

J. Mittelhaus,
Artificial Teeth.
N^o 34,586. Patented Mar. 4, 1862.

Fig. 1.

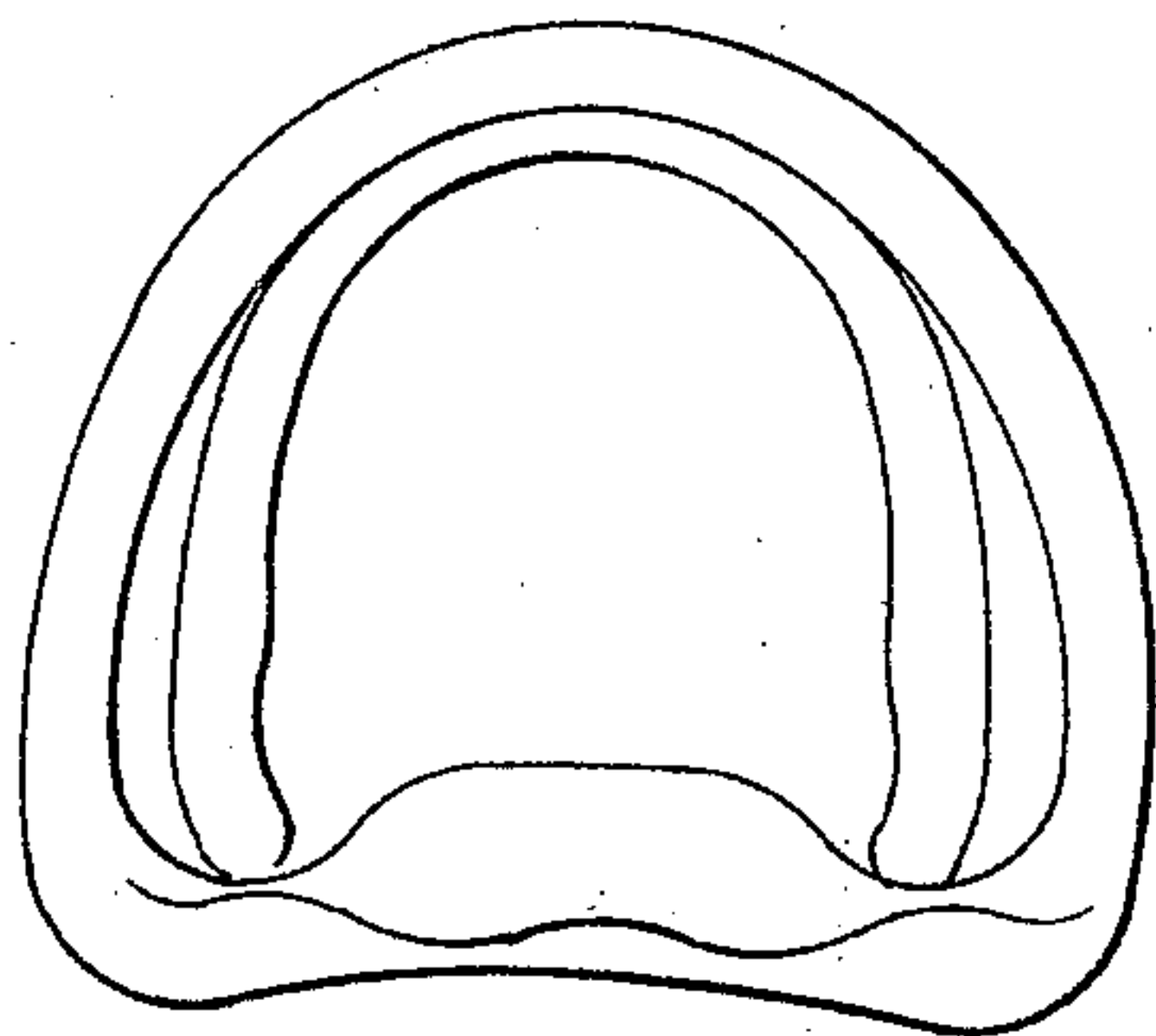


Fig. 2.

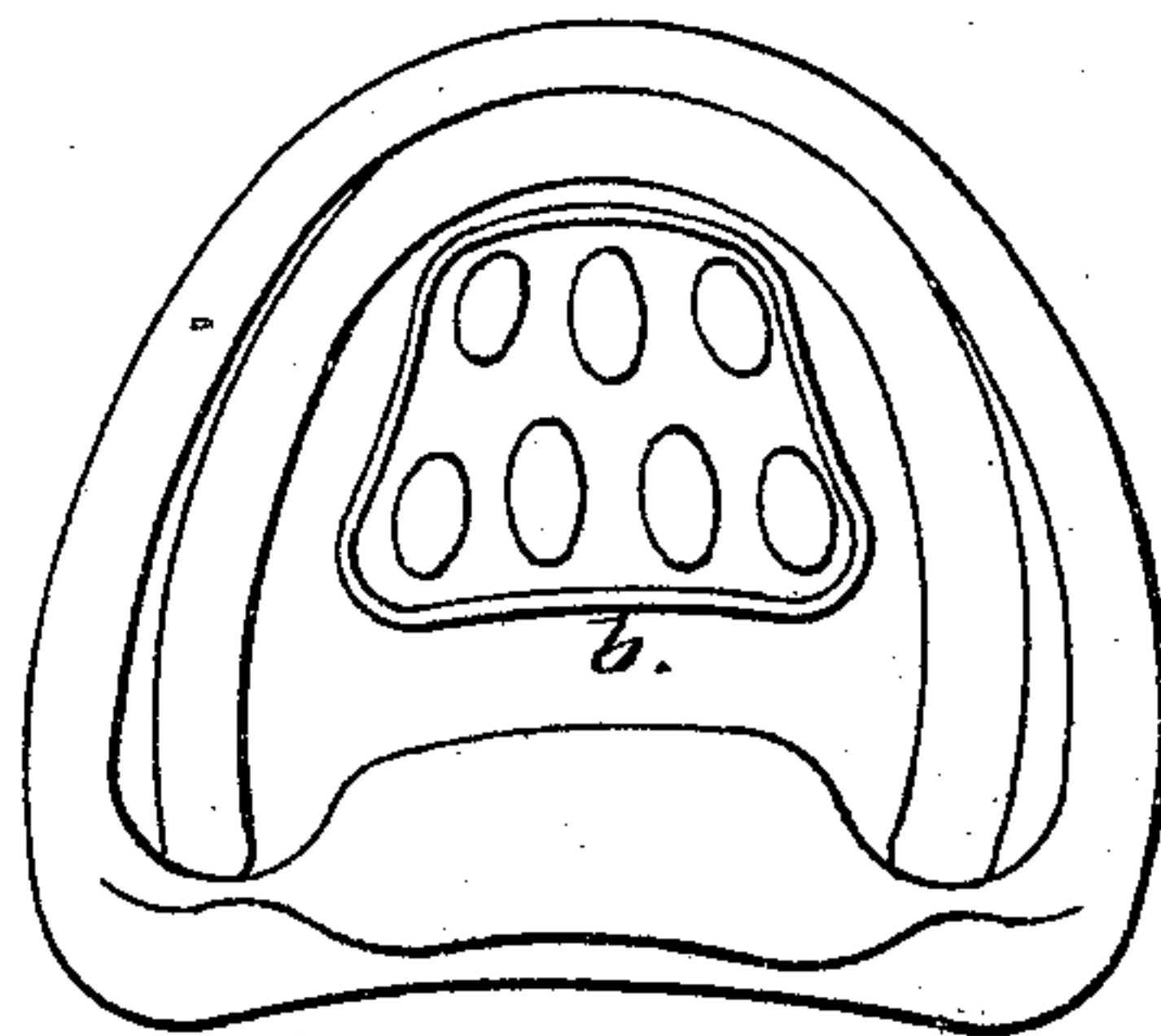


Fig. 3.

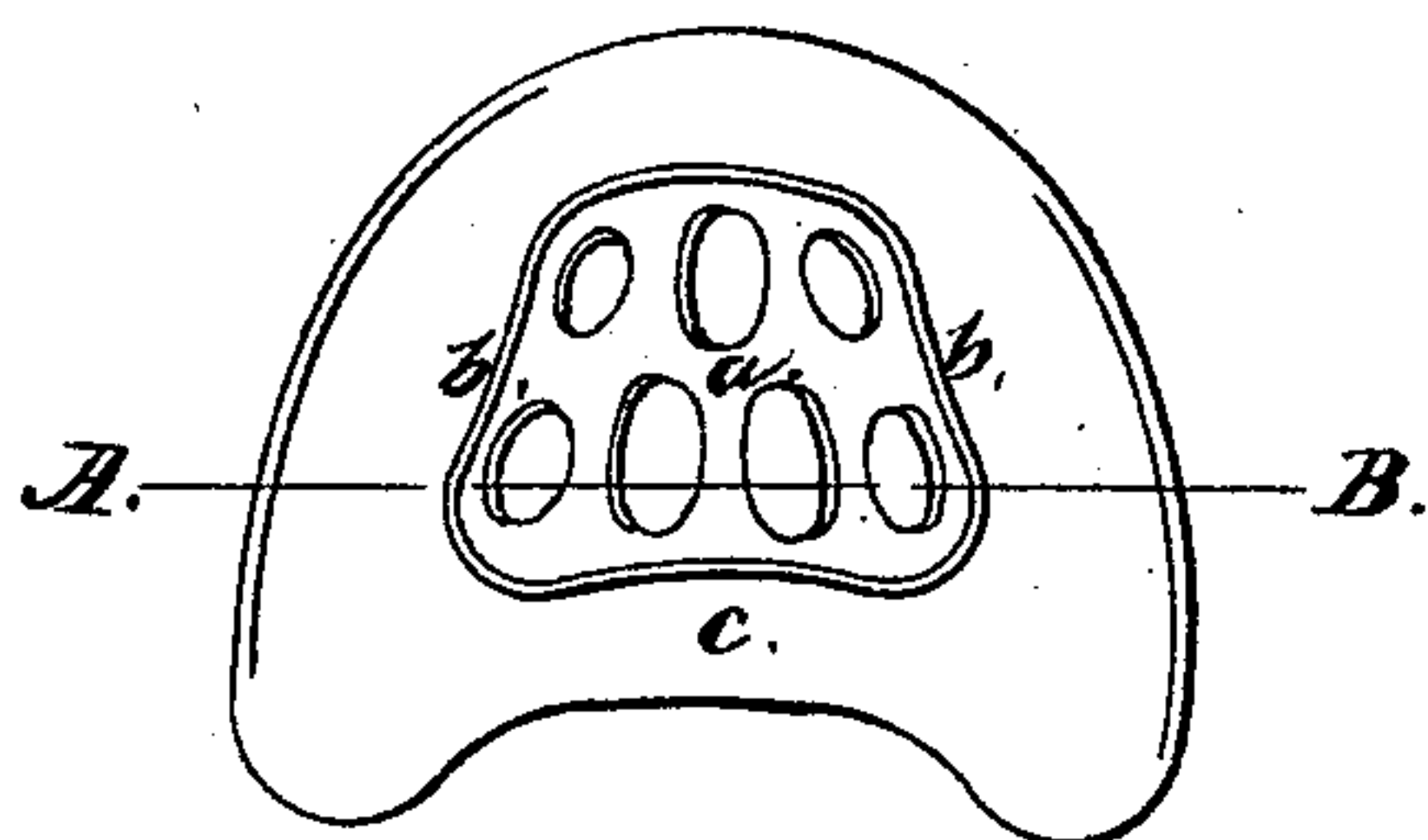


Fig. 5.

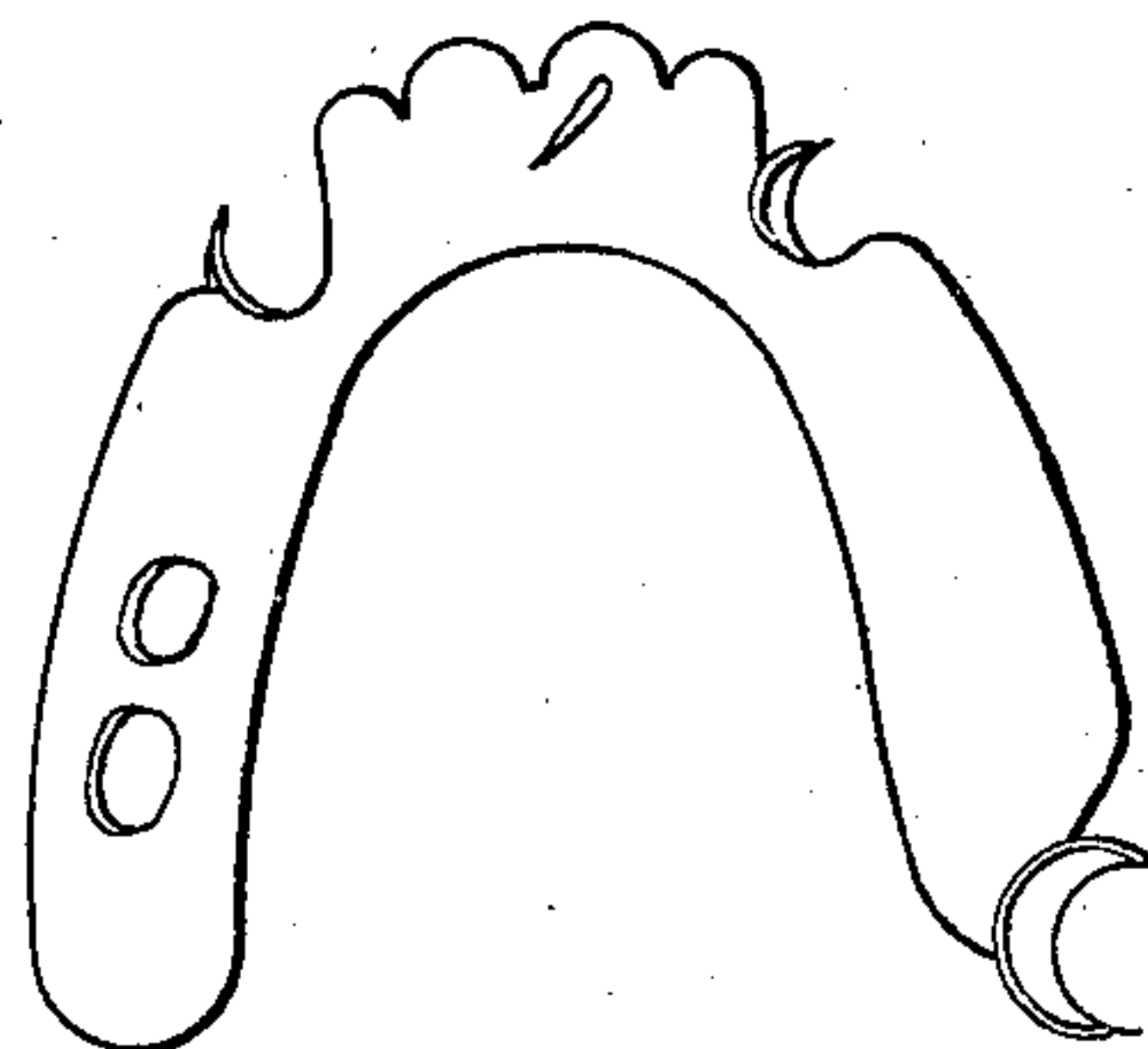


Fig. 4.



Witnesses:
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H. H. Hazard.

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by A. Pollak
his atty

UNITED STATES PATENT OFFICE.

JOHANN MITTELHAUS, OF BERLIN, PRUSSIA.

IMPROVEMENT IN SETTING ARTIFICIAL TEETH.

Specification forming part of Letters Patent No. 34,586, dated March 4, 1862.

To all whom it may concern:

Be it known that I, JOHANN MITTELHAUS, of Berlin, in the Kingdom of Prussia, have invented a Button Set of Teeth; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed sheet of drawings, making a part of the same.

The button set of teeth is of simple construction. It consists of three parts, as: *a*, the tooth-plate; *b*, an edge; *c*, a cover.

a, the tooth-plate, is in proportion to length and breadth at more or less places perforated by oval openings.

b, the edge, surrounds all the openings of the tooth-plate at the surface turned to the pituitary membrane.

c, the cover, which is a little larger than the edge *b*, is soldered to the tooth-plate at the side turned to the mouth-hole and that in such a way that between the tooth-plate and the cover a space is left whose largest vertical diameter is about one and one-fourth lines.

The button set of teeth has that in common with the American sucking set of teeth that both make the pressure of the air serviceable to them. In all other respects they are entirely different from each other, as, first, in the outer construction, the button set of teeth having two plates, one upon the other; second, in principle, for while the fastness of the American sucking set of teeth depends only on the pressure of the air the button set of teeth makes use of the air chiefly to form organs of fastness out of the pituitary membrane and makes it afterward but of very little consequence; third, in the greater practical usefulness, as the button set of teeth is not only better in every single case and removes all the wants and disadvantages adhering to the American sucking set of teeth, but allows a much more extensive application.

The first point follows simply from observing and comparing the button set of teeth with the different sucking sets of teeth commonly used in America and on the continent.

The two other points will be understood as simply from the following: The hollow-space plate invented by Parmly, in New York, and patented to Mr. Gilbert, in New Haven, for the making of sucking sets of teeth raised the expectation in a high degree, because it removed

the usual imperfect means of fastening-hook and spring with their disadvantages. These expectations, however, were not fulfilled, as the simple box sets of teeth of Gilbert possess too little power of hold and get loose in biting. Cleaveland tried to correct this fault by deepening the sucking-box in putting a wire round it, which to give it a still better hold went back again. By this arrangement the plate got more firmness, indeed, but it now had the disadvantage that the pituitary membrane of the mouth got into the hollow space, became inflamed, and ulcerated. Flagg, in Philadelphia, tried, therefore, to get a better hold for the sucking sets of teeth in another way by putting three sucking-boxes, one near the other. This proceeding, however, gives not much more guarantee for the firmness of the tooth-piece, first, because the air is not equally drawn from all three boxes, the plate at one point taking more, at another less, hold, and then because, like the simple Gilbert box, the three boxes get loose, also, as soon as the pituitary membrane of the mouth which enters the box begins to swell. All the box-plates, the Dwinell ventil-plate included, not having the least advantage over the mentioned plates, have the fault that they have either too little power of hold or make the pituitary membrane of the mouth to ulcerate.

The button set of teeth avoids both faults. It is put on in drawing out the air. By that means sucking protuberances are formed corresponding with the openings of the tooth-plate. These protuberances go through the openings and turn over behind them, being so many regular rivets or buttons, which alone hold the tooth-piece. These buttons of pituitary membrane are in so far movable as they yield if in chewing a partial pressure takes place without coming out of the openings, as they turn over head-like behind them. They are, besides, supported in their design to hold the set of teeth by the pressure of the air, which here can never be counteracted by the pressure of the sucking protuberances, as these last are not squeezed into boxes, but have under all circumstances, even at the greatest possible swelling—that is, when they should touch the cover—airless canals between them. This alone would sufficiently

prevent the squeezing in and ulcerating of the pituitary membrane; but also in its further arrangement the button set of teeth favors in no way any excessive hypertrophy. The box set of teeth in its manifold varieties draws the easily-yielding skin more or less toward its sucking apparatus, which makes the hypertrophies come out and makes it impossible at last to preserve even a little vacuum in the box for any longer time. The button set separates from the pituitary membrane of the mouth by means of the thin edge described at 2, which surrounds the opening, that part which alone is made to form the sucking protuberances or buttons of pituitary membrane as holders of the tooth-piece. The other part of the pituitary membrane remains quite untouched. The space between the openings of the tooth-pieces is now so divided that if between opening and edge it is marked as one part of space it comes between two openings to two parts of space, so that the pituitary membrane under it adds something partly to the formation of the sucking protuberances for the opening of the right side and partly to the formation of the sucking protuberances for the left opening, thus regulating the sucking protuberances and preventing a partial and excessive hypertrophy in one direction. The button set of teeth has also the advantage of a greater application over the American sucking set of teeth. The last is almost only confined to cases where it has a holding-point at the palate. The first is with few modifications to be applied everywhere at the palate or at the jaw-bone, supposed that there are no roots of teeth at the place of application. The button set of teeth allows even a combination with a hook set of teeth, as shown in Figure 5, (drawn after a set of teeth in use,) where at one side hook-fastenings are applied, because there are still roots of teeth in the jaw-bone and on the other side button set of teeth; but beyond the province of tooth technics the principle of button sets of teeth finds application, giving the most

solid support for plates having defective palates.

The button set of teeth does not originate in theoretical hypothesis, but in careful experiments and close observation of the functions in the mouth which prevent the American sucking sets of teeth to be more generally used, and but now, after the inventor has succeeded by reflection to remove the hinderances and disadvantages of the sucking sets of teeth and has convinced himself by long experience (some sets of teeth have been in use since two years already) of the above-stated advantages and the thorough practicability, he ventures forth with his invention.

Fig. 1 represents the palate and upper jaw-bone without teeth. Fig. 2 shows the palate after the sucking protuberances or pituitary-membrane protuberances have formed themselves in consequence of the wearing of the button set of teeth. Fig. 3 is a representation of the button set of teeth belonging to the two former drawings. Fig. 4 shows the section A B of the button set of teeth of Fig. 3. Fig. 5 represents a common tooth-plate, at one side of which button at the other hook fastening is applied.

Having thus described my improvements, I claim—

The construction of button set teeth by combining the following elements: first, a tooth-plate *a*, in proportion to length and breadth at more or less places perforated by oval openings; second, an edge or rim *b*, surrounding all openings of the tooth-plate on the side facing the pituitary membrane; third, a cover *c*, a little larger than the said edge, soldered to the tooth-plate at the side turned to the mouth-hole, so as to leave a space between the tooth-plate and the cover, substantially as shown and described.

JOHANN MITTELHAUS.

Witnesses:

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CARL LEHMANN.