No. 729,335. PATENTED MAY 26, 1903.

W. A. HARVEY.

MECHANISM FOR OPERATING SNAP OR ROTARY SWITCHES.

APPLICATION FILED MAY 17, 1902.

NO MODEL.

Fig. 1.

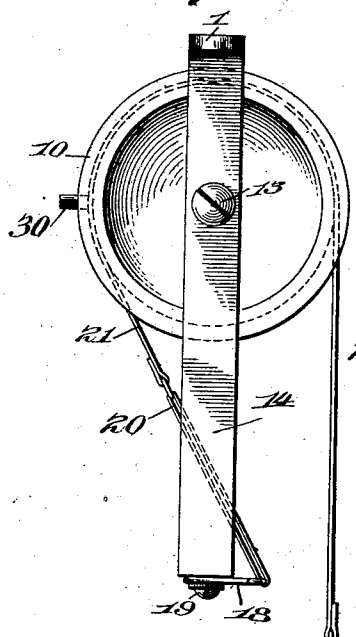


Fig. 2.

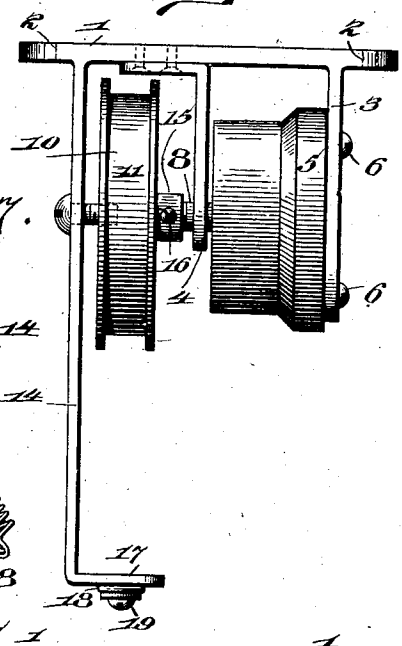


Fig. 7.

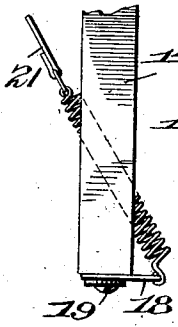
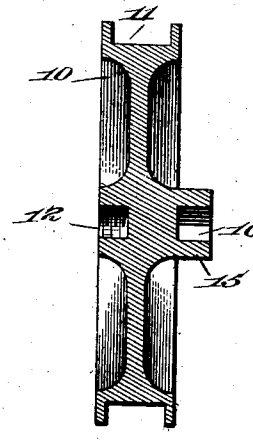


Fig. 3.



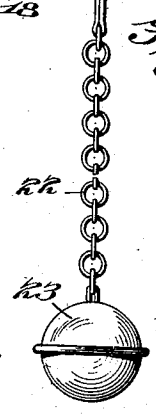


Fig. 5.

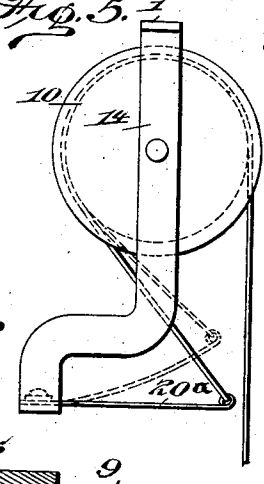
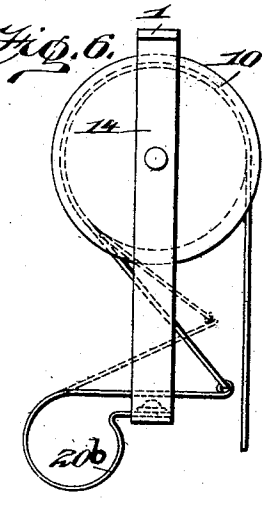


Fig. 6.



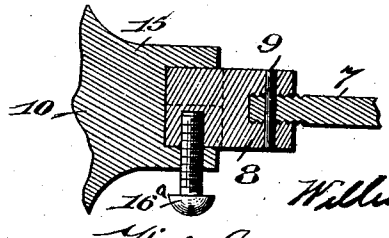


Fig. 4.

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No. 729,335. Patented May 26, 1903.

UNITED STATES PATENT OFFICE.

WILLIAM A. HARVEY, OF SCRANTON, PENNSYLVANIA.

MECHANISM FOR OPERATING SNAP OR ROTARY SWITCHES.

SPECIFICATION forming part of Letters Patent No. 729,335, dated May 26, 1903.

Application filed May 17, 1902. Serial No. 107,805. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. HARVEY, a citizen of the United States, residing at Scranton, Lackawanna county, and State of Pennsylvania, have invented certain new and useful Improvements in Mechanism for Operating Snap or Rotary Switches, of which the following is a specification.

My invention is especially adapted for the operation of snap or rotary switches when said switches are placed on the ceiling or located high up on the wall, ceiling-switches being usually used in connection with the low-tension arc-lamp.

In the majority of snap or rotary switches there are four points of rest in one revolution of the switch, two for break and two for make; and my invention consists of means adapted to be attached to the operating-stem of the switch which will give said stem one-quarter of a revolution at each operation, and means whereby said mechanism is reset for the next successive operation automatically; and my invention consists, further, of the parts and combination of parts, as will be hereinafter more fully set out.

In the drawings, Figure 1 is a side elevation of my invention attached to a suitable switch-box. Fig. 2 is a front elevation of the same, the operating mechanism being removed. Fig. 3 is a vertical central section of the operating-pulley. Fig. 4 is a detail sectional view of the connection between the switch-stem and the operating-pulley. Fig. 5 is a side elevation of a slightly-modified form. Fig. 6 is a side elevation of a further modification, and Fig. 7 is a side elevation in detail of another modified form.

1 represents a base of a suitable hanging frame, provided with openings 2, through which screws may be passed to fasten said base to a suitable support, such as a ceiling or wall.

3 and 4 are arms extending from said base, between which the rotary switch 5 is secured, the base of said switch being secured to the arm 3 by means of the screws 6, while the operating-stem 7 of the switch is keyed within a sleeve or collar 8 by means of a key 9, said collar or sleeve being journaled in the lower end of the arm 4. The outer end of the sleeve or collar 8 is rectangular in cross-section.

10 is a band-operated pulley, provided with a band-groove 11 on its periphery. This pulley is provided with a screw-threaded recess 12 in one side of its hub, in which the screw 13 is adapted to be inserted, thereby supporting said pulley from the arm 14, which extends from the base 1. The other side of the hub of this pulley is extended some distance beyond the outlines of the wheel, as at 15, said extension being provided with a rectangular recess 16, in which the rectangular end of the collar or sleeve 8 is adapted to be seated and secured therein by means of the set-screw 16^a, as shown in Fig. 4. The lower end of the arm 14 is bent at right angles, as at 17, to which is secured an arm 18 by means of the screw 19.

20 is a resilient member, one end of which is secured to the arm 18, while the other end of said member is suitably secured to the non-elastic band 21, said band being adapted to be passed around the periphery of the pulley 10 and confined within the groove 11. This band 21 may be continued for any length and a suitable handle attached to its free end, or, if desired for purpose of ornamentation, a suitable chain 22, with a pendent ball 23, may be secured to said free end, according to the wishes of the builder or manufacturer.

In the modification shown in Figs. 5 and 6 it will be seen that I have merely changed the style of the resilient member, which in these instances consists of a flat spring member 20^a in Fig. 5 and in Fig. 6 a bent spring 20^b, all other features of construction being the same.

The operation of this device is as follows: Assuming the parts to be mounted, as shown in Figs. 1 and 2, when it is desired to turn on a switch the band 21 by means of the pendent 23 is drawn downward, until the resistance placed upon the resilient member 20 binds the band 21 sufficiently tight upon the periphery of the pulley 10 to cause friction enough between the band and said pulley to operate the pulley, whereupon the continued pull upon the band revolves the pulley 10 and operates the switch. As soon as the pull is released upon the free end of the band, all friction between the pulley and the band is

removed, whereupon said band is free to slide over the periphery of the band of the pulley without friction, when the resilient member assumes its normal position.

As shown in Fig. 1, I have provided a stop 30, which may be a metallic button riveted or otherwise secured to the non-elastic band 21. This stop is placed on the band in such a position as will permit of the pulley 10 receiving a full quarter-revolution and the slight rotation over a quarter-revolution, and the object of the stop is to limit the rotation of the pulley to prevent excessive strain on the resilient member, to which the band 21 is secured, whereby the resilient member is protected against an unnecessarily long pull on the band.

In Fig. 8, in which parts are broken away, I have illustrated the resilient member in the form of a coil-spring, which may be used with equal effect.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. The combination with an electric switch and pulley connected to the switch of an operating-band running loosely over said pulley and means tightening said band on said pulley to revolve the same.

2. The combination with a rotary electric switch, of a pulley connected therewith, a non-elastic band loosely secured around said pulley and a fixed resilient member connected to one end of said band.

3. The combination with a rotary electric switch of a band-pulley having a recess in its hub in which the stem of the switch is secured, a non-elastic band loosely secured around said pulley, and a resilient member secured to a suitable support, said band being secured at one end to said resilient member while the other end is free.

The foregoing specification signed this 9th day of May, 1902.

WILLIAM A. HARVEY.

In presence of—

LEWIS B. CARTER,

SHAINE I. SWINGLE.