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C. WRIGHT
PHOTOGRAPHIC APPARATUS
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2,023,159

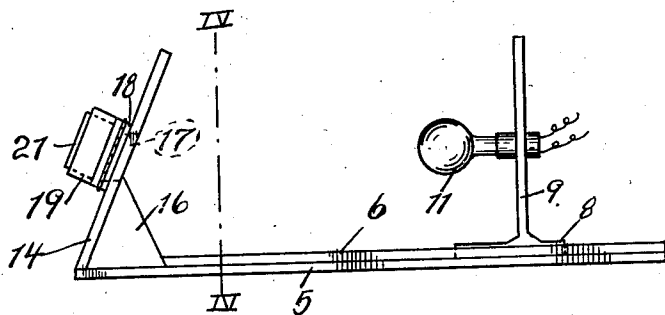


FIG. I.

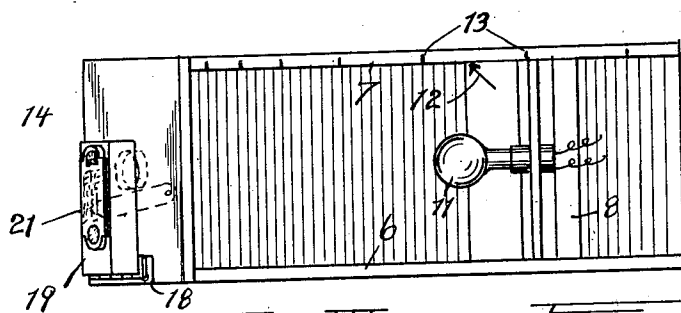


FIG. II.

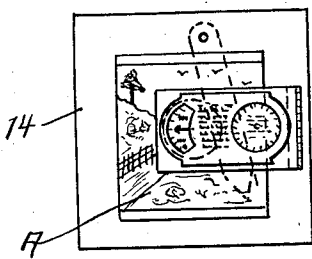


FIG. III.

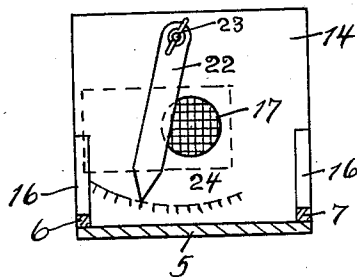


FIG. IV.

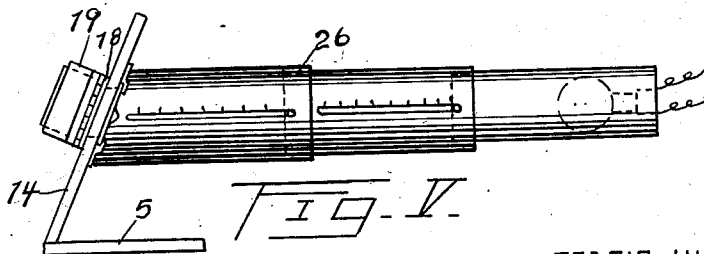


FIG. V.

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PHOTOGRAPHIC APPARATUS

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4 Claims. (Cl. 88—14)

This invention relates to the art of printing in relation to photography, and has particular reference to a device for determining definitely the amount of time required to expose the printing paper (either contact or enlarging) for various negatives, all of which may have different densities.

A further object is to produce a device which is simple to manipulate and, therefore, one which may be employed by the average photographic worker.

A further object is to produce a device which is readily transportable.

A still further object is to produce a device which will eliminate the necessity of making tests and prints for each negative made.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawing forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

Fig. I is a side elevation of one form of my device,

Fig. II is a top plan view of Fig. I,

Fig. III is a front elevation of Fig. I,

Fig. IV is a cross sectional view taken on the line 4—4 of Fig. I, and

Fig. V is a side elevation of a modified form of my device.

In photography, after a negative is produced it is necessary to make positive prints therefrom, in order to properly enjoy the picture taken. This making of a paper positive is termed printing. This printing may occur in two different ways, namely, through contact with the negative or by projection, wherein the negative is spaced from the paper, the principle involved being that the negative only permits light to pass to the paper in proportion to the density of the various parts of the negative, and depending upon the average density of the entire negative the time necessary for the light to effect the coating of the paper must be determined. Heretofore this has been accomplished by the use of test strips, placed across the face of the negative exposed and developed. As this process requires several minutes of time, it will be evident that considerable delay would occur in making prints when it is often necessary to make several test strips before the correct printing time is found and a final print is made. Also in making test strips, only a portion of the negative is employed and consequently a full print of the entire negative may not have the quality desired and, therefore,

a second print will be made, increasing or decreasing the time a few seconds, either above or below the time found for the test strip. Therefore, it is apparent that the test strip method is a very tedious and unsatisfactory method.

Applicant has, therefore, devised a means for definitely checking a negative and after checked and compared with a chart the user can immediately ascertain the proper printing time for any magnification of such a negative.

In the accompanying drawing, the numeral 5 designates a baseboard having parallel side guides 6 and 7, between which and upon the baseboard, is slidably positioned a block 8 having a stand 9 carrying an electric bulb 11. A pointer 12, 15 mounted upon the block 8, is so positioned that it is adjacent scale markings 13 formed upon the side guide 7. Secured to the base 5 is an easel 14 held in position by bracings 16. This easel has an opening 17 therethrough, the purpose of which is obvious. Fastened to the front of the easel is a spacer block 18 to which is hingedly secured a meter block 19, which is recessed to receive a meter 21. I prefer to employ a selenium cell type of meter or one which is activated by the light to cause a needle to move over an indicating dial. However, visual type meters may be employed by merely changing the shape of the block 19 to fit the different type of light measuring device. Pivoted to the back of the easel 14 is a shutter plate 22 which is adjustably secured by a wing nut 23. The lower end of this plate moves over a scale 24, the purpose of which will be later seen.

In the modified form shown in Fig. V, the same principle is involved, the only difference being that a telescoping tube 26 serves to support the light bulb and scale markings upon the tubes must be added together to determine the proper calibration.

In using my apparatus it is first necessary to make a test print for each size of enlargement for each type of paper to be used and with a known developer at a known temperature. As a matter of illustration we will assume that a negative requires for a two-times magnification the stop 16 and with a given paper ten seconds of exposure. With this negative as a basis the block 8 is moved so that the arrow 12 is opposite the marking ten seconds upon the side guide 7. The negative is now placed upon the easel as shown at A in Fig. III and the meter is read. We will assume that the meter reading is 200. A notation is then made and this factor of 200 is then

the factor for all negatives of two-times magnification.

Now, to use my apparatus for another negative employing this initial data, the operation is as follows:—

Selecting the negative and placing it at A as before described, we find that the meter reading with the light at the ten seconds mark gives 250 on the meter. Therefore, this negative is weaker than the original negative and the light must be moved further away in order to bring the meter reading down to 200. As we move the light away the needle will move from 250 to 200 and when it arrives at that point, by then looking upon the side guide 7 we will find that the arrow 12 is opposite another number, for instance, 8, showing that it will require but eight seconds in order to make a print from this weaker negative. Thus it will be apparent that by moving the block 8 and the light to or away from the meter, it will be possible to measure a definite light density through any negative and to immediately determine in seconds the printing time when the meter reads in accordance with the factor number found for the magnification being used. In determining a factor number, should the meter pointer fall between markings which have no indicia, it is obvious that it will always be hard to locate just the right point for the needle in later use. Therefore, I have provided a shutter plate on the back of the easel so that should the pointer come to rest on the scale at what would be 204 degrees, then by moving the shutter 22 upon its pivot, a certain amount of light may be cut off from the opening 17 and the meter reading brought down to the point where the needle is directly above an easily observed indicia marking, as for instance, the 200 mark. The position of the shutter is noted.

It will, therefore, be apparent that with my device, after a person has made a plurality of initial prints, one for each degree of magnification, thereafter he may consult the factor number for that magnification and immediately determine the printing time for any negative at that magnification, without making test strips and with the assurance that the print made will be correct as to exposure time.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same and that various changes relative to the material, size, shape and arrangement of parts may be resorted to without departing from the spirit of

the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:—

1. In a device of the character described, a base, an easel positioned at one end of said base, a slider mounted on said base and carrying an illuminating means, a light measuring instrument carried on said easel, means for interposing a film between said instrument and said illuminating means, said means including a block pivoted to said easel and supporting said instrument, whereby said instrument may be pivoted away from said easel for the positioning of the film.

2. In a device of the character described, a base, a sliding block mounted on said base, scale markings carried by said base and adjacent said block whereby the position of said block with relation to said base may be determined, illuminating means mounted on said block, an easel secured to one end of said base, said easel having an opening therethrough, a block pivoted to said easel and supporting a light measuring instrument over said opening whereby the light from said illuminant will activate said instrument.

3. In a device of the character described, a base, a sliding block mounted on said base, scale markings carried by said base and adjacent said block whereby the position of said block with relation to said base may be determined, illuminating means mounted on said block, an easel secured to one end of said base, said easel having an opening therethrough, a block pivoted to said easel and supporting a light measuring instrument over said opening, whereby the light from said illuminating means will activate said instrument, and a shutter plate secured to said easel for partially closing the light area of said opening.

4. In a device of the character described, a base, parallel side guides secured to said base, a block slidable on said base and between said guides, markings carried by said block and one of said side guides for determining the relative position of said block to said guide, a meter supporting easel secured to one end of said base, said easel having an opening formed therethrough, a light source supported on said block whereby light from said light source may pass through said opening, and a pivoted block secured to said easel and capable of receiving and positioning a light measuring instrument in alignment with said opening.

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