

J. HERRICHT.
 PHOTOGRAPHING MACHINE.
 APPLICATION FILED OCT. 27, 1911.

1,038,135.

Patented Sept. 10, 1912.
 4 SHEETS—SHEET 1.

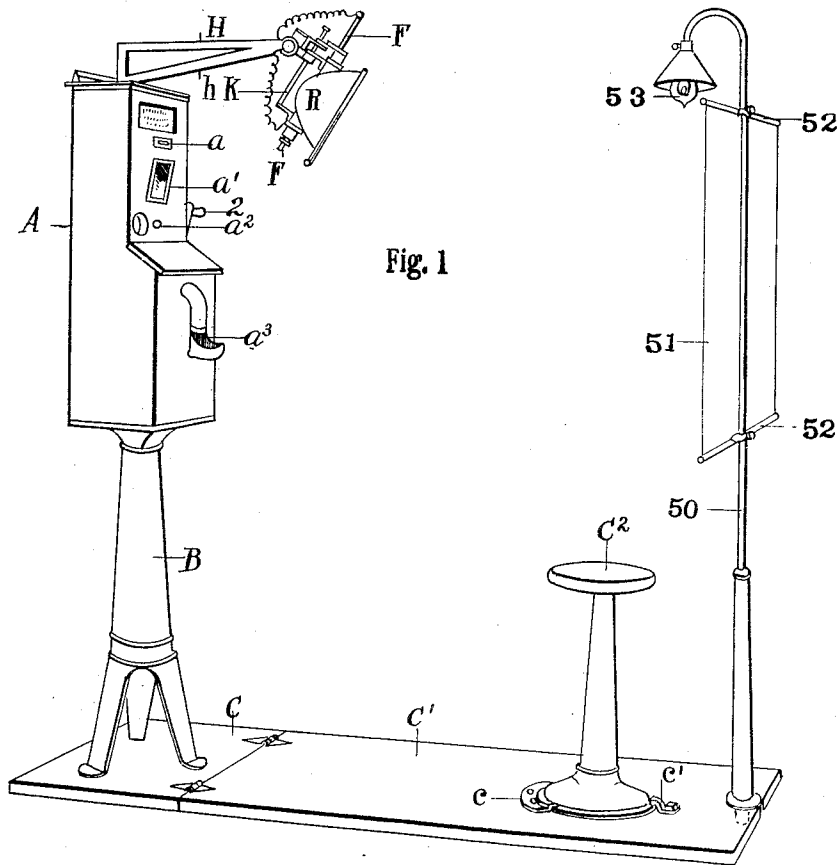


Fig. 1

ATTEST
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Fig. 2

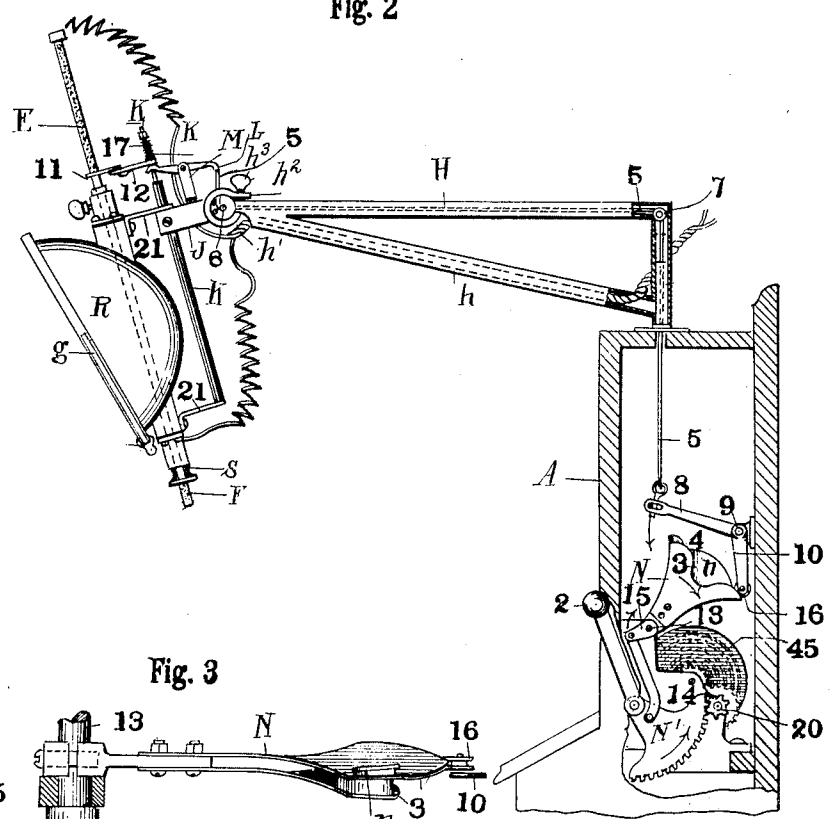


Fig. 3

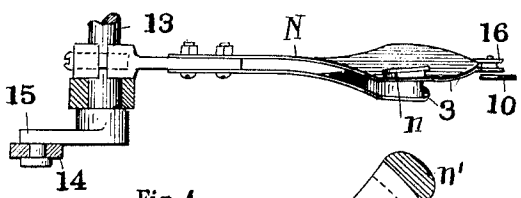


Fig. 4

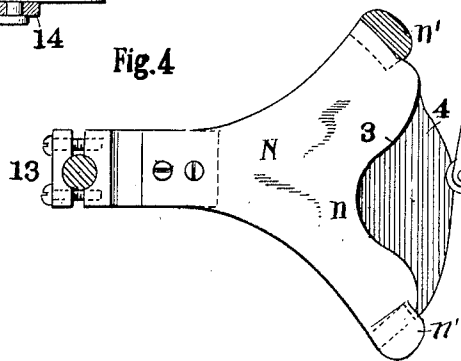
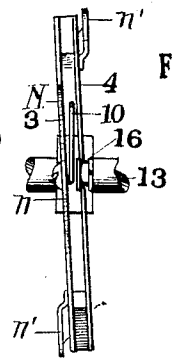


Fig. 5



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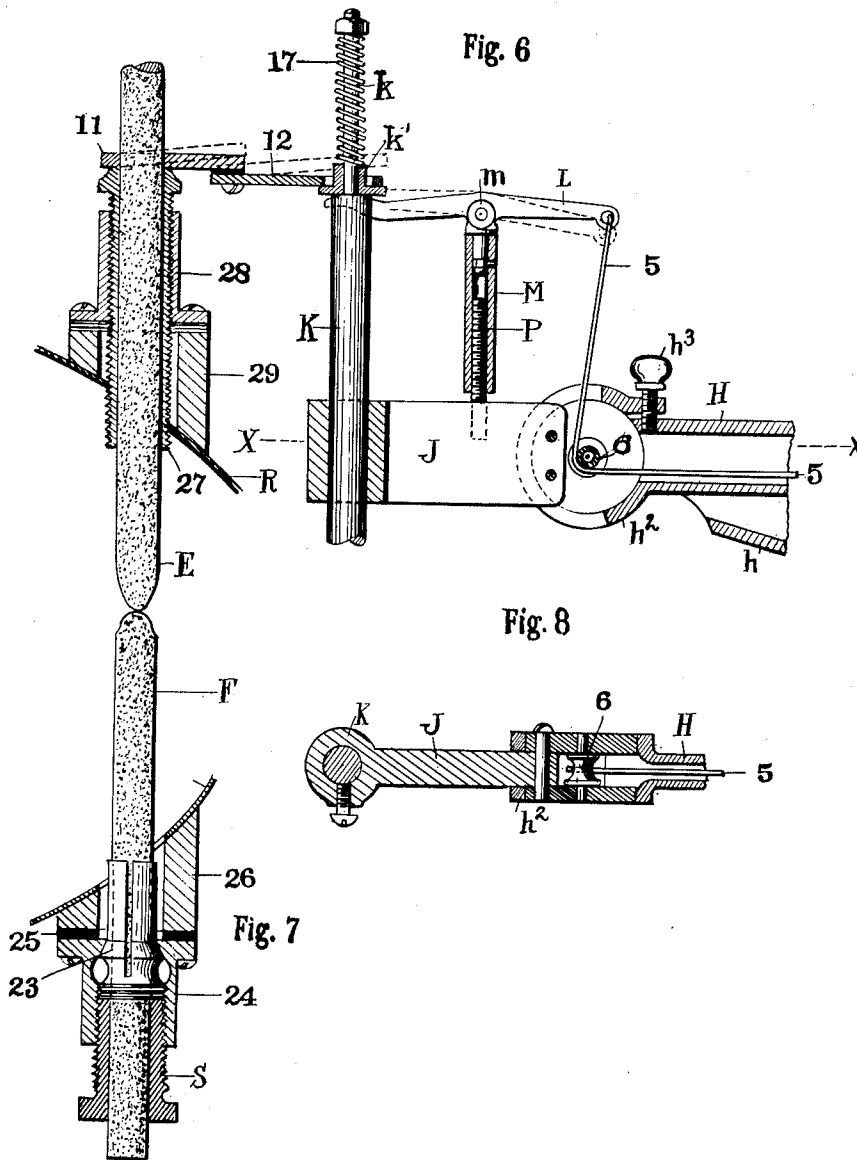
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4 SHEETS—SHEET 4.

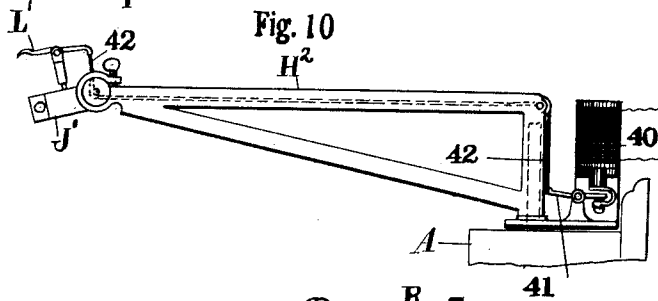
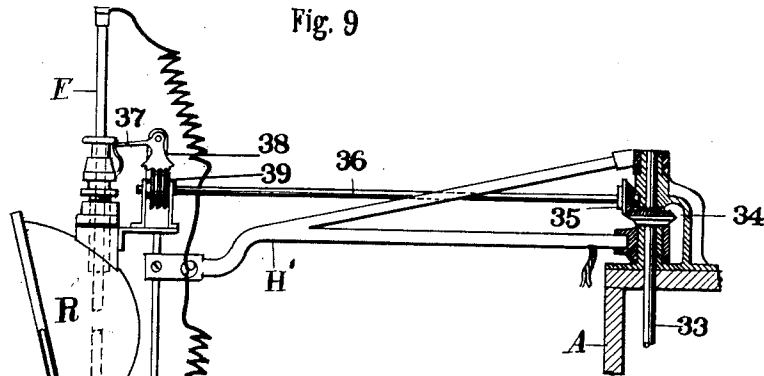


Fig. 11

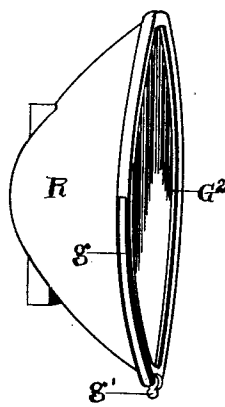
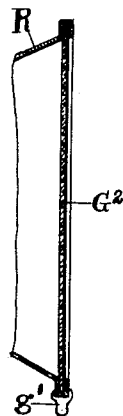


Fig. 12



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UNITED STATES PATENT OFFICE.

JOHN HERRICHT, OF NEW YORK, N. Y.

PHOTOGRAPHING-MACHINE.

1,038,135.

Specification of Letters Patent.

Patented Sept. 10, 1912.

Application filed October 27, 1911. Serial No. 657,028.

To all whom it may concern:

Be it known that I, JOHN HERRICHT, citizen of the United States, residing at New York, in the county of Queens and State of New York, have invented certain new and useful Improvements in Photographing-Machines, of which the following is a specification.

My invention relates to photographing machines, and the object of the invention is to provide a machine of this kind with sundry improvements including an arc light with means for automatically operating the same through mechanism from within the machine, all substantially as shown and described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a complete machine embodying my entire invention. Fig. 2 is an enlarged side elevation of the arc light mechanism and a vertical sectional elevation of the cabinet and the light controlling and other mechanism within the cabinet, as hereinafter fully described. Fig. 3 is an edge view in plan of the cam lever from which the arc light is controlled; Fig. 4 is a side elevation thereof, and Fig. 5 is a rear end elevation of said lever. Fig. 6 is a further enlargement of the arc light mechanism, and shows the upper carbon and the means for supporting the same mostly in vertical section. Fig. 7 is a vertical sectional elevation of the lower carbon support, and Fig. 8 is a plan section on line $x-x$, Fig. 6. Figs. 9 and 10 are views representing modifications of the invention, wherein mechanical appliances are employed, as in Fig. 9, and as in Fig. 10, for controlling the upper carbon. Fig. 11 shows the reflector, and Fig. 12 is a sectional view thereof.

I am of course aware that there have been coin controlled photograph machines or apparatus with which arc lights have been employed for instantaneous photographic productions, and therefore the idea, broadly, of employing an arc light with such machines is not claimed here to be original with me, but in all such cases the arc light was a wholly separate part and had no mechanical or other operative connection with the machine and required an attendant for all its operations.

My invention is unitary and automatic and is operative with or without coin controlled mechanism.

Having reference now to Fig. 1, A represents the cabinet, and B the pedestal therefor with a suitable base C and a pivoted platform section C' upon which is fixed seat C². This seat is removable, being held by a segmental plate c at one side of its flanged stand, and by a clamp c' opposite thereto, and thus when the platform C' is to be folded the said seat is easily removable by simply turning the clamp c' . In this way the seat to be occupied by the subject is definitely located in respect to the camera upon a portion of the apparatus itself and not on a floor, and thus the entire apparatus, including the seat, can be shifted from one position to another or bodily removed. Now referring to the cabinet A, it is seen to have certain features comprising a coin receiving slot a , mirror a' , lens or lens hole a'' , and receptacle a^3 for a finished picture. Having these features, it will be understood that the machine may be coin operated, and sometimes it is equipped and furnished for such operation, as in this instance, and in any case the machine or mechanism is set in operation by means of the crank handle 2. This handle might be variously arranged and operated to effect the actuations planned for it, but in this instance it has a forward and back movement on an arc of a circle in doing its work, and this is its present limitation. That is, to take a picture the handle is rotated within limits its full stroke down and from there it goes back automatically by mechanism provided for this purpose and as hereinafter fully described. This downward movement of crank 2 being effected, everything else necessary to take the picture, including the movements of the arc carbons, occurs automatically and successively in due order. This will be better understood by referring to Figs. 2 and 6. In these figures we see the two carbons E and F, upper and lower, respectively, and supported together in a suitable frame comprising sundry parts which will now be described. Thus, in Fig. 2 is shown a right-angled hollow arm H, supported and horizontally rotatable upon a cabinet A as its base, and having an inclined tubular brace portion h through which pass the electric wires h' to the carbons.

In the operation of the light, it is planned to raise and lower the upper carbon sufficiently to completely break the electric con-

nection when the machine is not being used, and to establish a temporary arc when it is in use and a brilliant light is required to produce a picture. To this end a preferably
 5 flat sided arm extension J is introduced into clamping head h^2 on the outer extremity of supporting arm H, and which has flat sides between which the arm J is adjustably supported, and may be raised and lowered at
 10 its outer end to give any desired angle or position to rod K which passes up through the outer portion of extension J, and serves to fix the inclination of the upper carbon and its supporting parts. The said rod K
 15 is vertically adjustable in arm J, and clamping screw h^3 tightens arm J at its pivot in support H. By these means the inclination of the lamp and its carbons may be changed from that of a perfectly vertical position of
 20 the carbons to a more or less inclined position according as may be found desirable in the operations of the machine for focusing the light, and arm extension J supports the entire lamp, including the reflector. The
 25 position of upper carbon E is further mechanically and operatively controlled for either breaking or making the arc through a line of mechanism having its initial connection with crank handle 2. This mechanism
 30 as traced from lever L in Fig. 6, comprises said lever which is pivotally and rotatably supported upon tube M vertically adjusted on threaded stem P which is fixed upon extension J, and the said lever is thus
 35 arranged to tilt or pivot on its rotatable support m and is mechanically connected with crank lever 2 by means of a wire or cord 5 passing over a sheave 6 in the outer
 40 end of arm H, and thence back through said arm and over sheave 7 in its angle and down from there to engagement with arm 8 on rock shaft 9 within cabinet A. This shaft
 45 has another arm 10 with a roller or sheave 16 on its extremity adapted to run upon the two parallel cam edges 3 and 4 of cam lever N, seen more plainly in Figs. 3, 4 and 5. The said lever N is itself fixed upon a rock
 50 shaft 13, and is actuated from lever 2 through the medium of the toothed segment N' rigid for rotation with lever 2, and connected by link 14 off its pivot with arm 15
 55 upon rock shaft 13 carrying cam lever N. Now, following this mechanism back to lever L through cord 5, it will be plainly seen that when crank arm 2 is depressed from its position in Fig. 2, the lever L will be affected by such movement, and the effect will be to tilt said lever on its pivot with its inner
 60 end upward and its outer end downward so as to lower the upper carbon into touch with the lower one. This occurs because in its movement of the parts sheave 16 on rock lever 10, Fig. 2, travels back into depression n in the cam track 3, and when said wheel
 65 16 reaches this point the lever L is free to

tilt from position as in Fig. 2 to position as in Fig. 6 and carbon E is released from its grip and automatically drops. In this operation the grip 11 and its extension 12 drops also from dotted to full lines, Fig. 6.
 70 Rod K has a reduced upper end k on which is a free thimble k' supporting extension 12 and is pressed by spring 17. So as soon as lever L relaxes the spring 17 forces said parts down and also keeps cord 5 stretched. Then
 75 as the double edged cam N is further actuated and the wheel is carried over the rise of cam N the lever L institutes a new grip on carbon E through grip 11 and the carbons are separated so as to form an arc. 80
 This begins to occur while sheave 16 is on the latter part of cam 3. Then in the shift of arm 10 and its sheave onto return cam 4 the carbons are more and more separated up to a point where the arc is entirely broken. 85
 So it occurs that as the wheel 16 travels upon the edge 3 into depression n the points of the carbons are supposed to come together, as in Fig. 6, and from this point they separate and the desired light is obtained, when the arc is again broken, as
 90 seen in Fig. 2. For this movement of the cam arm N there is first, a practically instantaneous movement for dropping the upper carbon in the first half of the rotation of crank arm 2, and after which the arc is really established. Then the spring controlled or equivalent time mechanism or
 95 motor which is used to reversely actuate cam lever N comes into action through pinion 20 and causes the cam lever N to go back to its original position, at the same time carrying back crank 2. This occurs through segment gear N', and link 14 to short arm 15 controlling cam lever N, and the reverse travel is
 100 slower than the down pull of the crank by hand but yet only a little more than momentary. When the parts reach position as in Fig. 4 the arc is already broken.

Any suitable spring, motor or other actuated reversing mechanism may be connected up with the pinion 20, and I do not make any claim for such mechanism herein except as it serves the purpose of reestablishing the position of cam lever N and the
 110 other parts. It will be noticed that the said lever is set at a somewhat inclined relation to its shaft 13, relatively about as in Fig. 5, and the arm 10 carrying wheel 16 is of spring metal so as to adapt it to changing positions of said wheel necessary to run to and fro upon the separated edges 3 and 4. When the wheel gets to the end of its travel at each extreme of tracks 3 and 4 it meets with suitable stops n' , and riding up
 115 on the flush surface at these stops its spring arm 10 throws it over to the opposite edge track, where the side stop n' prevents it from going beyond this track and holds it thereon to make the trip. 120
 125
 130

The carbons are directly supported upon the reflector R, and further from rod K by rigid connections 21, thus forming a lamp frame. The lower carbon is secured in its position by a threaded tube S having a thin split extremity adapted to grip the carbon and a beveled portion 23 engaged against a correspondingly but reversely beveled edge in the carbon support 24, affixed to the reflector R and which is separated by insulation 25 from the part 26 fixed on said reflector. Hence, when the tube S is screwed inward it presses its split extremities against the carbon and holds it.

The upper carbon is designed to have a free up and down sliding movement within the externally threaded sleeve 27, and projects through the carbon supporting portions 28 and 29 rigid with reflector R so as to steady the carbon and facilitate its movement. Said carbon E is engaged by grip 11, which has a hole just large enough to permit free sliding movement of the carbon therein. Said grip will lock on the carbon and hold it when tilted sufficiently, say as in dotted lines Fig. 6.

In Fig. 9 I show a modification of the lamp support and structure and means of operating the upper carbon in which the arm H', corresponding to arm H, supports the lamp, and there is a shaft 33 with gear 34 meshing with gear 35 on shaft 36 for operating the carbon grip 37 through toothed segment 38, and worm 39 in mesh therewith and fixed on shaft 36. The lamp structure itself also is somewhat modified and carbons E and F get practically the same operation as in the main construction shown.

In Fig. 10 I show a supporting arm H² for the lamp closely resembling arm H, and having its lever L' which corresponds to L in Fig. 6, on arm extension J', electrically controlled from solenoid or magnet 40 through armature lever 41 and cord 42. The part 40 is electrically connected with the mechanism in cabinet A when this style of carbon controller is used by means of a switch or the like in operative relations with arm 8.

These modifications are suggestive of different means and ways of reaching the results set out in the foregoing description and from which it is obvious that mechanism for these purposes may take a wide range of difference and yet be within my invention.

In Figs. 11 and 12 I show a convenient way of supporting the glass G² in shell R, the said shell having a slot g within its lower half edge through which the glass is inserted, and a suitable clamp g' below holds it in place.

In the operation of hand crank 2 and segment N' enough power is stored in the

motor 45 to reverse cam lever N as hereinbefore described. Any suitable kind of motor may be used.

In Fig. 1 I show a suitable standard, 50, mounted upon base C', which standard is preferably removable. A thin sheet, 51, of suitable material is stretched upon the standard, which sheet serves as a background for the person who is being photographed.

In order that no strong shadows be thrown upon the background by the person introduced between the said sheet and the arc light, I prefer to place an incandescent or other light, 53, at the top of said standard in position to reduce said shadows.

What I claim is:

1. A photographing machine comprising a cabinet and an arc light and mechanism to control said light, said mechanism having a grip for one of the carbons and means in the cabinet to actuate the same at predetermined times, said grip consisting of a plate having a hole larger than the carbon in cross section and means to tilt the grip, substantially as described.

2. In a photographing machine, a cabinet and automatic mechanism therein, in combination with an arc light and means to open and close the circuit on said light operatively connected with said automatic mechanism, said means comprising a grip for one of the carbons and a pivoted member to actuate said grip, and a spring to press on one end of each said grip and pivoted member, substantially as described.

3. In combination, a cabinet and an arc light rotatably supported thereon, automatic mechanism in said cabinet and a line of mechanism operatively connected therewith and with the upper carbon of said light and comprising a grip with a hole engaged over the carbon, a pivoted lever to operate said grip and a spring bearing thereon, automatic mechanism in the cabinet comprising a rocking arm, and connections from said arm to said pivoted lever, substantially as described.

4. In combination, a cabinet and an arc light, and a support for said light rotatable on said cabinet, and mechanism for controlling the arc of the light connected with one of said carbons and comprising a cam lever and means to operate said lever located in said cabinet, substantially as described.

5. In combination, a cabinet and the actuating mechanism therein comprising a double track cam lever, in combination with an arc light and mechanism actuated by said lever operatively connected with one of the light carbons, substantially as described.

6. In a photographing machine, a suitable cabinet, an initial lever and a motor operatively connected with said lever, a trans-

mitting lever operatively connected with said initial lever and said motor, a pivoted lever in operating relation with said transmitting lever mechanism for operating the lamp and actuating connections from said pivoted lever to said mechanism, substantially as described.

7. In combination, a cabinet and an arc light and a jointed arm pivotally supported on the cabinet and carrying said light and mechanism to grip and release the upper carbon supported on the outer extremity of said arm and constructed to be tilted, substantially as described.

8. In combination, a cabinet and an arc light and mechanism in the cabinet to operate the light comprising a cam lever having parallel cam edges of different curvature, and a rock arm and a roller thereon to run on said edges alternately, in combination with the mechanism for actuating one of the carbons of the light and connections between the same and the said rock arm, substantially as described.

9. In combination, a cabinet and an arc

light means therein to operate an arc light comprising a cam lever having reversely curved edges, a rock arm and a roller thereon engaged with said edges and a motor operatively connected with said cam lever, in combination with the arc light controlling mechanism and a cord from said rock arm to said mechanism, substantially as described.

10. In combination, a cabinet and an arc light and a cam lever therein having two differently curved edges, an initial actuating lever operatively connected with said cam lever, and a motor operatively connected with both said levers, in combination with an arc light, mechanism to establish an arc therein, and means between said mechanism and said cam lever to actuate said mechanism, substantially as described.

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

JOHN HERRICHT.

Witnesses:

GUSTAV J. VOSS,
HARRY BLOCK.