No. 856,449. PATENTED JUNE 11, 1907.

C. J. CRITES & J. H. BREESE.

CONTINUOUS GLASS MELTING POT.

APPLICATION FILED OCT. 18, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

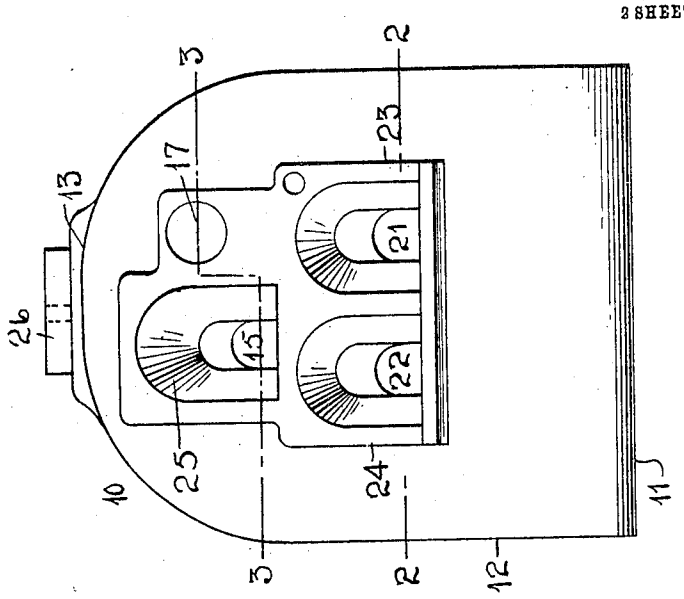
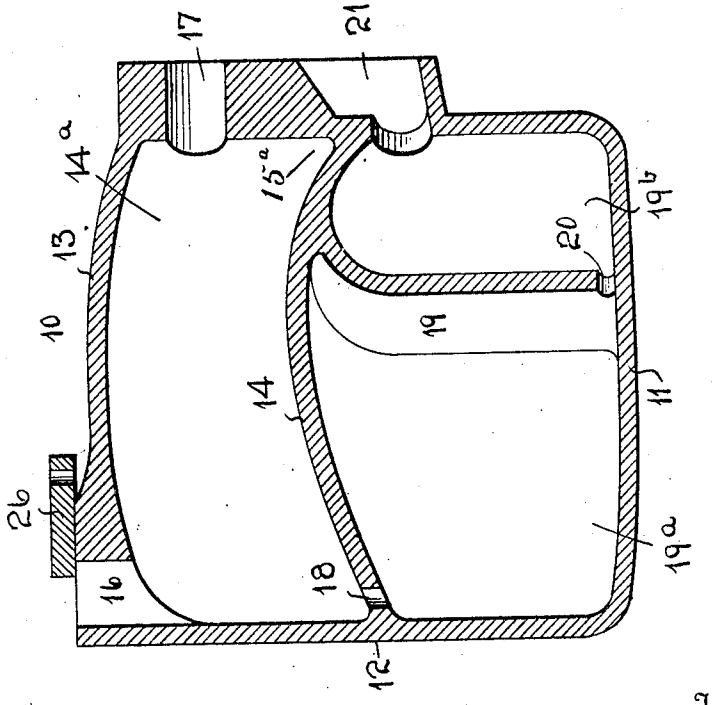


Fig. 4.



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2 SHEETS—SHEET 2.

Fig. 2.

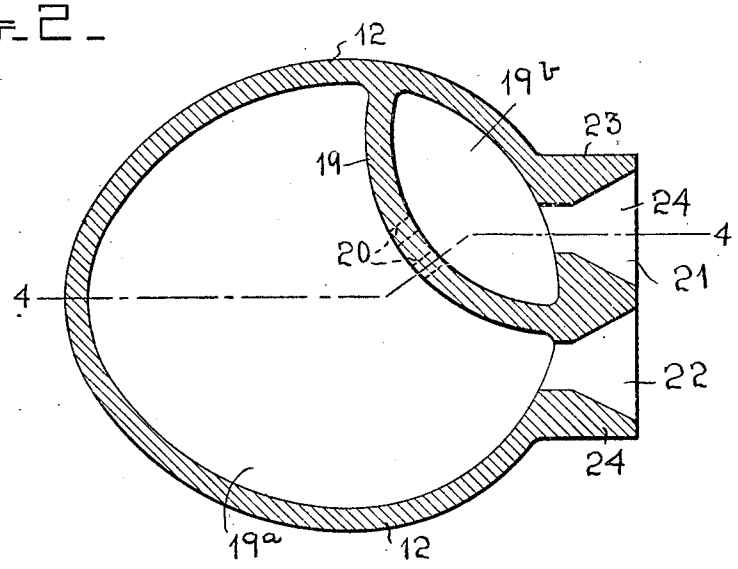
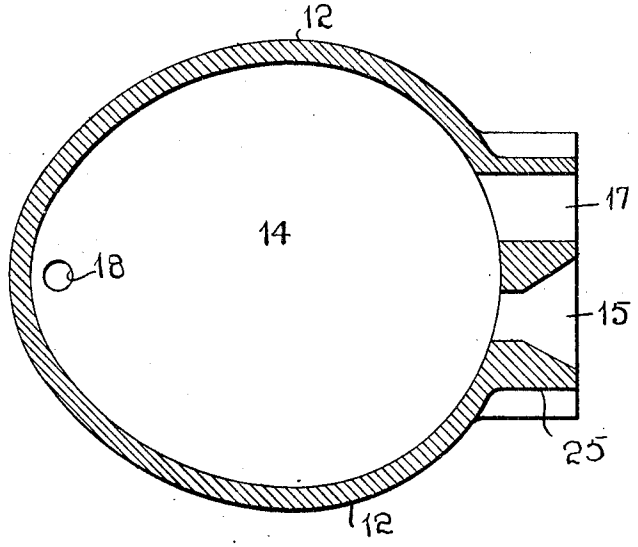


Fig. 3



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UNITED STATES PATENT OFFICE.

CLARENCE J. CRITES AND JOSEPH HENRY BREESE, OF WASHINGTON, PENNSYLVANIA.

CONTINUOUS GLASS-MELTING POT.

No. 856,449. Specification of Letters Patent. Patented June 11, 1907.

Application filed October 18, 1906. Serial No. 339,529.

To all whom it may concern:

Be it known that we, CLARENCE J. CRITES and JOSEPH HENRY BREESE, citizens of the United States, residing at Washington, in the county of Washington and State of Pennsylvania, have invented certain new and useful Improvements in Continuous Glass-Melting Pots; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to melting pots, of the class known as "continuous melting pots," or devices of this character wherein the compound for producing the glass is fed continuously thereto at one point and removed continuously therefrom at another point, and has for its object to improve the construction and increase the efficiency, utility, and economy of construction and operation of devices of this character.

With these and other objects in view, which will appear as the nature of the invention is better understood, the same consists in an improved construction and novel arrangement of the parts as specifically set forth in the claims forming a part hereof.

In the drawings forming a part of this specification and in which corresponding parts are denoted by like designating characters is illustrated the preferred form of the embodiment of the invention capable of carrying the same into practical operation.

In the drawings thus employed, Figure 1 is a front elevation of the improved device. Fig. 2 is a section on the line 2—2 of Fig. 1. Fig. 3 is a section on the line 3—3 of Fig. 1. Fig. 4 is a section on the line 4—4 of Fig. 2.

The improved device is constructed in one single mass of the refractory material usually employed in manufacturing melting pots for glass and for similar purposes, and comprises a body portion represented as a whole at 10 with a concave bottom 11, vertical side walls 12 and a dome like top 13. The improved body is designed to be located within the furnace in the usual manner.

The body portion of the device is somewhat egg-shaped transversely, as represented in Figs. 2 and 3, and for the purpose of this description, the larger end of the body will be referred to as the front of the device and the smaller portion as the rear of the device. Disposed intermediate the interior of the device is an upwardly curved partition 14, the latter being lowest at the rear end of the body, as shown in Fig. 4. This partition divides the pot into a fusing chamber 14^a and a gathering chamber 19^a, a curved partition 19 connecting the bottom 11 and partition 14, and subdividing the gathering chamber to furnish a working chamber 19^b.

Leading through the front portion of the body above the partition 14 is a feed aperture 15 through which the material for producing the glass is inserted and deposited upon the partition 14. The forward end of the partition, or that adjacent to the feed aperture or mouth 15 forms, in conjunction with the front wall of the pot a pocket 15^a, that operates to retain any slag or impurities present, so that all of the stock that escapes from the fusing chamber is free from any foreign matter that would detract from the commercial value of the product. Leading through the dome-like top 13 at the smaller rear end is an inlet flue 16 through which a portion of the heating medium enters the fusing chamber above the partition 14, and piercing the front wall of the body is an outlet flue 17, the latter being connected in any suitable manner with the draft chimney or stack, the latter not being shown as it forms no part of the present invention. Leading through the partition 14 at its rear end is a discharge aperture 18 through which the melted glass flows to the gathering chamber and thence to the working chamber through one or more apertures 20 as hereafter explained.

Piercing the front wall of the body and communicating with the working chamber is an aperture 21, and through which the glass may be "gathered" in the usual manner. Piercing the front wall of the body adjacent to the gathering aperture 21 is another aperture 22 communicating with the gathering chamber below the partition 14, to provide means of access thereto when required. The apertures 21—22 are provided with detachable closures of the usual construction, but they are not shown as they form no part of the present invention and as their construction is so well known. The apertures 21—22 are surrounded by guard hoods 23—24, and the feed aperture 15 is also provided with a guard hood 25.

The walls of the device may be of any required thickness, and the device may be of any required size or capacity.

With a device thus constructed, the operation is as follows: The compound from which the glass is manufactured is fed in through the aperture 15, as above described and deposited upon the partition 14. As fast as the glass is melted, it runs down through the aperture 18 into the gathering chamber, and thence through the apertures 20 into the working chamber 21 from which it may be removed in the ordinary manner, the supply of material being continuous as required through the feed aperture 15. By this means, the melting operation is continuous, as will be obvious. The supply of glass in the working chamber is thus uniform, and may be maintained at any required height by keeping up the supply of material in the feed aperture 15, as will be obvious. Thus the supply may be maintained in the working chamber at a uniform depth so that the operators can reach the material at the same point in the chamber at all times, which thus does not vary materially. If increased heat is required, it may be admitted through the inlet 16 and discharged through the outlet 17, and to control this auxiliary heat, a closing tile or damper 26 is provided, which may be employed to partially or wholly cover the inlet flue 16 and thus effectually control the supply of the auxiliary heating medium. The aperture 22 permits the inspection of the gathering chamber of the lower portion and clearing of the same when required. By this means also, the interior surface of the device is accessible during the drying process when the pot is first constructed, so that in event of cracks or fractures developing, they can be readily corrected.

The device is simple in construction, is effectual and practical in operation and adapted to the manufacture of any required quality of glass or like material.

Having thus described the invention, what is claimed as new is:

A one-piece glass melting pot of substantially ovoidal form in horizontal section having an arched top, a concaved bottom and an intermediate arched partition forming within the pot an upper fusing chamber, the space below said partition being subdivided by a vertical transversely curved partition into a rear gathering chamber and a front working chamber, said intermediate partition having at its rear end a discharge opening leading from the fusing to the gathering chamber, and the vertical partition having at its lower edge openings leading from the gathering to the working chamber, said pot being provided at its front with a charging opening leading to the fusing chamber, and a gas escape opening leading therefrom and with a pair of hooded openings communicating respectively with the gathering and working chambers, there being formed in the top wall of the pot a heat inlet flue entering the fusing chamber, and a movable closure for wholly or partially closing said inlet flue.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

CLARENCE J. CRITES.
JOSEPH HENRY BREESE.

Witnesses:
JOSEPH DUDLEY,
GEORGE JENNINGS.