

M. Loomis,
Artificial Teeth.
N^o 10,847. Patented May 2, 1854.

Fig 1.

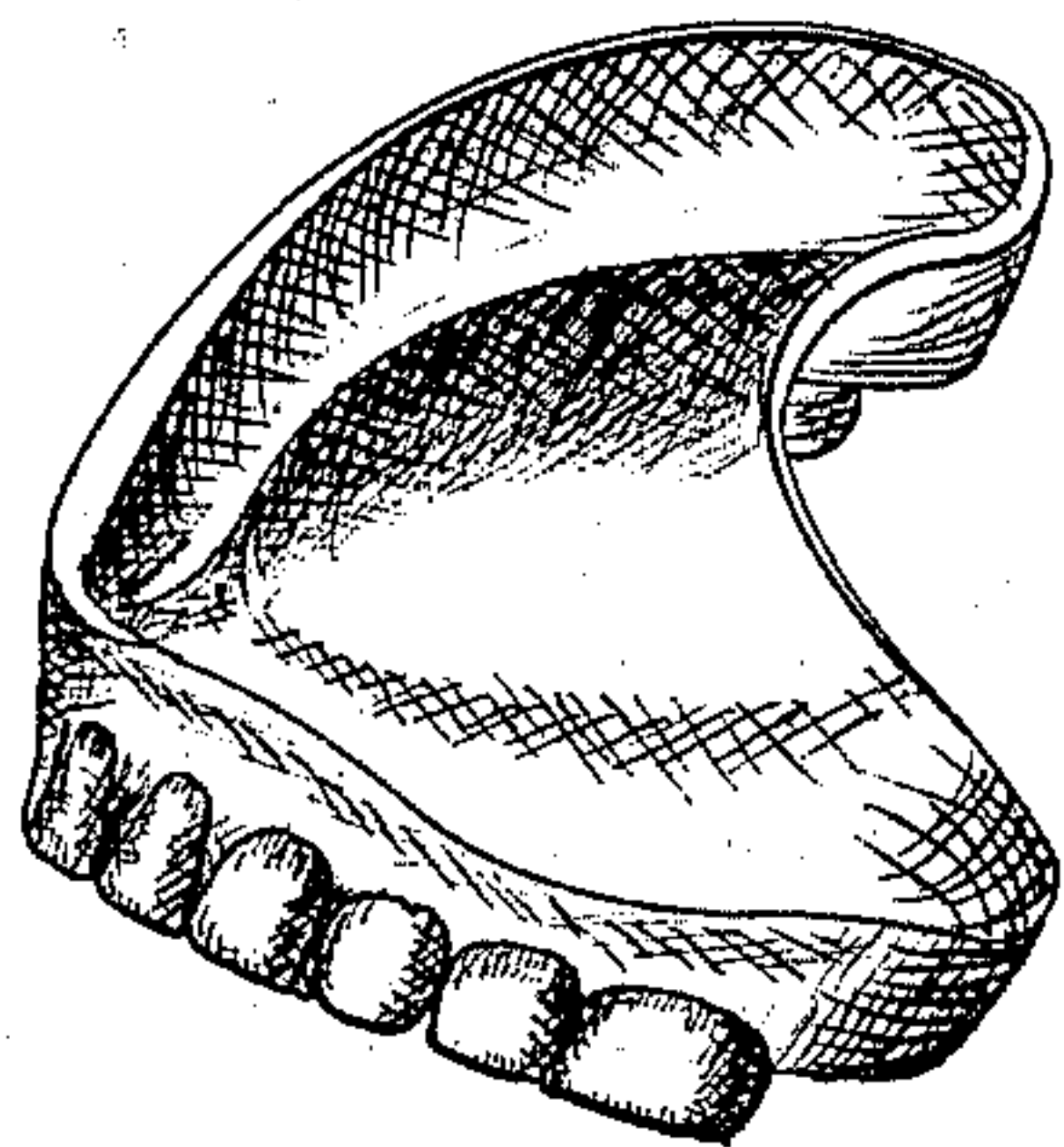


Fig 2.

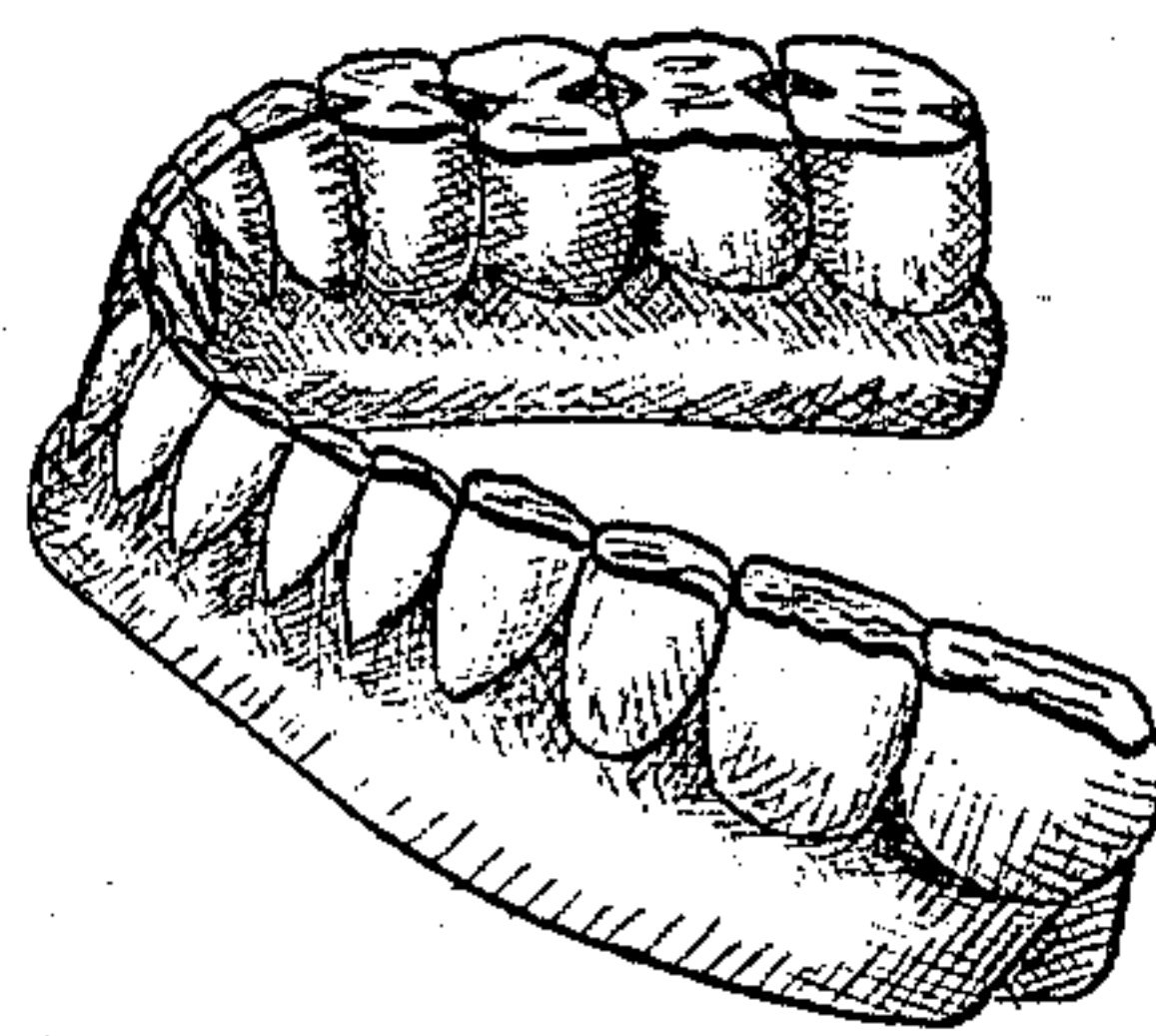


Fig 5.

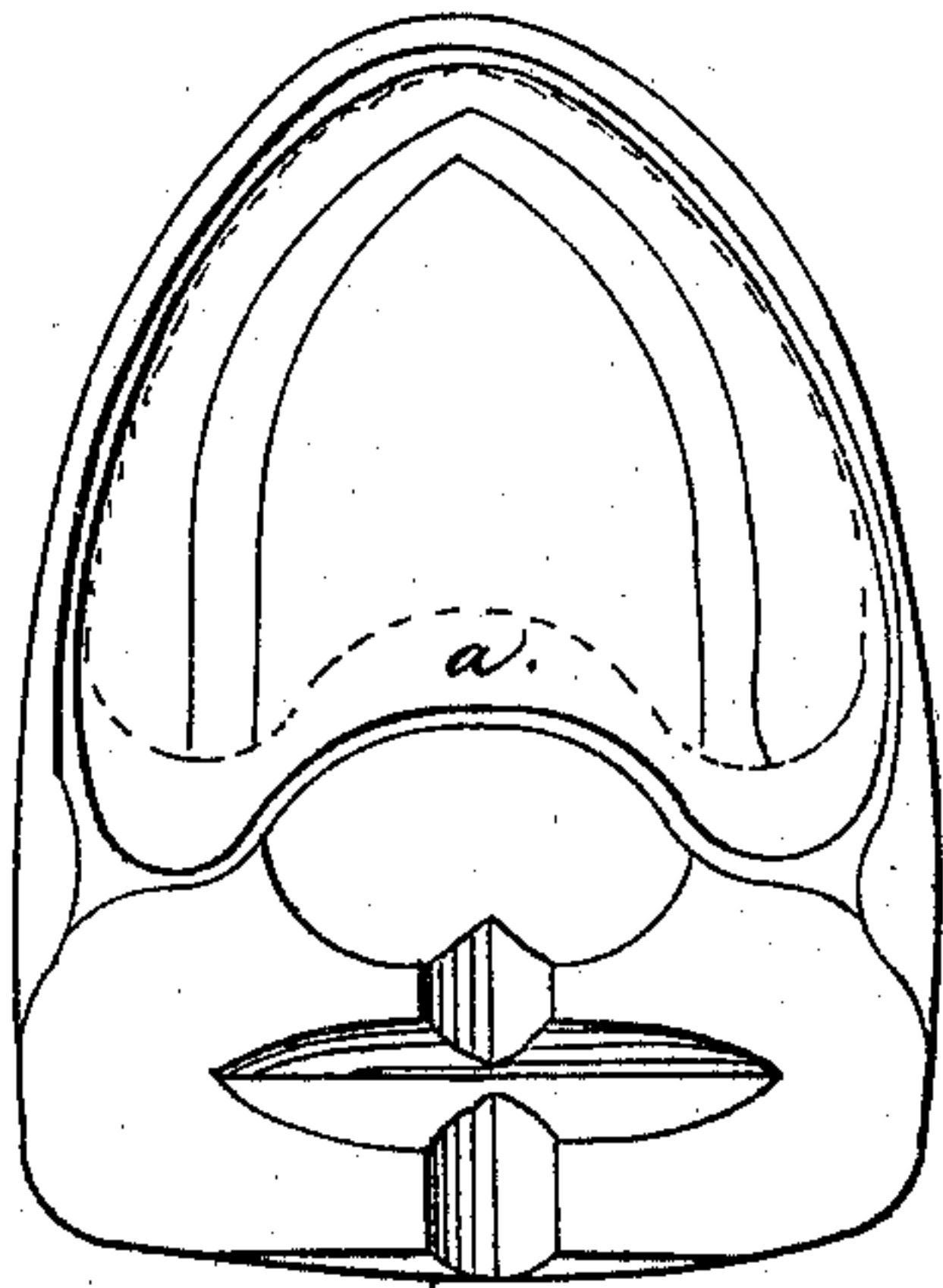


Fig 6.

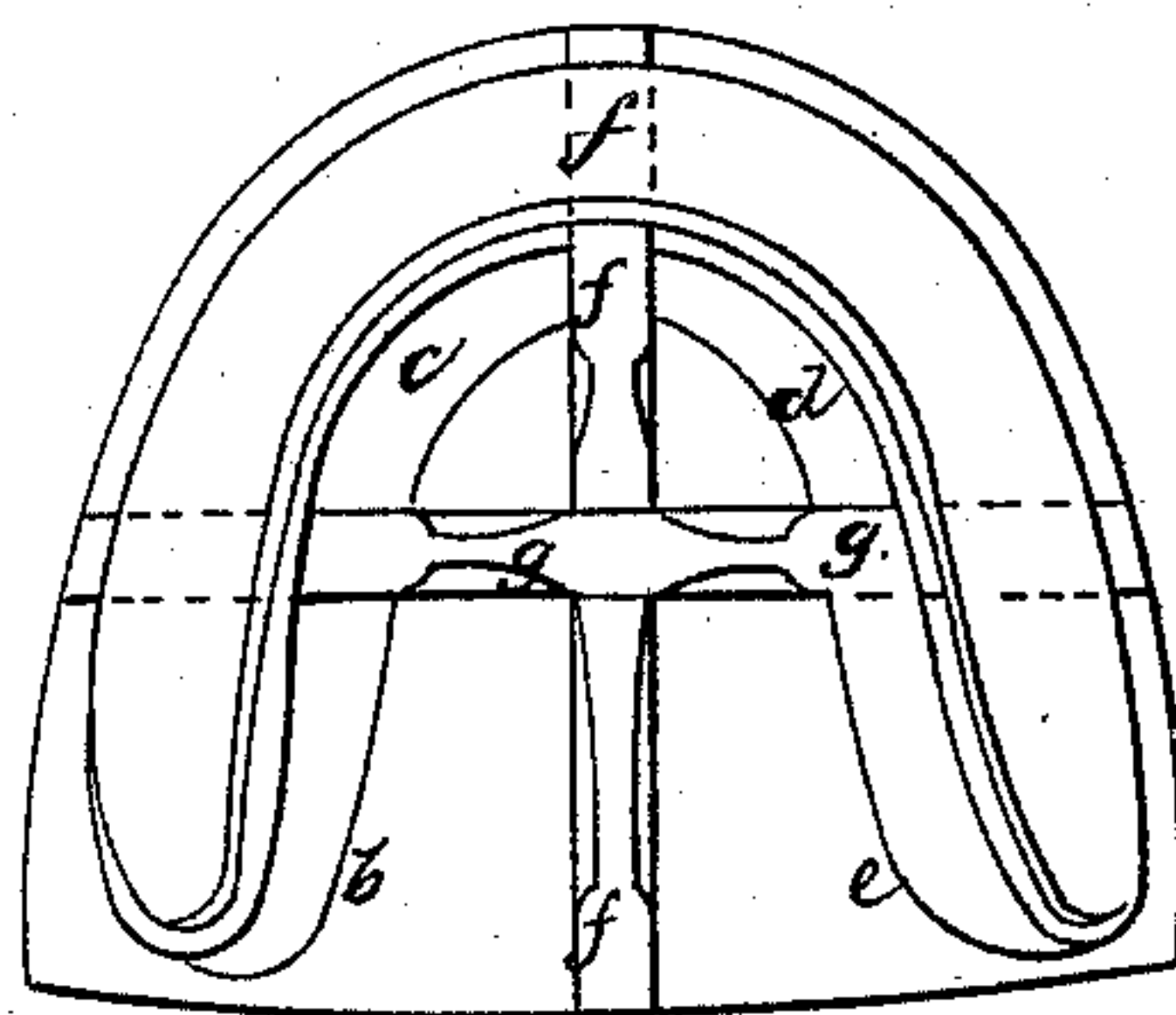


Fig 3.

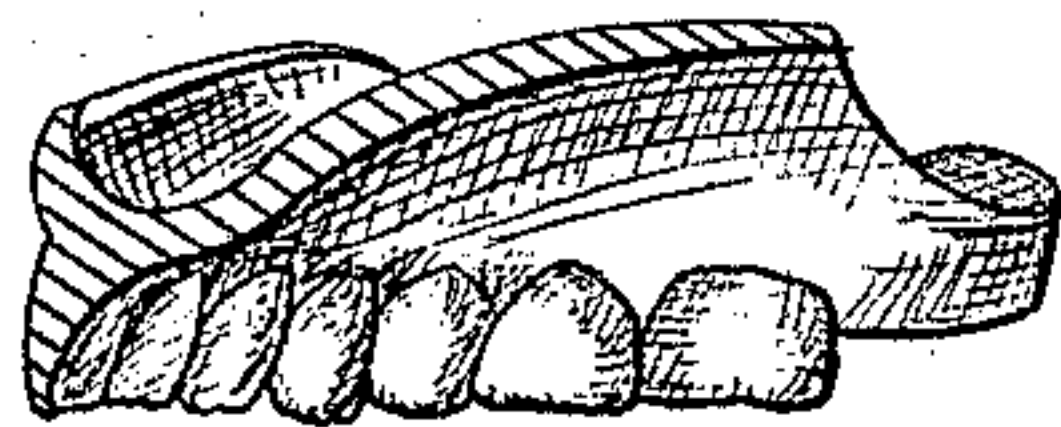


Fig 4.



UNITED STATES PATENT OFFICE.

MAHLON LOOMIS, OF CAMBRIDGEPORT, MASSACHUSETTS.

PLATE FOR ARTIFICIAL TEETH.

Specification of Letters Patent No. 10,847, dated May 2, 1854.

To all whom it may concern:

Be it known that I, MAHLON LOOMIS, of Cambridgeport, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in the Manufacture of Artificial Teeth; and I do hereby declare that the same is fully described in the following specification and the accompanying drawings, letters, figures, and references thereof.

Of the said drawings Figure 1, represents a perspective view of my improved upper jaw half sets of teeth. Fig. 2, is a perspective view of the lower jaw half sets of the kind. Figs. 3 and 4, are longitudinal sections of such half sets. Fig. 5, is a top view of the half mold of the upper jaw, the same exhibiting by the colored portion, *a*, the amount of enlargement for shrinkage of the porcelain, as hereinbefore described. Fig. 6, is a similar view of the lower part of the mold for the lower jaw set, and shows the process of enlargement for such purpose, it being effected by sawing the mold longitudinally and transversely into four pieces, *b*, *c*, *d*, *e*, and extending them apart and inserting strips of wood, *f*, *g*, between them.

My invention consists in making whole sets or the upper or lower halves or parts of sets of artificial teeth all of porcelain. A half set consists of but one piece of material, there being no metallic plate, as in the usual way, but the same material of which the teeth themselves are made is used instead of a metallic plate.

To make a full set of artificial teeth, thin silver plated or other proper metallic plates are first to be accurately fitted to the upper and lower jaws in order that the exact size and shape of that part of the mouth to be fitted may be definitely known. These plates are to be made by the ordinary process of gold plates, to which sets of teeth are usually fastened. Wax is next to be placed upon these plates in order to determine somewhat the length and position of the teeth to be made. Next the inside of the plate or that side which is applied to the flesh of the mouth is to be filled and covered over with dentist's plaster (wet to a convenient consistence) and said plate with the plaster is to be placed upon a thin bed of the same plaster, so that the plaster on the plate shall rest on the bed of plaster. To prevent the bed of plaster from spreading and the better to shape it, it may be confined by means of a

strip of sheet iron about an inch in width bent somewhat in the form of the letter U and continued straight across so that the ends may touch each other. When this bed of plaster has become sufficiently hardened, the sheet iron or metallic form last mentioned is to be removed. The metallic plate is next to be taken off from the whole of the plaster. The plaster after this may be neatly trimmed. When this plaster cast, upon which is to be formed the upper half of the set of teeth, is to be enlarged to counteract in part the effect of the shrinkage of the porcelain material consequent upon baking such may be effected as follows: As different mixtures for porcelain differ in the amount they contract by baking, the extent of enlargement (as near as I can estimate this enlargement I should say that generally speaking it would increase each of the dimensions of the mold one sixteenth of it) must be in proportion to the amount of shrinkage, which may be ascertained by measurement and experiment. This ascertained the aforesaid plaster cast, upon which is to be formed the half set or that portion for the upper jaw, may be scooped out sufficiently to allow for shrinkage; and it may be extended back or lengthened the proportional distance from the mark left by the rear edge or limit of the plate and so as to allow for the longitudinal shrinkage. When the enlargement of the plaster cast has been completed, the wax which was before placed on the metallic plate is to be removed therefrom and placed on the plaster cast, the deficiency at its two extremities being supplied if necessary, its height and breadth corrected (if requisite) by the addition of other portions of wax. This wax so put on the cast is designed to form a space between the two pieces of plaster which are to compose the matrix for forming the porcelain material of the teeth. After the wax has been thus adjusted, it may be oiled in order that prepared plaster, which is next to be poured or placed upon and over both the wax and remaining surface of the plaster cast upon which it is placed, may be subsequently the more easily separated from said wax and plaster which separation is to be effected when this plaster last used has become hard or set. This plaster last put on is for the purpose of forming the other portion of the matrix. Next a sufficient portion of the plaster so removed must be cut away

from the whole mass in order to make, when the two parts of the mold are placed in contact, a space which will admit of the porcelain mixture running back far enough to form that portion of the upper part of the set which is usually made of metallic plate. The space thus made between the masses of plaster constitutes the matrix for forming the upper portions of the set of teeth. That matrix for forming the lower portion of the set of teeth is to be made in a similar manner. The enlargement may be done by sawing the mass of plaster apart crosswise and next glueing the parts firmly together with a piece of wood between them, such pieces of wood to correspond in thickness with the amount of shrinkage of the porcelain material, in a longitudinal direction. Next the whole may be again cut apart at right angles with the first separation and again glued together, with a similar strip of wood between the two halves, such strip allowing for the transverse shrinkage. Now the inferior or last made half of each of these matrices may be spaced off upon the edge, which determines the outer surface of the porcelain material, and so as to determine the width and positions of the teeth to be made. First, that for the upper teeth is spaced to suit the occasion. Then to space that, for the lower teeth, the flat sides of the two may be placed together, and that for the lower teeth spaced by marking between the spaces of that for the upper teeth. Then after thinly coating with bayberry tallow that surface of the matrix which is a representation of the part of the mouth to be fitted it is ready to receive the porcelain material, which may next be carved or shaped as may be necessary. This being done, the mass of porcelain material may be warmed until it melts the tallow beneath, so as to admit of its being removed from the matrix. While in this condition any desirable shape may be given to its edges of the part so formed in the matrix by applying where desired a thinly diluted portion of the porcelain mixture by means of a small camel's hair pencil. Next the cast is to be placed upon the tile for baking it in the usual way as practised in manufacturing porcelain. After the two portions have been taken from the furnace the last time they may be ground on their inside surfaces where they may need it in order to make them fit accurately a plaster bed or perfect representation of that part of the mouth which it is desired to fit.

When the mouth to be fitted with teeth is of such a peculiar shape as to render it a difficult operation to remove the carved work from the matrix, which faithfully represents it, as it sometimes the case with the upper jaw, the difficulty may be obviated in the following manner: After the metallic plate has been accurately fitted to the mouth,

it may be taken and oiled on its inside surface. Next, with dentist's plaster moistened to a convenient consistence, such portions of the oiled surface of the plate may be covered as shall most seem to interfere with its direct removal from the hardened mass of paster, which is afterward made to fill it, and it is well to divide into small separate pieces that plaster which is thus first placed in the plate in order that it may be subsequently more easily removed from the work, which is to be shaped and carved upon it. Next, when these plaster pieces have become hard, their outer surface should be thinly covered with bayberry tallow or its equivalent. The remaining portion of the oiled surface of the plate is next filled and covered over with a similar preparation of plaster. When this becomes hard, it is also to be covered with bayberry tallow or the equivalent and the tallowed surface placed upon a thin bed of prepared plaster confined to its place by means of a sheetiron form, as before spoken of. The plate may next be removed and the mold enlarged and finished in the same way as the matrix before described.

Some of the advantages of making sets of teeth in my way are quite apparent, for a half set thus all solid and in one piece of material will be in use a cleaner and purer job than those made in the usual way, (viz, of gold metallic plate and teeth fitted thereto,) there being no joints around the teeth made after my plan for the accumulation of foreign substances. They can also be afforded at an incomparably lower price than those as usually made, thus extending the benefits of artificial teeth to hundreds of persons who cannot afford them on gold or platina plates.

In actual practice I find it is much easier to make teeth in this way, my method proving to be a great saving of time and labor. I have fitted several jaws, both upper and lower, with sets of teeth made on my improved plan, which teeth are now in daily use, answering every requirement.

I do not claim the process above set forth. In making sets of artificial teeth I do not claim the spreading of a gum enamel over one side of a metallic roof plate upon which the teeth are fastened, nor the extension of the porcelain gum some way and not entirely upon the roof, but

What I claim as my invention is—

The improved manufacture of whole or half sets of porcelain or mineral teeth substantially as described.

In testimony whereof I have hereto set my signature this twenty-sixth day of October A. D. 1853.

MAHLON LOOMIS.

Witnesses:

R. H. EDDY,
F. P. HALE, Jr.