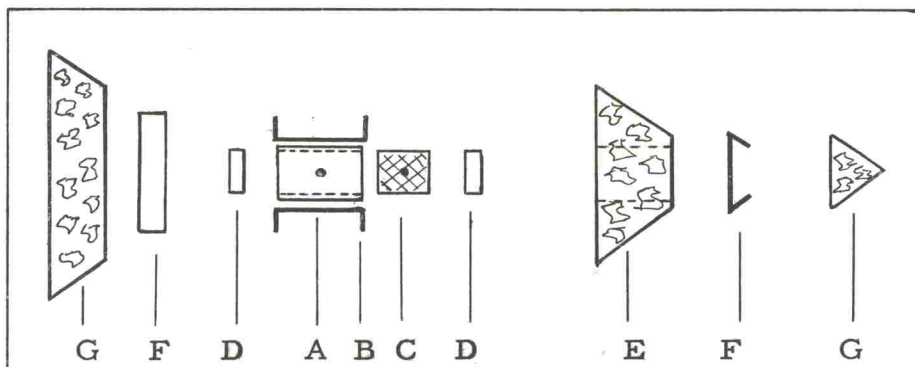




- A - Boron nitride tube with hole through it for thermocouple wire.
- B - Tantalum heating strips.
- C - Zinc sample with hole for thermocouple wires.
- D - Boron nitride end plug.
- E - Body of tetrahedron.
- F - Steel end tab.
- G - Sliced-off edge of tetrahedron.

Fig. 6. - Sample geometry for zinc

from one set of anvils through the end tab, along the two tantalum strips and out the other end tab and set of anvils. The tantalum strips have enough resistance to make very good heaters. Now the zinc sample was placed inside an oven and insulated from the heating elements by the BN.

Melting Point Detection Method:

In order to detect the latent heat of melting, it is important that the sample be heated at a very constant rate. Again the thermocouple wires were connected to the strip chart recorder and temperature vs. time was recorded. As the sample was heated linearly with time, latent heat showed up as a sudden increase in the slope of the time/temperature curve. A typical chart from the recorder can be seen in the Appendix. Near linear heating was accomplished by setting the variac on the power supply (with the power off) at a large enough value that, with the power