

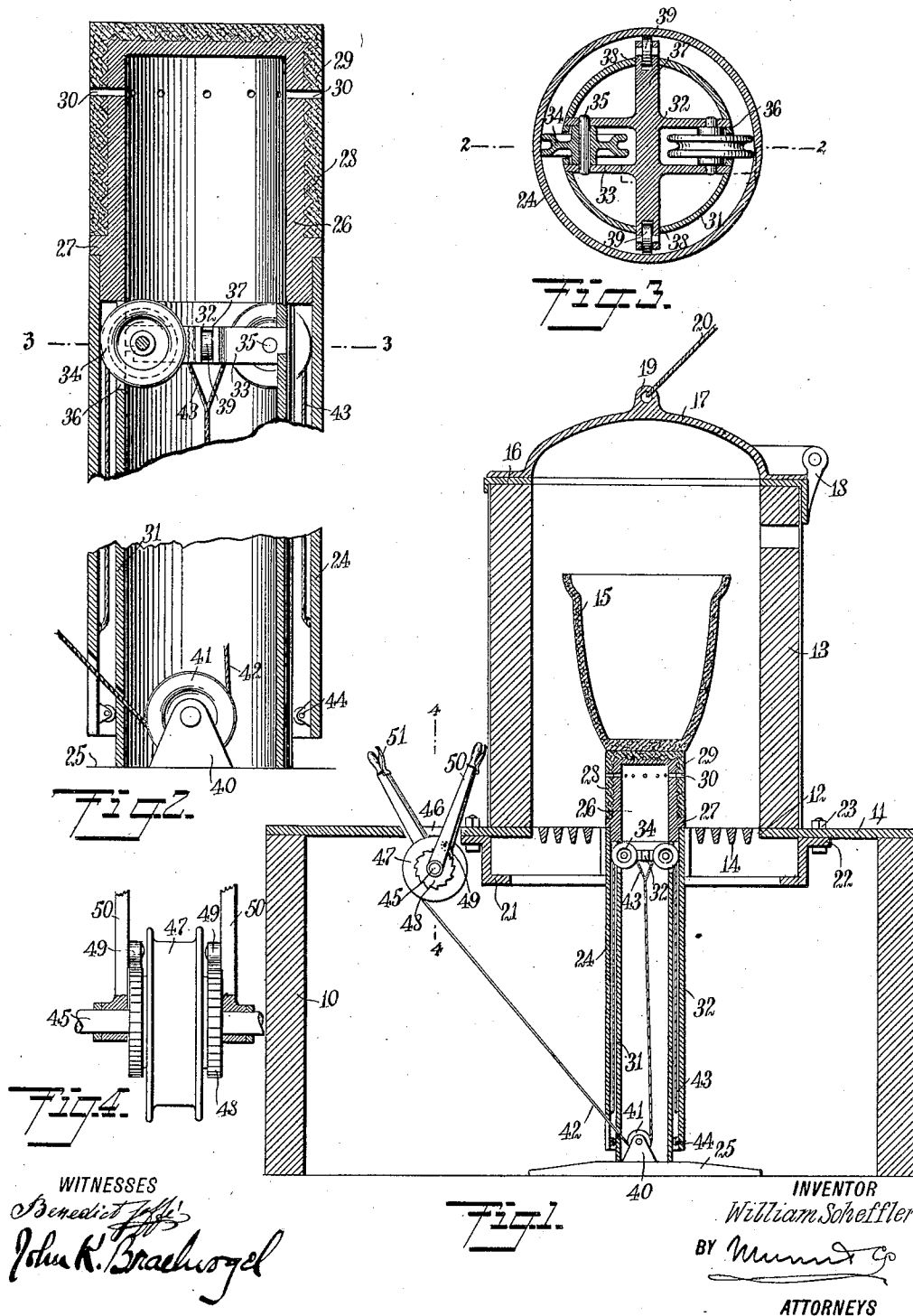
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FURNACE.

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UNITED STATES PATENT OFFICE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM SCHEFFLER, a citizen of the United States, and a resident of Gulfport, in the county of Harrison and State of Mississippi, have invented a new and Improved Furnace, of which the following is a full, clear, and exact description.

This invention relates to furnaces for melting brass, and for other purposes, and has reference more particularly to a furnace in which is provided a movable support for a crucible or the like, together with means for moving the support into and out of the furnace.

The object of the invention is to provide a simple, strong and durable furnace in which brass and other metals can be melted, and for like and other purposes, in which the crucible or other container for the metal or the like can be easily and quickly moved into and out of the furnace, in which the moving of the crucible requires little effort and time, in which the crucible is subject to comparatively little wear, by means of which is obviated the use of tongs or like devices for moving the crucibles, in which the heat in the furnace is conserved, whereby fuel is saved, in the use of which the workman is little exposed to the heat and gases, and which requires the services of but few attendants.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a vertical section of a furnace constituting an embodiment of my invention; Fig. 2 is an enlarged fragmentary section on the line 2—2 of Fig. 3, of part of the mechanism for moving the crucible support; Fig. 3 is a transverse section on the line 3—3 of Fig. 2; and Fig. 4 is a fragmentary section on the line 4—4 of Fig. 1.

Before proceeding to a more detailed explanation of my invention, it should be clearly understood that while the same is particularly useful in connection with brass furnaces, it can also be advantageously embodied in furnaces used for other purposes. The movable support in the furnace is intended primarily to carry the crucible in

which the brass is melted. However, the support can also be employed to hold other like objects in the furnace. Certain of the details shown for example herewith, form no part of the invention, and can be varied in accordance with individual preference and special conditions, without departing from the underlying spirit of the invention.

Referring more particularly to the drawings, I have shown for example, a furnace comprising a base casing 10 having a top 11 provided with an opening 12 about which the furnace casing proper, 13, is positioned. The furnace is fashioned from any suitable refractory material, and may be of any convenient form and size. A grate 14 is located in the opening 12, and the furnace casing 13 is proportioned to hold a suitable crucible 15. At the upper edge, the furnace casing has a rim 16, upon which a cover 17, movably mounted upon the rim by means of a hinge 18, seats. The cover has an eye 19 at which is fastened an operating line or other flexible member 20, by means of which the cover can be raised and lowered. An annular frame 21 is arranged under the top 11, about the opening 12, and has flanges 22 secured by means of bolts 23, to the top.

Centrally located with respect to the furnace casing 13 and the grate 14, is a tubular support 24, arranged about a tubular guide member 31, and movable through a central opening of the grate. It terminates near the bottom of the casing 10 above a base plate 25, upon which the guide 31 rests. I employ a support head 26, consisting of a cylindrical member having near the lower edge a laterally extended flange 27 adapted to seal at the upper rim of the member 24, with the lower portion of the head projecting into the member 24. The head has on the outer surface, projections or protuberances 28 which assist in holding in position a layer or coating 29 of refractory material such as fireclay. The head and its refractory coating have therethrough openings 30 so that cool air can penetrate into the support under the crucible positioned upon the support. The tubular guide 31, at the upper end, has mounted therein a spider 32 having bifurcated arms 33, in which are journaled pulleys 34. These have spindles journaled in openings of the arms 33, and extend through openings 36 of the member 31, to engage at the wall of the member 24. The spider has bifurcated parts 37 projecting

through suitable openings 38 at opposite sides of the member 31. Guide rollers 39 are journaled in these projecting parts, and engage at the inside of the member 24. A bracket 40 is mounted upon the plate 25, within the member 31, and has journaled thereon a pulley 41, under which passes an operating flexible member 42. This is connected with lines 43 which pass over the pulleys 34, and extend downwardly between the members 24 and 31, being secured adjacent to the lower end of the member 24. Near the lower end, the latter has guide rollers 44 which engage at the outside of the member 31.

A shaft 45 is journaled within the base casing 10, under an opening 46 in the top 11, and has a drum 47 upon which the flexible member 42 is wound. The drum, at the opposite ends has rigid therewith, ratchets 48 adapted to be engaged by dogs 49 pivotally carried by levers 50, loosely mounted upon the shaft, adjacent to the ratchets. Each lever has a manually operable device 51, for controlling its dog. By means of the levers, the drum can be actuated to wind upon it the line, or to permit the same to unwind. By winding the line upon the drum, the crucible support can be raised so that the crucible can be moved out of the furnace to the top thereof, the cover 17 being opened for the purpose. The support 24 moves guidingly up and down about the member 31.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent:

1. In a furnace, a pair of members arranged to telescope one within the other, one of said members being a fixed guide member, the other of said members being a supporting member and having means for supporting a crucible, guide rollers between said members, a flexible device for raising and lowering said supporting member, and located within said outer member and between said members, whereby said members serve to protect said device, and means for operating said flexible device to move said supporting member.

2. In a furnace, a hollow, fixed guide member, a hollow supporting member movable upon said guide member and having at the upper end means for supporting a crucible, guide rollers between said supporting member and said guide member, a flexible member secured at the lower end within said supporting member, a guide pulley mounted at the upper end of said guide member, a second guide pulley positioned near the lower end of said guide member, said flexible member passing over said first-mentioned pulley and under said last-mentioned pulley, and means for operating said flexible member to raise and lower said supporting member.

3. In a furnace, a crucible support comprising a hollow, fixed guide member, a hollow, movable, supporting member arranged to move longitudinally of said guide member, a spider secured at the upper end of said hollow guide member, and having arms provided with guide pulleys engaging said supporting member, and rollers engaging said supporting member, a flexible member arranged within and secured at the lower end of said supporting member and passing over said pulleys into said guide member, in combination with means for operating said flexible member to move said supporting member.

4. In a furnace, a tubular guide, a tubular supporting member movable upon said guide, a crucible supporting head having the lower end positioned within said supporting member and having a flange seating at the edge of said supporting member, and means for raising and lowering said supporting member, said head being adapted to support a crucible, said means being arranged within said guide and within said supporting member whereby the same serve to protect said means.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM SCHEFFLER.

Witnesses:

ELIAS L. GROOMS,
WILMER G. BUCK.