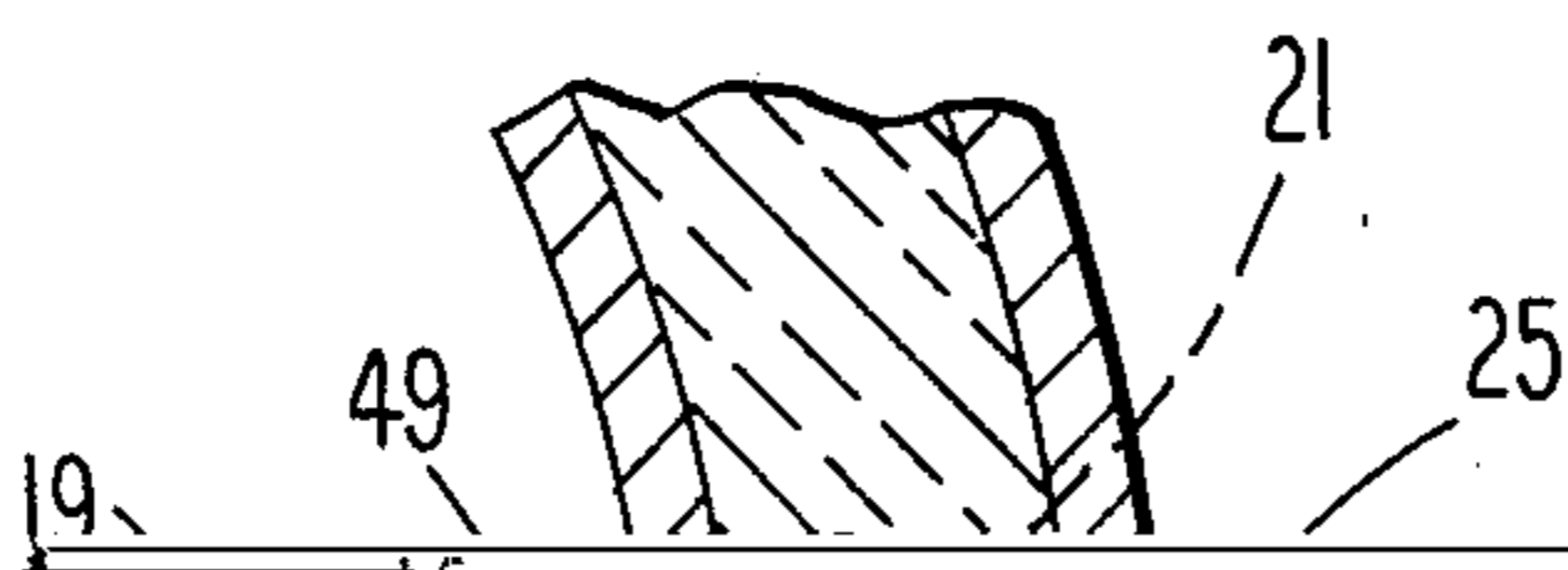


**Fig. 1**



[54] **HORIZONTAL ARRANGEMENT FOR A**

**VACUUM FURNACE**

- [75] **Inventor:** Fred W. Ripley, Perkasio, Pa.
- [73] **Assignee:** Vacuum Furnace Systems Corporation, Souderton, Pa.
- [21] **Appl. No.:** 83,269
- [22] **Filed:** Aug. 7, 1987
- [51] **Int. Cl.<sup>4</sup>** ..... F26B 17/10
- [52] **U.S. Cl.** ..... 34/233; 432/66; 432/77
- [58] **Field of Search** ..... 34/233, 63, 66, 225, 34/135, 136, 137; 432/66, 77
- [56] **References Cited**

inside surface of the outside wall is a layer or layers of heat insulating material means such as graphite felt. Further disposed next to the inside surface of the insulating material means is an inside wall preferably made of graphite. The inside wall defines the chamber of the hot zone structure into which items to be heat treated are placed. Passing through the outside wall, through the layer of heat insulating material, and through the inside wall are many continuous apertures. At the end of each continuous aperture there is located a threaded terminal piece and threaded into each terminal piece is a graphite nozzle. Accordingly there is a plurality of graphite nozzles passing from outside the outside wall of the hot zone structure through into the inside chamber of the hot zone structure. Through the graphite

HOT ZONE ARRANGEMENT FOR A VACUUM FURNACE

FIG. 2 shows a cross-sectional view of a graphite nozzle passing through a hot zone wall.

Consider FIG. 1 which depicts a hot zone structure

BACKGROUND OF THE DISCLOSURE

It is a general practice in the design of vacuum furnaces to include heating elements which are located within a structure designated as a hot zone assembly.

5 wall 15, an inside wall 13 and a section of heat insulating material disposed therebetween. In a preferred embodiment the outside wall is fabricated from stainless steel but other suitable materials could be used. In a preferred

3

destruction because of certain vapors such as nickel chromium vapor which are generated in vacuum furnaces. I have found that if the nozzles are made of graphite such as graphite nozzle 19 that the vapors do

4

ing at least one aperture therein; said one aperture in said outside wall means disposed to be in alignment with said at least one aperture in said heat insulating material means and said at least one aperture in said heat insulating material means disposed to be in alignment with said

10

the graphite of which the nozzle 10 is made is non porous

at least one aperture in said inside wall means to form a