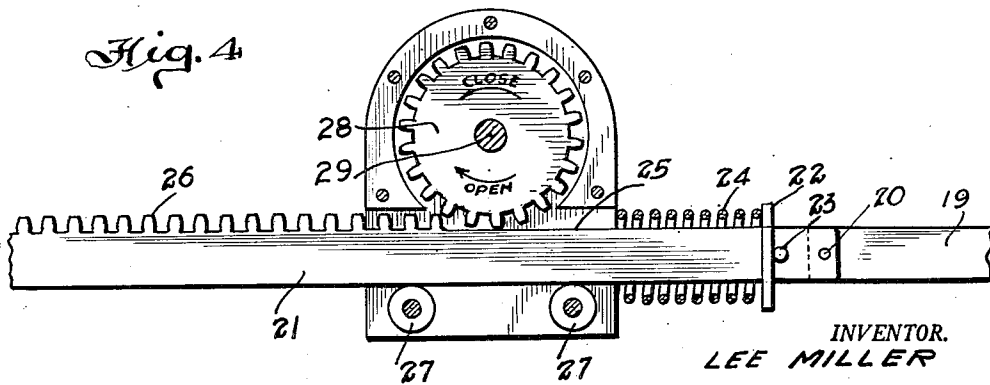


Fig. 4



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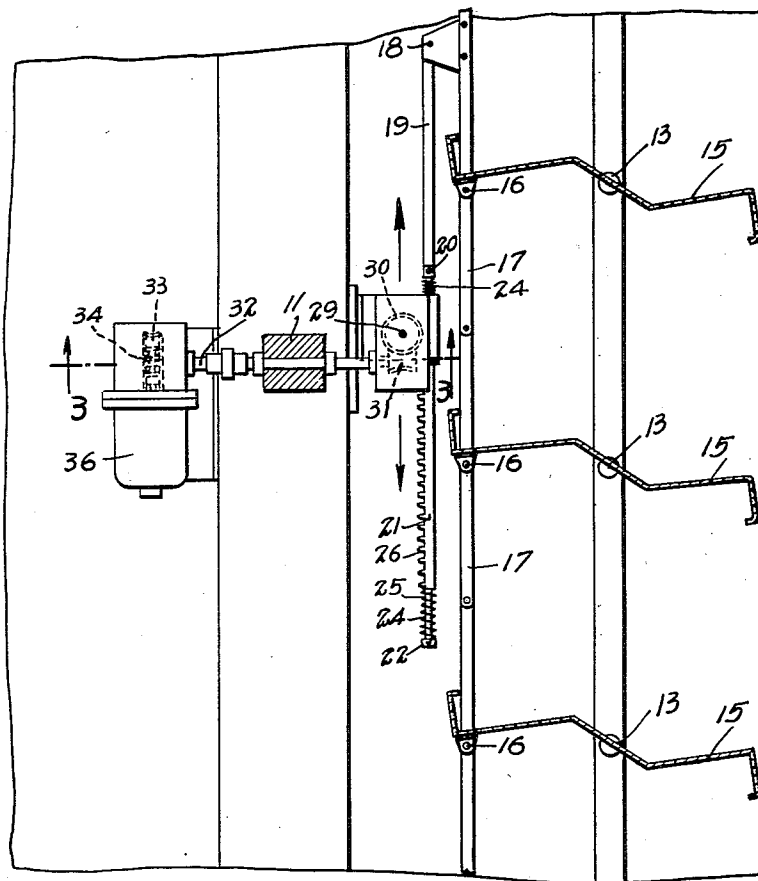


Fig. 2

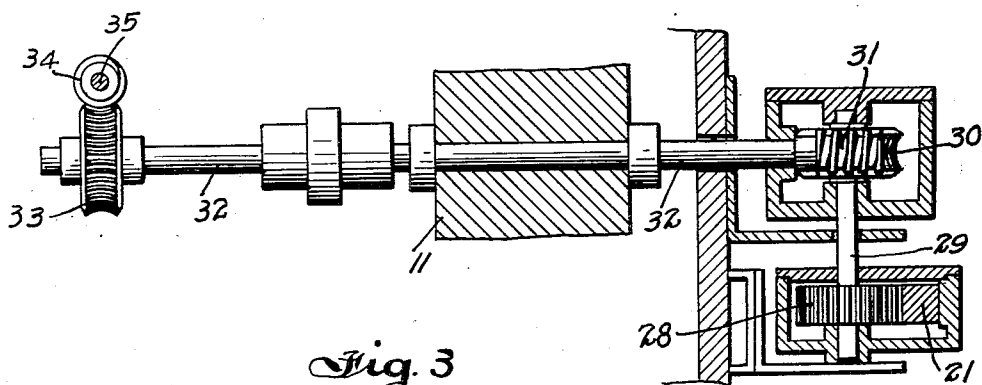


Fig. 3

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ELECTRIC OPERATOR FOR VERTICAL JALOUSIES

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2 Claims. (Cl. 268—22)

This invention relates to an electric operator and more particularly to an operator designed to open and close the pivoted vanes of vertical jalousies.

While electric motors have heretofore been used to actuate the pivoted vanes of jalousies, the mechanism required has been cumbersome and expensive in view of the necessity of incorporating limit switches to de-activate the motor when the vanes have been moved to the extreme positions.

It is accordingly one object of the present invention to provide an electric operator for pivoted vanes of jalousies employing novel limiting means.

It is another object of this invention to provide an electric operator of the type described which avoids the necessity of the use of limiting switches.

It is a further object of this invention to provide an electric operator of the type described which is completely reversible.

These and other objects, features and advantages will be apparent from the annexed specification, in which:

Figure 1 is a side view partly in section of a window provided with a vertical jalousie and the actuator of the present invention.

Figure 2 is a section along the line 2—2 of Figure 1.

Figure 3 is a schematic section taken along the line 3—3 of Figure 2.

Figure 4 is an enlarged view of the rack and pinion mechanism.

Referring now more particularly to the drawings, there is shown a window provided with a sill 10 and a sash mullion 11 and a lintel 12, between which there are pivoted as at 13 and 14 a plurality of vanes 15. The vanes 15 are in turn pivotally connected as at 16 to an arc arm 17 which is itself pivotally connected as at 18 to a rod 19 pivoted as at 20 at one end of a rack 21. The rack 21 at each end thereof is provided with a plate 22 affixed thereto by a pin 23 against which bears one end of a coil spring 24 mounted around the smooth portion 25 of the rack. The rack is provided with teeth 26 throughout a portion of its length and at each end a smooth portion 25 in which there are no teeth. The rack 21 has its lower edge riding upon a pair of rollers 27 and a pinion 28 is disposed above the rack in position to engage the teeth 26 as most clearly shown in Figure 4. The pinion 28 is provided with a shaft 29, on one end of which is mounted a pinion 30 engaging a worm 31 affixed to a shaft 32. The shaft 32 extends through the sash mullion 11 and carries a pinion 33 engaged by a worm 34 carried by the shaft 35 of a reversible electric motor 36.

The operation of the above-described device is as follows: When it is desired to actuate the vanes 15, electric motor 36 is energized to drive the same in one direction.

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Rotation of the shaft 35 is imparted through the worm 34 and pinion 33 to shaft 32, and thence through worm 31 and pinion 30 to shaft 29, and thence to the pinion 28. The pinion 28 rotates, thus driving rack 21 one direction until the teeth of the pinion 28 disengage the teeth 26 of the rack 21 as shown in Figure 4. At the same time, this results in a compression of the spring 24. As the teeth of the pinion 28 disengage the teeth 26, movement of the rack 21 ceases and this is engineered to occur as the movement of the vanes 15 imparted by the arc arm 17 has reached a limiting position either fully open or fully closed.

The operator will then de-energize the motor 36. When it is desired to reverse the movement of the vanes, the operator merely switches the motor 36 to reverse position. The spring 24 being under compression, the rack 21 is biased in a direction to engage the teeth 26 with the teeth of the pinion 28 and thus the rack 21 is driven until the teeth of the pinion 28 disengage the teeth 26 of the rack 21 at the opposite end. As the rack 21 is provided with a spring 24 at each end thereof, it will be obvious that the above-described action for one end of the rack will be repeated at the other end thereof. From the foregoing description, it will be apparent that by means of the above-described mechanism, limited movement of the rack 21 is effected without the necessity of limit switches for the motor 36, but that due to the springs 24 the rack is always positioned to re-engage the teeth of the pinion 28 for movement in the reverse direction.

While there has been described what is at present considered the preferred embodiment of the invention, it will be understood that various changes and alterations may be made therein without departing from the essence of the invention, and it is intended to cover herein all such changes and alterations as come within the true scope and spirit of the annexed claims.

I claim:

1. An actuator for a jalousie having pivoted vanes comprising an arc arm pivotally connected to said vanes; a rack connected to said arc arm; a pinion engaging said rack; a reversible electric motor driving said pinion; said rack having end portions extending beyond its toothed portion adjacent which said pinion disengages said toothed portion and spring means at each end of said rack arranged to bias said rack to re-engage said toothed portion and said pinion.

2. An actuator for a jalousie having pivoted vanes comprising an arc arm pivotally connected to said vanes; a rack connected to said arc arm; a pinion engaging said rack; a reversible electric motor driving said pinion; said rack having a toothed portion and smooth portions at each end thereof; said pinion being adapted to drive said rack until it disengages the teeth thereof in either direction and spring means at each end of said rack arranged to bias said rack toothed portion toward said pinion.

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