

C. H. SPANGLER.
CURRENT LIMITER.
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1,215,423.

Patented Feb. 13, 1917.

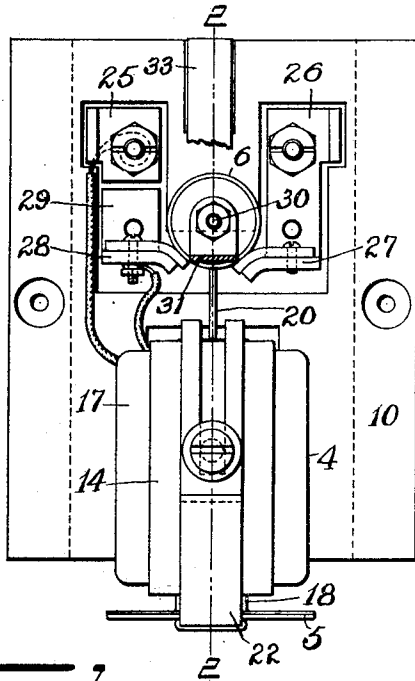


Fig. 1.

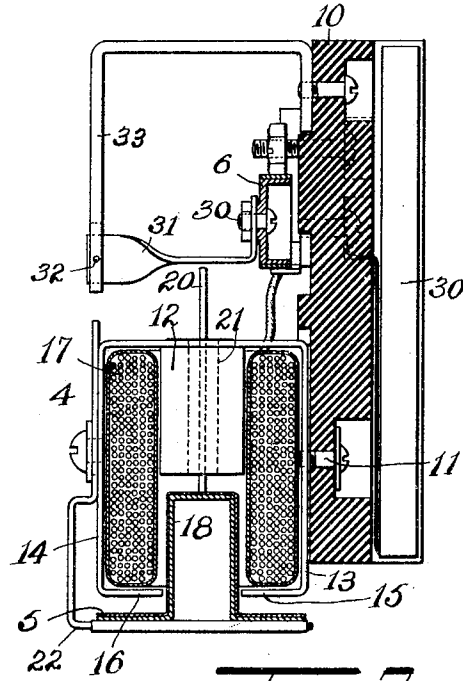


Fig. 2.

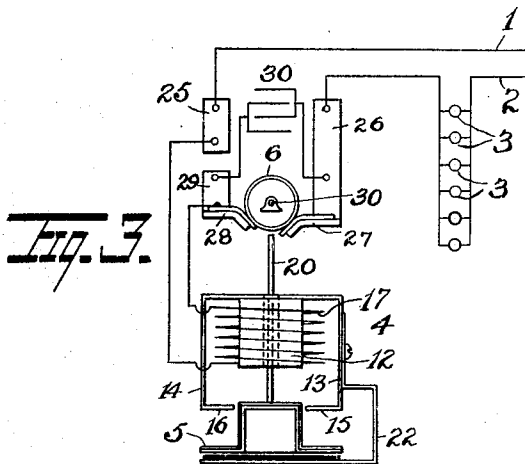


Fig. 3.

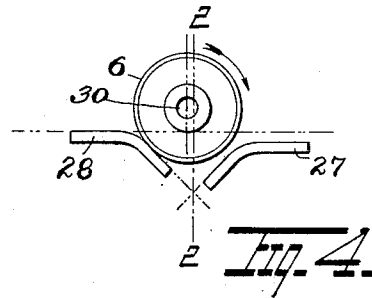


Fig. 4.

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CURRENT-LIMITER.

1,215,423.

Specification of Letters Patent.

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Application filed August 16, 1915. Serial No. 45,690.

To all whom it may concern:

Be it known that I, CHARLES H. SPANGLER, a citizen of the United States, residing at Reading, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Current-Limiters, of which the following is a specification.

My invention relates to devices for controlling the amount of current used in an electric circuit, as in a residence where a certain number of lamps or other translating devices have been contracted for; such devices automatically causing a "flickering" by intermittently making and breaking the circuit, when the maximum amount of current contracted for is exceeded.

My object is to provide an improved device of simple construction, applicable alike to both direct and alternating electric circuits, and comprising particularly an improved contact which will automatically adjust itself after each break and make so as to bring a new contact surface to bear for the purpose of preventing burning of the contact and prolonging the life of the device as well as securing efficiency of operation. The invention is fully described in connection with the accompanying drawing and the novel features are fully set forth in the claim.

Figure 1 is a front elevation of a device embodying my invention.

Fig. 2 is mainly a sectional elevation of the same on the line 2—2 of Fig. 1.

Fig. 3 is a diagrammatic view showing clearly the electric circuits.

Fig. 4 is a separate view indicating the make and break action of the swinging roller contact.

In the accompanying drawing Fig. 3 illustrates my invention diagrammatically, reference numerals 1 and 2 indicating the line wires of the electric circuit, 3, 3 the lamps or other translating devices, and 4 an electromagnet which operates an armature 5 to raise the contact 6 and interrupt the service upon use of current in excess of the contracted amount; the purpose and effect being to rapidly make and break the circuit so as to cause a flickering of the lights until the excess demand is relieved. The general construction, as more fully in-

dicated in Figs 1 and 2, is similar to that shown in my pending application Serial No. 6011 filed Feb. 4, 1915, and the present invention consists essentially in the pivotally carried roller bridging-contact 6 arranged to coöperate as hereinafter described, with fixedly spaced contacts 27 and 28 which form a break in the line 2 of the circuit

The electro-magnet indicated is of inverted U shape, with a wound intermediate hollow pole member 12 of opposite polarity to the parallel pole members 13 and 14; and the armature disk 5, which is normally supported below the members 13 and 14 by an adjustable bracket 22 and is provided with a central extension 18 similarly positioned relative to the shorter central member 12 as shown, has a lever-operating rod 20 passing through the latter. The magnet is secured to a suitable block 10, which also carries circuit post plates 25, 26, 29, and a supporting bracket 33 for the armature-operated lever 31.

The main line 2 is broken between the post plates 26 and 29, the latter being formed with the fixedly-spaced faced contacts 27 and 28 arranged in a horizontal plane and adapted to jointly form a seat for the bridging roller 6 as indicated in Figs. 1 and 3. The free end of the lever 31 forms an axis for the roller, which is swung in a vertical plane at approximately right angles to the plane of the fixedly-spaced contacts 27, 28, as the lever is raised or lowered by the armature. As shown in Fig. 4, the lever 31 is pivoted at 32 to its support 33, so as to normally swing in the parallel plane indicated to one side of the vertical plane 2—2, which latter passes through the axis of the seated roller, while the contact 28 is elevated slightly above the contact 27; the purpose and effect being to cause a slight turning movement of the roller on its axis as the lever is pressed slightly sidewise in its make and break swings.

The passage of the current through the roller bridging-contact 6, as indicated in Fig. 3, must be so rapidly broken and restored when an excessive load is put on the line 2 that it is not only essential to satisfactory operation that a condenser, 30, should be extended across the gap as shown in Fig. 3, to absorb arcing, but that new

points of contact should be thus provided for at each rapid bridging movement for the break in the line.

What I claim is:

- 5 In a current limiter mechanism comprising an electro-magnet and armature, fixedly-spaced contacts forming a break in the line, a roller bridging-contact, an armature-oper-

ated carrier lever for the latter arranged to swing in a plane approximately at right angles to the plane of said fixedly-spaced contacts, and means for imparting a turning movement to said bridging contact in making and breaking the circuit. 10

In testimony whereof I affix my signature. 15

CHARLES H. SPANGLER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."