2 Sheets—Sheet 1.

J. D. HEIGES.

VULCANIZING APPARATUS.

No. 170,731. Patented Dec. 7, 1875.

Fig 1

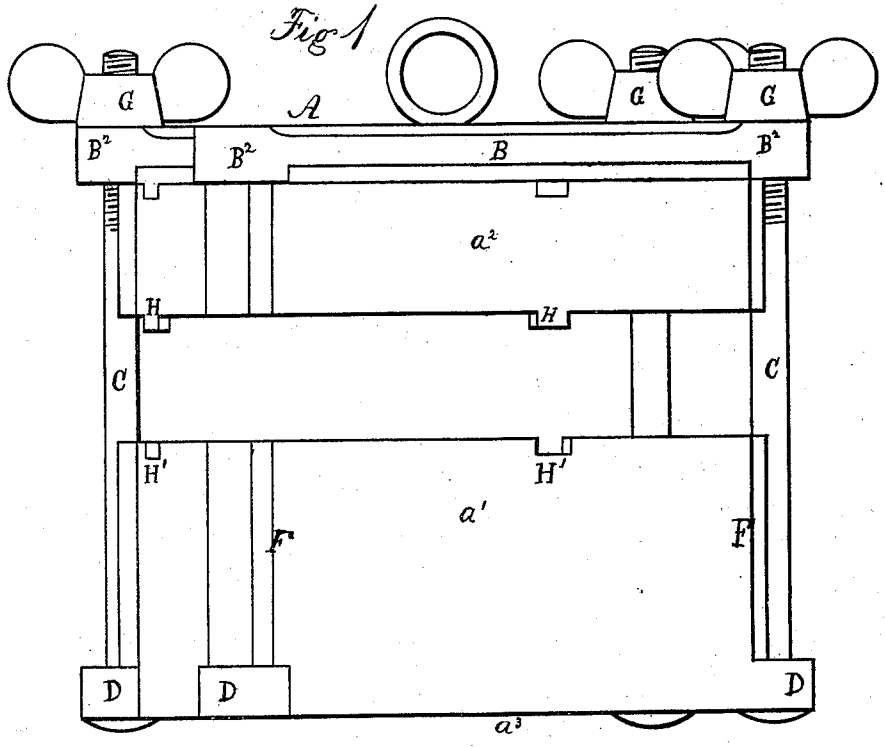
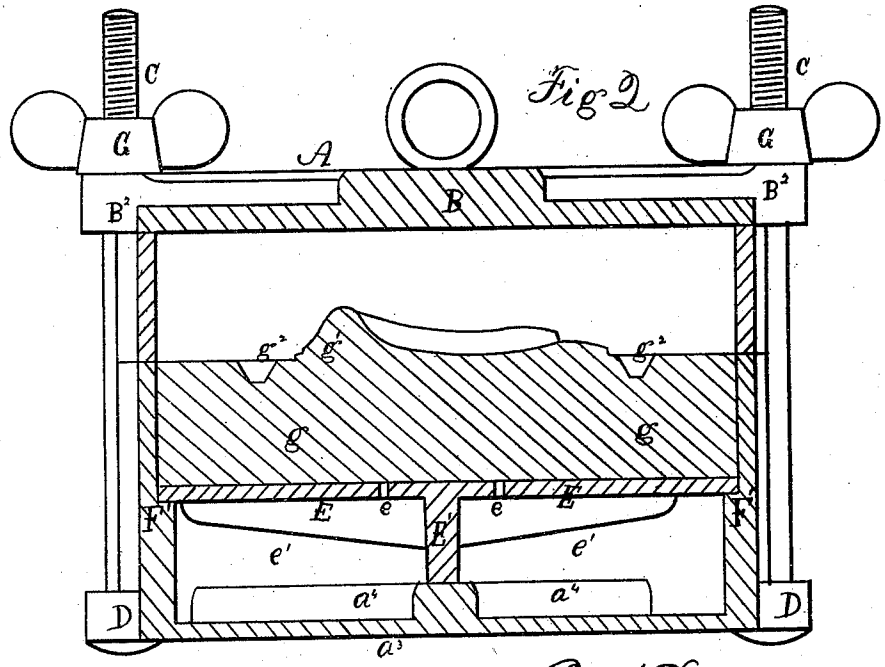


Fig 2



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2 Sheets—Sheet 2.

J. D. HEIGES.

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Fig 3

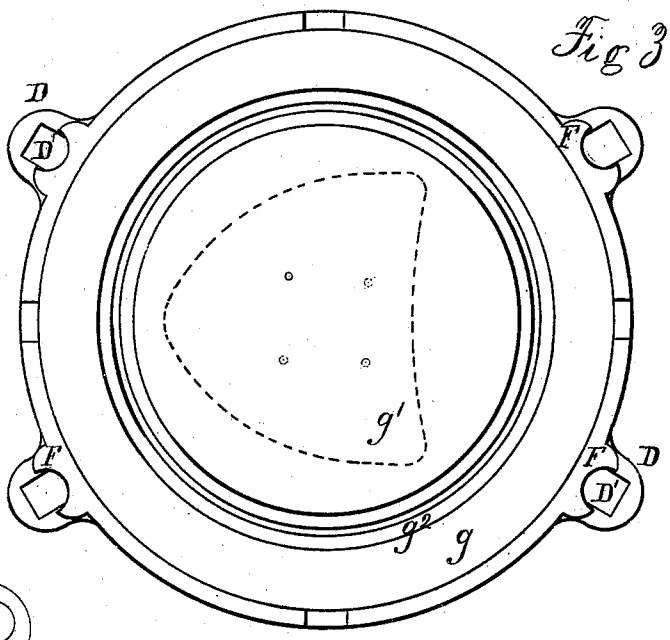


Fig 5

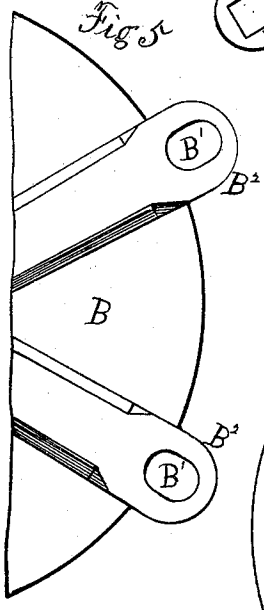
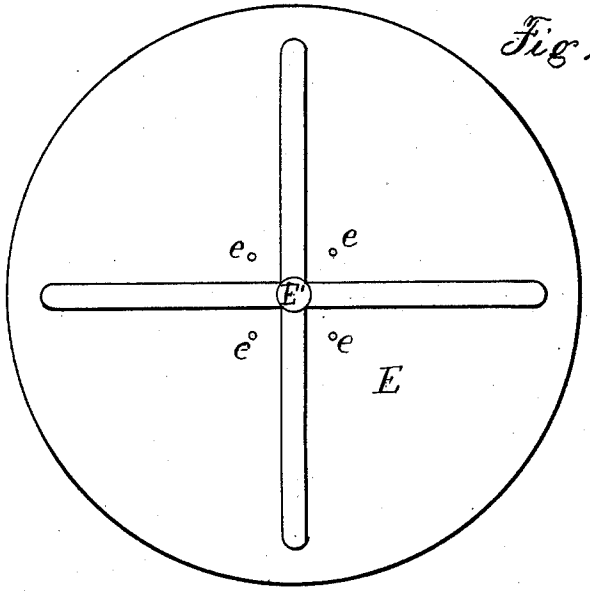


Fig 4



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UNITED STATES PATENT OFFICE.

JACOB D. HEIGES, OF YORK, PENNSYLVANIA.

IMPROVEMENT IN VULCANIZING APPARATUS.

Specification forming part of Letters Patent No. **170,731**, dated December 7, 1875; application filed September 9, 1875.

To all whom it may concern:

Be it known that I, JACOB D. HEIGES, of York, in the county of York and State of Pennsylvania, have invented certain new and useful Improvements in Process and Apparatus for Treating Celluloid Bases or Plates for Artificial Teeth; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in dental flasks, the nature of which will be hereinafter fully explained by reference to the accompanying drawings, in which—

Figure 1 represents a side elevation with cap and upper section of flask raised and one of the bolts removed; Fig. 2, a vertical section, showing the internal construction of the flask and a mold for holding the teeth; Fig. 3, a plan with cap removed, and Fig. 4 a view of under side of tray or plate separating the chambers of the flask; and Fig. 5, a portion of the top or cover.

In each of the views similar letters of reference are employed to indicate corresponding parts wherever they occur.

A represents my improved flask, which, when in use, is supported over a spirit or other suitable lamp or flame, for the purpose of heating the same, as hereinafter more fully explained. The flask A is constructed in two sections, a^1 a^2, and the top B being held correctly in position by means of projections, hereinafter described, and of bolts or rods C C, which, at their lowers ends, are provided with squared heads, fitting into slots D′ in projections D, formed on the periphery or sides of the section a^1, while at their upper ends they pass through slots B^1 in projections B^2, formed on the edge or periphery of the top B. The lower section a^1 is provided with a solid bottom, a^3, and is divided about half-way by means of a movable plate or tray, E, supported on a rim or ledge, F′, and a central support, E′, which rests on cross-braces a^4, cast with the section a^1, in order to give greater strength thereto, in order to bear the strain of the downward pressure of the materials being operated upon during the process of forming the celluloid plates and affixing the teeth thereto. Around the center of the plate or tray E are formed small holes or apertures *e*, for the passage of steam from the interior of the chamber *e′*, formed below the plate or tray E.

In using the apparatus, the chamber *e′* is filled about half full of water, which, by the action of the heat of a lamp or other suitable flame, is converted into steam and passed up through the openings *e*, and through the porous plaster, to act upon the celluloid plates, which are placed centrally on the plate E, together with the necessary molds and teeth, as is well understood by dentists.

g is the plaster filling surrounding the lower die g^1. It has formed in it the annular channel g^2, for the purposes of receiving any surplus celluloid that might otherwise prevent the perfect closing together of the sections of the flask, and for collecting the water formed from the condensation of steam, which will be absorbed by the plaster, and thus, in a degree, resupply the flask with water to be regenerated into steam. The upper surface of the filling *g*, between the periphery and annular channel g^2, is made to slope slightly inwardly, to facilitate the collection of the water. The celluloid plate, filling *g*, and die g^1 having been properly arranged on the plate E, the cover B and section a^2, containing the opposite die and teeth, are then placed in position, as shown by Fig. 1, having a space between the lower edge of section a^2 and the upper edge of section a^1, the sections being held in correct relation, the one to the other, by means of the grooved projections F, formed on the sides of the sections a^1 a^2, adapted to embrace the bolts or rods C C. These parts being thus arranged, and the flask having been heated, so as to cause the steam to rise from the water in the lower chamber *e′*, and render the celluloid plastic, they are gradually brought together by means of the nuts G G, until the projections H on the under side of section a^2 come down and fit closely into the recesses H′, formed in the upper side of section a^1, thereby firmly closing in the celluloid plate, and conforming it to the dies or molds and teeth.

The slots B^1 are formed slightly elongated, so as to allow of one side of the top being lowered or screwed down slightly in advance of the other, when the condition of the celluloid requires it.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A dental flask constructed with sections a^1 a^2, the section a^1 being divided by a perforated plate or tray, E, and provided with an internal steam-generating chamber, e', beneath the plate or tray E, substantially as shown and described.

2. In a dental flask, the combination, with a section, a^1, provided with a steam-generating chamber, e', and perforated supporting plate or tray E, of the removable section a^2 and cover B, substantially as shown and described.

3. A dental flask embodying in its construction a section, a^1, provided with a steam-generating chamber, e', perforated plate or tray E, removable section a^2, and a top or cover, B, the whole being held and drawn together by external bolts or rods C C, working in grooved projections or guides F, and screw-nuts G G, substantially as shown and described.

4. The combination with a dental flask, constructed with an internal steam-generating chamber, of a filling, g, provided with a groove or channel, g^2, around the die g^1, substantially as and for the purposes described.

5. The combination with a dental flask, constructed with an internal steam-generating chamber, e', and perforated supporting-plate E, of a filling or mold, g, surrounding a die, g^1, and provided with a groove or channel, g^2, substantially as and for the purpose described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JACOB D. HEIGES.

Witnesses:
D. S. WAGNER,
PETER AHL.