M. H. GREENEWALT.

ILLUMINATING MEANS.

APPLICATION FILED JAN. 18, 1919.

1,345,168. **Patented June 29, 1920.**

3 SHEETS—SHEET 1.

Fig. 2

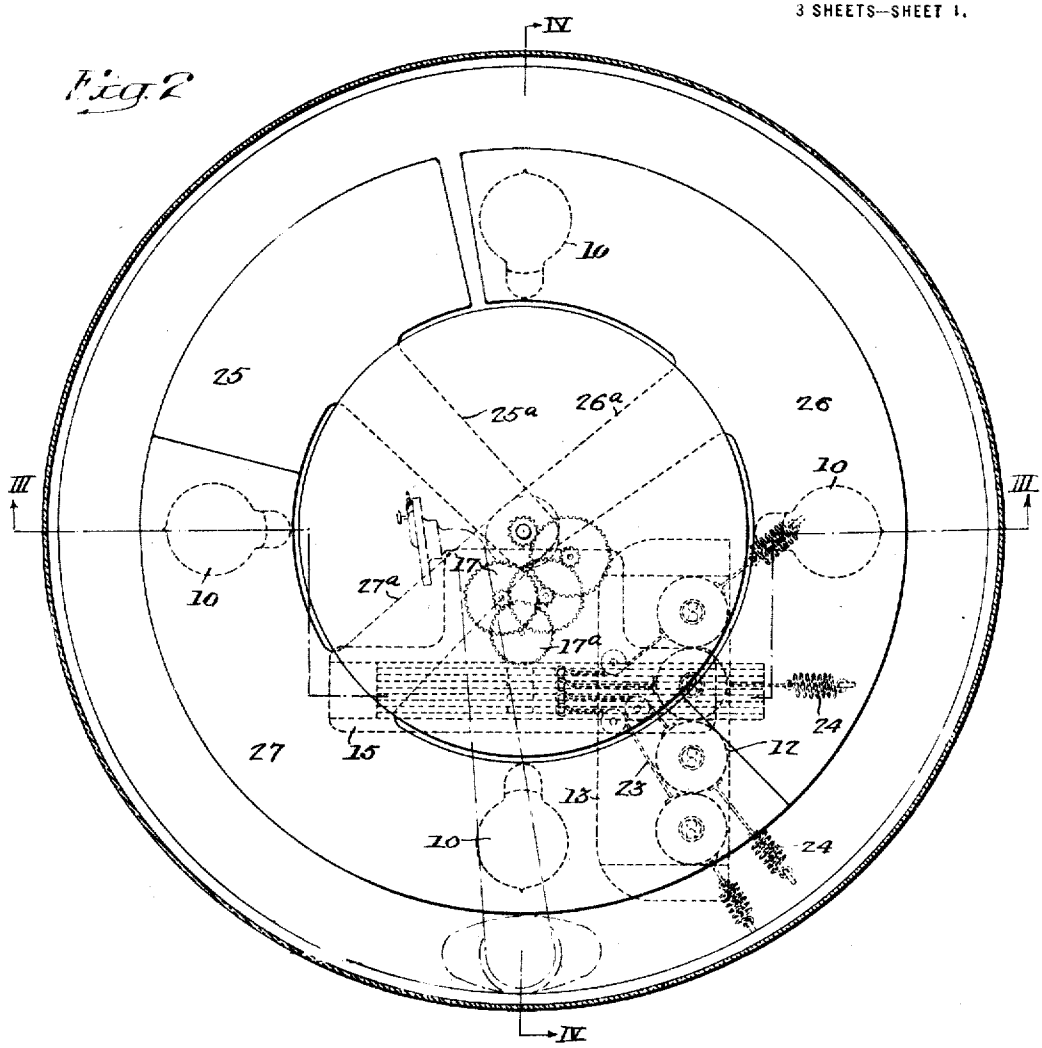
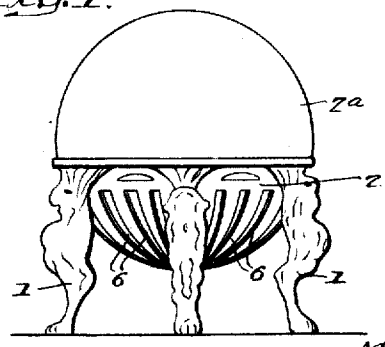


Fig. 1.



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3 SHEETS—SHEET 2.

Fig. 5.

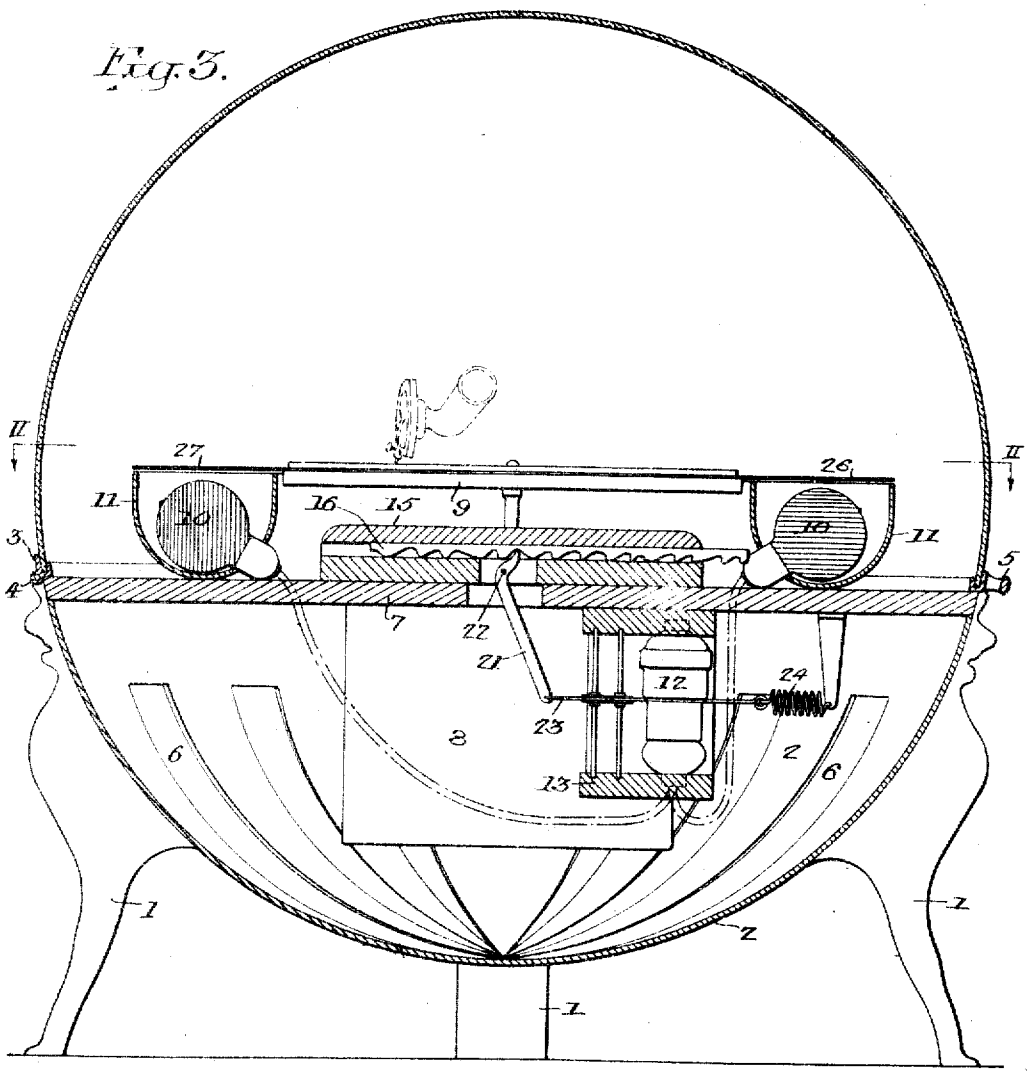


Fig. 7.

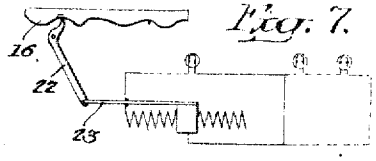


Fig. 6.

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3 SHEETS—SHEET 3.

Fig. 4.

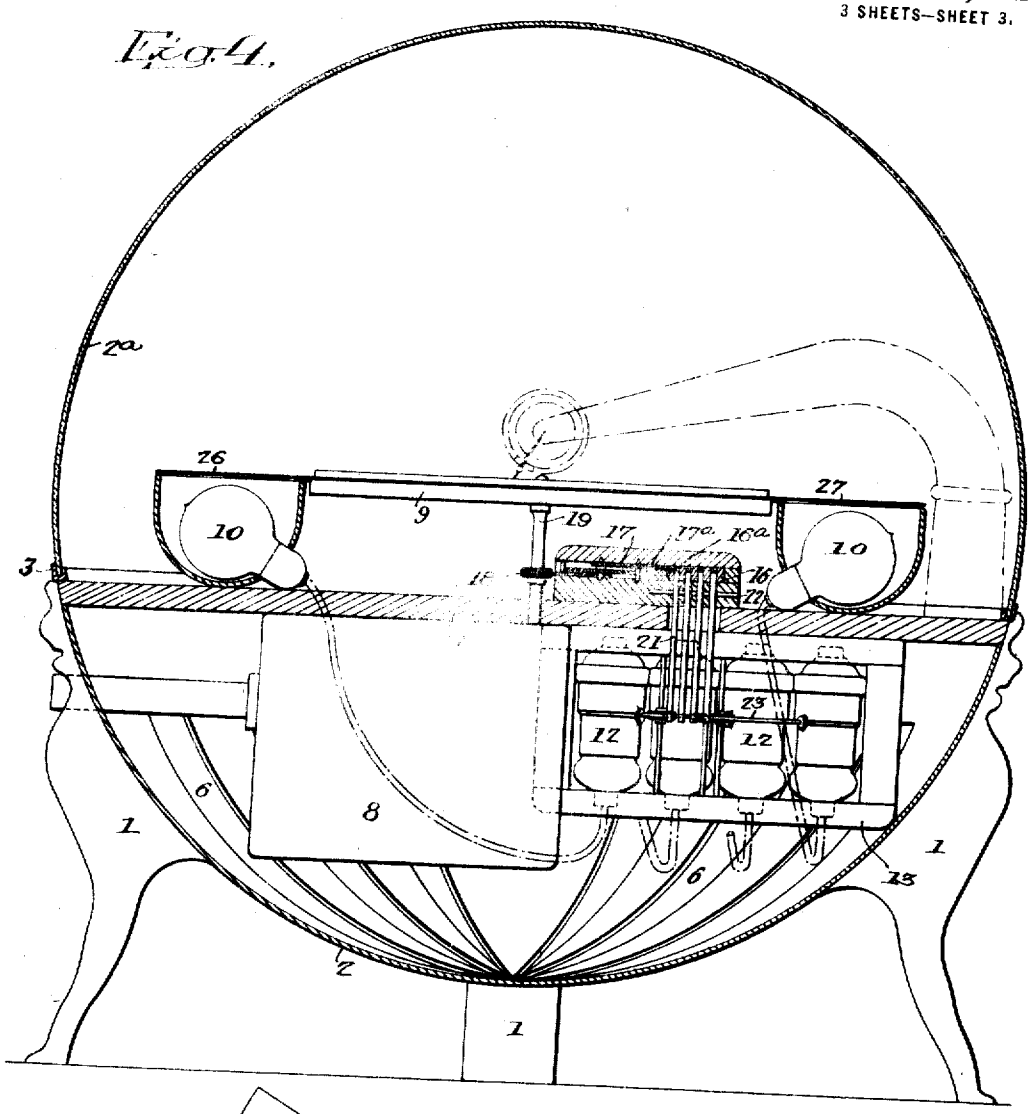
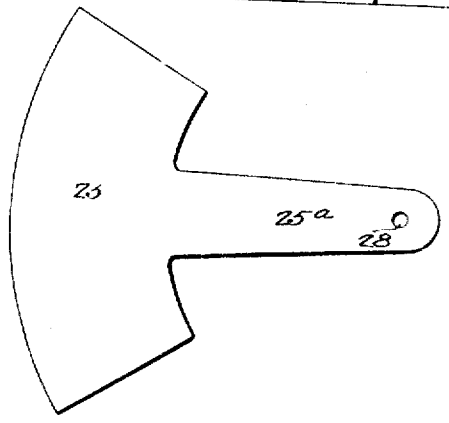


Fig. 5.



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UNITED STATES PATENT OFFICE.

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ILLUMINATING MEANS.

1,345,168. Specification of Letters Patent. Patented June 29, 1920.

Application filed January 18, 1919. Serial No. 271,544.

To all whom it may concern:

Be it known that I, MARY HALLOCK GREENEWALT, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improved Illuminating Means, of which the following is a specification.

The object of my invention is to provide a graphophone or phonograph, or other similar, so-called, talking machine, adapted to play records of the disk or other type, with means whereby illumination of the instrument or certain of its accessories and the atmosphere directly adjacent or surrounding the same can be produced, and in various tints or colors or gradations thereof, if desired.

A further object of my invention is the provision of means for increasing or decreasing the amount of illumination, with or without coloration. The changes effected in the color of the illumination, more or less arbitrarily, may be coördinated changes in brightness or darkness or color with an absolutely arbitrary relation or reference to the musical notes whereby any desired notes or series of notes may have their expression accentuated or their effect added to by an accompaniment of color or light intensity, or they may be changes wherein the light and color scheme has no complemental reference whatever to the musical composition. Either arrangement is entirely within the scope of my invention.

In carrying my invention into effect, I make use of a structure in which I preferably employ electric lamps with tinted, or untinted globes, striped or otherwise, of a character containing means, usually in the form of resistance, that will permit of the amount of light emitted being cut down or increased as by the use of a greater or less number of lamps, or by cutting resistance in and out, and the instrument is provided with means for automatically controlling suitable switches or other means so as to effect this result. For this purpose, suitable cams, actuated by mechanism carried by the rotating member of the instrument so that changes in the amount or intensity of the illumination, and the color thereof, may be effected entirely automatically, may be employed.

In order that the color scheme can be developed, the rotating table which carries the record disk (when such form of instrument is combined with my improved illuminating means), may be provided with overhanging leaves of translucent, colored or parti-colored material, overlying the source of illumination and through which the latter may shine so that the color may be lessened or intensified, or altered in tint, coincidently with the increasing or decreasing of the amount and kind of illumination, and the cutting out or in of the resistance controlling the amount of illumination afforded by the electric lamps or other source of illumination. The color leaves may be arranged in different lengths of sections so as to increase or decrease the amount and kind of color produced; they may be continuous or discontinuous, and they may partially overlie or overlap each other at the edges so as to produce an additional shade or color, and their arrangement may follow any order or scheme.

These and other features of my invention are more fully described hereinafter, reference being had to the accompanying drawings, in which:

Figure 1, is an elevation, on a reduced scale, of one form or arrangement of illuminating means for a graphophone, phonograph, or talking machine structure, within the scope of my invention.

Fig. 2, is a plan view, partly in section, showing the improved illuminating means, and one form of controlling means therefor, within the scope of my invention.

Fig. 3, is a sectional elevation on the line III—III, Fig. 2.

Fig. 4, is a sectional elevation on the line IV—IV, Fig. 2, and

Figs. 5, 6 and 7, are views illustrating details of my invention.

My improved illuminating means may be employed with a phonograph structure having a base or supporting portion 1, which may carry within or as part of the same a spherical body 2, part of which is transparent or translucent, with or without coloration or tinting, or, if desired, the whole may be transparent or translucent, with or without coloration or tinting. The upper portion of the spherical body, which I have indicated at 2^a, is substantially in the form of a hemispherical shade or globe, translucent in character, which may be attached to a rim 3, preferably hinged to the base as at 4, and this rim may be provided with a suitable handle 5 whereby said upper

portion may be raised and lowered as desired for the purpose of placing records in position, or of changing the colored leaves, or for any desired purpose. It will be understood, of course, that the top portion 2^a may be in sections, and it may be arranged to swing open instead of lifting. The base portion of the structure is preferably apertured as indicated at 6.

Within the structure a supporting table 7 may be mounted, carrying a suitable housing or inclosure 8 for the usual spring or motor-controlled mechanism employed for driving the record supporting table 9, and such driving mechanism may be of any usual character; the same forming no part of my present invention.

Arranged around the rotating table 9 and set at any suitable points desired, are a series of electric lamps 10, (four being shown in the present instance,) suitably mounted in supporting sockets or other means whereby their position may be permanently maintained, and these lamps may be disposed in reflectors 11 so that the illumination produced by the same may be properly diffused through the tinted or colored films or other light filtering media with the fullness or brightness desired. In some instances, the globes of the lamps may be colored, and in Fig. 4, I have shown such arrangement, in which the lamp at the left of the figure is indicated as having a globe colored red, while the lamp at the right of the figure is indicated as having a globe colored blue. The lamps are connected by suitable conductors of any usual type with controlling switches, which may be in the form of socket switches 12, or any suitable form of switch capable of performing the desired function, mounted in a frame or carrier 13 supported by the table 7, and these switches (or any switches used) are of a type or character providing resistance which may be cut in and out so as to regulate the amount of current passing to the lamp and the consequent illumination afforded by the latter. To effect the operation of these switches, mechanism of the following character may be employed:

Mounted on the table 7 is a casing or housing 15, containing a series of cams 16, which may be arranged to move as a unit and may be driven from a train of gears 17 in operative engagement with a pinion 18 on the driven shaft 19 of the record driving mechanism which carries the record supporting table 9. The cam unit may be toothed at the edge as at 16^a for engagement by the member 17^a of the gear train. These cams, which in the present instance are shown as arranged to slide, may be shaped in any arbitrary fashion; one being provided for each lamp, or group of lamps, as may be desired, and in the construction shown they are preferably spaced apart by division plates 20 whereby cam grooves are provided. In operative engagement with each cam bar is a lever 21, pivotally mounted on a pin 22 carried by the housing for said cam bars, and connected to the opposite end of each bar is a cord 23 operatively connected to one of the switches 12 so that any one of the lamps may be turned on or off, or the resistance therein may be cut in and out as the movement of the lever controlled by the cam may dictate, to increase or decrease the amount of light afforded by the lamp.

The cam unit is removable and replaceable at will, and the dimensions of the structure are such that fresh ones may be slipped into place when the upper part of the casing is opened. Preferably, means should be employed to hold the train of gearing which moves the cam out of action until the record commences to play, and for permitting the cam unit to be set in place after any operation thereof without affecting the driving mechanism, and for insuring the position of the cam relatively to the record so that the illuminating scheme may be properly coördinated with the sound.

Single lamps 10 are illustrated in the drawing. It will be understood, of course, that a plurality of lamps may be employed at the points where I have shown single lamps, and that such lamps may be operatively connected to switches similar to the switches controlling the single lamps and arranged to cut the same in and out of action in any sequence. The opposite ends of said cords 23 are preferably attached to suitable springs 24, so that said cords and the levers are under tension at all times; insuring that the switches controlling the illumination or the intensity thereof afforded by the lamps will respond to instantaneous application of the operating cords as dictated by the cams. If desired, spring connections may be attached to the opposite sides of the levers. By such means of operating the switches, or equivalent controlling means, gradations in the amount or intensity of the light produced may be automatically and instantaneously effected by means of said cams.

The train of gears may time the progress of the cam or cams to the progress of the rotating sound record, and the projections and depressions on the active surface of the cam or cams may be so arranged or timed in their effect, to the convolutions of the sound record in their effect, that the lamps which they control may make a sequence in the vibrations of light as the record makes a sequence in the vibrations of sound, similar in the effect upon the individual. In such manner a cam or cams may be employed as a master record for duplicating in quantity a means for an expressive light se-

quence as the disk is a master record for duplicating in quantity a means for an expressive sound sequence; both complementing each other and forming in effect a master record of two parts inseparable from each other where they are to affect the senses of the individual through the eyes and ears simultaneously.

Similarly, the cam may become a master record of an agreeable and expressive light play, entirely independent and irrespective of the sound producing element or the sounds thereof.

It is desirable that the illumination so provided may be colored, and to effect this I propose the application of colored screens or films or filters of any suitable translucent or transparent material which overlie the lamps and which are intended to rotate with the record-carrying table or in consonance therewith, or in some relation thereto. The films may carry single colors or a plurality of colors as desired.

These films are clearly shown in the plan view at 25, 26 and 27, and they may be of the three primary colors—red, yellow and blue, or of any proportioned parts of these or any other colors or hues desired. They may be of such size or dimensions that a portion of each may be superposed upon a portion of an adjacent one whereby other shades or tones may be effected, or any arrangement that may be desired to produce the color effect intended, successively or simultaneously, to merge or follow. They are preferably provided with inwardly projecting portions or arms 25^a, 26^a and 27^a, respectively, which may be apertured at 28 to slip over the post of the rotating table upon which the disk record is mounted, under the latter.

In Fig. 6, I have shown a perspective view of a cam unit; the same being inverted to show the cam grooves and the rack at the edge whereby it may be moved. In Fig. 7, I have shown a diagrammatic view of a resistance switch under the control of a lever, which in turn is actuated by one of the cams.

Although I have shown the use of independent and independently controlled switches for the four lamps employed, it is obvious that a single switch may be connected to control a plurality of lights and be operatively connected to a single lever, with a single cam control therefor; all of which is within the scope of my invention.

I claim:

1. The combination, with mechanical sound producing means, of a translucent inclosing casing therefor, means for projecting or diffusing light within said inclosing casing, and means for coördinating different intensities of said lighting effect with the sound produced by the mechanical means.

2. The combination with a rotating member adapted to support a phonograph record, of colored films or filters projecting beyond the edge of the rotating structure, and means for projecting or diffusing light through said overhanging films as they rotate.

3. The combination of a rotatable record-supporting member, a colored film or filter supported by and movable with said record-carrying member, and means for illuminating said film.

4. The combination of a rotatable record-supporting member, a fixed lamp, and a colored film or filter supported by and movable with said record-carrying member through which the rays from said lamp may shine.

5. The combination of a rotatable record-supporting member, a colored film supported by and movable with said record-carrying member, means for illuminating the same, and means for automatically changing the intensity of the illumination.

6. The combination of a rotatable record-supporting member, a fixed lamp, a colored film or filter supported by and movable with said record-carrying member through which the rays from said lamp may shine, and means for automatically changing the intensity of the illumination afforded by said lamp.

7. The combination of a rotatable record-carrying member, a series of colored screens or films carried thereby and projecting beyond the edge thereof, means for illuminating said films, and means for controlling the amount of illumination passing through said films.

8. The combination of a rotatable record-carrying member, a series of colored screens or films carried thereby and projecting beyond the edge thereof, a plurality of fixed lamps for illuminating said films, switches for said lamps, and means for automatically controlling said switches.

9. The combination of a rotatable record-carrying member, a series of colored screens or films carried thereby and projecting beyond the edge thereof, a plurality of fixed lamps for illuminating said films, resistance switches for said lamps, and means for automatically cutting in and out such resistance.

10. The combination of a rotatable record-carrying member, a series of colored screens or films carried thereby, a plurality of lamps for illuminating said screens, switches controlling said lamps, cams for automatically controlling said switches, and means operatively connected with the record-carrying member for driving said cams.

11. The combination of a rotatable record-carrying member, a series of colored screens or films carried thereby, a plurality of lamps for illuminating said screens, resistance switches controlling said lamps, cams for

automatically cutting in and out such resistance, and means operatively connected with the record-carrying member for driving said cams.

12. The combination of a rotatable record-carrying member, an electric lamp, a switch therefor, a cord connected to said switch, a lever connected to said cord, and a cam operatively connected to said record-carrying member for actuating said lever.

13. The combination of a rotatable record-carrying member, a colored film carried thereby, an electric lamp, a switch therefor, a cord connected to said switch, means for keeping said cord in tension, a lever connected to said cord, and a cam for actuating said lever.

14. The combination of a rotatable record-carrying member, a plurality of electric lamps surrounding the same, colored globes therefor, and means operatively connected with the rotatable record-carrying member for automatically controlling the illumination from said lamps which is diffused through said colored globes.

15. The combination of a rotatable record-carrying member, a series of colored films carried thereby and projecting beyond the edge thereof, a plurality of electric lamps, and means for automatically controlling the illumination from said lamps which is diffused through said colored films.

16. The combination of a rotatable record-carrying member, a series of colored films carried around the edge thereof, a plurality of electric lamps, and means for automatically controlling the illumination from said lamps, including resistance switches, and means for controlling the amount of resistance.

17. The combination of a rotatable record-carrying member, a series of colored films carried around the edge thereof, a plurality of electric lamps, and means for automatically controlling the illumination from said lamps, including switches, a plurality of levers, cords connecting the switches and levers, and cams for controlling the movement of said levers.

18. The combination of a sound producing instrument, a translucent inclosure for the same, a source of illumination for such inclosure, and means for controlling the character and intensity of such illumination.

19. The combination of a rotatable record-carrying member, a translucent inclosure for the same, a source of illumination, and means operatively connected with the rotatable record-carrying member for controlling the intensity of such illumination.

20. The combination of a sound producing instrument, a translucent inclosure for the same, a source of illumination, means for coloring the same, and means for controlling the intensity of such illumination.

21. The combination of a rotatable record-carrying member, a translucent inclosure for the same, a source of illumination, means operatively connected with the rotatable record-carrying member for coloring the same, and means for controlling the intensity of such illumination.

22. The combination with mechanical sound producing means, of a translucent inclosure for the same, a source of illumination, and means coördinated with the character of the sound for controlling the intensity of such illumination.

23. The combination with mechanical sound producing means, of a translucent inclosure for the same, colored films supported by the sound-producing means, a source of illumination, and means for controlling the intensity of such illumination.

24. The combination of a rotatable record-carrying member, a translucent inclosure for the same, colored films supported by the record-carrying member, a source of illumination, and means operatively connected with the rotatable record-carrying member for controlling the intensity of such illumination.

MARY HALLOCK GREENEWALT.