April 9, 1935. G. A. PEABODY 1,996,828

PHOTOGRAPHIC EXPOSURE METER

Filed Nov. 3, 1933

Fig. 2.

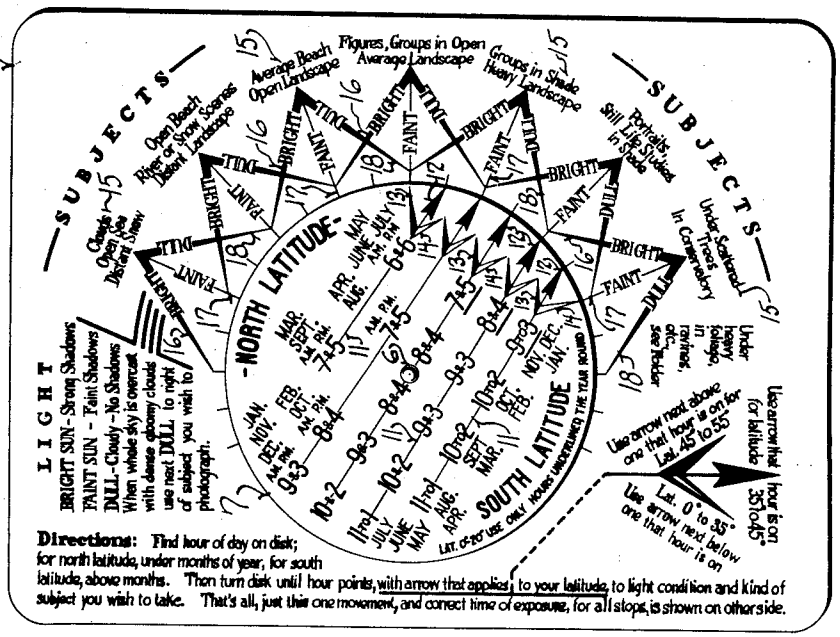
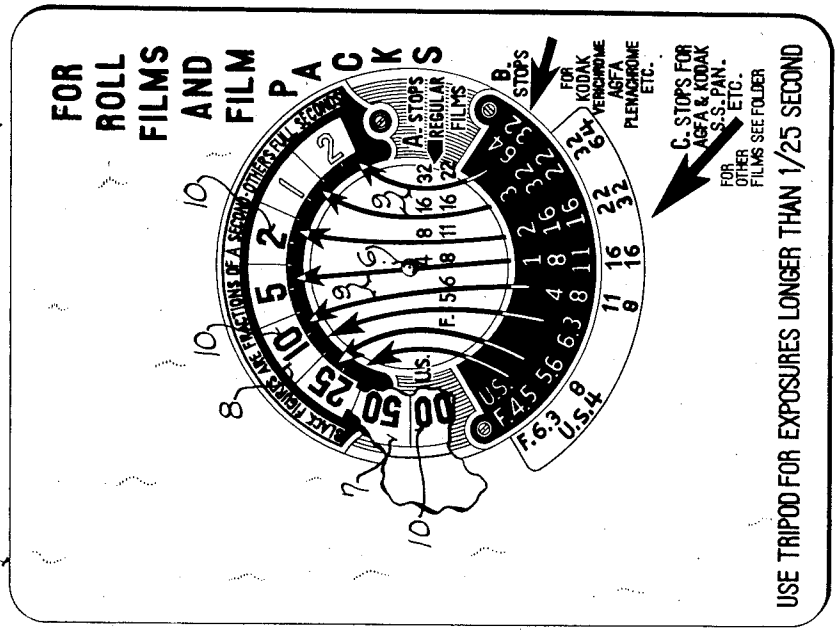


Fig. 1.



Inventor
George A. Peabody
By Ira Milton Jones.
Attorney

Patented Apr. 9, 1935

1,996,828

UNITED STATES PATENT OFFICE

1,996,828

PHOTOGRAPHIC EXPOSURE METER

George A. Peabody, Milwaukee, Wis.

Application November 3, 1933, Serial No. 696,456

5 Claims. (Cl. 235—88)

This invention relates to new and useful improvements in photographic exposure meters of the type forming the subject matter of Patent No. 1,478,956, issued to E. Harrold.

Meters of this character are provided to enable the determination of the proper duration of photographic exposures from certain known conditions. Heretofore, devices for this purpose have been complicated and as in the aforementioned Harrold patent, consisted of a multiplicity of associated relatively movable elements, the manipulation of which required considerable skill. These past devices were thus difficult to use.

It is, therefore, an object of this invention to improve and simplify the construction of exposure meters and to provide a device whereby adjustment of but a single moving member affords the desired indication.

With the above and other objects in view which will appear as the description proceeds, this invention resides in the novel construction, combination and arrangement of parts substantially as hereinafter described and more particularly defined by the appended claims, it being understood that such changes in the precise embodiment of the herein disclosed invention may be made as come within the scope of the claims.

In the accompanying drawing, one complete example of the physical embodiment of this invention is illustrated constructed according to the best mode so far devised for the practical application of the principles thereof, and in which:

Figure 1 is a plan view of the front side of an exposure meter constructed in accordance with this invention; and

Figure 2 is a plan view of the reverse side thereof.

Referring now more particularly to the accompanying drawing in which like numerals indicate like parts, the numeral 5 designates a base which may be formed of cardboard, celluloid, or any other suitable material, and is preferably of rectangular shape as illustrated.

Rotatably mounted as at 6, on the reverse side of the base, is a disk 7, part of which is visible from the front of the base through an arcuate opening 8.

The front face of the base bears indicia representing three sets of lens stops indicated as A, B, and C. These sets of stop indicating numerals are arranged according to the different systems employed in the various types of cameras, and each set is intended to be used with certain indicated films. The numerals representing these different stops are conveniently placed beneath the arcuate opening 8, and indicating arrows 9 are provided to connect the numerals of the different sets with spaced points on the lower edge of the arcuate opening 8 to cooperate with numerals 10 delineated on the disk 7 and visible through the opening 8.

The numerals 10 on the disk 7 indicate seconds and fractions of a second, the heavy black numerals representing fractions of a second, while the outlined numerals indicate full seconds.

The three sets of stops illustrated, accommodate all of the various types of films on the market. The A stops take care of all regular films and film packs. The B stops take care of Kodak Verichrome, Agfa Plenachrome, and similar types of film, and the C stop is provided for those films such as Agfa, and Kodak Super Sensitive Panchromatic.

It is thus possible with these three sets of stops to obtain the correct photographic exposure regardless of the type of film used. For instance, if the film being used is a Kodak Verichrome and a lens opening as represented by the stop U. S. 8 is used, the central arrow 9 would be employed as it leads from the numeral 8 in the B set of stops, and its pointing to the numeral 5 of the disk 7 would indicate that the proper exposure for the setting of the device as shown would be one-fifth of a second.

The correct setting of the disk 7 is determined by the aid of the data provided on the reverse side of the base and disk as illustrated in Figure 2.

As here shown, the reverse side of the disk has a plurality of transverse lines 11 terminating in arrows 12, and having pointers 13 and 14 leading diagonally therefrom, respectively, above and beneath the arrows 12. The lines 11 connect different sets of numerals which are arranged in columns perpendicular to the lines 11 and which represent different hours of the day, the columns being in line with designations of the different months of the year. The designation of the various months of the year are duplicated at diagonally opposite portions of the disk so as to compensate for the north and south latitudes.

In using the device in the Northern Hemisphere, the hours of the day beneath the designations of the months of the year are used, and in using the device in the Southern Hemisphere, the hourly designations above the months of the year are used.

The arrow 12 of the line 11 that the selected hour is on is used if the geographical position is between 35 degrees and 45 degrees, either north

or south latitude; the pointer 13 leading diagonally upwardly from the selected line 11 is referred to to indicate that the arrow next above the one that the hour is on is to be used if the geographical location is between 45 degrees and 55 degrees either north or south latitude; and the pointer 14 leading downwardly from the selected line 11 is referred to to signify that the arrow next below the one that the hour is on is to be used if the latitude is from zero to 35 degrees either north or south latitude.

Delineated on the reverse side of the base 5 and arranged around one side of the disk 7 are designations 15 of various subjects or types of objects to be photographed, and leading from each subject designation to the periphery of the disk 7 are three indicating lines 16, 17 and 18.

The lines 16 lead to points at the periphery of the disk with which the selected arrow on the disk is to be aligned if the light conditions are bright. The lines 17 lead to points at the periphery of the disk with which the selected arrow is to be aligned if the prevailing light conditions are faint; and the lines 18 lead to points at the periphery of the disk with which the selected arrow of the disk is to be aligned if the light conditions are poor.

Operation

Assuming that the subject to be photographed is a portrait or a still life study in shade, that the light is faint, and the month is July, the hour of the day is 4:00 P. M., and the geographical location lies between 35 degrees and 45 degrees north latitude.

The disk 7 is then turned to its position shown in Figure 2, with the arrow 12 of the line 11 second from the bottom, pointing to the line 17 leading to the selected subject designation.

Holding the disk in this position the chart is reversed and the correct time for the exposure can be determined from the resultant setting of the disk.

Assuming that the camera used is equipped with a shutter marked with the U. S. system of stops, and that Kodak Verichrome film is being used, then the B set of stops is referred to, and if the shutter is set to an opening indicated by the stop U. S. 8 the arrow 9 leading from this numeral 8 in the B set of stops is employed to obtain the duration of the exposure, and as this points to the numeral on the disk representing one-fifth of a second, that is the proper exposure for the conditions outlined.

For other stop settings and other types of film, the proper time of exposure can be determined in a like manner.

From the foregoing description taken in connection with the accompanying drawing, it will be readily apparent to those skilled in the art to which an invention of the character described appertains, that this invention affords a novel and extremely simple meter for determining from certain known conditions, the exact indication of the proper time for photographic exposures and that this correct exposure for all stops is obtained merely by the setting of a single movable element.

What I claim as my invention is;

1. A photographic exposure meter comprising a base having an arcuate opening, a circular disc rotatably mounted on the back of the base with a peripheral portion thereof covering the arcuate opening to be visible therethrough, the back of the base having indicia arranged about the periphery of the disc to represent various types of subjects to be photographed and the back of the disc having indicia representing different months of the year and hours of the day, indicating markings on said back of the base and disc associated with the indicia thereon adapted to be aligned upon rotation of the disc to connect selected time designations on the disc with selected subject designations on the back of the base, the front of the base and the front of the disc visible through the arcuate opening in the base having indicia representing different lens stops and various durations of exposure respectively, whereby the setting of the disc by means of the indicia on the back of the disc and base in accordance with the prevailing conditions affords an indication of the proper duration of exposure through the medium of said indicia on the front of the base and disc for said conditions.

2. A photographic exposure meter comprising a base having an opening therein, and a movable element connected with the base for movement past said opening, said movable element having designations on the face thereof visible through said opening representing durations of photographic exposures, the face of the base having indicia representing different lens stops and having markings to connect different designations of lens stops with different points along the length of the opening to align with the exposure designations on the movable element, and the reverse sides of the base and movable element having indicia representing various types of subjects and light conditions and periods of time together with cooperable indicating means by which the movable element may be adjusted in accordance with known conditions so that the proper duration of photographic exposure for the known conditions and for any lens stop setting is shown on the face of the base and the movable element.

3. A photographic exposure meter comprising, a flat base member having an arcuate opening and markings on one side thereof depicting different lens stops with indicating lines leading therefrom to spaced points at an edge of the opening and having captions defining different types of subjects and markings associated therewith indicative of different light conditions on the reverse side of said base member with indicating lines leading therefrom to spaced points arranged in an arc concentric with said arcuate opening, and a rotatable disc mounted on said reverse side of the base member with a portion thereof visible through said arcuate opening and its periphery adjacent the termini of the indicating lines leading from said captions, said disc having a schedule of durations of exposure on its face which is visible through the opening for cooperation with the indicating lines leading from the markings representing the different lens stops and having indicia on its opposite face representing different periods of time with indicating lines extending therefrom to the periphery of the disc to cooperate with the lines leading from the subject captions to enable the setting of the disc in accordance with known conditions.

4. A photographic meter comprising a flat base member having an opening therethrough and having a set of numerals representing different settings of lens openings with indicating lines leading from said numerals to spaced points along an edge of said opening, and a movable element revolubly mounted on the reverse side of the base member with a portion thereof movable past and visible through said opening, said portion of the movable element having designations rep-

resenting different durations of exposure and cooperating with the termini of the indicating lines along the edge of the opening, and the reverse side of the base member and movable element having indicia representing various types of subjects and light conditions and periods of time together with cooperable indicating means by which the movable element may be adjusted in accordance with known conditions.

5. A photographic exposure meter comprising a flat base member having an opening therethrough and having a set of numerals representing different settings of lens openings with indicating lines leading from said numerals to spaced points along an edge of said opening, and a rotatable disc revolubly mounted on the reverse side of the base member with a portion thereof movable past and visible through said opening, said portion of the rotatable disc having designations representing different durations of exposure and cooperating with the termini of the indicating lines along the edge of the opening, the reverse side of the base member having indicia arranged around the periphery of the disc and representing various types of subjects and light conditions, and the reverse side of the disc having indicia representing periods of time and said reverse side of the base and disc having cooperating indicating means associated with the indicia thereon by which the disc may be adjusted in accordance with known conditions, adjustment of the disc by means of the indicia on the reverse side of the disc and the base placing the disc in a position to indicate the proper duration of photographic exposure for the known conditions and for any lens stop setting.

GEORGE A. PEABODY.