ABSTRACTS OF RECENT U. S. PATENTS

The views of the readers of the JOURNAL relative to the usefulness to them of the patent abstracts regularly published in the JOURNAL will be appreciated. Favorable views are of particular interest. In the absence of a substantial body of opinion to the effect that these patent abstracts are desired by the membership, their early discontinuance may be considered.

1,825,663. **Film Reel and Spindle.** A. G. HAYDEN. Oct. 6, 1931. A reel and spindle interlock on slight relative rotative adjustment, thereby to give them a driving connection and prevent the reel from accidental escape from the spindle. The film reel comprises a pair of plates and a hub between said plates adapted to have a film wound thereon, one of said plates having a hole therein and the other of said plates having an opening with tongues therein projecting toward, but not to, the center of the plate; and a spindle, in said hole and opening, having a groove for receiving said tongues to prevent movement of the reel axially of the spindle.

1,825,781. **Television Scanning Device.** L. H. DAWSON. Oct. 6, 1931. Scanning disk for television systems in which a rotatable disk is provided with a plurality of conically shaped light conducting and concentrating members extending through the disk perpendicularly to the plane thereof. The light concentrating members are constructed from quartz having a high refractive index for increasing the luminous intensity of the image by concentration of the available light rays.

1,825,953. **Device for Permitting the Continuous Feeding of the Film in Projecting Apparatus.** P. G. H. HALLONGREN. Oct. 6, 1931. Projecting apparatus in which the reflecting members are divided into at least two groups, which successively reflect the picture rays and are positively caused to turn synchronously, during which operation the active surfaces or the surfaces struck by the picture rays turn in the same direction, and the said rays pass the reflecting surfaces at the same side of the axis or axes of rotation through which the said reflecting surface or surfaces extend or with which the surfaces or surface are substantially parallel, the said axis or axes having an oblique position with relation to the plane, on which the incoming rays travel (the plane of the wandering picture).

If two axes of rotation are provided the reflecting surfaces may be located either round the axes or tangentially to cylindrical surfaces enclosing the axes of rotation and concentric with the same. In practice the two groups of reflecting members preferably are located around an axis common to the same and the reflecting surfaces of the one group located radially, while the reflecting surfaces of the second group are located tangentially to a cylindrical surface enclosing the said axis and concentric with the same.

1,825,955. **Synchronized Cylinder Record for Talking Picture.** E. S. HAYFORD. Oct. 6, 1931. Apparatus for synchronizing a sound record with a picture record comprising a cylinder of conducting material mounted for simultaneous movement with the picture record, a sleeve of non-conducting material carried

upon said cylinder and having an opening, a stylus mounted for movement along said cylinder and normally engaging said sleeve and adapted to enter the opening therein and an electrically operated actuating device connected in circuit with said stylus and said cylinder for operating said sound record. The sound producing means may be rendered operative or inoperative at any predetermined position with respect to the film being projected, thereby permitting the use of a record having a limited tone groove length in connection with a greater length of film.

1,826,305. **Scanning System for Television.** H. P. DONLE. Oct. 6, 1931. A scanning system having a speed regulating drive interposed between the scanning disk and the driving motor. The shaft is formed in two parts, and the speed of rotation of one part is manually controlled by friction means and regularized by a ball governor. The other part of the shaft carries the scanning disk and the angular relation between the two parts of the shaft is adjustable by manually controlled means independent of the speed controlling means and independent of the speed of the motor.

1,826,332. **Drive Mechanism for Scanning Disk.** C. O. VERMILLION. Assigned to Wired Radio, Inc. Oct. 6, 1931. A drive mechanism for a scanning disk having means for framing the scanning holes of the scanning disk with respect to the object to be televised or the picture to be reproduced. The scanning disk driving mechanism is so arranged that constant speed may be obtained at both the transmitter and receiver even during periods of adjustment for framing the apertures in the scanning disk with respect to the picture or object.

1,826,522. **System for Avoiding Interruptions of Television Program.** F. H. OWENS. Assigned to Owens Development Corp. Oct. 6, 1931. A plurality of photoelectric cells are arranged in light paths formed through the film. The cells operate simultaneously for controlling the input circuit of an amplifying system. The light which is directed through the film is split into diverging paths toward a plurality of photoelectric cells so that any one of the cells will continue to operate for controlling the reproduction of sound in the event of failure of the others so that there will be no interruption to the sound program.

1,826,680. **Motion Picture Projector Cabinet.** A. STUBER. Assigned to Eastman Kodak Co. Oct. 6, 1931. A projector is housed with a sound reproducing instrument in the same cabinet, the projector being mounted on a rotatable support for projecting a picture in any desired direction to the most suitable location on a portable screen. A phonograph or radio apparatus may be housed in the cabinet, but is so isolated from the projector that the noises of the projector are muffled and prevented from interfering with the equipment within the cabinet. The light rays from the projector within the cabinet are directed vertically through the cabinet and then projected horizontally in any desired angular direction. The direction of the beam may be selected by shifting the projector to the desired angular position within the cabinet structure by means of a crank which engages the rotatable mount for the projector.

1,826,695. **Light-Protected Motion Picture Film.** P. FAVOUR. Assigned to Eastman Kodak Co. Oct. 6, 1931. A light protecting covering is interwound with the film strip and is normally unperforated, but capable of being perforated as a film moving mechanism advances the film through contact with the film perforations. Pasters are provided for attaching the supplementary light-

protective covering to the perforated film band, the pasters attaching one end only of each supplementary light-protective covering to the film band.

1,826,754. **Method of Making Photophonographic Records.** F. EHRENHAFT. Oct. 13, 1931. A recording lamp is employed having a luminescent gas discharge controlled by sound waves, which transform said luminescent gas discharge into a transitional form of discharge intermediate between a glow and arc discharge.

1,826,786. **Sound Controlled Still Picture Protector.** P. S. HOPKINS. Assigned by mesne assignments to Agfa Ansco Corp. Oct. 13, 1931. Projecting apparatus for still pictures accompanied by a sound program. The still pictures are shifted automatically to coördinate the picture with the sound program so that a picture is projected appropriate to the accompanying sound. The apparatus is capable of use as a projector accompanied by an illustrated lecture without the attendance of the lecturer.

1,826,812. **Electroöptical Transmission Employing Mirrors instead of Light Valve.** H. NYQUIST. Assigned to American Tel. and Tel. Co. Oct. 13, 1931. A system for transmitting electrical impulses into light impulses of varying intensities, comprising two plane mirrors having their planes intersecting at right angles and controlled by incoming picture current at the receiving station, which mirrors take the place of the usual light valve. The term "90-degree mirror" is used to designate such an arrangement of plane mirrors. This "90-degree mirror" rotates about an axis at the line of intersection. The surfaces consist of alternately reflecting and non-reflecting strips which gradually increase in width from the line of intersection. The rotation of the 90-degree mirror is controlled jointly by picture currents received from a transmission line, which currents pass through a movable coil attached to the 90-degree mirror, and by current from a local source which passes through a stationary coil, the position of the 90-degree mirror varying in accordance with the amount of current received from the line. A constant light source is arranged to project a beam of substantially parallel rays of light toward the surfaces, the axis of the beam being directed toward the axis, or intersection line, of the surfaces and at an angle thereto. The reflected beam from these surfaces is directed to a focal point on a light-sensitive surface, such as a photographic film. The amount of light reflected by the surfaces and, therefore, the intensity of the light at the focal point will vary directly with the angular change in position of the surfaces as controlled by the picture currents received from the sending station. The reflecting strips on the surfaces may be so designed as to give a non-linear relation between the light intensity and the received current strength.

1,826,836. **Television Scanning Device.** M. STACHO. Oct. 13, 1931. A television scanning system consisting of a pair of rotatably mounted disks having co-acting intersecting slots therein for the passage of light rays. One of the disks has an armature member mounted thereon and associated with an electromagnetic control for retarding the disk at the completion of each revolution in a manner to cause the same to rotate periodically at a reduced speed as compared with the other disk.

1,826,858. **Photographic printing apparatus.** V. K. ZWORYKIN. Assigned to Westinghouse Electric and Manufacturing Co. Oct. 13, 1931. A concentric arrangement of drums for aligning a positive film with a negative film for the printing of positives from the negative. The light source is directed through the

drums and through the negative film adjacent to the outside drum to the positive film adjacent to the inner drum. The light source, when a reduction in film size is to be made, is positioned exteriorly of the large wheels over which the negative film is fed, and the light therefrom, passing through the negative film, falls upon the surface of the unexposed film carried over the smaller wheels. If the device is to be used for enlarging, the negative film is fed across the small wheels and the positive film across the large wheels, the light source being so re-positioned that the negative film passes between it and the positive film.

1,826,970. **Television and Telephoto Device.** J. L. WALKER. Oct. 13, 1931. Picture reproducing system in which two separate scanning systems are directed upon opposite sides of a reproducing screen. A photographic plate or viewing screen uses light from two separate light sources and projects light from one light source upon one side and from the other light source upon the other side of said photographic plate or viewing screen and the illumination from the two separate light sources combined at one point. The recording lamps of the two scanning systems are connected in parallel in the output circuit of the receiving apparatus, and each so positioned on opposite sides of the screen as normally to give equal illumination upon the screen.

1,827,010. **Film Flame Stop.** L. D. KOHLMEYER. Oct. 13, 1931. The film is protected by a fire-proof frame structure forming compartments surrounding the film reels. The entrances to each of the compartments are provided with passageways formed between a pair of rollers carried on fixed axes in the passageway. A second pair of rollers is mounted adjacent to each passageway for guiding the film through the passageway and at the same time forming a fire stop in the event of ignition of the film.

1,827,018. **Photoelectric Cell.** A. JOFFE. Assigned to Industrial Research Co. Oct. 13, 1931. A photoelectric cell comprising a sheet-like insulating layer having a thickness not greater than 0.01 mm. having a photoelectrically active substance distributed through the insulating layer and a pair of electrodes supporting the layer, at least one of the electrodes being transparent to light. The invention is based on the discovery that when an ion is initiated or excited within certain substances of requisite thickness, notably dielectrics or other materials of low specific conductivity, and further, when the substance is subjected to considerable electrical stress, the medium through which the ion travels at high velocity gives rise to an augmentation of the number of charged particles. The accumulative action effects a general movement of ions toward one of the electrodes and results in a greatly magnified space current with abrupt reduction of impedance to produce amplification of the impulse originally exciting the single ion. The original impulse may be energy derived from any physical phenomenon such as light, heat, electron bombardment, or other electrical effects.

1,827,206. **Film Support for Photographic Apparatus.** F. H. OWENS. Assigned to Owens Development Corp. Oct. 13, 1931. A support for traveling films, comprising a pair of axially aligned movable members, one of said members being adapted to engage a film and cause the same to travel over the other member. A stationary member is disposed between said movable members and spaced therefrom to permit the passage of light to said film between said stationary and movable members and on each side of said stationary member.

1,827,282. **System of Composite Photography for Motion Pictures.** O.

CHOUINARD. Assigned to Motion Picture Improvements, Inc. Oct. 13, 1931. A machine to produce moving pictures of animated objects and scenic or other effects wherein the scenic or other effects are recorded in positive, direct, and accurate relation to the moving objects, without the heavy cost of "locating." The method comprises making duplicate exposures on two films of moving objects having actinic properties substantially different from those of the background therefor, developing one of said films, projecting images from the respective frames of said developed film successively toward an actinic background, successively altering the actinic effect of said background complementary to and in registration with the respective projected images, and doubly exposing said undeveloped film by subjecting its respective frames to said background as successively altered in actinic effect and without substantial effect thereon of the respective projected images.

1,827,588. **Film Drive.** E. W. KELLOGG. Assigned to General Electric Co. Oct. 13, 1931. An improved film driving apparatus in which the film is driven jointly by a sprocket and a roller or drum and in which the speed of one of said members is varied in accordance with the amount of film moved by the respective members as determined by the number of film sprocket holes. A free running sprocket hole counter is provided engaging that portion of the film moved by the drum and a variable speed driving mechanism for the drum controlled by the relative movement of a drive sprocket and the sprocket hole counter. There are means responsive to a difference in speed of those portions of the film moved by the respective sprocket and drum members, as determined by the sprocket tooth openings and independently of the length of film between said members, for varying the speed of one of said members.

1,827,598. **Motion Picture Cabinet.** A. G. MERRIMAN. Oct. 13, 1931. The projecting apparatus is mounted within a cabinet structure having a portion at one side thereof which may be moved away from the cabinet structure for supporting a projecting screen upon which the picture from the projecting apparatus within the cabinet structure may be displayed. When the apparatus is not in use the screen is foldable into a position within the cabinet structure, making a compact article of furniture for the home or a compact advertising apparatus.

1,827,735. **Volume Control in Sound Record Reproduction.** J. R. BALSLEY. Assigned to Fox Film Corp. Oct. 13, 1931. The film bearing the sound record also carries a volume control record driven in synchronism with the sound record, and adapted to control the volume level of the sound reproduced from the sound record. This volume control record may be simply a varying density photographic record, which may be prepared by reference to the volume level of the sound record as recorded, as may be determined by ordinary reproduction thereof. The volume control record, which may be printed on the same film that carries the pictures and sound record, for instance, outside the sprocket perforations thereof, or on a separate film if more convenient, is operated in conjunction with a light beam and photoelectric cell to produce a varying electrical current which is utilized to control the level of reproduction, and to do this irrespective of the level at which the sound record was recorded. The photoelectric cell which is acted upon by the volume control record is connected across the grid and plate of a vacuum tube, whereby a varying plate current corresponding thereto appears in the plate circuit of the tube with means for modifying the volume

level of the reproduced sound in accordance with the variations in said plate current.

1,827,924. **Picture Copying Process.** F. D. WILLIAMS. Oct. 20, 1931. A method of copying pictures which comprises projecting primary component silhouette pictures of ultimate composite pictures upon an opaque picture perceptive screen and light-impressing a sensitized medium with a supplementary component, by aid of the light from said screen with the silhouette projected thereon so as to produce a latent stencil area. The stencil area is then light-impressed with a regular picture corresponding to the silhouette.

1,827,947. **Synchronizing Mechanism for Disk Reproduction.** W. R. MOORE, JR. Assigned to Deca Disk Phonograph Co. Oct. 20, 1931. Mechanical linkage for connecting phonograph and a picture projecting machine for taking up all lost motion between the mechanism for playing the record and that for projecting the pictures so that the music and the pictures shall perfectly synchronize. A worm gear connection is provided with an adjusting device which permits the taking up of lost motion.

1,828,032. **Projection Machine with Optical Intermittent.** R. DECAUX. Assigned to Société des Établissements Gaumont. Oct. 20, 1931. Projector wherein the film moves in a continuous manner along an arcuate guide, past a window lighted by a luminous source which is combined with a condenser. The film occupies the focal plane of an optical system which sends a beam of parallel rays on a mirror which is caused to oscillate about an axis located in its plane. From that mirror, the luminous rays are directed on a stationary mirror disposed at 45 degrees, caused to pass through an objective, from which they are projected on the screen. The oscillating movement of the mirror, which is controlled by a cam, is synchronized with the forward movement of the band in such a way that, between successive extinctions produced by a rotary blade acting as a shutter, the image of a determined point on the film is maintained stationary on the screen. The chief object of the invention is to provide a mechanical arrangement of the parts owing to which the oscillating mirror, the support of said mirror, and the control cam for controlling it are caused to coöperate under the best conditions, account being taken of the inertia of the different pieces and of the play which is liable to take place as a consequence of wear and tear. The mirror is fixed on a platform pivoted to a rocking lever of adjustable position and carrying an arm which receives the oscillations of the cam. The mirror bears at three points on the platform and is maintained in place by springs, in such a way as to eliminate all deformation of the reflecting surface.

1,828,199. **Toy Talking Movie Device.** F. H. OWENS. Oct. 20, 1931. An inexpensive form of toy talking picture apparatus wherein an intermittent picture strip may be moved past a viewing window in timed relation to the movement of a rotatable talking machine record support. The record carries the sound appropriate to the picture and is maintained at proper operating speed by a governor device.

1,828,236. **Method of Producing Visual Effects.** A. C. WATSON. Oct. 20, 1931. A neon lamp illuminating device in which substantially instantaneous intermittent illuminations are formed in different positions along a periodic path in rapid succession through repetitive cycles satisfying the critical frequency for continuous visual sensation. Visual effects of appreciable duration are produced

and modified by interposing a mask between the illuminations and the observer. An instance of usefulness of this method consists in the fact that by combining the red color of neon with the yellow color obtained from it as in the "Bezold-Brucke" phenomenon and also with other types of light such as the neon mercury tube and by placing before the rotating light a rotating mask which may itself be colored, so as to reflect daylight, it is possible to secure vari-colored visual patterns. If the mask referred to be rotated at a slightly different speed from that of the light, then the colored patterns undergo a series of changes of form, as well as of color and the total effect may be upon such a large scale as to produce exceedingly attractive and beautiful patterns of various colors.

1,828,364. **Film Contact System Employing Air Pressure.** F. E. GARBUTT. Assigned to Paramount Publix Corp. Oct. 20, 1931. The positive and negative films are pressed into firm contact by an air pressure system in connection with the printer and a current of air directed against the films in such a manner that the films are held in perfect contact against the registering means upon which they are supported.

1,828,399. **Photoelectric Cell Light Ray Condenser.** C. W. EBELING. Assigned to General Talking Pictures Corp. Oct. 20, 1931. A photoelectric cell light ray condenser is provided for condensing the rays of light after the same have passed through the sound track of the film and before the same impinges upon the photoelectric cell, thus insuring higher efficiency in the action from the cell due to the concentration of the beam of light thereon. A condensing lens is carried in the light slit block in the path of the light rays before they reach the photoelectric cell.

1,828,444. **Method of Dubbing and Printing.** W. ROM. Oct. 20, 1931. A printer for applying a sound record to a previously prepared picture film, which consists in utilizing two positive films of the same picture and projecting one positive film on a screen for guidance in applying sound to a negative film made from the other positive film of the same picture, driving said other positive of said film in synchronism with the projected film, masking a portion of said other positive thereby to provide an area for the sound record, driving a negative film in synchronism and printing relation with said other positive and with the sound area of said other positive masked as to said negative, and simultaneously recording sound on the sound area of said new negative, the sound record being applied to the sound area of said negative in accordance with the projected positive of the same picture.

1,828,569. **Film Stopping Apparatus.** E. W. KELLOGG. Assigned to General Electric Co. Oct. 20, 1931. The projector is arranged to stop the film driving machine before the record film is completely unwound and disengaged from the reel on which it has been wound. This is the situation, for example, when in normal operation the film is rewound on the original reel without removal from the machine, the purpose of rewinding being to leave the film ready for immediate use, namely, with the beginning part of the record on the outside.

1,828,571. **Picture Transmission System.** I. LANGMUIR. Assigned to General Electric Co. Oct. 20, 1931. A light source of the flaming arc type is used at the picture receiver. The current supplied to the arc lamp is modulated in accordance with the received signal. The picture at the receiver is projected on a screen. Spots of light from the arc lamp are projected on the screen but light

from the electrodes excluded. This is accomplished by a scanning apparatus comprising a disk having a series of lenses arranged in a spiral therein and arranged successively to pass between the lamp and the screen when the disk is rotated with a motor for rotating the disk in synchronism with a sending apparatus. An objective lens is provided and a second disk rotatable with the first-mentioned disk arranged with a series of holes therein corresponding with said lenses for excluding from the objective all light emanating from the electrodes of the lamp.

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