June 14, 1932. R. M. KERR 1,863,445

DEVICE FOR REMOVING FORMS FROM MOLDS

Filed Nov. 3, 1930

Fig. 2.

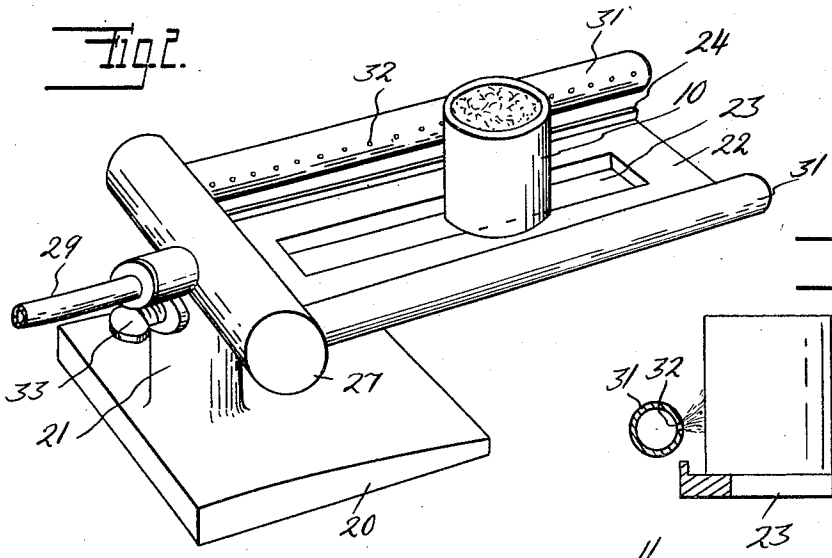


Fig. 4.

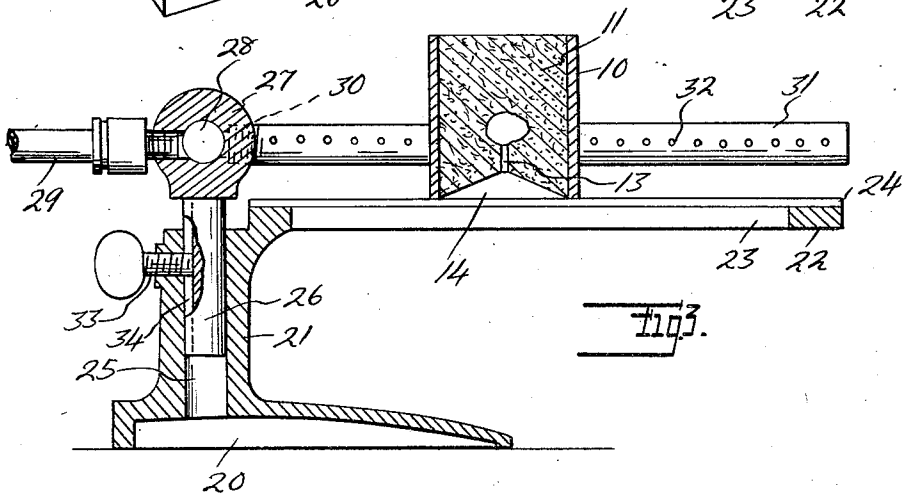


Fig. 3.

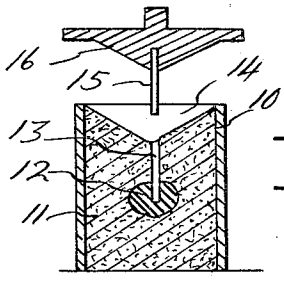


Fig. 1.

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UNITED STATES PATENT OFFICE

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DEVICE FOR REMOVING FORMS FROM MOLDS

Application filed November 3, 1930. Serial No. 493,089.

This invention relates to a device for removing a form from a mold and has particular reference to a device for removing a wax form from a mass of investment compound in which the wax form has previously been imbedded to form a mold.

The invention numbers among its objects the provision of a device of the above mentioned character which will be simple in construction and which will be capable of effecting a removal of a plurality of forms from a plurality of molds in a single operation.

Other objects and advantages of the invention will become more apparent as the following description proceeds, particularly when reference is had to the accompanying drawing, wherein:

Figure 1 is a semi-diagrammatic sectional view showing a flask and a form imbedded in a mass of investment compound in this flask;

Figure 2 is a perspective view of a device for removing the form from the flask shown in Figure 1;

Figure 3 is a longitudinal sectional view through the structure shown in Figure 2; and

Figure 4 is a transverse sectional view through the structure shown in Figure 2.

In molding inlays for use in dental work, it is customary to first obtain a wax form of the size and shape of the cavity to be filled. This wax impression or form, after it has first been protected by a coating of investment compound, is then worked downwardly into a flask which has been previously filled with a mass of semi-plastic investment compound so that the wax form produces a mold in the investment compound of the size and shape of the inlay desired. A wire or sprue is generally imbedded in the wax form during the forming of the mold and after the investment compound has become set the wire is withdrawn to provide a passage from the exterior of the flask to the center of the wax impression.

In Figure 1 there is semi-diagrammatically shown a flask 10 filled with a mass of investment of compound which is designated generally by the reference character 11. A form 12 of wax is shown as being imbedded in the investment compound, and a channel 13 communicates with the interior of the form and with a recess 14 formed in the end of the mass of investment compound, this channel being formed by a sprue 15 having its end anchored in the cap 16 of the flask. The present invention contemplates more particularly the provision of an improved device for effecting a removal of the form 12 from within the mass of investment compound, to the end that a mold will be formed within the investment compound, which mold will correspond in size and shape to the inlay desired.

Referring then particularly to Figures 2, 3 and 4 of the drawing, it will be noted that the device includes a base 20 provided with the upstanding pedestal 21. Projecting laterally from this pedestal and preferably from the upper end thereof, is a platform 22 which is provided centrally with the longitudinally extending slot 23 and which is provided at its sides with the upstanding marginal flanges 24.

The pedestal is bored as at 25 to receive a shank 26 which carries at its upper end a manifold 27. The manifold is bored to provide a chamber 28 with which a gas supply pipe 29 communicates and is also provided with the lateral bores 30 for receiving the burner pipes 31. It will be noted that the burner pipes are elongated and extend longitudinally of the platform 22 and adjacent opposite sides of the same, these burner pipes being provided with jet openings 32 which are directed inwardly toward the platform. The shank 26 is adapted for vertical adjustment in the bore 25 so that the burner pipes may be positioned at any desired level above the floor of the platform. For locking the shank in adjusted position there is provided a set screw 33, this set screw engaging in a slot 34 in the shank so that this shank is prevented from turning and the burner pipes are always maintained parallel to the longitudinal edges of the platform.

With the construction above described, a flask such as shown in Figure 1 of the drawing with a wax form therein, is inverted and positioned on the platform with the channel 13 in alignment with the slot 23 in the platform. Gas is then supplied to the burner

pipes and when this gas is ignited, jets of flame are directed from the burner pipes toward the sides of the flask, as clearly illustrated in Figure 4 of the drawing. These jets of flame heat the flask and the investment compound sufficiently to melt the wax form so that the melted wax drains outwardly through the channel 13 and through the slot in the platform. Obviously, after all of the wax has melted and has flowed from the flask, a mold is left in the investment compound, which mold may be filled with gold or with whatever material is to be used in the formation of the inlay.

It will be noted that the platform is preferably of sufficient length to receive at one time a plurality of flasks so that the forms may be removed from a plurality of molds at a single operation. It has been found that the greatest efficiency results if the jets of flame are directed adjacent substantially the lower portions of the flasks and the manifold and burner pipes are therefore vertically adjustable relative to the platform so that the jet openings may be vertically adjusted, dependent upon the size of the flasks being heated. The construction provides for locking the manifold and burner pipes in adjusted position while preventing movement of the burner pipes out of parallelism with the longitudinal edges of the platform.

While the invention has been described with some detail, it is to be understood that the description is illustrative only of the inventive idea and that the right is reserved to make such changes in the details of construction and arrangement of parts as will fall within the purview of the attached claims.

What I claim as my invention is:

1. In a device of the character described, a platform adapted to support a flask, a burner pipe extending longitudinally of said platform in parallelism with one side thereof, and means providing for vertical adjustment of said burner pipe relative to said platform while preventing movement of said burner pipe out of parallelism with the side of said platform.

2. In a device of the character described, a base, a pedestal projecting upwardly from said base, an elongated platform extending horizontally from said pedestal and supported thereby, said platform being provided substantially centrally with a longitudinally extending slot, a manifold, a shank fixed to said manifold and mounted for vertical adjustment in said pedestal, and burner pipes projecting from said manifold and extending longitudinally of said platform adjacent opposite edges of the same.

3. In a device of the character described, a base, a pedestal projecting upwardly from said base, a platform extending horizontally from said pedestal and supported thereby, said platform being elongated and being provided substantially centrally with a longitudinally extending slot, a manifold, burner pipes projecting from said manifold and extending in substantial parallelism with opposite edges of said platform, a shank fixed to said manifold and mounted for vertical adjustment in said pedestal, and means for locking said shank in adjusted position.

4. In a device of the character described, a base, a pedestal projecting upwardly from said base, a substantially horizontally arranged platform supported by said pedestal, a manifold, a burner pipe extending from said manifold in substantial parallelism with said platform, and means providing for vertical adjustment of said burner pipe relative to said platform while preventing movement of said burner pipe out of parallelism with said platform.

5. In a device of the character described, a base, a pedestal projecting upwardly from said base, an elongated platform extending horizontally from the upper end of said pedestal and supported thereby, said platform being provided substantially centrally with a longitudinally extending slot and being provided with upstanding marginal flanges on its longitudinal edges, a manifold, a pair of burner pipes carried by said manifold and extending in parallelism with and adjacent the longitudinal edges of said platform, said burner pipes being provided with jet openings directed toward the center of said platform, a shank fixed to said manifold and mounted in a vertical bore in said pedestal, and a set screw carried by said pedestal and engaging a groove in said shank whereby said shank is mounted for vertical adjustment in said pedestal but is prevented from turning therein.

6. In a device of the character described, a base, a pedestal projecting upwardly from said base, a platform fixed to said pedestal, a pair of burner pipes, a manifold connected to said burner pipes, a shank fixed to said manifold and mounted in a vertical bore in said pedestal, and means carried by said pedestal and engaging a groove in said shank providing for vertical adjustment of said shank in said pedestal while preventing rotation of said shank relative to said pedestal.

In testimony whereof I affix my signature.

ROBERT M. KERR.