

The Slit Diaphragms.—The diaphragms provided in front of the slit for making star and comparison spectra of the right width and in the right position were a modification of Hartmann's device^{*}, and were attached to the slit head. To change from the opening through which the star was exposed to the opening for the spark, the brass plate containing these openings was moved between adjustable stops. As displacements of the lines were sometimes noticed in two spark spectra taken side by side through these windows, it was feared that the sliding of this brass plate might induce strains in the slit. This arrangement was dismantled and that shown at *A*, Pl. IV., was made to replace it. There are two separate diaphragms, one for the star light, *B*, having an opening about 0.3 mm. wide in the centre, all the rest of the plate over the slit being cut away except two narrow bars about 0.2 mm. wide to limit the star light. This was done for convenience in setting on the slit and guiding. The diaphragm for the spark light, has two openings each about 1 mm. wide, separated by an opaque bar, about 0.35 mm. wide, which is central and occupies the same position on the slit as the opening for the star-light. These are mounted on adjustable pins so that either can be readily turned down in position, while the whole arrangement is mounted on an arm clamped to one of the supporting tubes, as shown in the figure. It can be placed at any desired distance in front of the slit, or at once moved away to leave the slit entirely free if desired. It does not touch the slit or slit head at all, and hence all chance of displacement of the lines from this cause is avoided. It is also much more convenient in use than the old arrangement. The window for the star light is only turned down at first to get the star image central, and occasionally throughout the exposure to ensure that the required width of spectrum is being uniformly exposed.

The Slit Jaws.—In the tests for flexure to be presently described, I noticed that, even when there was no movement of

^{*} *Astrophysical Journal*, XII., p. 46.