June 21, 1949. J. T. JANETTE 2,473,998

CENTRIFUGAL SWITCH

Filed April 2, 1945

FIG. 1.

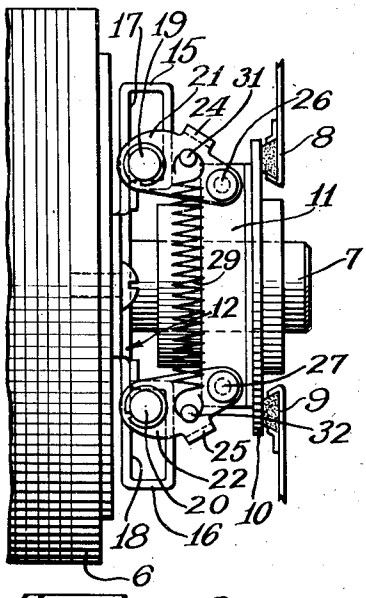


FIG. 2.

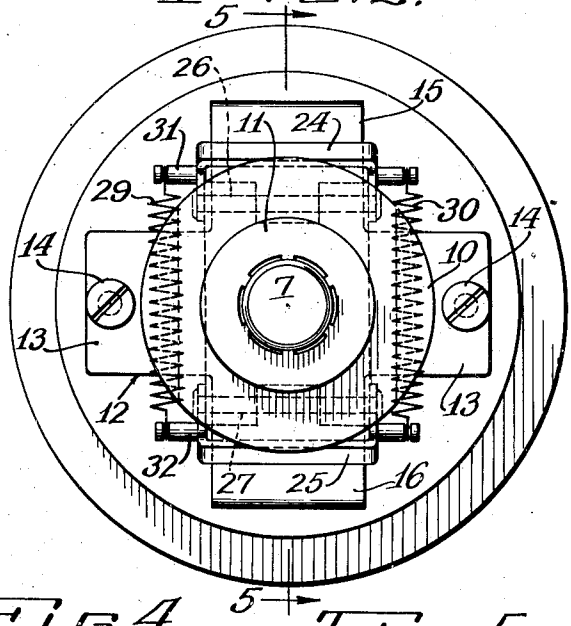


FIG. 3.

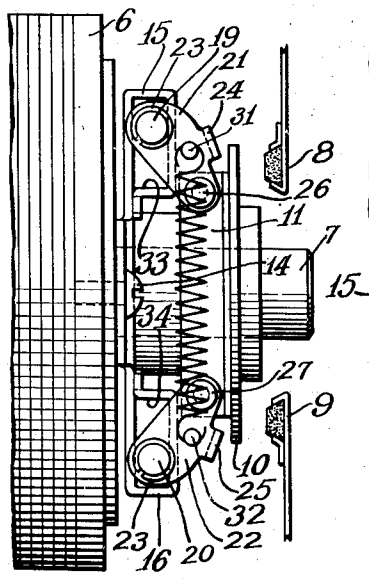


FIG. 4.

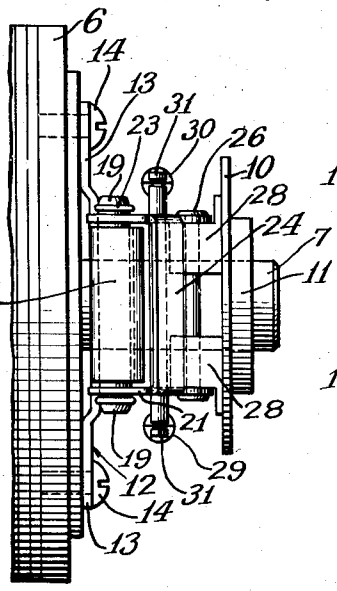
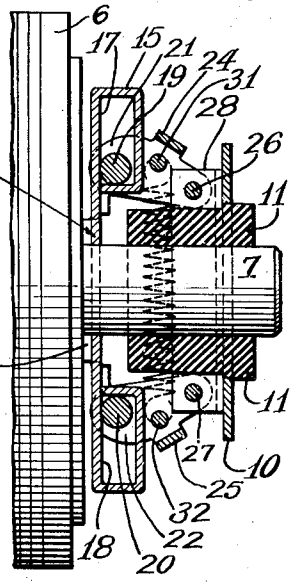


FIG. 5.



Inventor:
John T. Janette
By Glenn S. Noble
Attorney

Patented June 21, 1949

2,473,998

UNITED STATES PATENT OFFICE

2,473,998

CENTRIFUGAL SWITCH

John T. Janette, Kenilworth, Ill., assignor to Janette Manufacturing Company, Chicago, Ill., a corporation of Illinois

Application April 2, 1945, Serial No. 586,168

1 Claim. (Cl. 200—80)

1

This invention relates to centrifugal switches which may be used for various purposes but which are particularly intended to be used as component parts of electric motors, apparatus of this kind having been disclosed in my Patent No. 1,606,231. The present invention is intended as a general improvement in such switches and also as presenting novel construction and operating features.

Other objects are to produce a centrifugal switch containing comparatively few parts, a number of which may be formed of stampings for rapid and economical production; to provide a switch which will have satisfactory opening and closing characteristics; to provide a switch in which the movable member will be securely held when in closed position to prevent possible chattering or vibration; and to provide other novel features and improvements in operation which will be described more fully hereinafter.

In the accompanying drawings illustrating this invention,

Fig. 1 is a side view showing a motor armature or rotor with my switch applied thereto;

Fig. 2 is a front view of the parts shown in Fig. 1;

Fig. 3 is a view similar to Fig. 1 showing the switch in open position;

Fig. 4 is a side view taken at right angles to Fig. 1; and

Fig. 5 is a sectional view taken substantially on the line 5—5 of Fig. 2.

In these drawings, the switch is shown as a part of a motor having a rotor or armature 6 and driving shaft 7. The switch proper includes fixed brushes or contacts 8 and 9 which are connected in circuit with the starting windings in the usual manner. It also includes a contact ring or disc or movable switch member 10 which coacts with the brushes 8 and 9 to open and close the circuit. The ring or disc 10 is rigidly secured to a sleeve or collar 11 which is formed of insulating material and slidably mounted on the shaft 7, and which is adapted to be actuated by the centrifugal means for opening and closing the switch.

For this purpose a bracket or support 12 is provided having oppositely disposed lugs or ears 13 which are secured to the rotor by means of screws 14. This support or bracket 12 also has oppositely disposed arms 15 and 16 having transverse channels or guideways 17 and 18 for the cylindrical weights 19 and 20 as shown. The ends of the weights extend through pairs of links or arms 21 and 22 respectively and are held in position by any suitable means such as split rings 23. The

2

links 21 are fastened together by an integrally formed cross bar 24 and the links 22 by a similar bar 25. The outer ends or free ends of the links 21 and the links 22 are connected respectively by means of pivots or pins 26 and 27 with the insulating collar or sleeve 11 which is provided with a rectangular portion 28 for receiving such pins.

Tension springs 29 and 30 extend between pins 31 and 32 carried by the links or arms 21 and 22 and tend to draw the inner ends of these arms together as shown in Fig. 1, which is the normal position of the parts when the motor is at rest. The inner ends 33 and 34 of the guideways 17 and 18 serve as stops or abutments to limit the inward movement of the weights under the influence of the springs. These stops are positioned so that the center lines of the links will be at a slight angle only to the central plane of the rotor, and any thrust on the collar or disc tending to move the same to the left as shown in Fig. 1 will be so strongly resisted that the collar and parts attached thereto will be in substantially fixed position with respect to the shaft. This will prevent any tendency toward vibration or movement of the contact ring and the switch parts will therefore be held more securely in closed position.

When the rotor reaches a predetermined speed, the weights 19 and 20 will move outwardly or away from the center line of the rotor until the collar 11 strikes the base portion of the support or bracket 12 as shown in Fig. 3 and will, accordingly, move the contact member 10 out of engagement with the contacts or brushes 8 and 9 and open the circuit for the running position. I have found from actual use that the movement of the contact ring or disc 10 during its closing and opening movement is sufficiently rapid to avoid any undue arcing or injury to the contacts.

Having thus described my invention, what I claim is:

In a device of the character set forth, the combination with a rotatable member and a shaft therefor, of a base plate adapted to be fixed to the rotatable member and having outwardly extending branches with box-like guideways having broad flat engaging surfaces for the weights, cylindrical, weights extending through said guideways, pairs of connected links pivotally connected with the respective weights, an insulating collar slidably mounted on the shaft and pivotally connected with the pairs of links, a contact ring carried by said collar, pins through the respective pairs of links, springs extending between the pins tending to draw the weights inwardly, the arrangement being such that the inner ends of the

guideways serve as stops for the weights when drawn inwardly by the springs and the contact ring will be in closed position with the center lines of the links at a small angle to the axis of the shaft and when the weights move outwardly under the influence of centrifugal force, the contact ring will be moved to open position and the base plate will act as a stop for limiting the inward movement of the collar.

JOHN T. JANETTE.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,046,953	Bodine	Dec. 10, 1912
1,897,405	Thompson	Feb. 14, 1933
2,372,064	Esarey	Mar. 20, 1945
2,419,141	Johns et al.	Apr. 15, 1947