quartz hair 0.04 mm thick and a wire of metallic aluminium 0.23 mm in diameter. Besides the microscope adjustement of the camera, X-ray photographs were also made of the aluminium wire. After the relevant parameters had been measured on the X-ray patterns the necessary corrections were made to the adjustment of the camera or components were replaced as required.

A further check was made on the camera by making X-ray patterns of the same wire, but made of aluminium whose lattice constant was known exactly. The lattice parameter of the aluminium was calculated from the X-ray pattern line with indices (333) for CuK_{α_1} and CuK_{α_2} radiation. The photography was carried out by the asymmetric method.

To find the effective radius of the camera diffraction patterns were taken with the specimen fixed but with the sections of the film moved first to the left and then to the right of the beam. The following was obtained for the aluminium lattice parameter at 25°C: $a = 4.04143 \pm 0.00003$ kX (this is in very good agreement with Iyevin'sh and Ozol's data [9], 4.04145 ± 0.00002 kX).

In the diaphragm of the collimator there was a cylindrical aperture 0.3 mm in diameter. The diameter of the magazine was 68.4 mm. As the magazine, *10*, is based on the taper of the lower support, expansion of the support under pressure had to be checked. It was found that the diameter expanded by not more than 0.005 mm at a pressure of 11,000 kg/cm² and for this reason, in operation the magazine was fixed to the support after the desired pressure had been reached.

X-ray diffraction patterns obtained with and without rotation* of the test specimens under pressure are completely satisfactory. The results of experiments carried out on this apparatus are given in the next article.

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* In our apparatus the specimen was rotated under pressure by rotating the axis of the apparatus through a small angle every few moments in time. In this way the position of the magazine in respect of the beam was kept unchanged.

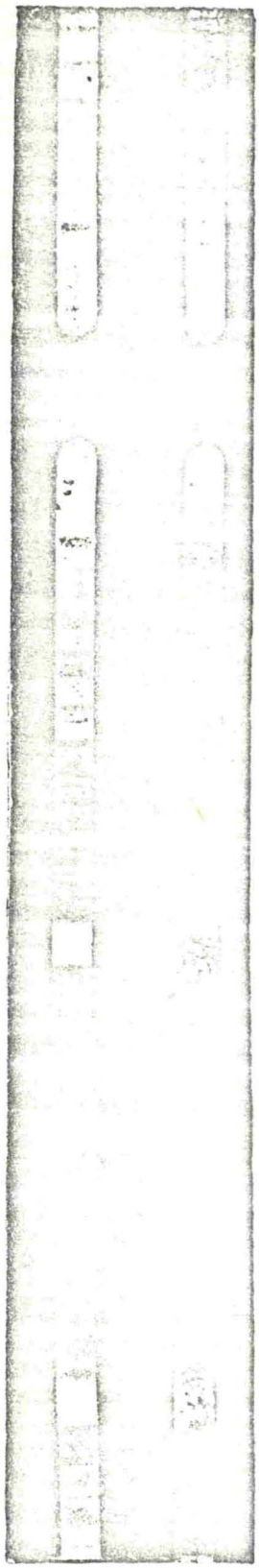

FIG. 4. X-ray pattern of beryllium chamber.

1. R.B. Jacobs,
2. A.W. Lawson a 20, 763 (1949).
3. A.W. Lawson a 21, 815 (1950).
4. L.F. Vereshcha *Dokl. Akad. Na*
5. L.F. Vereshcha V.V. Yevdokim 3, 90 (1958).
6. V.V. Yevdokim *Fiz. tverd. tel.,*