

A PORTRAIT LENS OF ELEVEN INCHES DIAMETER.

A GIGANTIC lens of 11 in. diameter, and aperture F/4.2, has recently been constructed by J. H. Dallmeyer, Ltd., at Willesden, for the use of a photographer in Egypt who wishes to secure life-size pictures in natural perspective. The theoretical design presented considerable difficulties, as the standard of definition in the final picture requires to be of as high an order



as in the case of a small lens. Aberrations which increase as the focal length increases have therefore to be remarkably well corrected—no easy task with a lens of this size. After weeks of calculation the desired form to give the individual lenses was found, and the metal tools were put in hand. The design is somewhat similar to that of the well-known Dallmeyer patent portrait lens, two glasses being in front of the diaphragm and two behind.

Glass discs of eleven inches diameter are not, as may be imagined, a stock article, and over six months elapsed before the glass makers were able to provide suitable material. The grinding and polishing fortunately passed off without incident, and the photograph below shows some of the men engaged on the work. The lens itself is seen in the lower part. The over all length is 20½ in., width 12½ in., flange diameter 16 in., and the lens complete scales just over a hundredweight. After the best results had finally been obtained, it was thought that it might be of interest to see what stereoscopic effect was obtained by reason of the large glass diameter. This diameter (11 in.) far exceeds the separation of the eyes, and might therefore be expected to produce curious results.

The test object, which had to be very short, on account of the little depth of focus, was a thin plate, painted on each side with alternate bands of black and white. These were so arranged

that a black band on the right-hand side corresponded to a white band on the left-hand side.

This object was put up about 20 feet from the lens and photographed in four ways:

Plate 1.—With the lens covered up, except for a small hole in the middle.

Plate 2.—With the lens covered up, except for a small hole on the right-hand side.

Plate 3.—With the lens covered up, except for a small hole on the left-hand side.

Plate 4.—With the complete lens uncovered.

Plate 1 corresponds to a photograph taken with a lens of the same focal length, but small aperture, and plates 2 and 3 to photographs taken by shifting such a lens 5 in. to the right and left respectively. Plate 4 is similar to what one might expect to see in a stereoscope using both these photographs.

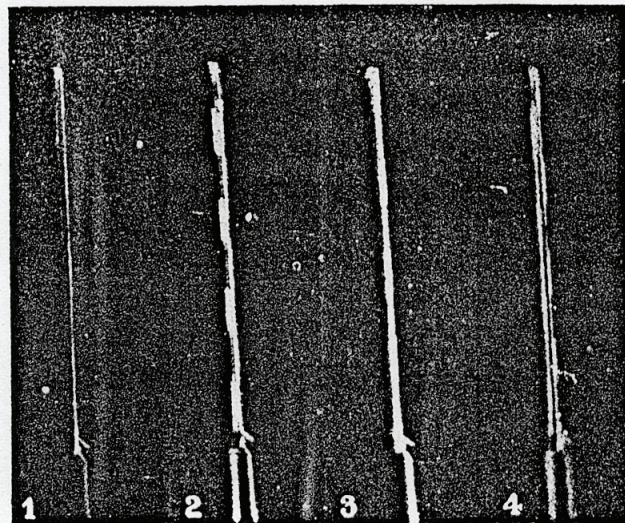
In plate 1 there is the end-on view of the plate only.

In plate 2 there is the end-on view and also the right-hand side.

In plate 3 there is the end-on view and also the left-hand side.

In plate 4 there is the end-on view and both sides, the whole being combined to form one view.

The photographs thus show the ability of a large lens to see



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round corners. Photographers have often stated that a large lens gives more roundness and modelling in portraiture, and that, perhaps, is explained by this property of seeing round corners.