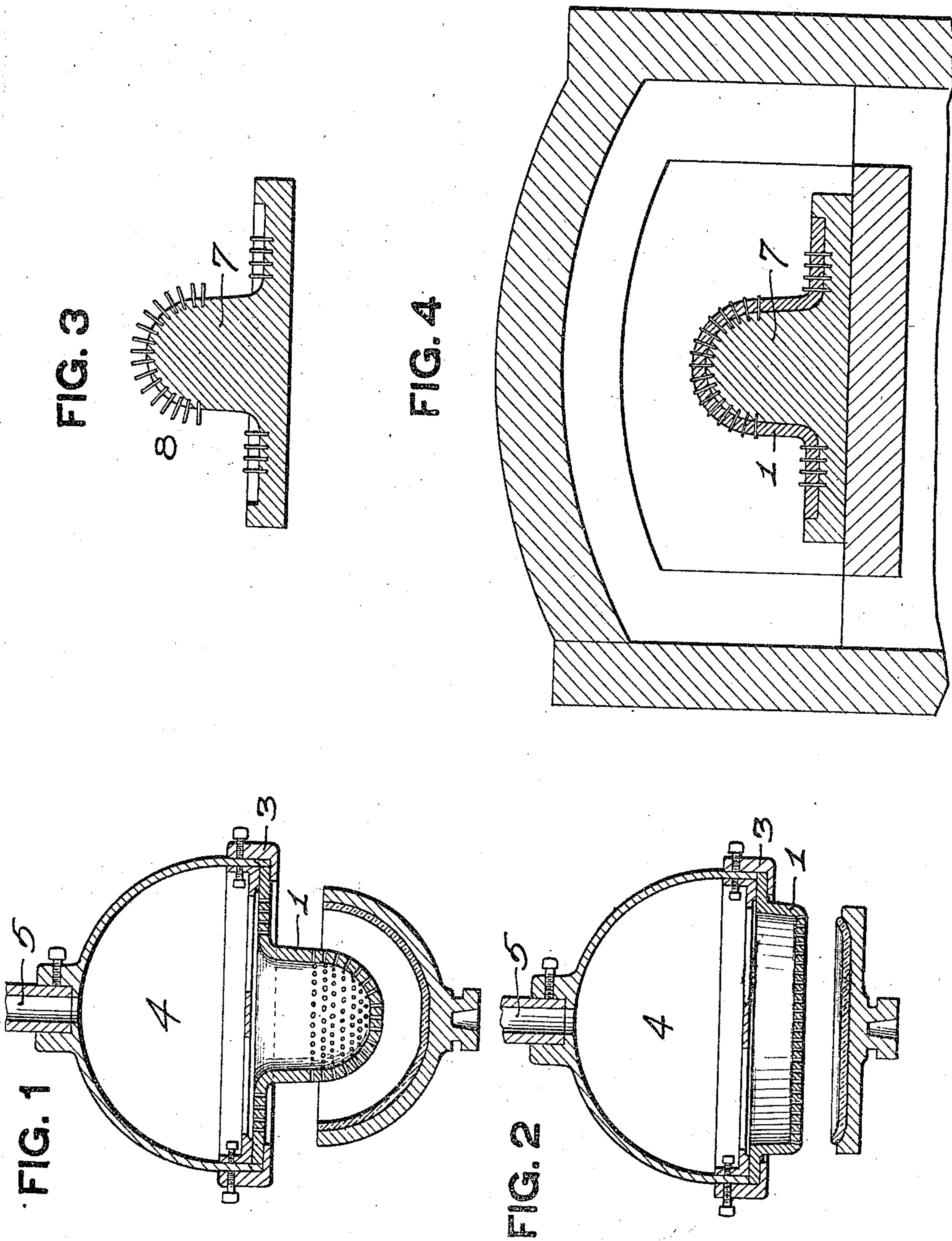


A. J. SANFORD.
 PROCESS OF FORMING BURNERS FOR FIRE POLISHING.
 APPLICATION FILED JUNE 26, 1909.

995,914.

Patented June 20, 1911.



WITNESSES.

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UNITED STATES PATENT OFFICE.

ANDREW J. SANFORD, OF NEWARK, OHIO, ASSIGNOR TO A. H. HEISEY & CO., INC., OF NEWARK, OHIO, A CORPORATION OF WEST VIRGINIA.

PROCESS OF FORMING BURNERS FOR FIRE-POLISHING.

995,914.

Specification of Letters Patent. Patented June 20, 1911.

Application filed June 26, 1909. Serial No. 504,550

To all-whom it may concern:

Be it known that I, ANDREW J. SANFORD, a resident of Newark, in the county of Licking and State of Ohio, have invented a new and useful Improvement in Processes of Forming Burners for Fire-Polishing; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to a process of making burners for polishing glassware, its object being to provide a durable burner of this type which will withstand the very high heat generated upon the jet face thereof, for use for example, in connection with a method of fire polishing, application for which was filed by me of even date herewith, Serial No. 504,552. It is very desirable for me to provide a burner of this type adapted to withstand the heat of the furnace and not warp or get out of shape, as may occur with a cast iron burner.

To produce the desired condition of flame jet for fire polishing according to the method described in said application it is desirable that the burner shall have multitudinous jet orifices formed therein so as to provide for a multitude of small jet flames which can be projected directly against the surface to be polished, and the object of the present invention is to provide a burner formed of refractory material such as plumbago, or like baked clay, to withstand high heats. The present invention has reference to such burner.

It contemplates the improved process of forming burners as hereinafter described and claimed.

In the accompanying drawings Figures 1 and 2 are sectional views of the burner; and Figs. 3 and 4 show the method of molding the same and forming the orifices therein, the said burner being illustrated as within a suitable kiln for the baking of the same.

The burner is formed of a refractory clay of suitable character, the most suitable material for the purpose being a mixture of plumbago and clay corresponding to that used in the manufacture of steel crucibles. The burner may be formed either by molding the perforations in the body thereof or by drilling them in, though I prefer the former method of manufacture. The burner is shaped to conform substantially to the article to be fire polished, being, for example, either concave for the outside polishing of

the bowl, or convex for the inside polishing thereof, or flat. These different forms are illustrated in the several figures. The burner has the body portion 1 corresponding to the desired shape as above stated, and it is made of suitable thickness to give the necessary strength of body. It may be supported in a suitable ring 3 by which it is secured to the mixing chamber 4 which depends from the gas and air supply pipe 5. The burner has numerous perforations extending through the same which are formed at proper angles (generally at about right angles to the body of the burner) so as to feed the gas and air to form flame jets on the outer face of the burner to project against the surface of the glassware to be polished and to which the body of the burner conforms. The refractory character of the burner enables it to withstand the high heat generated on its outer face without warping and a very durable burner for the purpose is thus produced.

In making the burner I prefer to form a mold of wood or like material adapted to char or disintegrate under high heat, and corresponding in shape to the body of the burner. For example, as shown in Figs. 3 and 4, for producing a burner for polishing the interior of bowls, a cone shaped wooden block 7 is turned up corresponding to the desired shape of the burner, and small nails or pins corresponding in size to the desired perforations of the burner are driven into the block in the desired positions for the formation of the jet orifices, such block and nails being shown at 8 in Fig. 3. The refractory material is then molded upon the block around the nails or pins so driven into the same, being packed closely around the same to the desired thickness for the formation of the burner. As so formed the burner is baked in a suitable kiln, as illustrated in Fig. 4, being exposed for the proper period to bring it to finished condition. The heat to which the burner is subjected in baking the same is sufficiently high to practically char the wooden block mold or former on which it is supported, and this leaves the nails or pins loosely supported within the burner body, so that after the baking of the same it is only necessary to carefully withdraw the nails or pins so forming the jet openings in the body of the burner. While the burner is preferably formed in this way

I also find that in using a plumbago burner, the jet orifices may be drilled into the same by a suitable small drill, and that the material is sufficiently soft to permit the rapid
5 drilling of the jet orifices into the same in this way.

What I claim is:

The method of forming a burner for fire polishing glassware, consisting in inserting
10 nails or pins in a wood or like block conforming in shape to the burner, molding the

refractory material over the wood block and around such nails or pins leaving the ends exposed, baking the burner and so loosening the pins from the block, and withdrawing the pins. 15

In testimony whereof, I the said ANDREW J. SANFORD have hereunto set my hand.

ANDREW J. SANFORD.

Witnesses:

E. J. MORATH,
J. E. SNELLING.