print, being a relatively compressible material, is especially suitable. The test flat is brought into contact first with one of the shims, then with the other two, without touching the mirror. At first we usually see a large number of fringes, indicating an appreciable wedge angle and an excessive difference in thickness between the shims. By partially withdrawing a thick shim or by compressing it, we cause the fringes to spread and appear across the surface in smaller number. When only ten or so remain, there is no advantage in equalizing the shims further. If we produce a too uniform or "flat field" appearance, defects even of as much as one- or two-tenths of a

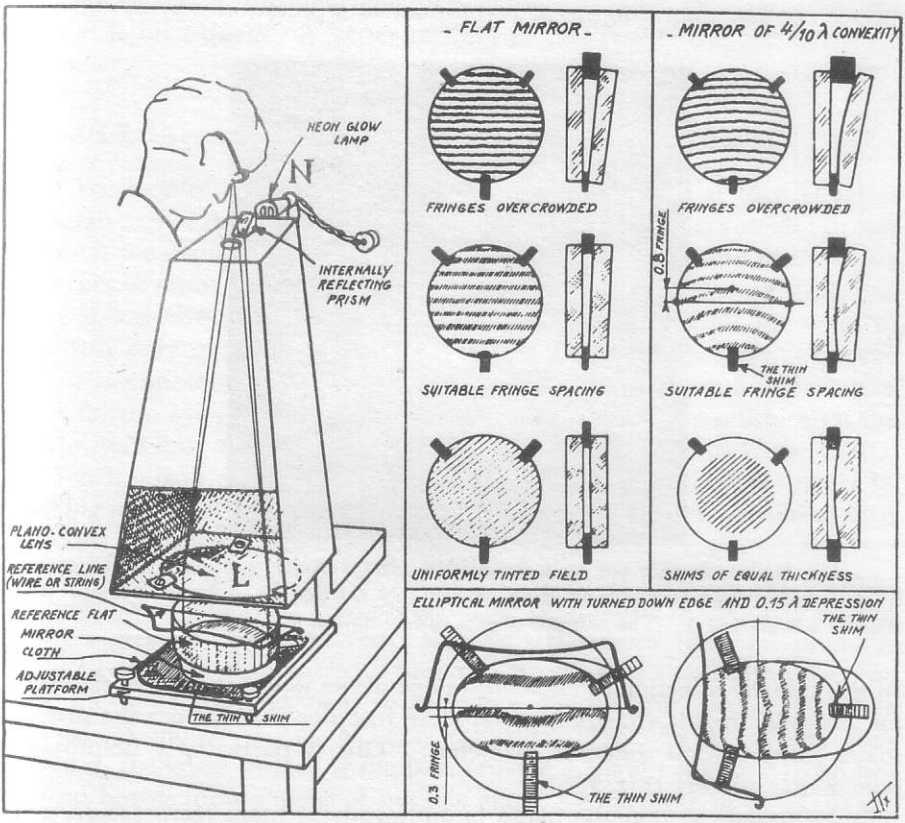

Fig. 50. Interference test on a flat mirror using the Fizeau apparatus.

fringe may remain unnoticed, but if the spacing between the fringes is about a centimeter, then a fringe curvature or irregularity of a half millimeter, representing $^1/_{20}$ fringe or a surface error of $^1/_{40}$ wave, is still quite visible.

Usually, either zonal defects are present or the mirror as a whole exhibits some curvature. To avoid errors of interpretation, we first identify and mark the thinnest shim. This is the shim which, compressed by light local pressure on the overlying glass, will cause the fringes to appear in greater