

P. B. CUMINGS.
ELECTRIC CURRENT INTERRUPTER.
APPLICATION FILED AUG. 28, 1908.

964,760.

Patented July 19, 1910.

Fig. 1.

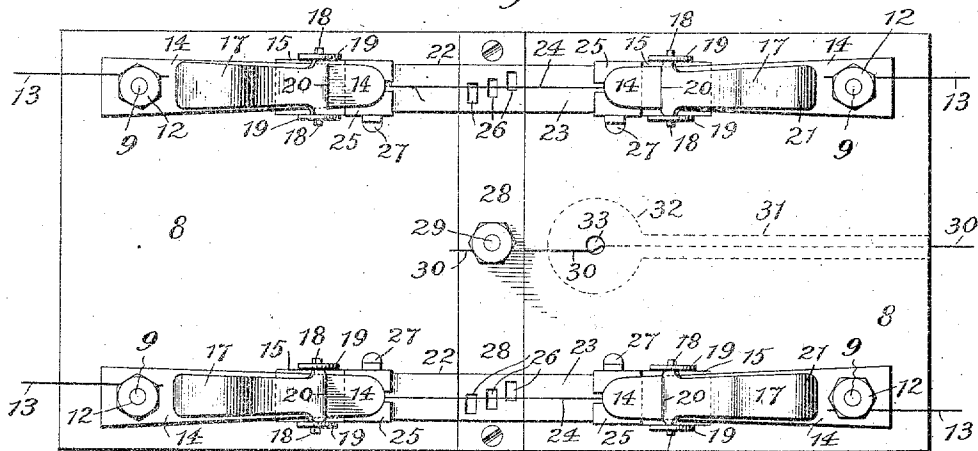


Fig. 2.

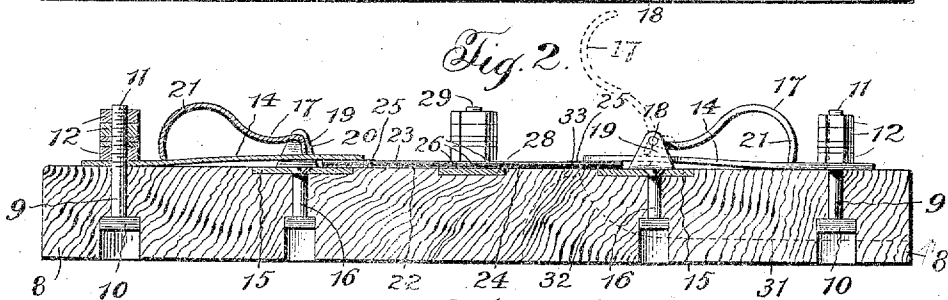


Fig. 3.

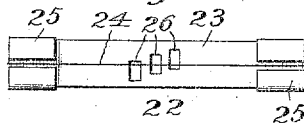


Fig. 4.



Fig. 5.



Fig. 6.

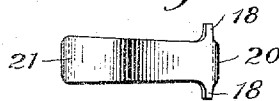
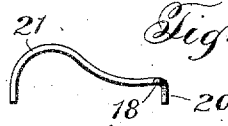


Fig. 7.



Witnesses:

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Inventor:

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UNITED STATES PATENT OFFICE.

PETER B. CUMINGS, OF FREMONT, NEBRASKA.

ELECTRIC-CURRENT INTERRUPTER.

964,760.

Specification of Letters Patent. Patented July 19, 1910.

Application filed August 28, 1908. Serial No. 450,710.

To all whom it may concern:

Be it known that I, PETER B. CUMINGS, a citizen of the United States, residing at Fremont, in the county of Dodge and State of Nebraska, have invented certain new and useful Improvements in Electric-Current Interrupters, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to an improved device whereby a current of undue intensity produced in a telephone, telegraph, or other conductor of electricity, by lightning or otherwise, is interrupted and conducted to the ground, before it reaches any mechanism connected with the conductor which would be damaged by such a current. Means are provided by the invention for removably holding the fuse element in place in such a device.

When read in connection with the description herein, the characteristics of the invention will be apparent from the accompanying drawing, forming part hereof, wherein an embodiment of the invention is disclosed, for purposes of illustration.

Like reference-characters refer to corresponding parts in the several views of the drawing, of which—

30 Figure 1 is a plan view; Fig. 2 is a sectional view; Fig. 3 is a view of a fuse element; Figs. 4 and 5 are views of a retaining member; and Figs. 6 and 7 are views of a clamp.

35 Referring more particularly to the drawings, 8 designates a base or carrying member, having projecting from one surface thereof binding-posts 9 with heads 10 counter-sunk into the other surface, the projecting screw-threaded ends 11 of the posts carrying nuts 12. The binding-posts are arranged in pairs, the posts of a pair being near opposite ends of the base, and the ends of a line-conductor 13 are capable of being connected by the nuts 12 of a pair to the binding-posts.

45 Each binding-post of a pair has connected thereto by compression between its lower nut and the base a conductive retaining member 14 of spring material extending centrally from the post and aligned with the like member connected to the other post of the pair. Member 14 is flat where engaged by the nut of the binding-post and is curved outwardly from the base between its ends. Its free end opposite to the binding-post is

normally raised and disposed over a conductive plate 15 secured to the surface of the base by a fastening element 16.

A clamp 17 is arranged to engage the curved portion of every member 14 to press its free end toward its plate 15. This clamp has, near one end, laterally-projecting pivots 18, by which it is pivoted on and between standards 19 rising from the plate 15. On the same end as the pivots the clamp is formed with a projecting portion 20, and toward the other end it is curved in an opposite direction to end 20 and then in the same direction to the end to form a projecting end 21 disposed in the same direction as end 20. When the clamp is swung in one direction on its pivots, its end 20 engages member 14 to press it toward plate 15, and its other end 21 also engages that member to prevent further movement of the clamp in that direction and swing of the end 20 to loosen engagement of that end. The clamp is loosened by reversal of this movement in an obvious manner, the curved portion of the clamp being conveniently grasped between the fingers and thumb of the operator.

To form a connection between plates 15 of a pair, there is provided a fuse element 22. This element includes a strip 23 of thin layers of mica between which is disposed a fuse-wire 24, or it may include a strip of any other suitable non-conductive material with the fuse-wire embedded therein. Each end of the strip is bound with a piece of conductive material 25 with which the fuse-wire is connected. The strip is arranged to be clamped between and held in place by members 14 and plates 15, the members engaging and forming a connection with the conductive ends 25 and thereby with the fuse-wire. The plates of a pair are thus connected, clamps 17 operating for this purpose in the manner already described. Intermediate the ends, the fuse element is formed with one or more openings 26 therethrough which are crossed by the fuse-wire.

It will be seen that the fuse elements can easily be slipped under the ends of members 14 and held in place thereby by operation of the clamps. In order to prevent the fuse elements, on being slipped under members 14, from moving too far to the side, and in order to properly position them under the members, stops 27 are located on the base in such position as to be engaged on one side

by a fuse element on reaching the proper position under members 14 when slipped in from the other side.

Across the base, at or about the center transverse line thereof between the binding-posts and under the position of the openings 26 of the fuse elements, is located an arrester-plate 28, disposed on or embedded in the base. The arrester-plate has thereon a binding-post 29, to which a ground-wire 30 can be connected. The base, on its opposite side, is formed with a groove 31, recess 32, and aperture 33, through which the ground-wire may be led to the binding-post.

The normal current of a line-conductor 13 passes through from one binding-post to the other of a pair by way of member 14 and fuse element 22, an ordinary current remaining insulated from the arrester-plate 28 by reason of the insulation 23 of fuse-wire 24 and by the fact that the insulation keeps the fuse-wire raised from the plate where it crosses openings 26. When a current of unusual intensity is set up in the conductor by lightning or otherwise, the fuse-wire will burn out at the openings 26 where it is exposed to the atmosphere, and the current will jump to the arrester-plate and be conducted to the ground by the ground-wire, the continuance of the current to instru-

ments or other parts on the line-conductor liable to be injured thereby thus being avoided.

When a fuse is burned out, it is not necessary to send a skilled electrician to put in a new fuse, as any unskilled person, such as the ordinary telephone subscriber, may loosen clamps 17, withdraw the burned-out fuse element, slip in a new fuse element, and fasten it in place by tightening the clamps. 35 40

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

A clamp for electric conductors comprising a base, a spring member connected near 45 one end to said base and having a free end normally raised from said base, a plate positioned under the free end of said spring member and arranged to be engaged by a conductor, standards on said plate, and a 50 pivoted member on said standards operable to engage said spring member and clamp the conductor between the spring member and said plate.

In testimony whereof I affix my signature 55 in presence of two witnesses.

PETER B. CUMINGS.

Witnesses:

EMMA GODEL,
WALDO WINTERSTEN.