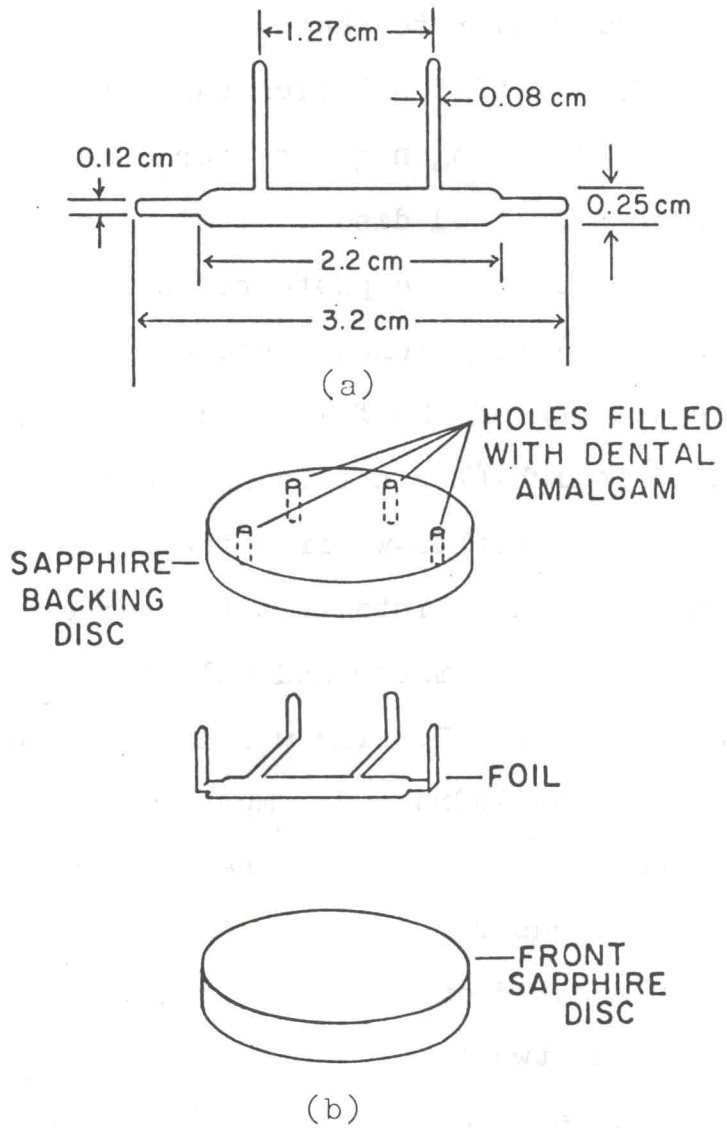

Fig. 2. Details of foil-anvil sandwich.
(a) Foil dimensions. (b) Sandwich, exploded view.

foil under the sensitized photo-resist, leaving the remaining foil in the template shape. The template was a Kodalith negative on an Estar base made by a 6:1 photo-reduction of a drawing. Shipley Company type AZ-111 photo-resist solution, AZ-303 developer, and a ferric nitrate photo-etch solution were used for silver. The photo-resist solution was first filtered by using over-pressure of nitrogen gas to force it through a Buchner funnel with a fritted disc of medium porosity. The silver foils were dipped in the photo-resist solution after being cleaned in trichlorethylene, acetone, and ethanol. (In order to enhance wetting of the foil, each foil was given a light chromic acid polish (Levinstein and Robinson, 1962) before dipping.) The foil was withdrawn from the solution at a rate of 3 to 10 inches per minute into air at a temperature of 70° to 90°C; a one-rpm electric motor and pulley arrangement was used for lifting the foil. Heating was accomplished by using two red-domed, 250-watt, infra-red lamps under a tent of aluminum foil. The foil was left in the warm air for 5 minutes for drying. Exposure was for 8 to 22 minutes by a 0.22 ampere, 115 VAC blacklight about 3 cm above the foil, half the time spent over each of the two templates. The foil lay on a black cloth; the templates were kept flat by a quartz glass plate (weighted with lead blocks) over the templates and foil. A 1:4 volume mixture of AZ-303 developer and distilled water developed the sensitized photo-resist coating in 2 to 3 minutes; solution temperature was about 30°C. For etching, the foil was floated on the etch solution by surface tension. The ferric nitrate