PUBLISHED

APRIL 27, 1943.

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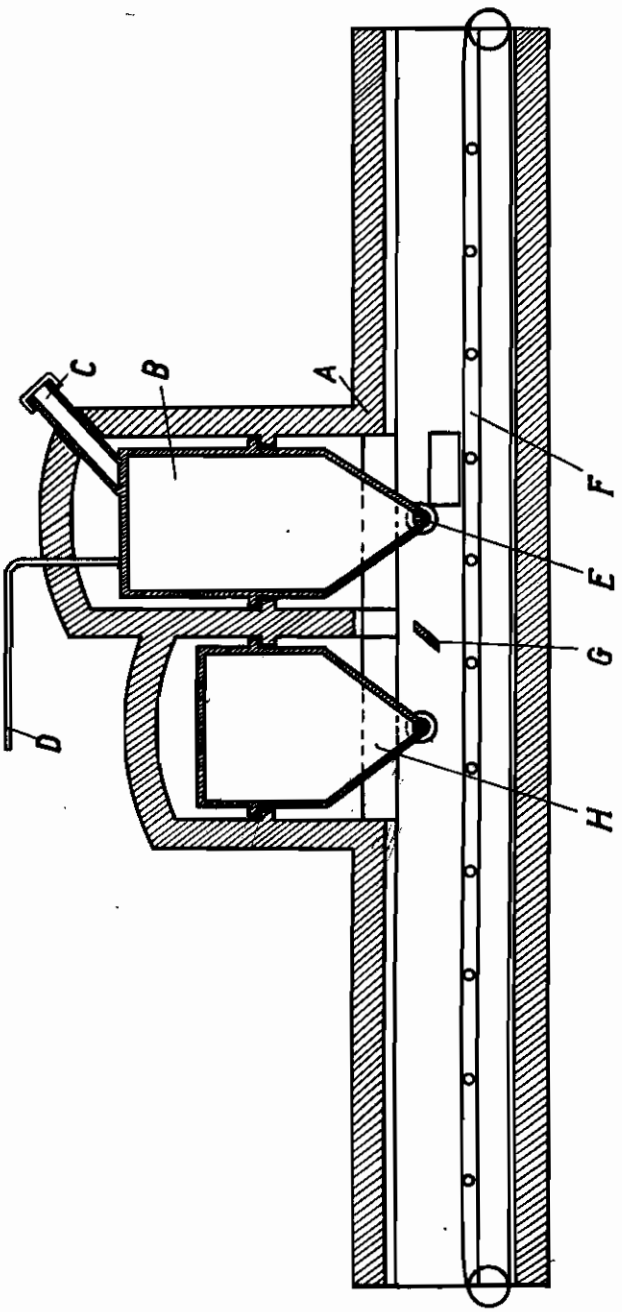
METHOD OF PRODUCING INSULATING MATERIAL FROM GLASS

Filed May 22, 1939

Serial No. 275,121



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Published Apr. 27, 1943

Serial No. 275,121

ALIEN PROPERTY CUSTODIAN

METHOD OF PRODUCING INSULATING MATERIAL FROM GLASS

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Application filed May 22, 1939

It has been known for a long time that when ground glass, to which gas separating substances have been added, is heated, a foamy mass, the sponge glass, is formed, which retains the foamy structure even after cooling down, provided suitable precautions are taken.

Such suitable precautions are the various known manufacturing methods, which prevent the bubbles from collapsing during cooling.

There is in existence, for example, a method wherein the glass powder is heated in moulds, which are subjected to greater or less pressure during cooling.

Other manufacturing processes are based on the use of certain substances and on effecting the heating and the subsequent cooling repeatedly.

Finally, a further method consists in heating ground glass with an addition of certain substances in tightly closed moulds, which lend to the product its final form.

The method of manufacture according to the invention consists in that powdered glass mixed with gas separating substances is heated in a large tightly closed container of fire-resisting steel. This container has a narrow opening or openings which may be closed. At the stage where the glass becomes foamy inner superatmospheric pressure is produced in the tank, for example by introducing compressed air into the tank, or in some other suitable manner. The effect of this superatmospheric pressure is that when the openings are simultaneously opened the sponge glass formed in the tank, being still quite soft, is forced out through these openings. Under the opening or openings vessels or forms are moved along, in which the extruded sponge glass is collected. The temperature under the container is lower than the temperature in the container. The comparatively large bubbles formed in the container are reduced in size during the extrusion through the openings, i. e. they are compressed, so that the pressure in the bubbles (superpressure) is higher than would correspond to the temperature. Owing to the fact that the mass of the sponge glass enters into a lower temperature, first this superpressure and then the solidification of the walls of the bubbles prevents same from collapsing. The size of the bubbles obtained depends upon the size of the opening or openings.

An embodiment by way of example is shown in the accompanying drawing.

In the incandescent zone of the tunnel furnace A a container B is disposed, which is licked by the combustion gases. The container B has a feed pipe C through which the material is introduced and a tube D for introducing the compressed air. Through the opening E the sponge glass passes into containers disposed on the endless band F under the container B. For uninterrupted operation a plurality of containers may be disposed side by side or one behind the other, the containers being charged and discharged at intervals.

At a further stage of production the shapes of insulating material may be provided with a coating of glass. This may be done by causing the containers or moulds into which the extruded sponge glass is introduced to pass under the scraper G and then under the container H, from which easily meltable glass is caused to flow or is sprayed upon the surface of the products and thus forms a coating of glass thereon. In another method for obtaining a coating of glass on one side of the product the containers or moulds are provided at the bottom prior to pouring in the sponge glass with liquid glass, which welds together with the sponge glass upon filling.

In any case it is necessary to paint or spray the vessels or moulds prior to filling with a suitable material, for example clay, kaolin or the like, which prevents the material from adhering to the vessels or moulds.

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