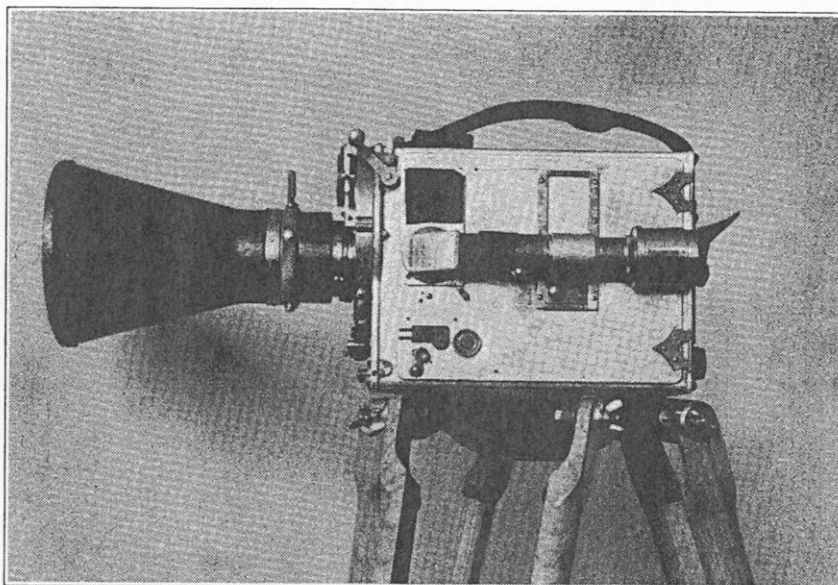


A BRIEF DESCRIPTION OF THE BRITISH REALITA PROCESS.



OPTICAL SYSTEM FITTED TO ECLAIR CAMERA.

Note that the optical unit does not extend beyond the focussing arm on any of the lenses. A large sun hood has been found indispensable.

Three analysis images are obtained by three primary objective systems mounted in conjunction with prisms and supplementary optical systems with focussing arrangements.

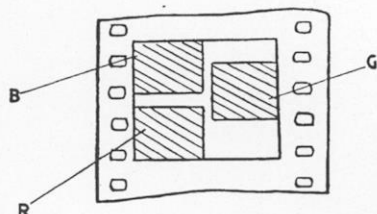


FIG. 1.

The disposition of the red, green and blue images. The size of each image is approximately 8.5 mm. x 11 mm.

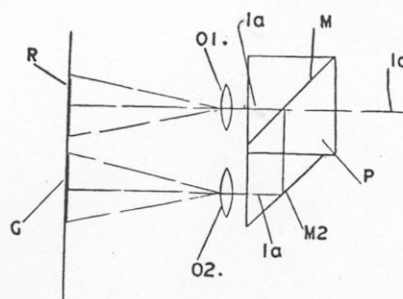


FIG. 2.

Sectional view of the optical systems in front of the film, taken through the common plane to the axes of two of the three images.

Filters are not shown, the optical systems O1, O2, O3 being indicated in an elementary fashion. In Figs. 5-6 the light path can be

traced through the prism block P and the reflecting and semi-reflecting surfaces M1, M2. The oblique prism Q increases the distance of the face M from the plane common to the axes of the objectives O1, O2 so that the whole unit may be kept small but adequate light transmitted to the margins of the images. In effect, the optical axis X of the objective O3 is moved from the plane O1-O2 in the plane of the object photographed (Fig. 4) making it possible for the image B near point g to receive adequate light.

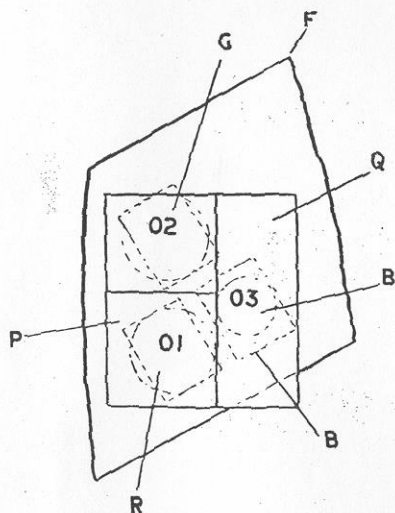


FIG. 3.

Shows a front elevation of the optical system.

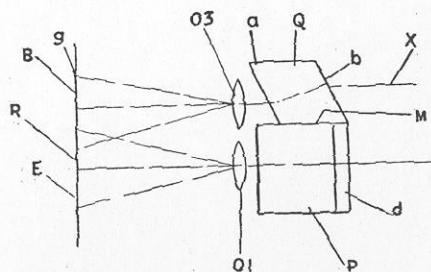


FIG. 4.

PLAN OF OPTICAL SYSTEM.

For poorly illuminated scenes the prism P is used to obtain identical red and green images and the oblique prism Q to obtain the third. Therefore there would be a space-parallax fringe between the blue and red-green images. A lens L1 is placed before the prism block. This lens can be moved along its axis to focus the whole arrangement according to the distance from the plane, which is of the greatest interest in the object to be taken. The lens is therefore located in each case at such a position that the image given by it of the plane in which focussing is effected is in a fixed position and this lies at a constant distance from O1, O2, O3 which are themselves at fixed distances from the film. Thus optically the variable real distance appears at a constant distance from the latter.

Objects lying in the focussing zone can therefore be completely superposed in projection without fringes, while the resulting blue (or yellow) fringes on objects out of the zone are very small and except in extreme cases almost imperceptible.

L1 may be positive or negative in sign and if the elementary objectives are computed to give sharp images of objects at infinity a lens L2 may be inserted to form an afocal system when focussing is

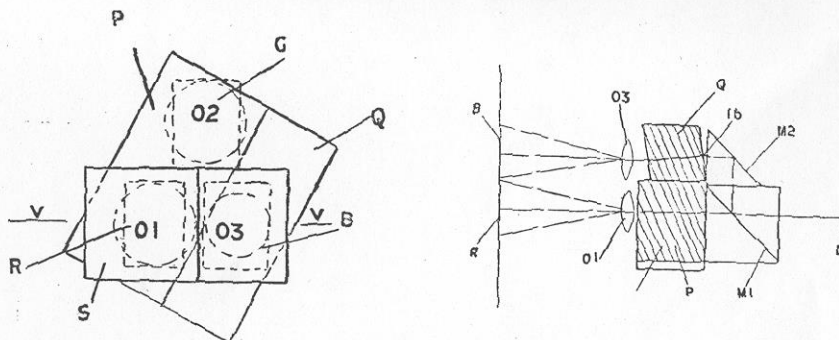


FIG. 5-6.

Front elevation and sectional plan on line V-V of Fig. 5 respectively of the optical systems of Figs. 2-4 in combination with a prism block arranged to obtain the images all from the same point of view, eliminating parallax.

effected at infinity. The maximum equivalent aperture is about F.8 in the case of the 50 mm. combination.

The displacement out of the longitudinal axis of the whole unit should be noted.

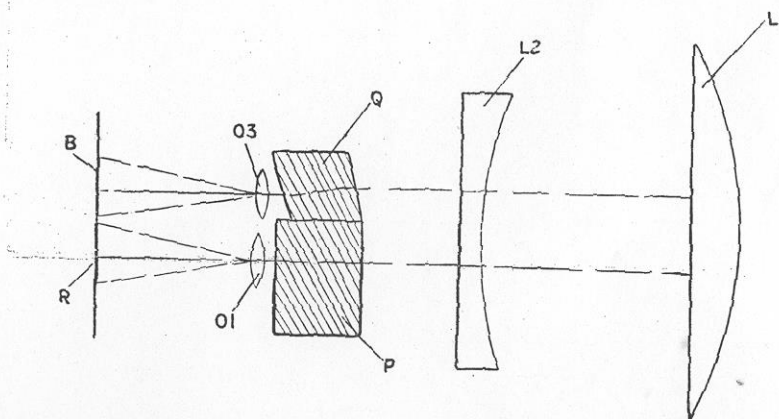


FIG. 7.

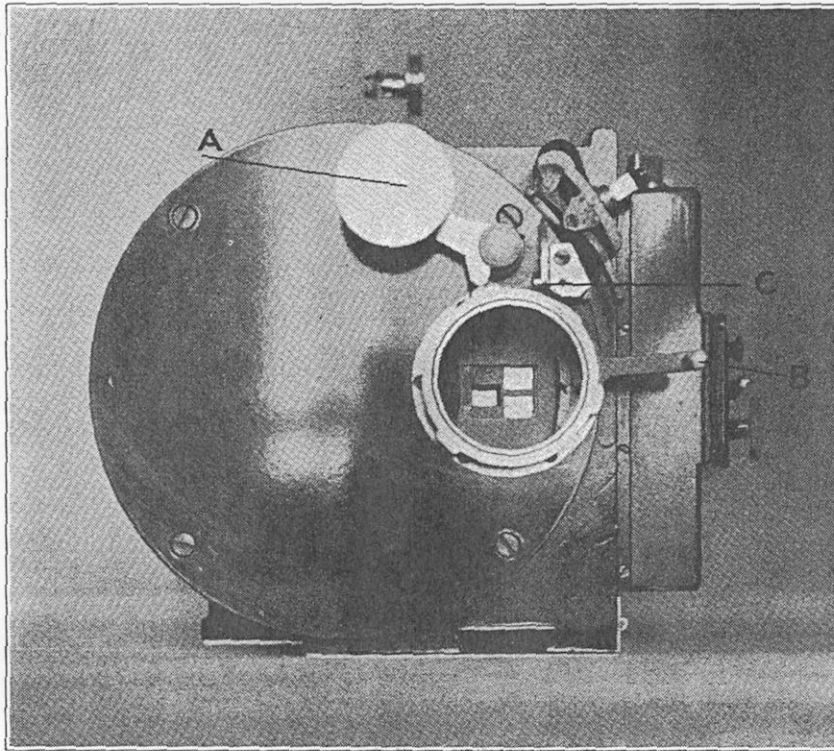
Sectional plan of the optical systems of Figs. 2-4 in combination with one or more lenses for placing the image of the object to be taken at infinity or at a finite fixed distance.

Negative shot on all cameras and all focal lengths of lens can be printed on one positive for projection without adjustment. As many as four cameras, six lenses and three different focal lengths have been used on one 1,000-foot film.

The size of the whole unit can be seen by referring to the photographs. A large hood is fitted to all lenses.

Modifications to the Standard Eclair consist of a new turret, dowelled and interchangeable instantly for black and white, and a new gate, also instantly interchangeable. Supplementary controls lock the lens in a predetermined position. The modifications are similar in the case of the Vinten.

Cameras equipped include Vinten, Bell-Howell, Leblay, Debrie and Eclair. In all cases the camera can be used for black-and-white cinematography by simple substitution of units.



Three-aperture gate (lens removed), and locking and regulating controls on the Vinten Model H.

A & C, Lens locks.

B, Focussing lever.