

inches in diameter, and having a focus of $2\frac{1}{2}$ inches. In the corresponding position of the tube B, or close to the plate glass reflector, the lens II is placed convexo-plane, of 5 inch focal length: $1\frac{3}{4}$ inches from this is another lens also convexo-plane, and having a focal length of 5 inches, and having the same diameter, viz: $1\frac{1}{4}$ inches.

THE CAMERA.

The camera consists of a mahogany box 3 inches square and 7 inches high, having (to secure steadiness) a base 6 inches square.

At the aperture in the centre of the anterior side there is a brass collar fitted, through which slides the tube containing the lenses. At the opposite side of the camera is a central aperture $2\frac{1}{2}$ inches square, behind which is a slide with a piece of ground glass $2\frac{1}{2}$ inches square. This slide moves in grooves for the purpose, and can be removed to make way for a slide containing a sensitized plate also about $2\frac{1}{2}$ inches square.

PHOTOGRAPHING.

As yet I have not attempted a photograph of the retina of the human eye, but have confined my experiments to the lower animals, and I have used solar light only in order to shorten the time as much as possible, but I do not doubt that diffused light, particularly that reflected from a bright cloud, would, with a longer "exposure," answer very well. In using the instrument for this purpose, a table of the ordinary height is placed near a window where the light of the sun falls upon it. It is well to have the shutters closed, and a beam of solar light admitted of the size of the illuminating tube, but this is not absolutely necessary, if precautions are taken to prevent diffused light entering the camera, and the ground glass is shaded while examining the image on its surface.

The camera is turned at right angles to the source of light, and the tube A or illuminating tube turned so that the light falls full into the tube, and is incident upon the whole of the lens G.

When the camera and tube are in proper position, a cone of light issues from the end of the camera tube through the centre of the aperture in the diaphragm, which is the condensed light from the lens G, reflected from the plate glass D. This cone forms a focus about $\frac{1}{2}$ inch outside the diaphragm which can be seen by holding a thin piece of white paper near the diaphragm. In photographing