

*J. A. McClelland,
Mould for Artificial Teeth.*

Nº 76,221.

Patented Mar 31. 1868.

Fig. 1.

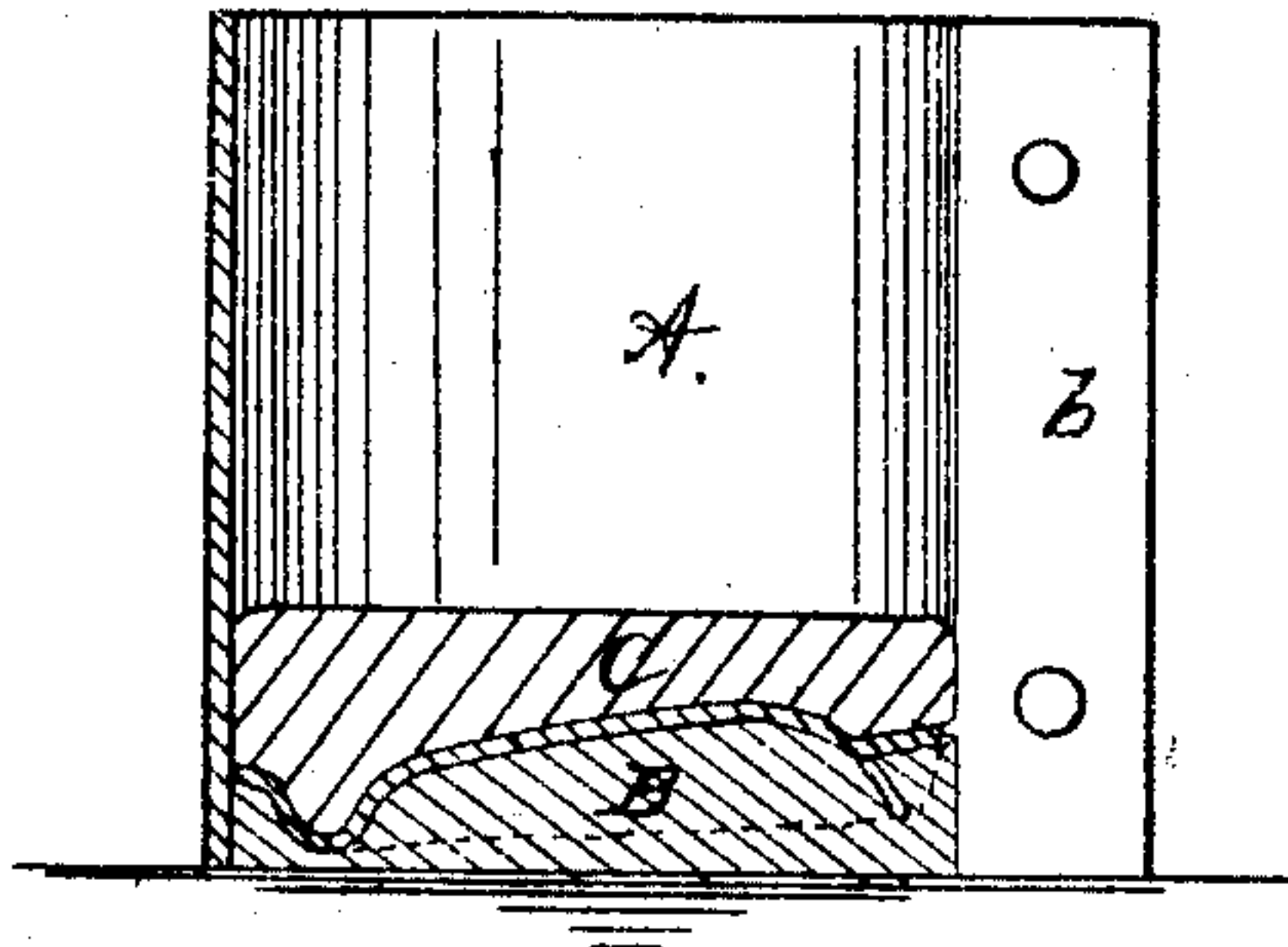


Fig. 2.



Fig. 3.

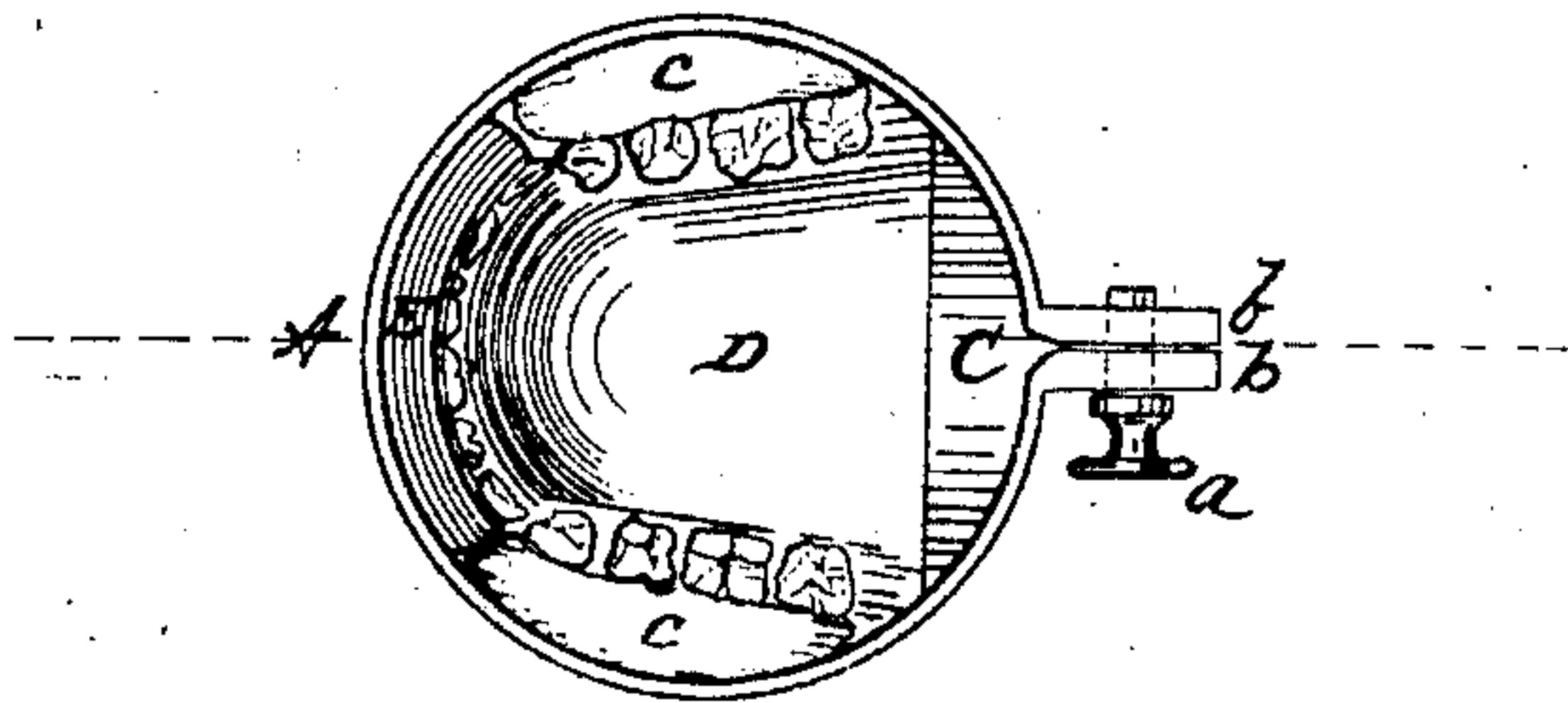


Fig. 4.

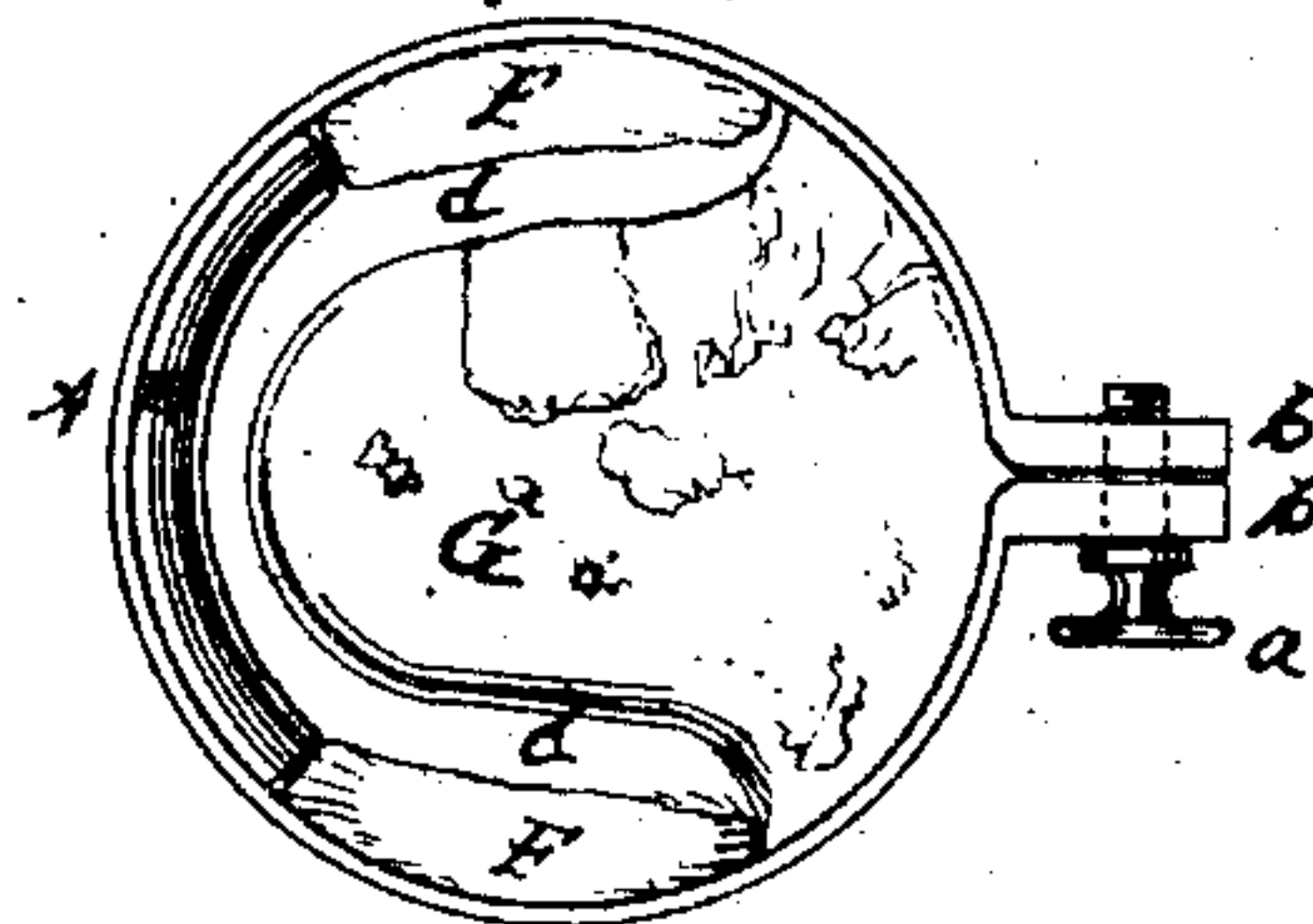


Fig. 5.

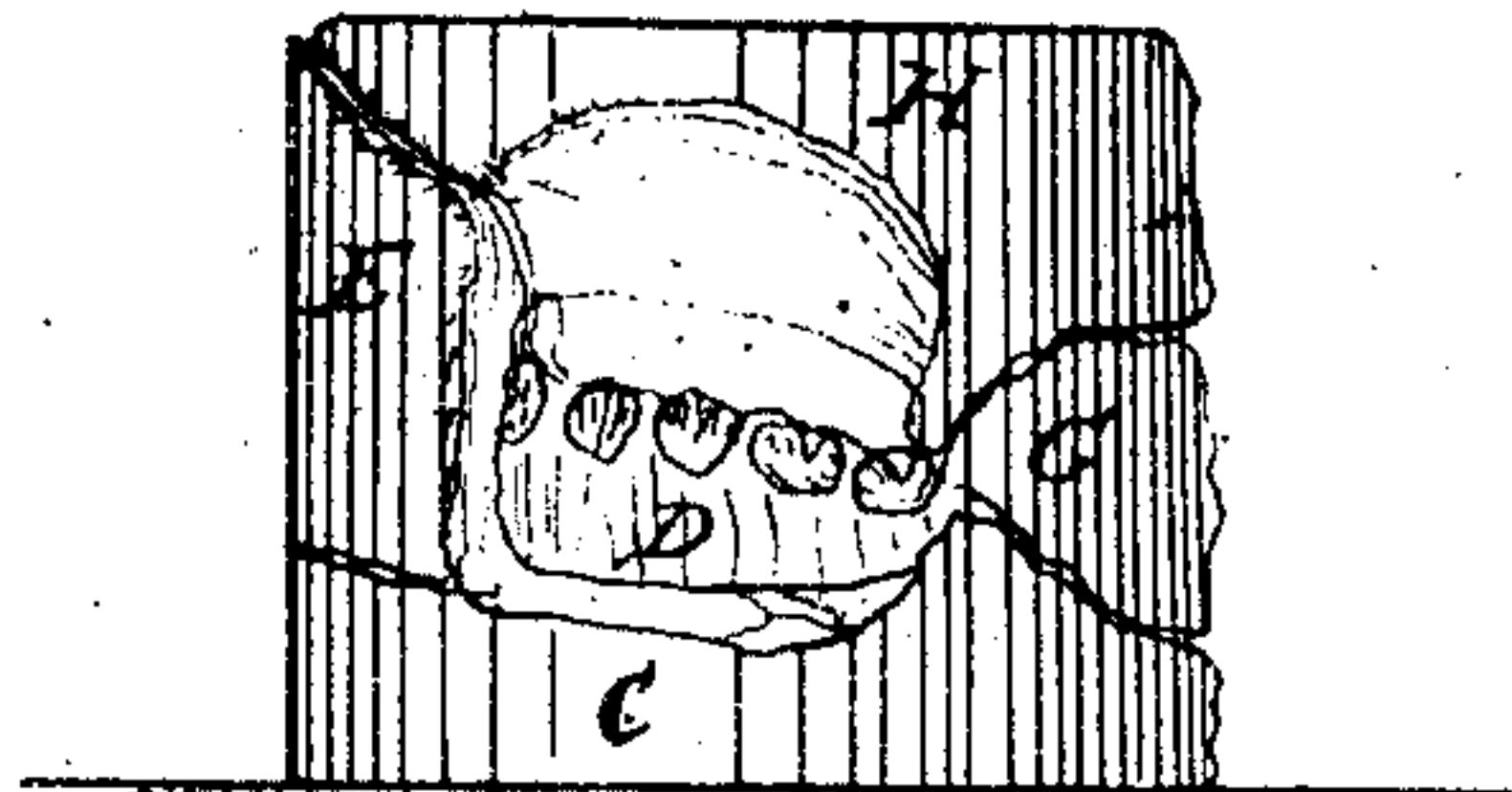


Fig. 6.

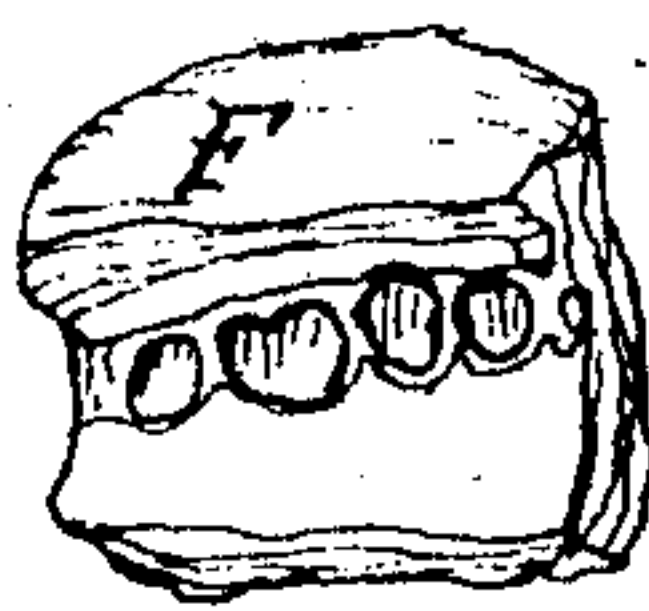
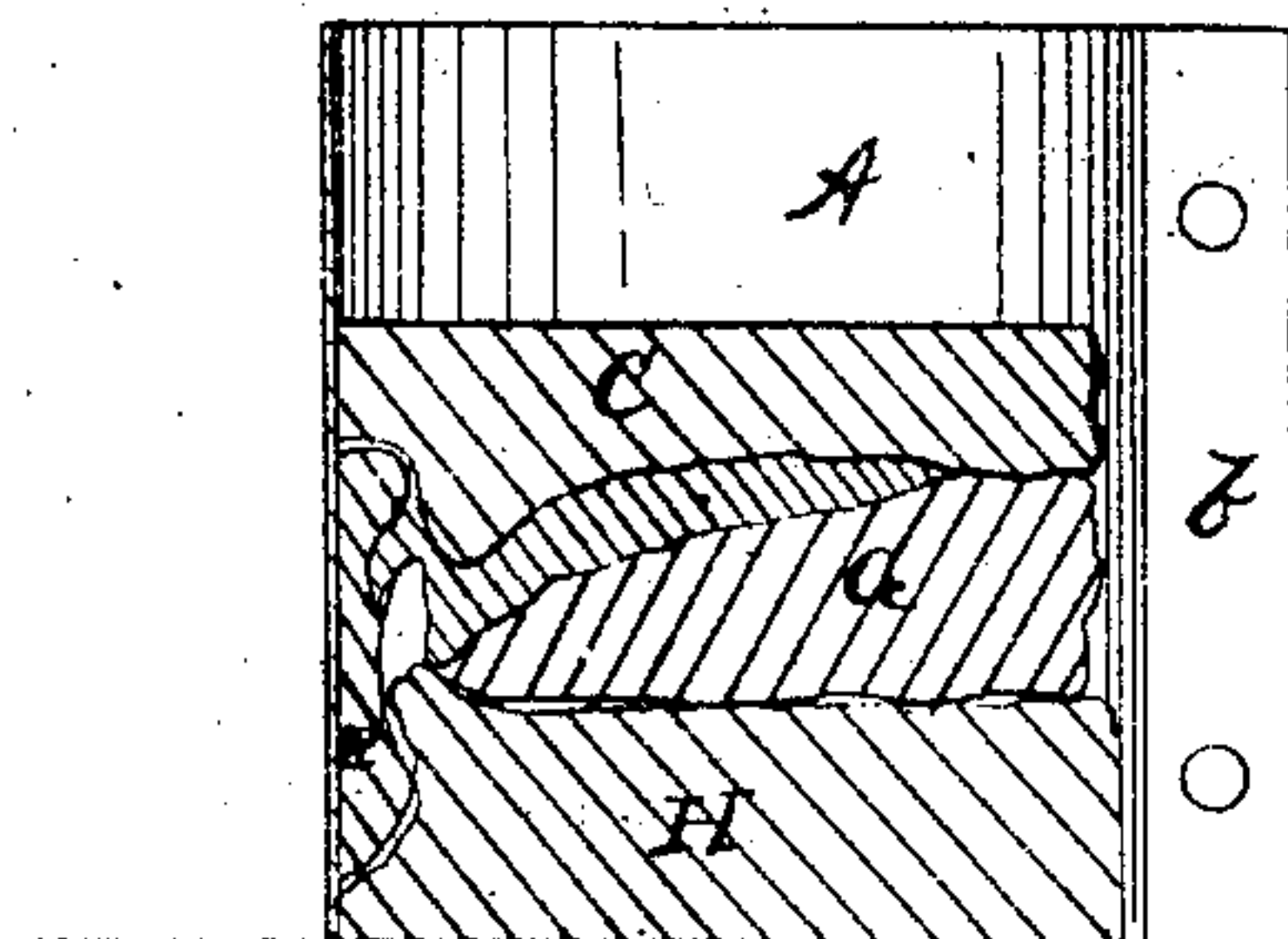


Fig. 7.



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UNITED STATES PATENT OFFICE.

JOHN A. McCLELLAND, OF LOUISVILLE, KENTUCKY.

IMPROVEMENT IN MOLDS FOR ARTIFICIAL TEETH.

Specification forming part of Letters Patent No. 76,221, dated March 31, 1868.

To all whom it may concern:

Be it known that I, JOHN A. McCLELLAND, of Louisville, in the county of Jefferson and State of Kentucky, have invented new and Improved Molds for Forming Dental Plates, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 represents the first operation for building the mold for a dental plate, showing a central vertical section of the cylinder-flask, containing a plaster impression of the gums, on which is cast a metal form as a base for the mold. Fig. 2 represents the metal form of the impression thus taken, on which is built a form of plaster for the dental plate, with the teeth arranged in place. Fig. 3 represents the next operation in building the mold, showing the plaster plate on the base within the flask, and the casting of a front section of the mold. Fig. 4 represents the next operation, showing the castings of the other sections of the mold. Fig. 5 represents the mold when completed, having one side section removed. Fig. 6 represents the detached side section removed from Fig. 5. Fig. 7 represents the last operation in forming the dental plate in the mold.

Similar letters of reference indicate corresponding parts.

This invention relates to a new and useful improvement in dental-plate molds; and consists in a metal mold constructed in sections within a metal flask, in such a manner that a dental plate may be molded and formed of rubber or other suitable plastic material by compression, as hereinafter described.

The first requisite in the construction of my improved sectional metal mold is a clamp-flask, A, made of brass, copper, or other suitable metal. The flask is made with one side open, and flanges *b b* united and held together by set-screws *a*, in such manner that the sides of the flask shall bind tight upon the mold to keep the sections in place, when constructed within the flask, and to bear a strong pressure for forming the dental plate.

To build up a mold, the flask A is closed by the set-screws *a*, and placed on a plane surface on one end, and in the bottom of it is in-

troduced an impression, B, of the gums, taken in the usual way, in plaster or other suitable substance that is refractory when set or cold. The impression B being thus provided and placed within the cylindrical flask A, as shown in Fig. 1, a metal mold, *c*, is cast upon the impression, which serves as the base or foundation of the mold for the dental plate in subsequent operations. The foundation metal mold *c* is then taken out of the flask, and, as shown in Fig. 2, a plaster form, D, is built upon it, with the teeth set in their respective places.

The mold C, with the plaster form D upon it, is then placed within the flask A, as shown in Fig. 3. The front section E of the mold is then cast by laying pads *c c*, of putty, clay, or other suitable material, on the opposite sides of the form D, leaving a space between them for receiving the metal section E, that is to be cast therein. A pad or covering of putty is also placed, at the same time, behind the teeth, on the face of the plaster form D, to protect the teeth, and confine the section E to the front side of the form.

In the next stage of the operation, the two side sections F F, Fig. 4, are formed by casting metal in the spaces left after removing the side pads *c c*, as shown in Fig. 3. A center core, G, may also be cast at the same time, or separately, on the top of the plaster form D. For this purpose a strip or narrow pad of putty, *d d*, must be laid over the cutting-edges of the teeth, as shown in Fig. 4.

When these several parts of the mold have been cast as desired, and the pad *d d* has been removed, a cap-piece, H, is then cast, which enters the space made by removing the pad *d d*, and fills in between the cavities and interstices of the teeth, forming a complete mold of the grinding-surfaces and cutting-edges thereof, as shown in Fig. 5. The metal mold, having been thus completely formed in sections, may be taken apart and set together again within the flask A by loosening the set-screws *a*. The plaster form D is removed and broken up, and the teeth are set aside in their order, for subsequent formation of the dental plate. The mold is cleaned by picking all adhering particles of plaster out of the cavities, and the sections are then replaced in reverse position within the flask, in order to form and mold the dental plate.

The flask A being inverted on a plane surface, the cap-piece H is placed within it at the bottom. The front section E, the side sections F F, and the core G are also all placed in proper relations, as shown in Fig. 7. The teeth are then placed in their respective cavities in the mold, with their cutting-edges downward, and around them and over the core G is packed the rubber or other plastic material for forming the dental plate, as shown in Fig. 7. The flask A is then screwed up tight, and the mold C is introduced on the top, in reverse position from that which it occupied before. A screw-press is then applied to bear upon the mold C, and press it down into the flask upon the plastic material within the mold, by which, under powerful compression, every part of the mold is filled, and the dental plate is perfectly formed and molded.

It will be seen that at the junction of the flanges *b b* there is a crevice or channel, which receives the metal when cast, and forms a sharp projection on one side of the mold, that serves as a gage in replacing the sections within the flask.

The mold and the dental plate thus formed are held in place in the flask by means of a stirrup-clamp, bearing on the top and bottom pieces, in subsequent baking or hardening processes, to which the plate may be subjected.

A mold may thus be formed in sections of cast metal, for molding and forming plastic substances into any desired shape.

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

1. A dental-plate mold formed in sections within a metal flask, substantially as described.

2. A metal clamp-flask, A, for said sectional dental-plate mold, constructed and operating substantially as herein described.

3. The method of forming a dental plate of plastic material within the said sectional mold, substantially as herein described.

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Witnesses:

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