

(No Model.)

E. HOFMANN.

ADJUSTABLE ARMATURE FOR ELECTRO MAGNETS.

No. 472,480.

Patented Apr. 5, 1892.

Fig. 1.

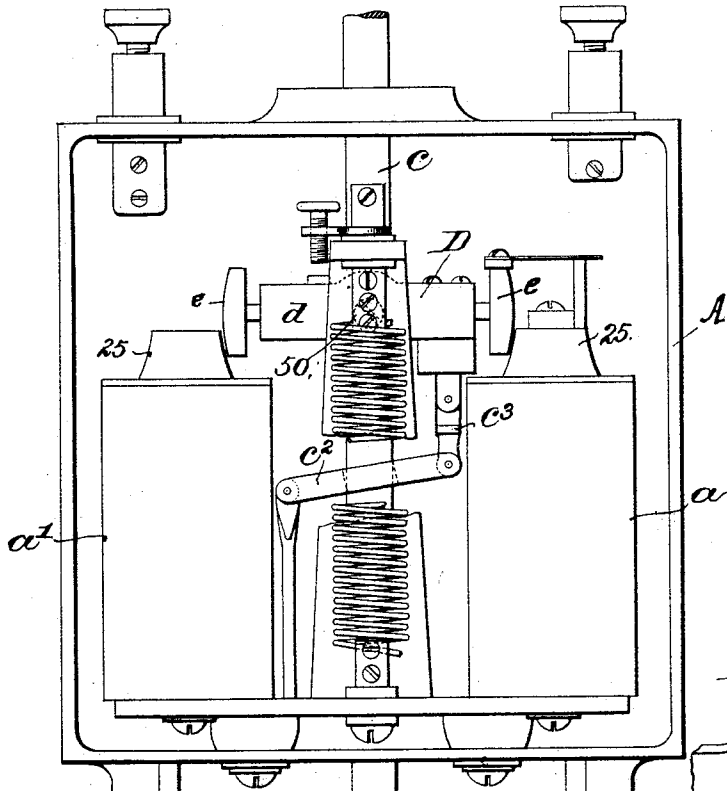
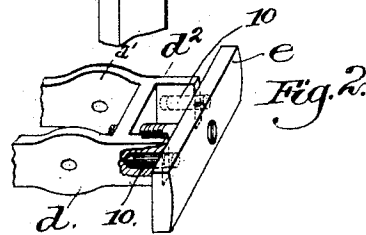
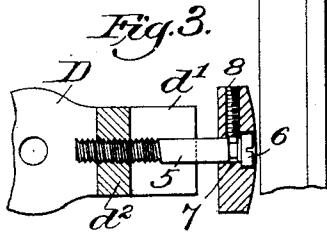
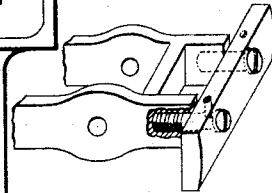


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

EMIL HOFMANN, OF BALLARD VALE, MASSACHUSETTS, ASSIGNOR TO THE
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ADJUSTABLE ARMATURE FOR ELECTRO-MAGNETS.

SPECIFICATION forming part of Letters Patent No. 472,480, dated April 5, 1892.

Application filed September 22, 1891. Serial No. 406,475. (No model.)

To all whom it may concern:

Be it known that I, EMIL HOFMANN, of Ballard Vale, county of Essex, State of Massachusetts, have invented an Improvement in Adjustable Armatures for Electro-Magnets, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

In many electrical devices, particularly in electric lamps, it is desirable that the armature of the regulating or controlling magnet be made adjustable with relation to its magnet in order that the movements of the device may be made as perfect and reliable as possible.

This invention has for its object to provide an armature which may be adjustable with relation to its magnet without destroying the proper relation between the one and the other.

The particular features of which this invention consists will be hereinafter described, and pointed out in the claims.

Figure 1 represents an electrical device embodying this invention; Fig. 2, a detail in perspective showing the end of an armature constructed in accordance with one form of this invention; Fig. 3, a vertical sectional detail taken on the longitudinal axis of screw 5, Fig. 2; and Fig. 4, a modification to be referred to.

Referring to the drawings, the invention is represented in connection with an electric lamp, of which A represents any suitable casing, it containing the usual high and low resistance magnets a a' , between which is extended the clutch-rod c , holding at its lower end the upper carbon c' . The usual clutch-bar c^2 is actuated at one side by a link c^3 , jointed to and operated by the armature-carrier D, pivoted at 50 in a suitable support, the said carrier as herein represented comprising two side bars d d' , one at either side of the clutch-rod c , and connected at or near their opposite ends by cross-bars d^2 , only one of which is shown in the drawings, Figs. 2 and 3.

In accordance with this invention the armatures e , arranged at opposite ends of the armature-carrier D and acted upon by the

pole-pieces 25 of the magnets a a' referred to, are each provided with a threaded screw or bolt 5, having its slotted or other head 6 countersunk in the face of the armature, the said screw at a point preferably just back of the head being provided with an annular groove 7 to receive a screw or pin 8 in the armature, (shown best in Fig. 3,) the screw or pin entering the groove referred to and causing the armature to be moved in either direction with the adjusting-screw as the latter is rotated.

Each armature will preferably be provided with one or more guide rods or pins 10 (see Fig. 2) to preserve the alignment of the armature during adjustment.

The operation of the device as represented is as follows: As the current is turned on, it will pass through the carbons and also through the low-resistance magnet a' , attracting the armature at that side of the pivotal center of the carrier D, lifting the clutch-bar c^2 to separate the carbons to produce the proper arc. As the carbons burn away and the resistance of the arc increases, a greater portion of the current will be directed through the high-resistance magnet a to attract its armature and partially return the carrier D to its former position to release the clutch c^2 and permit the carbons to again be brought into proper relation with each other, all substantially as common in electric-arc lamps of the present day. If the pull of either of the magnets is not sufficiently strong or do not bear the proper relation one with the other, the armatures e may be adjusted on the carrier nearer to or farther from their respective pole-pieces to thus regulate the action of the magnets upon the armature to produce the proper working of the device.

Fig. 4 represents a modified form of invention, wherein the guide-pins 10 are dispensed with and two adjusting-screws employed instead of one.

The invention is herein represented and described in connection with an electric lamp; but I desire it to be understood that it may be employed in connection with other electrical devices as well and with like results.

I claim—

1. The combination, with an electro-mag-

net, of an armature-carrier having recessed side arms, an armature, guide-pins thereon to enter said recessed side arms, and a screw having an annular groove connecting said armature and carrier, and a screw or pin entering said groove, substantially as described.

2. The combination, with an electro-magnet, of an armature-carrier, a screw therein having an annular groove and an armature, and a screw or pin entering said groove, to operate substantially as described.

3. The combination, with an electro-magnet, of an armature-carrier having side bars, an armature, a screw adjustably connecting said carrier and armature and to move the same with relation to said carrier, and guide-pins intermediate said side bars and armature, substantially as described.

4. The combination, with an electro-magnet, of an armature-carrier having recessed

side bars, an armature, a screw 5 to move the same toward and from said side bars, and the guide-pins 10, connected to said armature and moving in said recessed side bars, substantially as described.

5. The combination, with an electric lamp containing a controlling-magnet, of an armature-carrier and an armature, and a screw in said carrier to positively move said armature with relation to its carrier, an annular groove in said screw, and a screw or pin entering in said groove, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EMIL HOFMANN.

Witnesses:

GEORGE W. LESTER,
JOSEPH A. SMART.