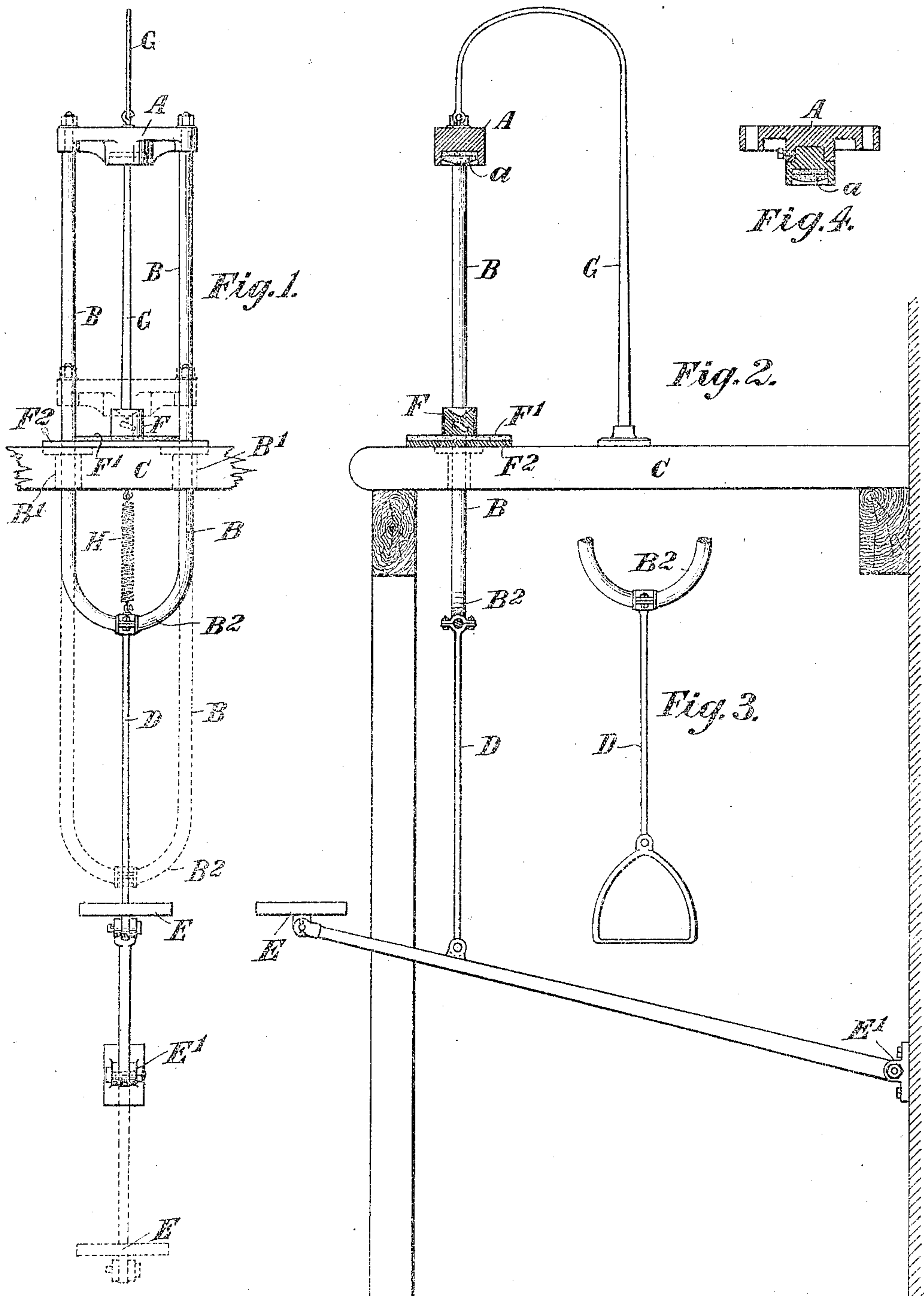


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 APPLIANCE FOR CASTING DENTAL GOLD INLAYS.
 APPLICATION FILED AUG. 18, 1908.

903,489.

Patented Nov. 10, 1908.



WITNESSES:
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UNITED STATES PATENT OFFICE.

VALENTINE MACDONALD, OF MELBOURNE, VICTORIA, AUSTRALIA.

APPLIANCE FOR CASTING DENTAL GOLD INLAYS.

No. 903,489.

Specification of Letters Patent.

Patented Nov. 10, 1908.

Application filed August 18, 1908. Serial No. 449,059.

To all whom it may concern:

Be it known that I, VALENTINE MACDONALD, (D. D. S., University of Pennsylvania; L. R. C. S., Edinburgh,) a subject of the King of Great Britain and Ireland, residing at No. 87 Collins street, Melbourne, Victoria, Australia, have invented a certain new and useful Improved Appliance for Casting Dental Gold Inlays, of which the following is a specification.

This invention consists of an improved appliance for casting dental gold inlays. By its use the molten or fused gold in the coned upper surface of the investment ring or mold can be played upon by the blow pipe until the instant that an asbestos padded cap suddenly falls or descends upon it and so forces the gold into the cavity of mold in the investment material. Said sudden force or pressure is obtained by the upper asbestos cap piece being supported on a drop head at a distance immediately above the mold or investment ring in such a manner that it can be instantly released and dropped rapidly down from such height onto the molten gold in the cone of the investment ring and thus the gold is forced (while intensely heated) into the cavity therein with the result that a perfect cast of the mold is obtained. The instantaneous and rapid drop of the asbestos padded cap being accelerated by foot pressure imparted through the medium of a treadle or stirrup, thus leaving the operator's left hand free, while his right hand is applying the blow pipe or flame, and hence the casting of the gold inlay is effected in a simpler and more efficient manner than is done with the present known appliances.

The casting appliance will now be fully described aided by a reference to the accompanying sheet of drawings in which.—

Figure 1 shows it by a front view, and Fig. 2 by a side sectional view, while Fig. 3 shows the stirrup for use in place of a treadle, and Fig. 4 is a modified construction of the drop head.

In the drawings A is a cross or drop head having the recessed asbestos cap either formed upon or secured to it and within such cap is the asbestos filling *a*. Said drop head is secured to the upper ends of two vertical sliding rods B which pass through guide bushes B¹ fitted into a bench or table C, while the lower ends of said rods are connected together by a bow B² at the center of which is the bearing for the upper end of a

connecting rod D the lower end of which is attached to a foot lever or treadle E which is fulcrumed in a suitably arranged bracket E¹, or, if desired, a stirrup may be carried at lower end of said connecting rod and thus the treadle be dispensed with. F is the mold or impression ring seated on a thick sheet of asbestos F¹ lying on a plate F² on the table or bench C.

G is a light rod bracket secured to table C and having a hook at its upper end upon which to suspend the drop head until just prior to its being released to drop and force the molten gold into the mold or in place of said bracket a coiled spring H secured between the underside of bench and the top of connecting rod or strap may be employed it being just strong enough to hold the cross head and guide rods up.

The operation of casting with the appliance is as follows:—Having taken the wax impression in the usual manner and shaped it for the future filling it is lifted from the cavity in tooth and a short piece of wire about 17 gage (Brown and Sharpe gage plate) for a medium size filling is taken and slightly warmed at one end and gently attached to the outer surface of the wax impression without distorting it. The wax and wire are then placed in the metal impression ring and invested with the requisite molding substance the wire being left to project through the investment so that it can be withdrawn when the latter sets. The mold ring is then heated gradually to burn out the wax and so leave a cavity in the investment, said cavity being the space originally occupied by the wax and the narrow passage formed from the space to the surface by the withdrawal of the wire. The prepared investment or mold is now placed in the casting appliance after the drop head and side bars are raised to the requisite height for the drop, the head being held up by a weak spring bracket attached to the bench aside of the side bars. The investment ring or mold is now placed in position and thoroughly heated, the gold ingot being placed in position over the hole through its top surface and the blow pipe is brought into action, the left foot meanwhile being kept in position ready to apply the necessary force to the treadle or stirrup to bring the drop head down upon the molten gold ingot in the mold with sufficient force to drive the molten gold into the cavity within the in-

vestment. The flame should be kept going strongly until the drop cap has passed through it and so shut it off from the gold at the latest possible moment. The drop cap
5 should be brought into action suddenly and with considerable force and such force as is necessary is readily applied by the foot method. The investment ring or mold is now removed and on cooling the inlay is re-
10 moved and finished off in the usual manner.

Having now described my invention what I claim as new and desire to secure by Letters Patent is:—

1. An improved appliance for casting dental gold inlays consisting of a drop head furnished with the asbestos cap and carried by
15 two vertical guide rods which pass through guide bushes in a bench or table under which

the guide rods are connected to a stirrup or treadle whereby the force of the falling drop
20 cap can be accelerated, substantially as described.

2. An appliance for casting dental gold inlays comprising a table, side rods movable vertically in the table, a drop head having an
25 asbestos cap carried by said rods, means for moving said rods, means for normally holding the drop head in raised position and a mold.

In testimony whereof I have hereunto set
30 my hand in presence of two subscribing witnesses.

VALENTINE MACDONALD.

Witnesses:

BEDLINGTON BODYCOMB,
CHARLES HACKETT.