ABSTRACTS OF RECENT U. S. PATENTS

1,812,865. **Valve for Magazines for Picture Films.** A. DINA. Assigned to The Precision Machine Co., Inc. July 7, 1931. Entrance valve for film leading to a film magazine for preventing fire from following the film from the projection machine into the film magazine in the event of accident. The valve consists of a pair of heat conducting rollers, mounted adjacent to a pair of guide rollers at the entrance of the film magazine. The rollers form a narrow entrance slit for the film with respect to the magazine and quench fire from the film in case of accident by conducting away heat as rapidly as it is generated.

1,812,957. **Electrically Operating Sound Recorder and Reproducer.** C. HUENLICH. Assigned to Thomas A. Edison, Inc. July 7, 1931. An electromagnetically actuated stylus for cutting a sound groove in a cylindrical type sound record. The stylus is carried by a floating arm which is connected with an armature. The armature is electromagnetically vibrated by an electromagnetic driving unit for cutting a sound groove in the cylindrical wax record by correspondingly moving the stylus according to impressed sound vibrations for producing a "hill and dale" sound groove in the sound record.

1,813,000. **Photographic Film Printer.** F. B. THOMPSON. Assigned to Cinema Patents Co. July 7, 1931. A multiplicity of film printer units are connected together for permitting a multiplicity of positive prints to be made from a single negative while insuring the obtaining of a uniform light intensity at the point of exposure in each of the film printer units in accordance with the light intensity desired or required for the production of the positive from the negative in accordance with the scene passing through the unit. A battery of photographic film printer units is provided and the negative film driven through all the units. Each unit has a positive film passing therethrough which is printed from the negative film by printer mechanism disposed in each of the printer units.

1,813,204. **Radio Photography Transmitter.** V. A. SCHOENBERG. July 7, 1931. Scanning mechanism for a moving film in which each frame of the film is successively scanned. The scanning disk is mounted in alignment with the film and is so shielded that a single light beam passes therethrough in the course of its passage through the film. A framing structure is provided around the light aperture through the scanning disk and is adjustable for defining the active field of the scanning disk.

1,813,439. **Lens for Photographic Cameras, Picture Projecting Apparatus, and Other Like Optical Devices.** CLYDE J. COLEMAN. July 7, 1931. Lens for obtaining sharper definition of objects which includes a marginal stop formed with an aperture and a supplementary stop of smaller diameter than the aperture located near the surface of the lens remote from the source of light and in a plane between the marginal stop and the focal plane near the optical axis. The supplementary stop is adjustable toward or away from the marginal stop. With this arrangement an image of the objects on the optical axis and near it or the meridian on which the screen is situated is projected by those rays reflected therefrom that

pass through the aperture constituted by the marginal and central stops to the lens while the rays of light reflected from other objects in the field pass obliquely through the said aperture to portions of the lens determined by the position of each such object.

1,813,542. **Talking Picture Vehicle.** F. H. OWENS. Assigned to Owens Development Corp. July 7, 1931. A portable talking picture apparatus in which the sound reproducer and picture projector is mounted upon a vehicle. The rear of the vehicle is provided with doors which may be swung open to support the picture projection screen and to provide a mounting for loud speakers on the rear of the doors. The reproduced sound and pictures are thereby made available to observers from the rear of the vehicle. The projection apparatus is located inside the vehicle. The idea is to provide a talking picture apparatus which can be readily moved from place to place for exhibitions at county fairs and in open air places.

1,813,669. **Method of Making Color Photographic Film Embossing Tools.** H. E. HASTINGS. Assigned to Eastman Kodak Co. July 7, 1931. Tool for embossing minute lenticular elements in a film through which light rays pass to the light-sensitive emulsion. The tool consists of an extra hard drawn phosphor bronze member with a smooth accurately dimensioned periphery which is highly polished. There are a plurality of closely spaced serrations in the order of 0.001 of an inch in size cut in the polished periphery. A thin layer of chromium is disposed on the polished serrations. These serrations are pressed into the film thus forming the lenticular elements through which light rays may pass.

1,813,681. **Electron Tube with Slotted Anode for Light Source in Reproduction.** O. SANDVIK. Assigned to Eastman Kodak Co. July 7, 1931. The electron tube in the reproducing amplifier has its anode slotted to enable the light radiations to be directed outwardly from the cathode and upon the photoelectric cell in the sound reproducing circuit, with a film having a sound record thereon interposed in the path between the source of illumination and the photoelectric cell. The sound record on the film modulates the photoelectric cell circuit. This arrangement eliminates the necessity of an extra light source and thus reduces the size of the sound reproducing apparatus.

1,813,990. **Film Spool.** H. A. DEVRY. Assigned to Q. R. S. DeVry Corp. July 14, 1931. The side plates of the film spool are each provided with tongues which project inwardly into grooves in the drive shaft and serve as keys for insuring simultaneous rotation of the film spool with the shaft.

1,814,137. **System for Multiple Scanning of an Area for Each Rotation of Disk.** J. B. FELSHIN. July 14, 1931. A system of scanning disks wherein a pair of coaxial parallel disks are arranged each having a plurality of spaced elongated narrow openings arranged in annular aligned paths. One of the disks has a greater number of apertures than the other disk. The arrangement of apertures is such that scanning of a predetermined area is effected a plurality of times during each revolution of the disks.

1,814,181. **Laminated Scanning Device.** L. OSKOW. July 14, 1931. Scanning means for a television system where the scanning device consists of a laminated member with a shutter movable with respect to the laminated member. The laminated member comprises a series of parallel plates spaced one from another.

The shutter is formed with a narrow slit disposed at an angle to the openings and allowing scanning of large areas in great detail.

1,814,217. **Changeover System Employing a Single Source and Lens.** T. HILL. July 14, 1931. The focusing equipment of the projector is mounted upon a frame adapted to receive the film driving mechanism. The projectors are adapted to be moved into alignment with a single source of light and a single lens as the end of each reel is reached and preparatory to the projection of the succeeding reel. Because of the fact that the same light source and same lens system is employed for each projection mechanism, refocusing of the machine is not necessary and the display of the picture can be handled by one operator without interruption.

1,814,382. **Television Receiving Apparatus.** V. G. GUSTAFSON. July 14, 1931. The rays of light from the glow discharge tube at the receiver are converged to a single beam or point of light which is directed against a revolving wheel having a number of reflecting surfaces thereon in the path of the converged light beam and arranged in such position as to reflect the light beam onto a second revolving wheel having similar reflecting surfaces on the same. The second revolving wheel is arranged with its axis approximately perpendicular to the axis of the first wheel and is so disposed as to reflect the received light beam to a screen for forming the frame. An objective lens may be employed to enlarge the pictures projected to the screen.

1,815,105. **Cylindrical Scanning.** W. HOWEY. July 21, 1931. The same cylindrical device is simultaneously used for scanning and engraving any desired subject. The cylindrical device produces rotary motion of a connected cylindrical surface and simultaneously produces coördinate movement of the scanning and engraving means adjacent the latter. The system may use any desired form of scanning by reflected light, mechanical means, or otherwise; it may utilize any desired form of engraving apparatus and may have more than one cylinder and its engraving device mechanically connected to the scanner.

1,815,513. **Manufacture of Cellulose Films.** H. KRULL. Assigned to The Film Feldmuhle, Papier und Zellstoffwerke Aktiengesellschaft. July 21, 1931. Manufacture of cellulose films of any desired length from aqueous cellulose solutions, preferably from a viscose solution, in which a plurality of tanks and a plurality of transport rolls are provided, each tank having coördinated therewith one of said transport rolls having a smoothly polished surface. Individual adjustable drives are arranged for a number of the transport rolls whereby shrinkage of the film may be compensated for by appropriate adjustment of roll speed. A viscose pouring device is disposed in coöperative relation to that transport roll which is the first in the series of rolls. There are two idle rollers between each two adjacent transport rolls in the series of the rolls. One of the idle rollers is adapted to take off the film from one roll of the two and the other idle roller is adapted to receive the film and transmit it to the second one of the adjacent transport rolls. The film is passed through the baths so that one and the same surface of it only is subjected to the action of such baths, and its opposite surface is maintained smooth by contact with the polished surfaces of the rolls.

1,814,525. **Continuous Printer.** F. H. OWENS. Assigned to Owens Development Corp. July 14, 1931. Apparatus for the printing at high speed of positive from a negative motion picture film and including guiding and driving means,

whereby the printing operation may take place during the continuous and uniform movement of the positive and negative film strips. A feed member consisting of a circular rotary disk is provided having peripheral teeth acting on a negative film at one side and on a positive film at the other side. Curved film guides serve to support the films in driving relation to the feed member and independently thereof. The radius of the arc of the film guides is greater than that of the feed member. There is a lens between the films adjacent the feed member. A light source is arranged outside the negative film and in alignment with the lens. Printing of the positive from the negative occurs as the films are moved in opposite directions around the rotary disk.

1,814,588. **Still Picture Projector.** R. P. VAULT. Assigned to Society for Visual Education, Inc. July 14, 1931. A projector employing film for the reproduction of "still" pictures. The film is of an endless arrangement adapted to be moved past the optical projection path and rewound for a repeat operation. The film is mounted inside the projector adjacent the hinged side thereof. The film is threaded through a single twist by which the surface of the film directly faces the door of the projection machine when the door is closed. A claw device extends through the door and engages the film permitting it to be moved step by step from the exterior of the cabinet to align selected frames with the optical system.

1,814,672. **Color Motion Picture System.** M. B. DUPONT. Assigned to Max B. DuPont Vitacolor Corp. July 14, 1931. Process of color photography and system of projection upon a screen for reproducing pictures in color without the disagreeable fringe effects or flicker often encountered in motion pictures which are reproduced in color. A combined shutter of opaque portions and color filters is employed where the filters comprise two color units each having major filters whose color values are from the same side of the spectrum but whose color vibrations are of different wavelengths and an interposed filter from the opposite side of the spectrum whose effective color vibration is less than that of the major filters. Successive frames of the negative film will be impressed with a blended color mixture. The light rays acting upon an image area are limited to a series of non-complementary and complementary spectrum values and a following area to a second series so combined as to run approximately from one side of the spectrum to the other, whereby the optical persistency of color of the first series will combine with the persistency of the second series and furnish all the spectrum values.

1,814,701. **Method of Making Viewing Gratings for Relief or Stereoscopic Pictures.** H. E. IVES. Assigned to The Perser Corp. July 14, 1931. The grating is made by exposing a light-sensitive plate to a substantially punctiform light source. The light rays are passed through a grating complementary in its spacing to the grating used in taking the relief picture negative. The distance between the light source and the complementary grating bears the same ratio to the distance between the grating and the light-sensitive plate, as the distance between the taking grating and the lens of the camera which made the picture to be viewed bore to twice the distance between the taking grating and the negative plate when the picture was made.

1,814,861. **Sound Recording and Reproducing Apparatus.** J. F. SEES. Assigned to General Electric Co. July 14, 1931. An adjustable slit for a sound reproducing projector is provided in a supporting housing aligned with the sound

track on the film. The slit has end shutters so mounted that the shutters may be separately adjusted in an endwise direction for widening or narrowing the light slit which is passed through the film.

1,814,987. **Color Picture Transmitting System.** A. WEAVER, *et al.* Assigned to American Telephone and Telegraph Co. July 14, 1931. Method of producing colored pictures where a colored object is progressively analyzed for each of a plurality of primary colors A separate series of electrical impulses corresponding to the varying values of one of the primary colors is transmitted to a distant point. Each of the separate series of impulses is utilized at the receiver to produce corresponding separate primary color records, which when used together produce a picture of the original object in its original natural colors. The invention contemplates the transmission of the different color components over different wire circuits, each of which is designed for the transmission of the particular series of impulses inherent in the transmission of the particular primary color allotted to that particular signaling channel.

1,815,109. **Machine Serving to Determine or Verify the Position of the Filament of an Electric Lamp.** A. J. B. MARSAT. July 21, 1931. A light source is arranged in the path of two separate optical systems. The position of the filament in the electric lamp is verified by focusing the image of the filament through the two separate optical systems upon a screen and the position of the filament in the lamp thus determined.

1,815,203. **Transmitting Dot Image of a Picture.** H. E. IVES. Assigned to Bell Telephone Laboratories, Inc. July 21, 1931. A dot image of a picture is produced by exposing varying portions of successive elemental areas of a record blank. A light-refracting device is used for staggering the elemental areas of the picture for forming the reproduced pattern. The selection of code combination of telegraphic signals is depended upon for producing the dot pattern at the receiver. The code telegraph signals may be transmitted directly to a station at which the picture is to be reproduced or they may be punched in a tape and subsequently transmitted. The received code telegraph signals control the punching of the tape. The elemental areas of a light-sensitive picture-receiving surface are exposed in succession along linear elements to a beam of light, with respect to which the light-sensitive surface is moved, for the purpose of reproducing the picture in the form of a dot image.

1,815,208. **Stereo-Cinematographic Camera.** H. MORAZ. July 21, 1931. A stereo-cinematographic camera in which a pair of spaced reflecting prisms are arranged to receive the rays of light angularly on one of the faces and to reflect the rays right toward the space between the prisms. A second pair of right reflecting prisms is disposed between the first pair to reflect the received images backward, and a right reflecting prism is provided adjacent the back of the second pair of prisms and turned obliquely to bring the received images one above the other. Two objectives are arranged to receive the images from the oblique prism. The film is moved perpendicularly to the plane of the rays of the objectives and the true position of the right and left portions of the picture reproduced.

1,815,251. **Method of Producing Animated Motion Picture Films.** F. L. GOLDMAN. Assigned to Audio-Cinema, Inc. July 21, 1931. Animated pictures are produced by a method which consists in providing a series of base pictures on a transparent film and manually executing on sheet material adapted to be posi-

tioned in front of a camera a series of pictures of a moving object in different positions upon a materially larger scale than the base pictures and providing each with a dark, blank background. A corresponding companion series of dark silhouette pictures of the object of the same size as said object picture is drawn and in the same respective positions on the sheet material and providing each with a light blank background. The base of the picture is placed with an unexposed negative film in a camera, with the base film in front of the negative film, and both back of the camera lens. The silhouette pictures are successively placed in front of the camera lens and photographed in reduced size upon the negative film through successive picture areas of the transparent base picture film. The base pictures are printed by reflection of light from the light, blank backgrounds of the silhouette pictures, whereby the base pictures will be projected upon the negative film with a portion of each negative picture area corresponding in outline with the dark silhouette, left unexposed The base film is now removed from in front of the negative film and the pictures of the object placed with the dark background successively in front of the camera lens and photographed in reduced size upon the unexposed portion of successive picture areas upon the negative film. The process is intended to reduce the labor of making animated pictures and render the making of such pictures commercially profitable.

1,815,455. **Using Principle and Secondary Images for Avoiding "Jerky" Pictures.** F. WALLER. Assigned to Paramount Publix Corp. July 21, 1931. A motion picture film having a plurality of frames where each frame bears images of successive phases of action of a subject. The images on each frame are of different degrees of intensity to provide a principal image and a secondary image, the principal image on one frame appearing as a secondary image on a succeeding frame. The purpose is to avoid the jerky and unnatural movement of the images in reproduction of the pictures. If five images are to be exposed they may be exposed respectively $^1/_{10}$, $^2/_{10}$, $^4/_{10}$, $^2/_{10}$, and $^1/_{10}$ of the normal exposure period. The motion picture positive produced by the method described will show upon projection a natural movement of the character desired.

1,815,481. **Automatic Switching Mechanism for Recording or Reproducing Apparatus.** F. H. OWENS. Assigned to Owens Development Corp. July 21, 1931. An automatic switching mechanism is provided for rendering the motors and the recording or reproducing lamp inoperative while the film is being threaded through the camera or projector. The switch mechanism is operated while the film retaining means is shifted out of engagement with the film moving means during the process of threading up. After the film has been threaded through the mechanism adjacent the light station, the film retaining means is shifted into engagement with the film moving means and the circuits to the driving motors and lamps completed.

1,815,486. **Film Viewing Machine.** I. SERRURIER. July 21, 1931. A film is moved past a viewing aperture by a driving motor mounted in compact assembly in a casing which also contains a lamp for illuminating the film. The film is moved under the guidance of a pair of rail members which presses the film against the light aperture for permitting the successive frames of the film to be viewed in step-by-step order. The step-by-step movement which is imparted to the film is applied by the movement of a sprocket actuated by the driving motor.

1,815,692. **Film Recording System Employing a Stylus.** F. VON MADALER.

Assigned to Visionola Mfg. Corp. July 21, 1931. A stylus device is mounted adjacent a film strip and operates to directly record sound vibrations adjacent one edge of the film strip. The recording needle is mounted in connection with a system of weights which serve to substantially eliminate and absorb undesired mechanical vibrations while permitting the sound vibrations to be recorded on the sound strip preparatory to a reproduction process in which the record formed on the film serves to vibrate a reproducing stylus for actuating a sound reproducing diaphragm.

1,815,693. **Synchronizing Mechanism for Disk Reproduction.** A. DEMADALER. Assigned to Visionola Mfg. Corp. July 21, 1931. Picture projection and sound reproducing unit wherein a Geneva movement is connected between the driving motor shaft and a driven shaft imparting intermittent movement to the film feeding drum while continuous movement is imparted to the record table which carries the phonograph record. The motion pictures are displayed on a small screen located at a point where the sounds emanate from the loud speaker which is operated from the phonograph.

1,815,694. **Synchronously Operated Motion Picture and Sound Reproduction Apparatus.** A. DEMADALER. Assigned to Visionola Mfg. Corp. July 21, 1931. A unit apparatus for reproducing sound and projecting motion pictures which includes a turntable drive for a phonograph which is operated in synchronism with the driving mechanism of the picture projection apparatus for effecting the reproduction of sound in timed relation to the projection of the picture. The same motor which drives the phonograph turntable also drives the picture projection apparatus with a gear system interposed therebetween for insuring synchronized operation of both the picture and sound reproducing systems.

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