

mind the operation of the magnetic control device may be understood from Fig. 6. When the operator depresses a key 52, closing contact 54, current flows from source 56 through line 58, contact 54, magnet 30, line 60, resistance 62, and line 64 back to source. But at the same time the current has another and easier path to follow, through spring blade 66, ring 50, spring blade 68, line 70 and line 64 to source. Most of the current follows the latter route, with the result that the magnet receives the full line voltage and is strongly energized, with the further result that the screen is positively started toward its operative position. However, as soon as the screen and its shaft begin to move, ring 50 is rotated so as to interpose an insulated gap between spring contacts 66 and 68, with the result that all the current must flow through resistance 62, and the torque of the solenoid is reduced accordingly with the result that the screen is delivered softly in operative position. When key 52 is released the screen is returned to normal position by its spring 42.

This invention has been found very satisfactory in practice. The screen is always started positively even with very low line voltage, and is always deposited softly in operative position even with high line voltage.

It is to be understood that the invention is not limited to the specific embodiment herein described but can be used in other ways without departure from its spirit as defined by the following claims.

I claim—

1. A color control apparatus for a spot light, comprising in combination, a color screen having normal and operative positions, a solenoid operatively connected to said screen, means for supplying current to said solenoid whereby said solenoid rotates said screen from normal to operative position, and means effective immediately after said rotation begins, for producing and maintaining a constant reduction in strength of said solenoid, whereby said screen is moved softly positively to operative position.

2. A color control apparatus for a spot light, comprising in combination, a color screen having normal and operative positions, a solenoid operatively connected to said screen, means for supplying current at comparatively high voltage to said solenoid whereby said solenoid rotates said screen from normal toward operative position, and means for automatically producing and maintaining a constant but reduced voltage through said solenoid after the rotation of the screen has started, for the purpose set forth.

3. A color control apparatus for a spot light, comprising in combination, a color screen having normal and operative positions, a solenoid operatively connected to said

screen, a resistance, a contact member, means for supplying current to said solenoid through said resistance and said contact member in parallel whereby said solenoid rotates said screen, and means effective while rotation is taking place for breaking the circuit through said contact member and thereby causing all the current to flow through said resistance, whereby said solenoid is supplied with a constant but weakened current, for the purpose set forth.

4. The method of operating a color screen for spotlights which consists in initiating a movement of the screen in front of the spotlight against a gradually increasing resistance with a substantially constant moving force considerably greater than the maximum resistance encountered, maintaining said force throughout a predetermined movement of the screen, and then suddenly changing said moving force to a substantially constant force having a strength less than the initial force and sufficient only to overcome the resistance at its maximum.

In testimony whereof I hereto affix my signature.

JOHN H. KLIEGL.