

SOME SUGGESTIONS IN PHOTOGRAPHY.

BY GEO. M. HOPKINS.

The field of photography has been enormously enlarged by the perfection of the different methods of artificial illumination. An entirely different class of subjects is rendered available, and persons whose business monopolizes all of the daylight are furnished op-

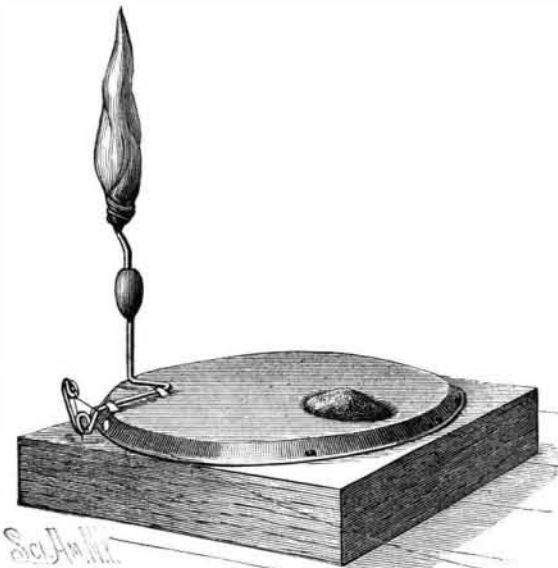


Fig. 1.—SIMPLE FLASH LIGHT.

portunities for the gratification of photographic tastes, provided their ambition does not lead them to a desire to "take all out of doors" at night.

In times past, some fault has been found with flash light pictures on account of the anxious expression of the subject caused by the expected explosion of the powder, or the closed eyes which are characteristic of pictures secured by flash lights that are not practically instantaneous.

It follows that a flash light must do its work "quicker than a wink," and that it must be ignited by some device other than a fuse or strip of paper, either of which gives warning and thus puts the subject on guard. Flash light lamps are undoubtedly good, but so far as the writer is aware, they are all limited in certain ways. In the first place it is necessary to compress a bulb to force air through a greater or less length of tube. This requires some effort on the part of the operator, and practically prohibits him from including himself among his subjects. If he does attempt to do this, the rubber tube leading from the bulb to the lamp must necessarily form an unsightly addition to the picture; and furthermore, the tube is limited as to its length, on account of the air friction, which so reduces the blast in a tube of considerable length as to entirely defeat the operation of the light.

After enumerating these objections to the ordinary flash light lamp, it is perhaps unnecessary to allude to the matter of expense. However, the lamps range in price from \$1.50 upward.

In Figs. 1 and 2 is shown flash light apparatus the cost of which is practically nothing, as the needed materials may be purchased for a few cents, and the labor involved is a matter of only a few minutes. A description is hardly necessary; the engravings tell the whole story.

Two loops soldered to the bottom of a small tin pan

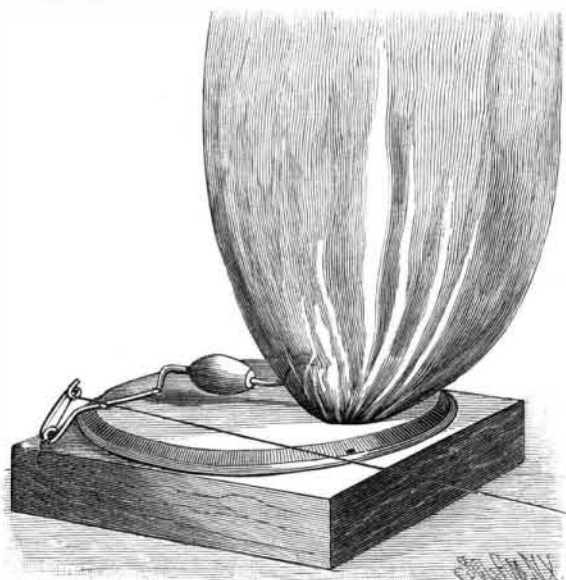


Fig. 2.—THE FLASH.

receive a wire which is bent at one end, forming a spiral, into which is inserted a little roll of asbestos. A fish line sinker is placed on the wire previous to bending, and near the pan the wire is bent to form a shoulder, which holds the wire in a stable position when raised, as shown in Fig. 1. The other extremity of the wire is bent at nearly a right angle and formed into a loop, then returned to form a practically T-shaped arm with an open eye at its extremity. A stout black

thread of sufficient length to reach as far as may be required is tied in the loop.

At the point in the surface of the pan where the asbestos strikes when pulled over, a shallow cavity is formed by burnishing the tin with a rounded instrument like a tool handle, the tin being placed over a cup, a box cover, or something of that kind which will support the metal around the cavity during the operation of burnishing.

The pan is secured to a heavy wooden block or to any fixed support by means of two or three tacks driven through its rim. One or two boxes of Blitz-pulver should be placed in the cavity in the tin; a few drops of alcohol are poured on the asbestos; the apparatus is placed on a step ladder or other high support, which is located at the side of the camera in such a position as to prevent the light of the flash from entering the camera tube. A large piece of white paper is suspended at the back of the apparatus and from 18 to 24 inches distant. If the operator is not included among the subjects, the black thread is simply connected with the lower loop, so that a rearward pull of the thread will tilt the wire arm forward. If the operator desires to include himself in the picture, the thread is slipped into the eye at the end of the wire, so that pulling the thread from the front will tilt the wire arm forward. Now, everything being ready, the alcohol is lit, the operator takes his position, pulls the thread, and the thing is done.

When the subjects are so posed with reference to the source of light as to produce undesirable dark shadows, this trouble may be avoided by arranging newspapers so as to reflect more or less light on the shaded side.

To secure good flash light pictures, two things in addition to a good instrument are required; one is an instantaneous light of sufficient intensity, the other is an instantaneous plate of the kind known as isochromatic or orthochromatic.

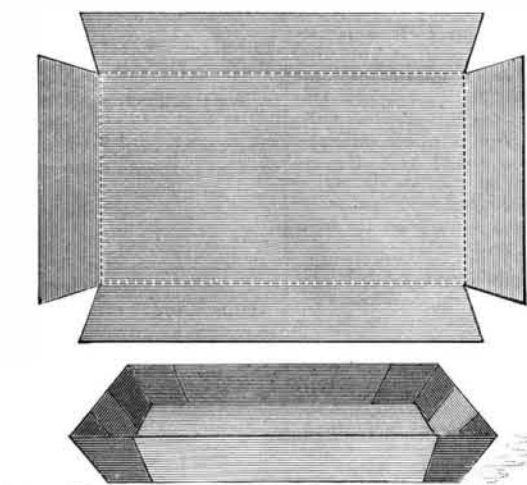


Fig. 3.—INEXPENSIVE TRAY.

Among the items of expense in the list of the amateur photographer's supplies will be found trays for developing, fixing, intensifying, toning, etc., and the temptation is often great to make one or two trays answer all purposes; but modern photography forbids the double use of trays, so that the operator must either purchase or make trays for himself. In Fig. 3 is seen, in the upper figure, a pasteboard blank, which, when creased as indicated by the dotted lines, bent up and fastened at the corners by pieces of cloth glued inside and outside as shown, forms a foundation for a serviceable tray. All that is required to complete the job is to fill the pores of the pasteboard and cloth with paraffine.

There are two ways of doing this. One is to dip the tray into paraffine melted in a pan of suitable size; the other way is to melt the paraffine by means of a hot iron and allow it to drop on the pasteboard, afterward spreading it with the hot iron. In either case a liberal supply of paraffine should be left in the corners. Paraffine candles will furnish the material for saturating the tray when paraffine in bulk is not available.

In Fig. 4 is represented a simple, easily made and efficient negative rack. It consists of thin wire frames pivoted to the base board and provided with corrugations for receiving the edges of the plates.

In Fig. 5 is shown a method of dark room illumination which permits of examining the negative thoroughly during the process of development without unduly exposing the plate. It consists of a two-candle power incandescent lamp attached to a handle and enclosed by a hemispherical reflector closed at the front with a disk of dark ruby glass. The lamp is held near the plate. All of the light is thrown downward, so that the eyes receive only the light reflected from the plate. Furthermore, only a small section of the plate is exposed to the light at any time. When the lamp is not in use in the manner described, it is either laid face down on the table or suspended so as to light the dark room

The Clouds.

Mr. John Aitken has been investigating clouds from the summit of the Rigi and Pilatus. He now finds, says *Science Gossip*, as in former observations, that fog is intimately dependent on the presence of dust particles in the air, each of the invisible granules forming the nucleus of a tiny head of water, these vesicles

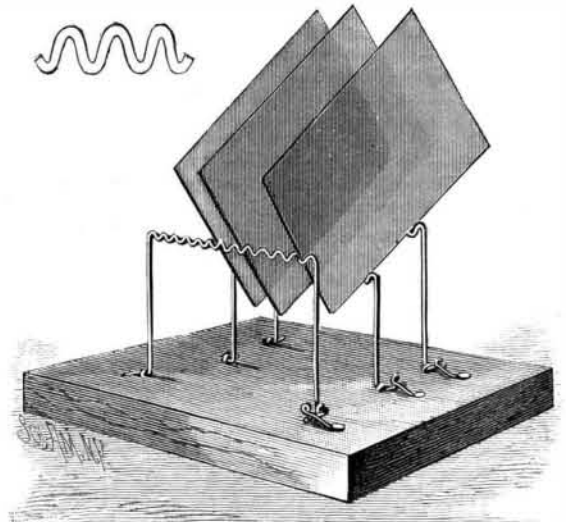


Fig. 4.—PLATE RACK.

constituting in the aggregate clouds, mists, and their kindred. At elevated situations the air is comparatively free from dust, while lower down it is full of it. But while clouds are passing over a peak the number of particles varies considerably. This, he discovers by a series of carefully compiled data, is due to the fact that the air entering into the clouds has forced itself up from the valley below. Hence the mountain air is pure or impure in exact accordance with the amount of this lower world current which has reached it. When the cloud vanishes, the ether resumes its old composition. Another curious fact just discovered by the same indefatigable observer is that the moment a cloud forms, it begins to discharge its contents in the shape of a steady shower of minute drops. These drops are not capable of being appreciated by the unassisted senses; but by the "fog-counter," an instrument of Mr. Aitken's invention, the exact number falling on a given space can be readily noted. What is still more curious is that though the air is in such circumstances saturated with damp, seats, stones, and other large objects near the earth are perfectly dry, the drops being evaporated by the radiant heat of the ground; but a pin's head or other small object, not offering the same area, is in these circumstances often covered with a minute globule of water. The fact of a cloud thus beginning to rain small drops whenever it is formed may account for the disappearance of these vaporous masses without any change in the wind or temperature. They gradually exhaust themselves.

W. A. HERRING, Mayor of Water Valley, Miss., informs us that the Illinois Central R.R. Co.'s shops at that place have ten 3 inch Cook brass strainer tube wells 30 to 60 feet in the ground, nearly all of which run water to near the surface, connected together to a 6 inch pipe which supplies 150,000 gallons per day for use of shops. Water falls two miles northeast on

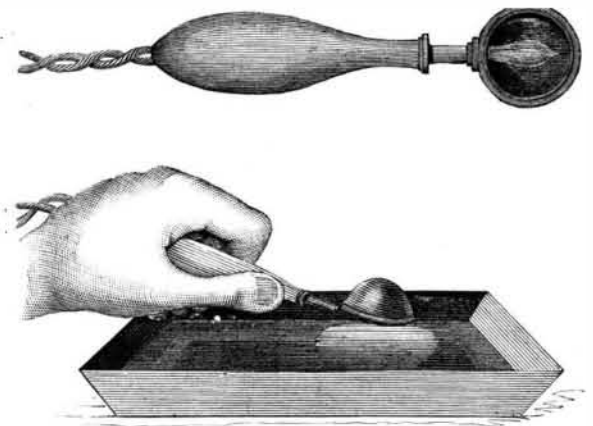


Fig. 5.—ELECTRIC TRAY ILLUMINATOR.

Black Jack Ridge, and percolates down through strata of pipe (good gig) clay and fine sand to the Creek Valley, where it breaks out in springs, and make an ever running brook 20 feet by 6 inches of water. The water used by railroad shops is as soft as rain water, clear and fine tasting; no appearance of mineral in it. It is rain water filtered through natural beds of sand.