ABSTRACTS OF RECENT U. S. PATENTS

1,816,039. **Printing Device for Colored Films.** R. BERTHON. Assigned by mesne assignments to Kislyn Corp. July 28, 1931. An electromechanical process for printing reticulated films wherein a projecting lens is interposed between a linearly reticulated film to be copied and a blank copying film. An iron magnetic armature is secured to the lens, which armature is vibrated by an adjacent electromagnet for displacing the optical center of the lens with relation to the network of the film to be copied so that each striation of said network will be spread out, as projected, over a surface equal to an interval of the network. A large number of vibrations per image are impressed upon the armature and lens.

1,816,083. **Rotatable Screen for Three-Color Cinematography.** A. HNATEK. July 28, 1931. A rotatable screen having red, green, and blue sectors thereon is provided for three-color cinematography in which only two of the three-color record images are taken at each exposure. The screen comprises filtering sectors separated by opaque sectors and divided into two concentric annular parts, one annular part having only one of the said three colors in all its sectors, the other annular part comprising the two other colors, which occur separated from one another and in opposite sectors of the annular part. By taking exposures the areas of the colors are inversely proportional to the sensitiveness of the film for the different colors. In projecting a film taken in this manner, the areas of the colors can be the same for all colors. If an auxiliary color is used for projecting purposes, the area (the sector) of such color is much smaller than the area (the sector) of the main colors by which this image is taken.

1,816,106. **Means for Driving Television or Other Apparatus at a Predetermined Speed.** J. L. BAIRD. Assigned to Television, Limited. July 28, 1931. A constant-speed motor such as a fork-controlled phonic wheel is arranged to drive a reversing switch operated at a constant frequency. Direct current is supplied to the switch and by virtue of the periodical reversals, a constant-frequency alternating current is made available. This alternating current is used to drive a synchronous motor, the speed of which is controlled by the frequency of its supply current, so that the speed of this motor is accurately controlled by the speed of the above-mentioned constant-speed motor.

1,816,234. **Projecting Machine.** A. SAPIER. Assigned to Universal Stamping & Mfg. Co. July 28, 1931. The casing of the projector extends around the support which houses the driving motor of the projector and may be adjusted angularly to different positions in a vertical plane for facilitating movement of the projector with respect to the receiving screen. The casing has a hollow cylindrical journal at its base which wholly encloses the motor adjacent the base of the casing and permits adjustment of the projector around the motor as an axis.

1,816,360. **Electrical Sound Reproducing Process Employing Metal Sound Record.** A. J. CAWLEY. Assigned to Radio Corporation of America. July 28, 1931. An all-metal electrically conducting photographic sound record is provided and the reproduction of sound controlled by the variation of the conduc-

tivity of a control circuit of a sound reproducing amplifier system. The metal sound record may be directly impressed upon a silver coated copper strip or a celluloid film may be softened by suitable solvents and metallic powder sprinkled over its surface. Heat and pressure are then applied, so that the particles are incorporated in the film; a metallic film is then electrically deposited upon this. The latter will adhere to the particles, and thus be held firmly to the film. The sound record of variable resistance is passed between a pair of brushes which lead to the input circuit of a sound reproducing amplifier for controlling the reproduction of sound therefrom.

1,816,397. **Sound Recording and Reproducing Monitoring Apparatus.** F. H. OWENS. Assigned to Owens Development Corp. July 28, 1931. Provision is made for listening in on the sound record at the time sound is being recorded or at the time of sound reproduction so that the operator can judge as to the volume and quality of the sound. Two recording lamps are provided and connected in series. One recording lamp operates directly upon the film while the other recording lamp operates upon a light-sensitive cell in an auxiliary pick-up circuit. The second recording lamp serves as ballast or resistance for the first recording lamp and prevents overloading thereof

1,816,409. **Non-inflammable Protecting Coating to Motion Picture Films.** L. L. STEELE. Assigned one-half to T. Moore of Washington, District of Columbia. July 28, 1931. A motion picture film is provided with a coating on each side which will not take flame if the film for any reason stops before the arc of the projecting machine; that will not take flame from contact with a lighted cigarette; that will maintain its original pliability under the destructive action of the intense rays of the arc light for a markedly longer time than the original film (thereby increasing the useful life of the film), and very materially curtailing fire hazard; that will be practically scratch proof in so far as injury to the gelatin emulsion image is concerned and which will decrease the tendency for dust, oil, or other foreign matter to adhere to the film, make it possible to clean films without injury to them in the process, and make films absolutely waterproof. The coating which is applied to the film has optical properties such that the projection values of the coated film are enhanced, that is, a brighter, clearer picture results on the screen.

1,816,831. **Combined Electrical Recorder and Reproducer for Phonographs.** O. M. DUNNING. Assigned to Thomas A. Edison, Inc. August 4, 1931. A stylus arm is provided with two stylus points, that is, a recording stylus and a reproducing stylus. The stylus arm is mounted in such a manner that the recording stylus may be vibrated from an electrical system for placing a sound groove on the sound record or the reproducing stylus may be moved into position for vibrating an armature within an electromagnetic field and generating current which may be used to operate an amplifier system and control a sound reproducer.

1,816,832. **Simultaneous Control of Two Reproducers by Film Switches.** C. W. EBELING. Assigned to Harrison W. Rogers, Inc. August 4, 1931. Two film-controlled switches are provided for controlling two sound reproducing machines for operation one at a time. The sound reproducing machines are selectively started and stopped by the film-controlled switches in accordance with the movement of the film. A sound amplifier and reproducer is connected

with the sound reproducing machine which is in operation according to the switch which is controlled by movement of the film.

1,816,989. **Light-Sensitive Layer.** M. P. SCHMIDT. Assigned to Kalle & Co. Aktiengesellshaft. August 4, 1931. A light-sensitive layer containing diazo compounds of aromatic amino-acylamines. For the preparation of light-sensitive layers and diazo copies thereof, diazo compounds are particularly well suited which contain in the aromatic nucleus besides the diazo group also an acylamino-group; it is of no consequence whether the diazo compound is applied together with the azo component and then developed with an alkaline bath, or whether the diazo compound is applied alone and developed after the exposure to light with an alkaline solution which simultaneously contains an azo component. The said diazo compounds have not only a very good stability and sensitiveness to light, but they yield dyestuff-pictures which are especially fast to light. The acyl residue may, for instance, be an acetyl group, a benzoyl group, or a naphthoyl group. Two amino groups can also be connected by carbonic acid residues or by thiocarbonic acid residues, or by residues of other polyvalent acids, *e. g.*, succinic acid; for instance, diazo compounds and tetrazo compounds of aromatic urea or thiourea are suitable. The aromatic residue having the diazonium group attached may be substituted. Preferably hydroxy-alkyl-groups have proved to be suitable substituents.

1,817,026. **Motion Picture Projector Employing Three Shafts of Light.** W. L. WRIGHT AND S. M. WRIGHT. August 4, 1931. A film is provided having a series of pictures each including three pictures arranged longitudinally on the film. A source of light is divided into three separate shafts of light in close proximity to each other and directed through the pictures in a series, three lens devices receiving the shafts of light after passing the film and directing the shafts of light onto a screen. One of the lens devices is offset with relation to the others. A prism is arranged to offset one of the shafts of light so that it passes through the offset lens device. The several pictures are projected in such manner that different light filtering means may be applied to the different shafts of light for producing predetermined effects during the projection of the pictures.

1,817,177. **Binaural Reproduction from Disk.** F. M. DOOLITTLE. Assigned to Radio Corporation of America. August 4, 1931. The effect of actual position or movement of the sound is obtained in sound reproduction by providing a sound record with two concentric sound tracks in which different stylus needles operate for controlling separate sound reproducing circuits simultaneously. The original records of the sound and the different tracks are made in accordance with the arrival of the sound from the original sound series to a pair of fixed predetermined points so arranged as to simulate the binaural effect which would be produced upon the ears of a listener similarly positioned. In the reproduction of the sound through separate stylus devices, the same binaural effect is reproduced.

1,817,217. **Film Spool and Mounting.** A. F. VICTOR. August 4, 1931. The side plates of the reel for carrying film are provided with central apertures of different shapes through which a spindle extends and provides locking engagement with the sides of the film reel. A rigid driving connection is assured by virtue of the arrangement of apertures of different shapes in the sides of the reel coöperating with portions of the driving spindle of corresponding polygonal formation.

1,817,320. **Motion Picture Printing Apparatus.** F. H. OWENS. Assigned to Owens Development Corp. August 4, 1931. Two negative films having separate records thereon may be utilized to print a single positive film for synchronous reproduction. The printer is particularly adapted for reconstructing a silent motion picture into a talking picture by combining parts of the film negatives already available. A construction of drum is provided over which one negative and the positive film are driven and subjected to light which passes through the interior of the drum and in alignment with a second negative film, the records from which are impressed upon the positive film.

1,817,502. **Scanning Disk for Television.** V. K. ZWORYKIN. Assigned to Westinghouse Electric & Manufacturing Co. August 4, 1931. Scanning disk wherein a transparent rotatable plate is provided with a plurality of opaque spots spirally positioned thereon. The arrangement of parts of the scanning disk is reversed over that normally employed as in the present instance the main portion of the scanning disk is transparent while the spirally disposed spots are opaque. A larger amount of light is obtained from the glow discharge tube by this arrangement as the major portion of the glow lamp electrode is always completely visible through the viewing aperture during the scanning operation.

1,817,612. **Reproducing System Employing Modulated High Frequency Currents.** P. H. CRAIG. Assigned to Invex Corp. August 4, 1931. Sound reproducing system in which a super-audible oscillator is connected to impress control current upon a loud speaker and the oscillator modulated in accordance with sound vibrations from a phonograph record for the reproduction of sound. A circuit is coupled between the super-audible oscillator and the loud speaker which serves to modulate the high frequency energy in its passage to the loud speaker circuit. A rectifier is provided in the loud speaker circuit so that the high frequency energy is first modulated and rectified for the reproduction of sound.

1,817,630. **Vibrating Motion Picture Screen for Sound Reproduction.** J. C. KROESEN. August 4, 1931. A motion picture screen having magnetic material incorporated directly in the screen so that the screen itself may be vibrated by electromagnetic forces applied directly to the magnetic material incorporated in the screen. The screen is used for both the display of pictures and the propagation of sound waves by vibration thereof under control of the electromagnetic means positioned at different points throughout the area of the rear of the screen.

1,817,661. **Safety Device for Motion Picture Projecting Machines.** J. F. ADAMS, *et al.* Assigned to Sentry Safety Control Corp. August 4, 1931. Switch for protecting motion picture projecting machines by cutting off the rays of light from the film under conditions of stoppage of the film for preventing accident and fire hazard. A douser is provided, adapted to be shifted into the path of light rays. A mechanism including a notched disk engaged by a trigger is provided for holding the douser out of the light obstructing position. An electromagnet is arranged to actuate an armature carried by the douser holding means to release the same upon actuation. A set of contacts is associated with the douser which operates when the douser drops for cutting off the motor circuit.

1,817,728. **Film Numbering Machine.** P. C. ARMITAGE. Assigned one-half to P. W. Newcomer of Pomona, Calif. August 4, 1931. A numbering machine for applying an identifying number on an envelope containing one or more films, which number appears on the film after being developed and printed so that

the danger of getting films of several customers mixed is eliminated. The device comprises a casing upon which the film enclosed in an envelope may be supported and exposed to light rays which pass through a window and through the numbering portion of the flap of the envelope for photographing the number upon a portion of the film which is pressed against the flap. The casing contains both a white and ruby lamp which may be alternately used. The ruby lamp will give enough illumination to permit the envelope and film to be properly positioned over the window in the casing preparatory to a printing operation using the white lamp.

1,817,781. **Photoelectric Cell and Sound Reproducing Drum.** OSCAR STEINER. Assigned to General Electric Co. August 4, 1931. The sound film is guided over a rotatable drum located between the film supply and storage reels. The rotatable drum has a circumferential opening therein which is bridged by the film. The parts on the opposite side on the circumferential opening are secured together in fixed relation on opposite sides of the opening. A photoelectric cell which receives the light passing through the opening is located between the separate parts of the drum so that light of an external source may be passed through a slit adjacent the drum and through the circumferential opening in the drum for passage through the film.

1,817,963. **System of Color Photography.** J. G. CAPSTAFF. Assigned to Eastman Kodak Co. August 11, 1931. A film for taking natural color pictures which consists of a single light transmitting support with a panchromatic emulsion on one surface of the support. The other surface carries minute lenticular elements particularly adapting the film for a color process of a type requiring light rays to pass through the support before reaching the emulsion, there being in the film sheet a layer including a dye absorptive of light of all colors and positioned between the emulsion layer and the opposite surface of the film sheet and transmitting at least seventy per cent of light passing once directly through said layer and unaffected by ordinary photographic baths.

1,817,977. **Iris or Fade-In Effect in Motion Picture Film.** P. FAVOUR. Assigned to Eastman Kodak Co. August 11, 1931. A separate film strip is applied to a motion picture film for obtaining a fading effect at desired points along motion picture film. The applied strip extends over a predetermined length of the film and is provided with apertures adjacent each of the frames of the motion picture film, which apertures vary in size for producing an "iris" effect by which a gradual transition such as a "fade-in" effect is obtained in the projection of the motion picture. The applied strip has a greater light retarding effect adjacent one end than at the other end and the ability to transmit light varies from area to area in accordance with the size of the apertures in the applied strip.

1,818,354. **Composite Photographic Method and Apparatus.** R. J. POMEROY. Assigned one-half to Paramount Publix Corp. August 11, 1931. Two independent cameras are focused upon the subject which is illuminated before a non-actinic ground. The two films are simultaneously exposed by light splitting. One film has an additional amount of light thrown thereon so that it is relatively overexposed. When this overexposed film is developed, a substantially opaque mask image of the subject is formed. The other film is masked with the mask image and by exposure to the desired background; the subject image of the second film is combined with an image of the background. The cameras may be

adjusted both laterally and vertically so that a similar image is produced on each film. However, an auxiliary light is focused upon the film in one camera so that overexposure results, allowing the combining process to be effected during the development period.

1,818,355. **Adjustable Lens Holder.** W. C. READEKER. August 11, 1931. An adjustable lens holder which may be moved to different projection positions such that images may be projected in a plurality of directions at relatively different angles. A prism is mounted upon a frame member in such manner that the prism may be rotatably adjusted to control the deflection of light rays in different directions. The device is designed particularly for portable motion picture machines for facilitating the projection of pictures upon a desired surface.

1,818,432. **Intermittent Feed Mechanism.** G. ROUILLER AND J. MARION. August 11, 1931. Structure of intermittent film feed mechanism designed to obtain the least possible obturation owing to variable angular movement of the shutter with parts of the projector to which the mechanism is applied arranged for ventilation between the parts. The obturator has equidistant vanes and is mounted on a central axis of rotation. There are fan blades on these vanes for setting up ventilating currents to pass through the lantern casing. There is a pin on the obturator eccentric with the axis thereof, which pin engages a link for predetermining the position of the obturator and insuring coöperaton between the film feeding means and the obturator during framing.

1,818,499. **Filter Mounting Frame.** A. B. MUELLER. Assigned to Postergraph, Inc. August 11, 1931. A frame for mounting a filter where the filter may be quickly shifted or removed for permitting a change of plates and a quick resetting thereof at exactly the same distance from the light source. The frame has a pair of independent reels slidably mounted for supporting the frame members, the frame members being adjustable on the reels and being held in parallel relation thereto. A gear actuator is provided for effecting quick adjustment of successive screens or filters in the frame.

1,818,502. **Sound Reproducing Apparatus.** FREEMAN H. OWENS. Assigned to Owens Development Corp. August 11, 1931. A guide for sound film in which a rotatable sprocket and an idler roller are mounted for rotation upon an aligned axis for moving the film adjacent a light station or point of translation. A photoelectric cell is disposed between the idler roller and the drive sprocket closely adjacent the film and subjected to variations in light in accordance with the record on the film.

1,818,718. **Synchronous Control of Color Screens.** H. A. KLIEGL. Assigned to Kliegl Bros. Universal Electric Stage Lighting Co., Inc. August 11, 1931. The color screens are mounted in a rack in which each color screen is angularly shiftable under magnetic control in the path of the spotlight. The movement of each color screen is controlled by a small Selsyn motor. Each Selsyn motor is connected by line wire to a Selsyn generator at the control position. The operator, by rotating a knob on the Selsyn generator at the control position, sends control current over the line for operating the motor at the spotlight control for moving the desired screen into the light beam. By twisting the different generator shafts to the control position, the desired color screens may be moved into position in front of the spotlight.

1,818,760. **System Employing a Braun tube for Drawing Electrical Pictures.** P. SELENYI. Assigned to Egyesult Izzolampa Es Villamossagi Reszvenytarsasag, of Ujpest, Hungary. August 11, 1931. A sharply defined bundle of cathode rays generated in a Braun tube is set in motion by circuits terminating adjacent the tube for describing a variable path over a recording screen at the end of the tube. The path of the moving rays on the screen leaves a permanent but invisible mark on it, in the shape of a line drawn with electrical charges. The negative charges constantly conveyed by the cathode rays mark the path of travel of the pencil of rays on the spots of the screen hit by them, by getting fixed on the highly insulating material of the screen, and forming thereon an invisible line, drawing, or picture—according to the character of motion and intensity of the rays—consisting of negative charges imparted to the spots of the screen hit by the pencil of rays. This invisible "electrical picture" is made visible in a manner similar to that used in producing the well-known "Lichtenberg-figures," *i. e.*, by spraying the screen with a fine electrically charged powder. A mixture of fine, powdered sulfur and minium is employed for this purpose. When this mixture is sprayed on the screen by a current of air produced, for instance, with a rubber-ball sprayer, the sulfur acquires a negative, the minium a positive charge, and therefore the minium particles adhere to the negatively laden spots of the screen, thereby making the "electrical drawing" visible in red lines.

1,818,862. **Double Amplifying System.** R. A. MILLER. Assigned to Bell Telephone Laboratories, Inc. August 4, 1931. A sound recording system where two separate transmitters are provided in connection with two amplifiers to a recording camera. The leads between the transmitters and the recording camera may be of substantial length. There is a light-valve string controlled by the main amplifier with a switch provided for quickly short-circuiting the light-valve string and de-energizing the amplifier. Either one of the sound pick-up channels may be used independently and in conjunction with volume control circuits for effecting the recording of sound under different conditions.

1,818,927. **System of Color Photography.** J. N. GOLDSMITH. Assigned to Spicers, Limited, of London. August 11, 1931. A motion picture film is coated with a constituent of coloring matter upon which there are impressed geometrical patterns on the surface of the film. There is then successively impressed upon the film one or more media, each containing a compound capable of reacting with the constituent to form a differently colored coloring matter. The coating originally applied to the film comprises a solution of the anilide 2:3 oxynaphthoic acid in alcoholic potash. The pattern formed on the film may comprise red lines developed by ruling on lines of a solution of diazotized 2:5 dichloraniline. Blue lines may be developed on the film by ruling on lines of a solution of 4 amino 4′ ethoxy diphenylamine.

(Abstracts compiled by John B. Brady, Patent Attorney, Washington, D. C.)