

APPARATUS AND
METHOD OF INTRODUCING SMALL
AMOUNTS OF REFRACTORY ELEMENTS INTO A
VAPOR DEPOSITION COATING

ABSTRACT OF THE DISCLOSURE

A method of introducing small amounts of a refractory element into a vapor deposition coating. A second material (30), containing at least two elements which are desired to be deposited as a coating on a base material, has placed over it a first material (20) substantially comprising such two elements and a refractory element. The first material (20) is adapted to permit transport of the at least two elements in the second material (30) through the first material (20) when the first (20) and second (30) material are in a molten state and in touching contact with the other so as to permit evaporation of the two elements and the refractory element from an exposed surface. Heat is supplied to the first (20) and second (30) materials to permit evaporation of the at least two elements of second material (30) and the refractory element in the first material (20), and the resulting vapors are condensed as a deposit on a base material (50). A particular method of heating is further disclosed to assist in maintaining adequate rates of evaporation for the aforesaid method, wherein the supplied heat is supplied to an inner heated area (91) and a surrounding outer heated area (92) and at least a portion of the inner heated area (91) is heated to a greater temperature than the outer heated area (92).

Fig. 1