These slots are illustrated in the drawing, but the sleeve may have more, or less slots and may be unitary with only a single slot. Thus, whenever it is fitted into the well and pushed downwardly against the taper, the slot spacing and the inside diameter of the sleeve will decrease. This will effectively grip a thermopile placed with the sleeve into the well. The holding washer **29** is used to effect this pushing and gripping action by bearing against the top of the sleeve; thus, the inside diameter of the holding washer is slightly greater than the inside diameter of the sleeve so as not to interfere with a lead wire extending from the thermopile through a slot **33** of the sleeve. A ring of bolts **34** extend through holes in the holding washer and into tapped holes **35** in the shoulder **27**, and these bolts may be tightened to pull the holding washer tightly against the sleeve and to wedge the sleeve between the tapered wall well and the thermopile.

The structural organization of the thermopile includes a central, axially centered, cylindrical core **40**, wherein a tubular test cell **41** is snugly fitted as best shown at FIG. **3.** The thermopile consists of alternating retention layers and the thermocouple layers placed upon this core **40** and above an enlargement **42** at the bottom of the core, as now described. Each retention layer includes an inner aluminum ring **43**, an outer aluminum ring **44** and an insulation disc **45** between them. The thermocouple layers are discs **46** of insulating material which are wire-wrapped as hereinafter described.

To complete the spacer layer, the inner rings **43** are proportioned to fit against the walls of the core **40**, and each ring is split, as at **47**, to effect a positive, tight fit upon the core **40.** The mica insulator discs **45** have an inside diameter proportioned to fit about the inner rings **43** and an outside diameter proportioned to fit within the outer rings **44.** The outer rings **44** are proportioned to fit against the inner wall **32** of the sleeve **30**, and each ring **44** is split as at radial slot **48** to permit it to vary in diameter and effect a snug, solid contact of the ring within the sleeve **30.** The flow of energy, electrical and thermal, from the core of the thermocouple to the heat sink can be accurately measured only if a continuous and solid contact of the several components is maintained, and in the present invention, this is positively attained because the diametrically adjustable sleeve **30** combines with the array of diametrically adjustable outer rings **44**, by virtue of respective slots **33** and **48.** For example, if through a machining deviation, one ring **44** has a diameter slightly less than the diameter of an adjacent ring **44**, the sleeve **30** would, nevertheless, be fitted over both. When the diameter of the sleeve is then decreased by forcing it into the the tapered well, it will first grip the larger ring. Because of slot **48**, however, the larger ring **44** will decrease in diameter and to the point where the smaller ring **44** is gripped, and such process would continue until all rings **44** in the thermopile are solidly gripped by the sleeve.

The sleeve **30**, the core **40**, and the inner and outer rings **43** and **44** are of aluminum. This is an ideal material for heat transfer and also ideal because the same are anodized to form insulated oxide surfaces which will transmit heat but will not short out the small voltages generated by the thermocouples. Thus, the thermocouple wires may lay directly upon these anodized surfaces.

The washer-shaped thermocouple discs **46** are formed of mica or a similar insulating material, depending upon the temperatures at which the calorimetric tests are to be made. Each disc has a thermo-responsive wire **49** wrapped about it, and these discs are placed between the retention layers with the wires against the rings **43** and **44.** The discs are smaller in diameter than the outside diameter of the rings **44**, while the inner, central holes of the discs are larger in diameter than the core **40.** Thus, the thermocouple discs **46** provide a small clearance, and each disc **46** is so proportioned as to lie between the inner and outer rings **43** and **44**, at each side of it, with the thermocouple wire **49**, wrapped about it, being solidly gripped by the several anodized rings.

Each disc is wrapped with a wire **49**, from inside to outside, by a series of loops. For example, each disc may have **30** complete, radially directed wraps or loops about the ring-like body of the disc. At the same time, the wire is prepared to produce a thermocouple action. The wire is preferably a commercial type such as 30 gauge constantan wire which is well known for its thermo-responsive actions when coupled with another metal such as copper or silver. A simple mode of producing the bimetallic wire necessary for a thermocouple action is to copper plate or silver plate one side of the wraps of the constantan wire **49.** To do this, the other portions of the wrap are masked, as by covering the same with an acetone-soluble glue. Thereafter, an electroplating operation is permitted to proceed in a conventional manner to deposit a layer of copper upon the exposed reaches of the constantan wire wraps. This operation is permitted to continue until the copper layer **50**, shown at FIG. **10**, is approximately 0.003-inch thick. The result is a large number of thermocouples in a simple, series-connected arrangement.

A number of thermocouple discs **46** are combined to produce the thermopile T with the wire **49** extending from one disc to the next by means of the short wire portion **49'** which has a length approximately equal to the thickness of the large aluminum rings **44.** For example, in the unit above described, 40 thermocouple discs may be used in the thermopile, and each disc may have thirty wraps of wire **49.** When the wire wraps are electroplated, as hereinabove described, a total of 1,200 individual thermocouples will then be produced. The continuous wire **49** will include connective portions **49'** between the adjacent discs and when the thermopile is assembled, with the disc between the spacer components, these wire portions **49'** may extend from one disc to the other and will pass through the outer ring slots **48** as indicated at FIGS. **7** and **8.** Also, the lead wire **49''** from the bottom of the thermopile may extend upwardly to the top thereof through the passageway formed by a slot **33** of the sleeve for connection with a lead wire **20**, as shown at FIGS. **7** and **8.**

An important use of the microcalorimeter is to determine the heat which is released when an asphalt adheres to an aggregate. To make such a test, the tubular test cell **41** is partially filled with asphalt and the aggregate is thereafter dropped into the asphalt. Accordingly, it is necessary to provide a means for dropping the aggregate into the liquid asphalt in the test cell **41** in a manner which will not cause any temperature change in the asphalt except that caused by the reaction. Also, because of the exceeding delicacy of the minute measurements, it is necessary to provide a