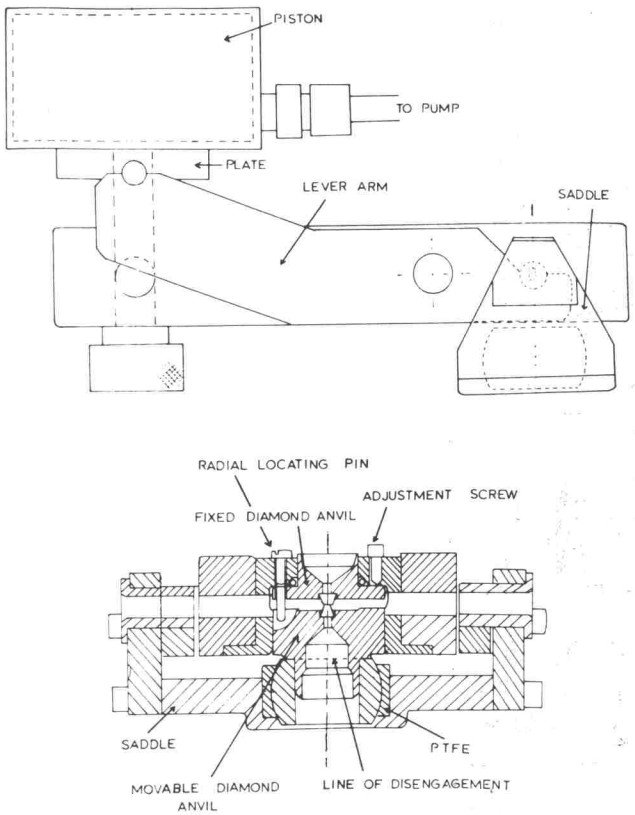

Fig. 4. Modified DAC cell [53]. (Figure reproduced through the courtesy of the authors and Applied Spectroscopy.)

the problem of non-hydrostatic pressure can be circumvented. Phase changes may be readily identified in the DAC, using a microscope, by the change in color occurring and the sharp demarcation between phases. Color changes alone, particularly in coordination compounds, do not necessarily indicate a phase change. A primary requisite is the appearance of the Becke line of demarcation. In colorless materials, the phase changes may be identified by the Becke line, which demarcates the phases. The DAC is compact and can be readily used with a microscope. All loadings of solid materials into the DAC should be monitored microscopically to ensure a proper distribution in the cell. This procedure prevents any diamond—diamond contact, which could cause chipping or gouging of the diamonds. Additionally, such monitoring can alert the experimenter to any phase change or other phenomena occurring.

The DAC has also been used for Raman work at high pressures, and this instrumentation will be discussed later [53,59—61].

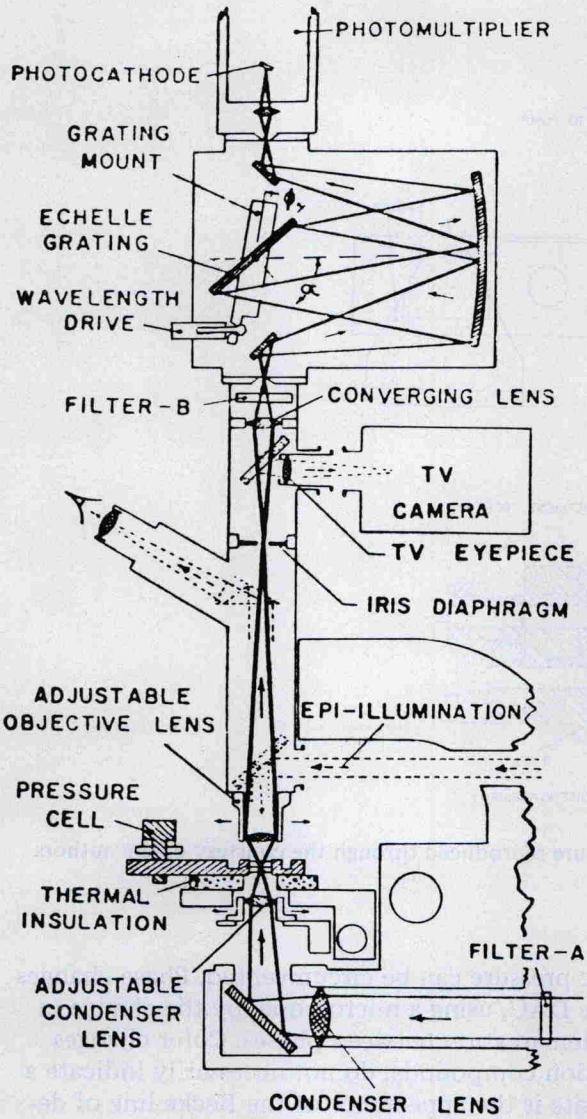

Fig. 5. Details of the Waspaloy pressure cell [54]. (Figure reproduced through the courtesy of the authors and Review of Scientific Instruments.)

Table 5 summarizes the details of some of the anvil cells that are in use for optical studies.

(ii) Optical link of pressure cell with spectrophotometer or interferometer

Owing to the small optical aperture in the DAC (ca. 0.25 mm^2 in area or larger) and in the piston-cylinder cell (Drickamer cell I, 0.028 in. and cell II,