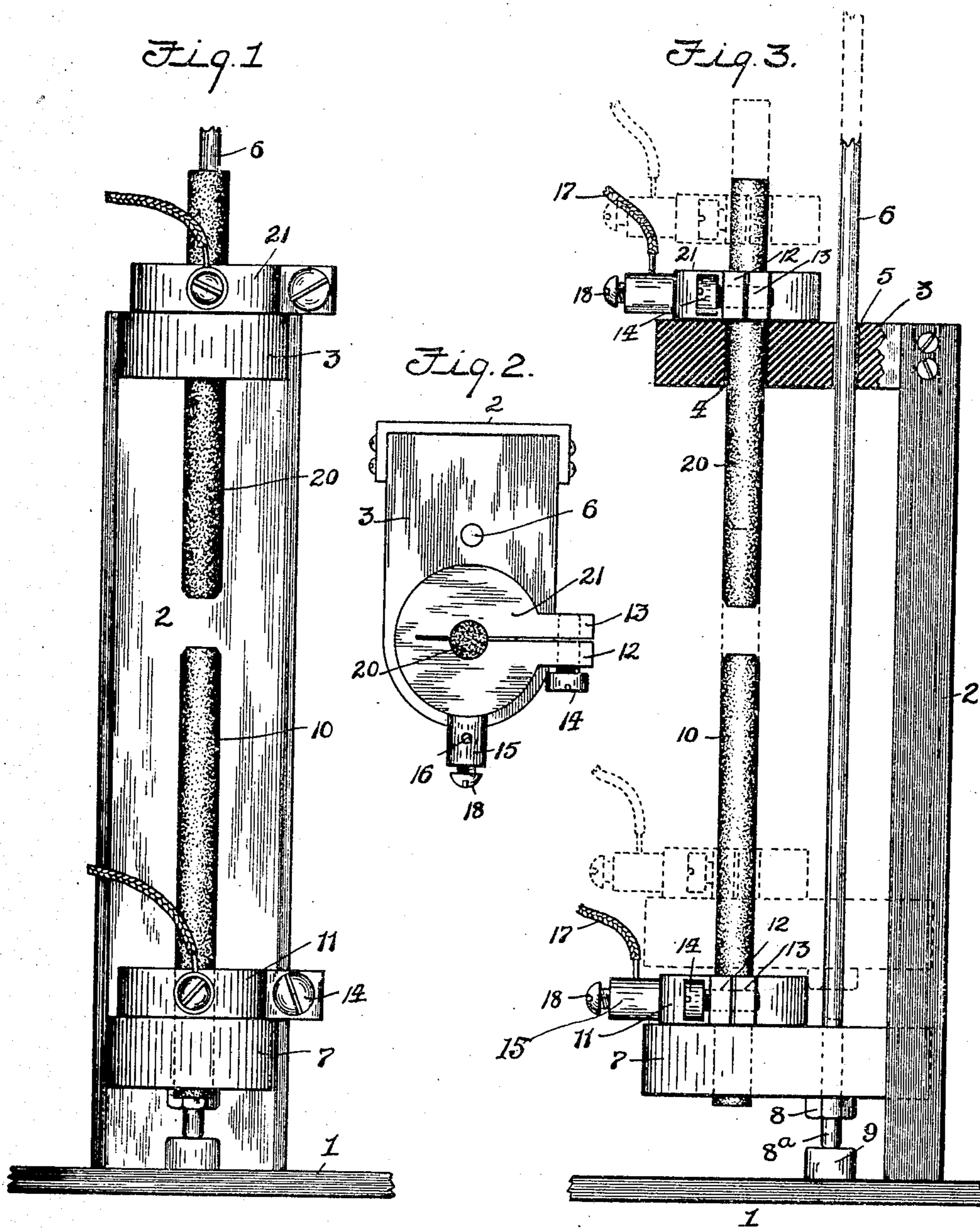


No. 892,872.

PATENTED JULY 7, 1908.

H. H. McINTIRE.
ELECTRIC SWITCH.
APPLICATION FILED SEPT. 27, 1904.



Witnesses:

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by

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UNITED STATES PATENT OFFICE.

HERVEY H. McINTIRE, OF SOUTH BEND, INDIANA.

ELECTRIC SWITCH.

No. 892,872.

Specification of Letters Patent.

Patented July 7, 1908.

Application filed September 27, 1904. Serial No. 226,121.

To all whom it may concern:

Be it known that I, HERVEY H. McINTIRE, a citizen of the United States, residing at South Bend, in the county of St. Joseph and State of Indiana, have invented new and useful Improvements in Electric Switches, of which the following is a specification.

This invention relates to an electric switch, and while especially adapted for use in photographic printing machines where the lights are intermittently used in rapid succession, it may be employed in any case where the making and breaking of an electric circuit is required.

Experience has demonstrated that metallic contact switches soon corrode, and the are produced when breaking contact deteriorates the efficiency of and consumes the contact points, necessitating entirely new switches at frequent intervals. To overcome these defects I have produced a switch which embodies the use of carbon contact points, which may be easily and quickly replaced when consumed, and which allows for the waste of carbon by arcing without impairing the efficiency of the switch or the making of a perfect contact.

For a full understanding of the details of construction, merits and advantages of my invention, reference is to be had to the following description and to the accompanying drawings, in which:—

Figure 1 is a front elevation of my improved switch. Fig. 2 is a plan view thereof, and Fig. 3 is a side elevation with the upper terminal support shown in section and with the parts shown in dotted lines in the position they assume when the circuit is closed.

Making renewed reference to the drawings, 1 designates a suitable support or base to which the channeled iron guide 2 is secured. At the upper end of this guide is secured a terminal support 3 which may consist of slate, porcelain or other non-conducting material, such support being stationary and having a transverse aperture 4 through which one of the contact terminal members of the switch projects and also having an aperture 5 through which plays an operating rod or bar 6. The contact terminals are preferably made of carbon so that there will be no corrosion and the consumption by arcing greatly decreased.

Mounted to slide in the channel guide 2 is another terminal support 7 which is pierced by the lower end of the operating rod 6 and

arranged to move therewith, the rod being provided with a nut 8 which fits up against the lower face of the terminal 7, and the projecting end of the rod 8^a engages with a rest or block 9 when the contact support is lowered and the circuit broken. The lower contact support 7 is provided with an aperture which is in vertical alinement with the aperture 4 of the upper contact support 3, and in this aperture is fitted a carbon contact terminal member 10, to which is secured a clamping member 11, which consists of a ring with a slit extending diametrically and transversely thereof and terminating short at one end of the periphery of the ring, whereby the latter may yield laterally to constrictively engage the carbon stick.

At one side the clamp is preferably provided with ears 12 and 13, which are pierced by a thumb screw 14 for the purpose of clamping the same upon the carbon stick. Projecting from the side of this ring is a boss 15, which is bored transversely, as at 16, to receive the end of a wire conductor 17, which may be held in the aperture by the binding screw 18 fitting in the end of the boss. The upper carbon contact terminal member 20 is fitted with a similar clamp 21 which has the lugs, thumb screw, binding post and conductor connection, which are indicated by the same reference characters as in the first mentioned and described clamp, but the carbon stick 20 of this upper contact member is adapted to play loosely through the aperture 4 so that when the operating rod 6 is raised, automatically or otherwise, and the contact support 7 with the clamping ring and carbon contact member 10, also raised to contact with the carbon contact 20, the latter will be slid in the aperture 4 and the clamp 21 raised. These positions of the parts are indicated in the dotted lines in Fig. 3, and it will thus be seen that the consumption of the carbon and contact points, occasioned by the arcing, is compensated for, inasmuch as the contact members or carbons may be adjusted with relation to each other at intervals, as they are consumed and easily and quickly replaced with new ones when necessary without in any manner impairing the usefulness of the remaining parts of the switch, it being only necessary to release the thumb screws 14 and adjust the carbon sticks in the clamps. When handled automatically, the lower carbon contact may be set to raise a like distance each time, lifting the upper carbon a

suitable distance beyond the point at which the two first contact, thus allowing for the consumption of the contact points by arcing, measured by the distance the upper carbon is raised above its normal position, before a re-adjustment of the carbon is necessary.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:—

10 1. In a switch device of the class described, a supporting element having a longitudinal guide way and with a stationary terminal support extending laterally from one end, a movable terminal support movable in the
15 guide way of said supporting element, a contact terminal movable through said stationary terminal support, a contact terminal movable with said movable terminal support, and means for moving said movable terminal support to cause the contact terminal
20 carried thereby to engage and move the contact terminal which is movable through the stationary contact support.

2. In a switch of the class described, a supporting element having a longitudinal guide way and with a stationary terminal support extending laterally from one end, a movable terminal support movable in the guide way
25 of said supporting element, a contact terminal movable through said stationary terminal support, means for holding said contact terminal from downward movement through said stationary terminal support, a contact terminal movable through said movable terminal support, means for holding said last
30 mentioned contact terminal upon said movable terminal support, and means for moving said movable terminal support and the contact terminal carried thereby.

40 3. In a switch of the class described, a base, a supporting element rising from said base and having a longitudinal guide way

and with a stationary terminal support extending laterally from its upper end, a movable terminal support movable in said guide way, a contact terminal movable through
45 said stationary terminal support, a contact terminal movable with said movable support, and a rod extending through both of said terminal supports and bearing at one end upon said base and provided with a stop bearing beneath the movable terminal support.

4. A switch of the class described, embodying a stationary terminal support having a contact terminal free to slide therein, in
55 combination with a movable terminal support having a contact terminal movable therewith, an adjustable clamping ring on each contact terminal to hold the latter on their supports and in their relative positions, and means for operating on the movable terminal support to bring the contact terminals
60 into contact and also slide the first mentioned contact terminal in its support.

5. In a switch of the class described, a base, a guide secured thereto, a terminal support secured to one end of said guide and having a transverse aperture, a contact terminal projected through the aperture, an adjustable clamping ring on the contact terminal
70 and having a binding post, a second terminal support slidably mounted in the guide, a contact terminal carried thereby, an adjustable clamping ring on the second contact terminal and having a binding post, and an operating
75 rod slidably engaged with the first mentioned terminal support and secured to the movable terminal support, substantially as specified.

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

HERVEY H. McINTIRE.

Witnesses:

GEORGE OLTSCH,
GRACE M. COLE.