

The "Magnifying" glass

$v = -18 \text{ cm}$ (virtual)

$u = 4 \text{ cm}$ (real)

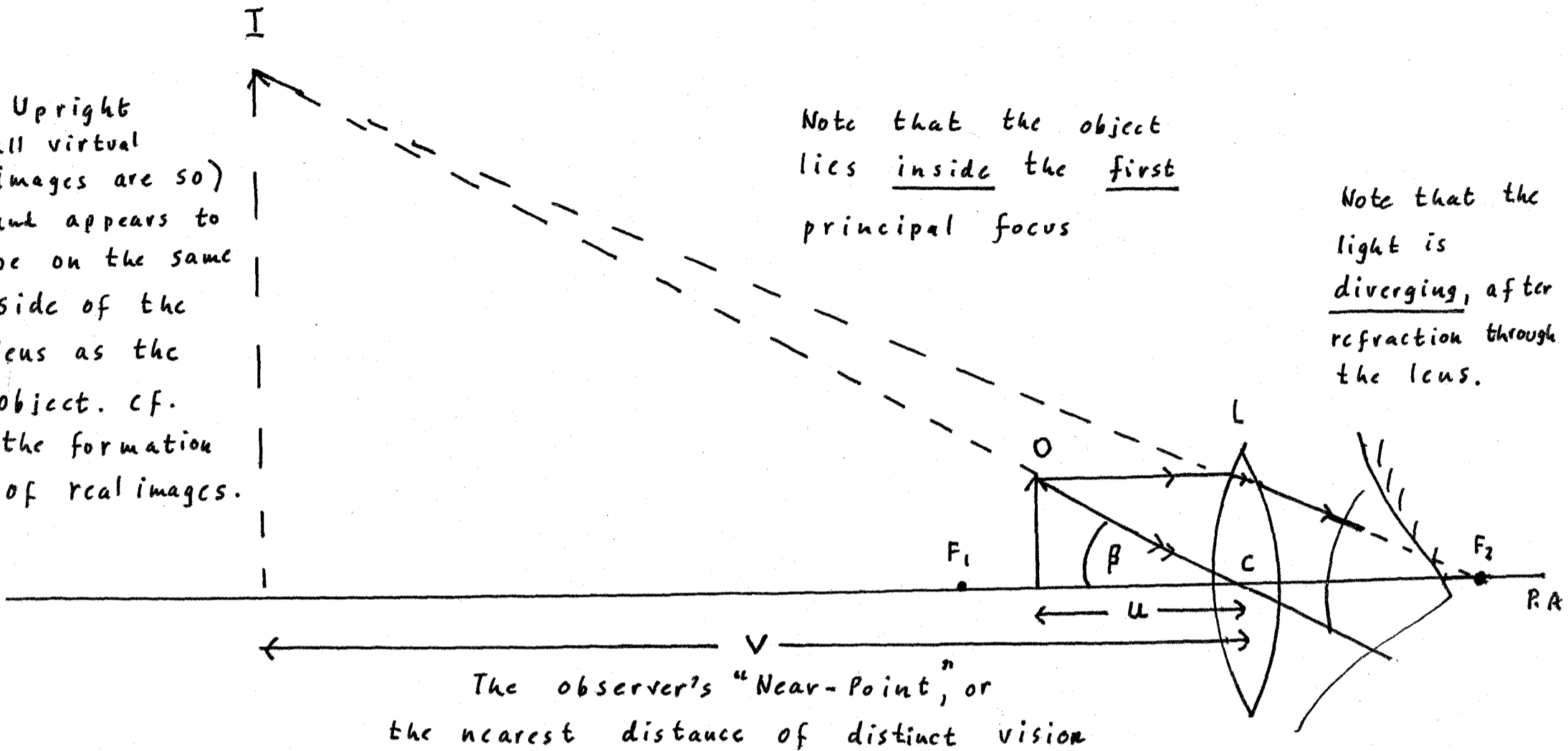
\Rightarrow The p.f.c. $\approx 5.1 \text{ cm}$

The position of the lens, close to the eye, is adjusted until the virtual image is clearest.

Upright (all virtual images are so) and appears to be on the same side of the lens as the object. cf. the formation of real images.

Note that the object lies inside the first principal focus

Note that the light is diverging, after refraction through the lens.



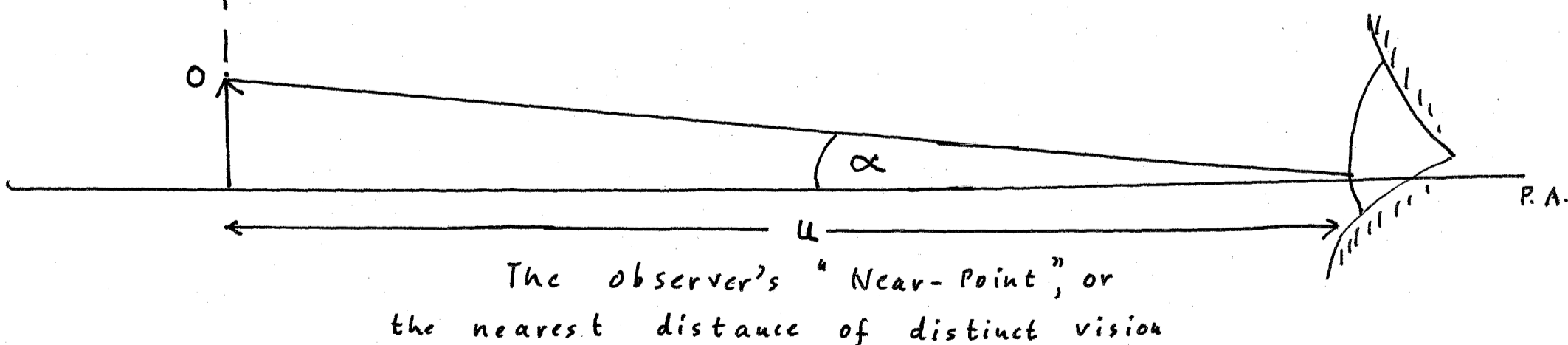
The observer's "Near-Point", or the nearest distance of distinct vision

The angle subtended at the eye, by the image, is β

Without the lens

The object at a distance of u will now be well inside the observer's nearest distance of distinct vision, and would appear blurred.

In order to be seen clearly, it has to be placed at the "Near-Point", and now subtends at the observer's eye an angle of α .



The observer's "Near-Point", or the nearest distance of distinct vision

We can define the magnifying power as:

$$\frac{\text{angle subtended at eye by the image at the "Near-Point"}}{\text{angle subtended at eye by the object were it located at the "Near-Point"}}$$

That is, $m = \frac{\beta}{\alpha}$