ABSTRACTS

The New Copper Oxide Cell. M. ARNDT. *Phot. Ind.*, **29**, Feb. 25, 1931, pp. 237–8. The photoelectric effect or flow of electrons from a metal exposed to light has found application in the potassium and caesium cells, such flow being accelerated by including a battery in the circuit. A certain amount of energy of the incident light is necessary to initiate the flow of electrons. It has been found that a metallic salt in contact with the metal requires a relatively low level of energy to start the flow of electrons. This has found practical application in the new copper oxide photoelectric cell which is described by the author. Further developments of this kind would seem to be of importance to the future of sound films. C. E. M.

New Debrie Sound Film Camera. *Phot. Ind.*, **29**, Feb. 25, 1931, pp. 238–40. The new models seem well designed to meet all the requirements of sound film exposure. The camera stand rides on three rubber tired wheels controlled by an ingenious steering mechanism. The stand is made entirely of metal with an aluminum base containing the motors, resistance, *etc.* At the rear is a small platform for the operator. The camera is enclosed in a sound-proof housing which is mounted in a yoke upon a pillar so that it can pivot in a vertical plane. C. E. M.

Sound Recording Apparatus for Expeditions. H. FREESE AND H. LICHTE. *Kinotechnik*, **13**, Feb. 5, 1931, pp. 44–7. The need for sound recording apparatus that can be transported to the field by rail, ship, porter train, *etc.*, and still give results equal to those obtained with the apparatus of the studio, has caused Klangfilm G. m. b. H. of Germany to construct equipment that is contained in a number of water-proof cases. When the equipment is operating on location, power is generated by a two-cycle, single cylinder gasoline engine located 200 meters from the scene of action. This drives a 220-volt direct current dynamo. A transformer is located 50 meters from the scene, arranged to supply 1000, 135, and 15 volts for the plates and filaments of the amplifier tubes, driving motors for the sound and picture cameras, *etc.* At this distance are located also the control panel, sound camera, and amplifier, housed in a tent. Telephones, power cables to the picture cameras, and cables for the microphones run thence to the scene. The apparatus described is intended for features or short pictures. Cheaper and simpler apparatus is used for news recording. M. W. S.

Motion Picture Education in Japan. Y. MIZUNO. *Internat. Rev. Educational Cinemat.*, **3**, Jan., 1931, p. 5. The history of the movement is given. Japan produced 718 theatrical films in one year. About 2 per cent of the films produced are educational. About 30 cinemas in Tokyo hold a children's movie day periodically on Sunday. The All-Japan Association of Cine Education directs the use of educational films in Japan, in the schools, factories, and for the women through a women's society. Sub-standard film is in wide use in the schools. R. P. L.

The Film Collection of the Austrian Ministry of Education. G. A. WITT.

Internat. Rev. Educational Cinemat., **3**, Mar., 1931, p. 213. An archive for important educational, cultural, and historical films has been instituted in Vienna. Both standard and sub-standard films are lent out and even projectors and cameras. It is also a center for information on cultural films. R. P. L.

Cinema and Visual Fatigue. G. D. F. *Internat. Rev. Educational Cinemat.*, **3**, Jan. and Feb., 1931, pp. 53 and 165. Another installment of the report of the investigation. Programs for children ought not to last longer than 10 to 15 minutes without a rest period of several minutes. The cinema should be forbidden for children under 16 after a certain hour in the evening. Only 14.5 per cent out of 19,661 children complained of bodily fatigue. R. P. L.

Empty Seat Indicators. *Film Daily*, **55**, May 31, 1931, p. 8. A system has been developed which makes it possible for the management of a theater to know at all times the seating of the house. By its means, the exact number of seats available in every section may be transmitted to the lobby of foyer quickly and accurately, resulting in the seating of waiting patrons immediately as seats become available. The system is said to consist of a number of dial sending stations located in various aisles, and a receiving station in the main lobby. By operating the dial at the sending stations, the ushers in any aisle may signal the number and location of the seats available. C. H. S.

New Continuous Projector. *Film Daily*, **55**, May 14, 1931, p. 64. A film projector called the "Kinisophote," operated on a continuous principle, has been invented and successfully demonstrated in Madrid, Spain. The machine runs continuously at a constant speed and the screen receives a constant amount of light, thus doing away with flicker. This projector permits the use of very thin (cellophane) film, which is driven by a single claw as only one side of the film is perforated. The sound track is placed in a 5-mm. space along one side, so that the section for pictures retains its normal one inch width. The film is driven at a constant speed, so that the sound can be recorded at any point. Instead of the usual distance of 75 perforations from the corresponding frame, the sound can be placed immediately opposite each frame, thus avoiding the difficulties arising from cuts and repairs. After being wound up as used during projection, the film is not rewound but is picked out from the inside of the reel to be projected again. This operation is done by conical rollers. C. H. S.

Industry Earns 95 Millions in 1930. *Mot. Pict. Herald*, **103**, Sect. 1, May 9, 1931, p. 11. Gross earnings reported by 12 companies were $421,927,400 for 1930 compared with a total for 9 companies in 1927 of $168,060,696. Net income for 16 companies amounted to $94,833,067 in 1930 compared with $45,218,670 in 1927 for 12 companies. Gross earnings are not included for Paramount, Universal, Eastman Kodak Company, and National Screen. G. E. M.

Sound-on-Film for Home Movies. A. J. KOENIG. *Electronics*, May, 1931, p. 621. A discussion of the problems involved in the recording of sound on 16 mm. film. A. C. H.

A Dynatron Vacuum Voltmeter. RINALDO DE COLA. *Electronics*, May, 1931, p. 623. This paper is concerned with the use of the pliodynatron as a means of obtaining considerably greater sensitivity than is possible with single-tube voltmeters. A. C. H.

Acoustic Treatment for Sound-Picture Theaters. VESPER A. SCHLENKER.

Electronics, May, 1931, p. 625. A general discussion of the treatment of acoustics in motion picture theaters which cannot be usefully abstracted.

A. C. H.

The Unit of Photographic Intensity. The Present Status of Its Standardization. LOYD A. JONES. *J. Opt. Soc. of America*, June 1931, p. 361. The International Congress of Photography undertook several years ago to bring about a standardization of the source of light to be used in photographic sensitometry, the interests of this country being represented by a committee of the Optical Society of America. This paper is concerned with the present status of the project and contains recommendations for a unit of photographic intensity which, however, have not yet been ratified by the national committees represented at the Congress. A new report dealing with certain features of the recommended light source will be presented at the 8th International Congress to be held in Dresden during August, 1931. A. C. H.

Patent Review on Receiver Circuits and Tubes. JOHN J. ROGAN. *Electronics*, June, 1931, p. 672. A brief review of the present patent situation with respect to vacuum tubes and receiving circuits. The important patents with serial numbers and expiration dates are given. A. C. H.

Glow Lamp Sound-on-Film Recording. VERNE T. BRAMAN. *Electronics*, June, 1931, p. 679. A description of the glow lamp method of sound-on-film recording with special reference to the proper design of the glow lamp. The author has devised a special type of three electrode glow lamp, the function of the third electrode being to make the ignition voltage equal to the extinguishing voltage by allowing a very small modulated ionizing current to flow at all times. This ionizing current is independent of the modulated current between the normal electrodes, and causes the gas to remain ionized with a faint cathode glow even when the normal lamp current is reduced to zero. A. C. H.

Automatic Time Delay Relay. C. HUFF. *Proc. I. R. E.*, **19**, June, 1931, p. 1019. In certain hot cathode, mercury rectifier tubes, no plate voltage should be applied for at least thirty seconds after the filament current is turned on. By means of an automatic time delay relay, made up of a system of relays and a telechron clock motor, this thirty-second delay is automatically taken care of. To prevent breaking the high potential plate circuit, separate transformers are used for plate and filament potentials. The relay closes the primary circuit of the plate transformer. A complete description of the relay is given, aided by a schematic diagram. A. H. H.

A Non-intermittent Camera. WILLIAM STULL. *Amer. Cinematographer*, **12**, June, 1931, p. 12. The Moreno-Snyder camera, now made in Hollywood, uses an optical intermittent system consisting of eight rectangular plano concave lenses which supplement the regular lens of the camera and move with the film to correct its continuous motion. The effect is a steady motionless image upon each frame. The lens wheels are clamped and cemented so they cannot get out of alignment, it is claimed. A variable slit at the aperture takes the place of shutter control for variation of exposure and the large maximum aperture of 360 degrees makes possible a tremendous range not available in ordinary apparatus.

The camera includes a finder system operating through a prism, placed in front of the aperture by a manual control, and automatically thrown clear whenever the camera is started; also a novel photo-cell exposure meter which actuates a dial at

the rear of the casing to indicate correct exposure for the particular lens and slit adjustment used. An artificial frame line is put in the film by a masking device in the matte box which must be set after focusing and adjusting the lens aperture. The new camera is stated to be noiseless and capable of operating at any speed between eight and three hundred frames per second. A. A. C.

1930 Equipment Exports Gain. N. D. GOLDEN. *International Photographer*, **3**, April, 1931, p. 13. Preliminary figures of the Bureau of Foreign and Domestic Commerce show that exports of American motion picture equipment increased $4,000,000 over the 1929 estimate, or approximately 80 per cent. Europe is our best customer, the Far East second, and Latin America third. Sound apparatus, which is this year reported separately for the first time, accounts for four-fifths of the total volume of export business. A. A. C.

Stewart-Warner 16 Mm. Camera. *International Photographer*, **3**, April, 1931, p. 25. A manufacturer's announcement states: "The camera is compact and light, 2 by 5 by 8 $^3/_4$ inches, is made of duralumin throughout, with an etched satin-finished case; weighs 3 $^1/_2$ pounds when loaded with 100 feet of film, and will retail at $50.00, with carrying case." Experimental work on the camera was done in Hollywood and the plant was moved to Chicago in February. A. A. C.

The Spicer-Dufay Process of Color Cinematography. *Brit. J. Phot.*, **78**, June 5, 1931, p. 22 (Color Suppl.). This color process uses a mosaic filter film mechanically prepared. Dyes are applied in squares to the number of 350 per inch by means of an ink-resisting printing process on the film base. The emulsion, coated on top of a protective coating over this color mosaic, is specially made for the purpose, and consists of grains of relatively large size and great sensitiveness together with a finer material. The original negative image is obtained chiefly on the large grains leaving the fine grained part for development of the reversed positive. A projection printing method has been worked out for the making of prints which is claimed to be highly successful. The Spicer Company expects to extend this method to the production of prints on a white base material, to lead to a cheap and easy process of color photography for general use. A. A. C.
