F. C. HINMAN.

CASTING APPARATUS.

APPLICATION FILED SEPT. 8, 1914.

1,130,974.

Patented Mar. 9, 1915.

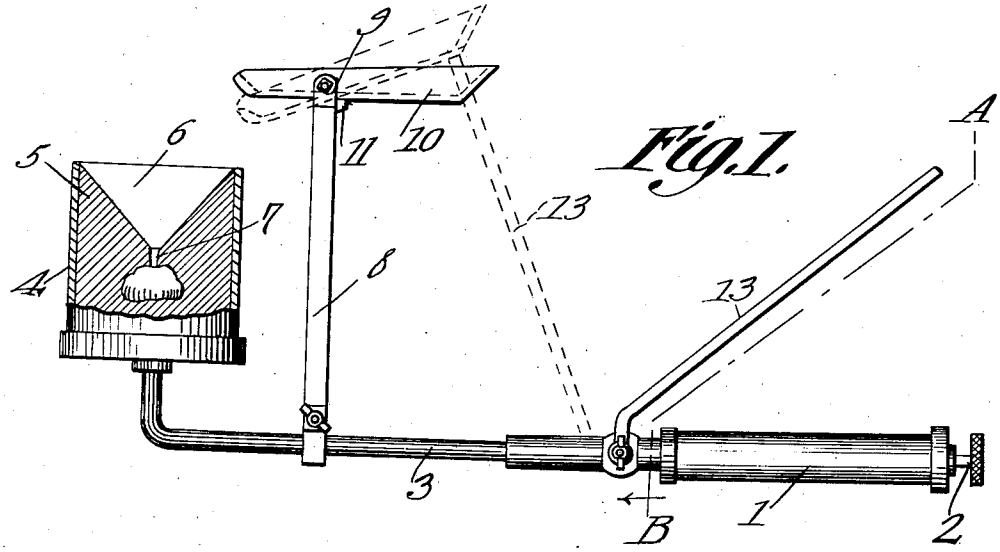


Fig. 1.

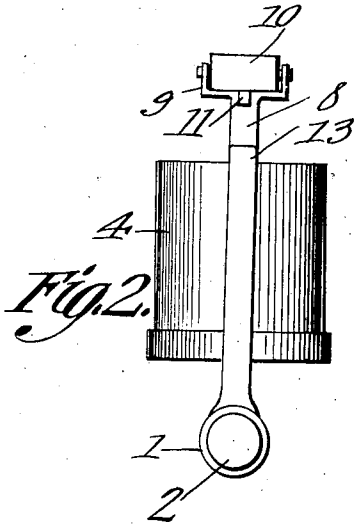


Fig. 2.

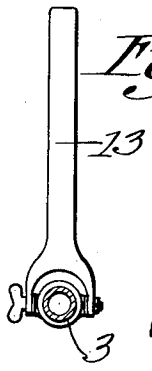


Fig. 3.

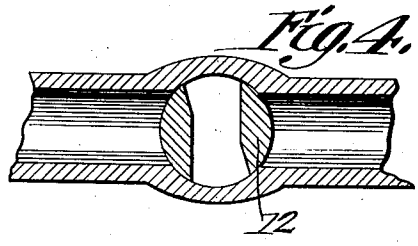


Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

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CASTING APPARATUS.

1,130,974. Specification of Letters Patent. Patented Mar. 9, 1915.

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To all whom it may concern:

Be it known that I, FREDERICK C. HINMAN, a citizen of the United States, residing at Lincoln, in the county of Lancaster and State of Nebraska, have invented a new and useful Casting Apparatus, of which the following is a specification.

This invention relates to casting apparatus especially designed for use in dental work.

The principal object of the invention is to provide means whereby the metal may be melted at a point remote from the investment, the metal being subsequently dumped onto the investment so that the metal will be almost entirely deposited in the mold by gravity and but slight suction will be necessary in order to complete the filling of the investment.

A further object is to provide means whereby a metal can be heated to a boiling point and promptly dumped without removing the blow pipe therefrom, thus avoiding any slight delay of heat which would tend to chill the metal and produce an imperfect casting.

A further object is to provide means whereby the act of dumping the metal onto the investment will operate to open the suction valve, the parts being so proportioned that the suction is started prior to the dumping of the metal onto the investment.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings, the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a view partly in section and partly in elevation of the apparatus, the investment and its crucible being shown in section, and the position of the metal crucible and the valve stem during the pouring of the metal being indicated in dotted lines. Fig. 2 is an elevation of the apparatus. Fig. 3 is a section on the line A—B Fig. 1. Fig. 4 is an enlarged horizontal section through the valve.

Referring to the figures by characters of reference 1 designates the casing or cylinder of a suction pump having a piston adapted to be operated by a rod 2 in the usual manner. A suction pipe 3 extends through the casing and supports the crucible 4 in which the investment 5 is adapted to be placed. The investment has the usual conical recess 6 so that molten metal dumped upon the investment will gravitate quickly to the sprue 7, the recess 6 being of considerable depth so that gravitation of the metal to the sprue will be facilitated.

Mounted on the suction pipe 3 is a standard 8 having a fork 9 at its upper end within which a crucible 10 is pivotally mounted, this crucible being held in substantial horizontal position by reason of the fact that it is mounted off center and bears downwardly on a stop 11. This crucible is designed to contain a sufficient amount of metal which can be heated in the usual manner to the boiling point. A valve 12 serves to close communication between the crucible 4 and the casing 1, this valve being normally closed and having an arm or stem 13 connected to it. The stem is so proportioned that when it is swung for the purpose of opening the valve 12, said valve will first be brought to an open position after which the arm 13 will strike one end of the crucible 10 and elevate it, so that the contents of the crucible will be dumped into the recess 6.

In using the apparatus herein described, the valve 12 is closed and a sufficient amount of metal is placed in the crucible 10 and heated to the boiling point, it being unnecessary to remove the blow pipe from the metal until the desired heat has been obtained. Any suitable fluxes may be added, so as to make the metal flow better. As soon as the metal has reached the desired heat, the arm 13 is swung to the position indicated by dotted lines in Fig. 1, first opening the valve so as to create a full suction through the pipe 3 and casing 1. As soon as the full suction is established the arm 13 strikes the crucible 10 and tilts it, thus causing the boiling metal contained therein to dump into the investment. The weight of the metal falling onto the investment will be sufficient to practically fill the mold so that only a slight suction will be necessary to complete the casting operation.

Importance is attached to the fact that

the sprue 7 can be made large so that metal, when dumped, passes through easily by gravity.

What is claimed is:—

1. The combination with an investment ring, means for creating a suction therefrom, and a valve for preventing said suction; of a metal crucible tiltably mounted adjacent said investment ring, a valve stem, and means operated by said stem after the opening of the valve for tilting the crucible to discharge its contents into the ring.

2. The combination with an investment ring, means for creating a suction therefrom, and a valve for preventing the suction, of a tiltably mounted metal crucible, means for supporting said crucible in active position, and means operated by the opening of the valve for discharging the contents of the crucible into the investment ring subsequent to the opening of the valve and the establishment of the suction.

3. The combination with a suction element, a pipe extending therefrom, and an investment ring supported by said pipe, of a valve normally closing the pipe, a standard supported by the pipe, a metal crucible movably mounted upon the standard, and means operated by the opening of the valve for discharging the contents of the metal crucible into the investment ring after the valve has been opened.

4. The combination with an investment ring, means for creating a suction therefrom, a valve for preventing said suction, of a crucible tiltably mounted, and means operated by the opening of the valve for discharging the contents of said crucible into the investment ring after the valve has been opened.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

FRED. C. HINMAN.

Witnesses:
FRED FUNKE,
L. C. STOREY.