

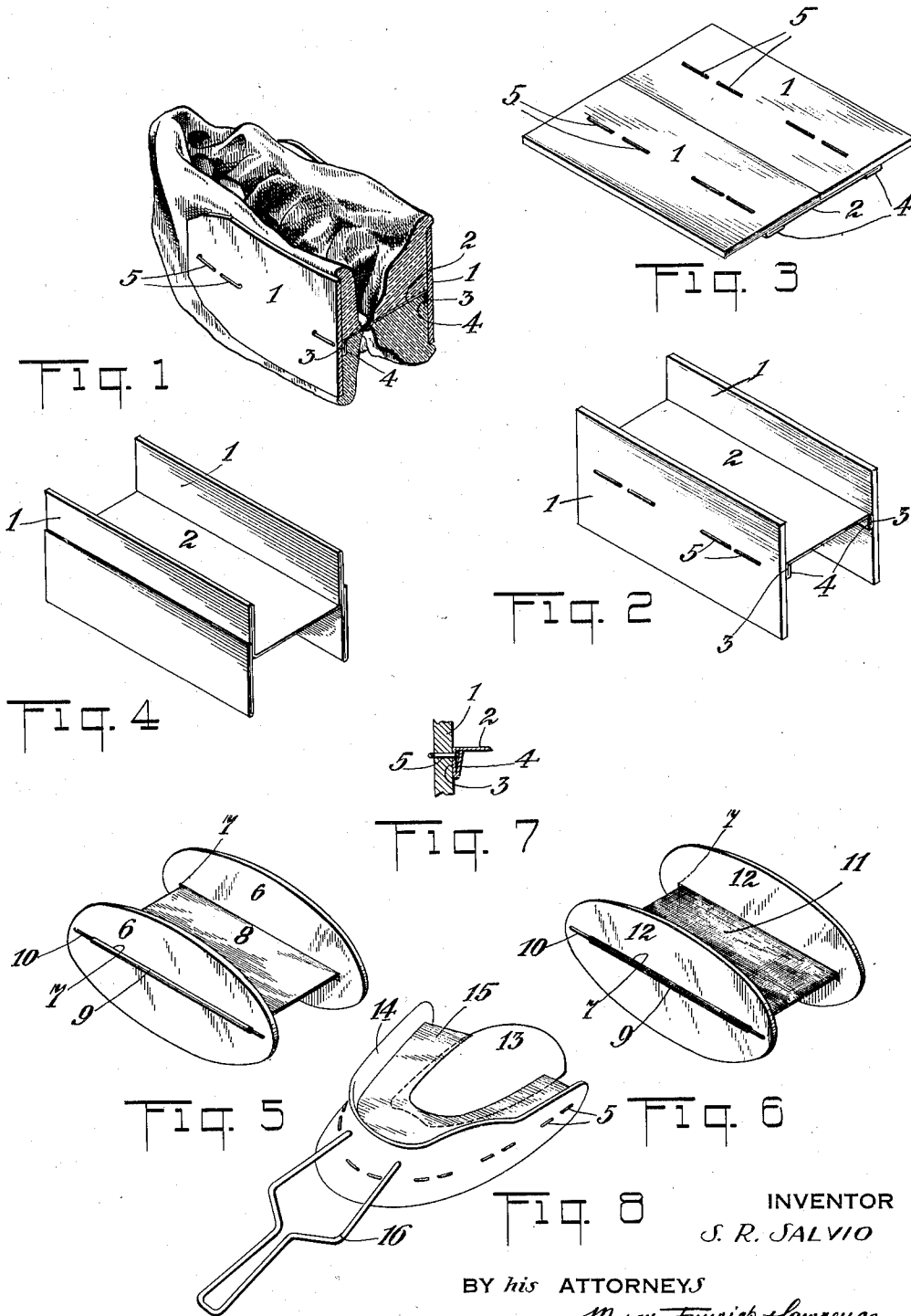
Nov. 6, 1934.

S. R. SALVIO

1,979,493

DENTAL IMPRESSION FORM

Filed Nov. 13, 1930



INVENTOR
S. R. SALVIO

BY his ATTORNEYS

Mason, Fenwick & Lawrence

UNITED STATES PATENT OFFICE

1,979,493

DENTAL IMPRESSION FORM

Salvatore R. Salvio, New York, N. Y.

Application November 13, 1930, Serial No. 495,494

5 Claims. (Cl. 32—19)

This invention relates to improvements in dental impression forms, and has more particular relation to improvements in forms for holding plastic substances, such as beeswax, for taking impressions from the teeth of patients for subsequent making of moulded forms from these impressions.

One of the objects of the invention is to provide a simple and cheap wax holder that may be applied to a patient's mouth, to receive the "bite" from his teeth, without fear of injury to the gums or to the roof of the mouth, or the tongue.

A further object of the invention is to provide and impression wax holder provided with a separator for the teeth of the upper and lower jaws and which separator will also receive and retain the impression of the teeth.

A further object of the invention is to provide an impression wax holder, the impressed portion of which may be removed from the holder after each impression and a further impression portion substituted.

A still further object of the invention is to provide an impression wax holder that may be "knocked down" or normally retained in a perfectly flat condition.

The invention also has further objects, all of which will be hereinafter more particularly set forth and claimed.

In the accompanying drawing forming part of this specification:

Figure 1 represents a perspective view partly in vertical section of one of my improved holders with the impressed wax therein.

Figure 2 represents a perspective view of the holder shown in Figure 1 before the wax has been applied thereto.

Figure 3 represents a perspective view of the wax holder in its "knocked down" condition.

Figure 4 represents a perspective view of a modified form of impression wax holder made entirely of metal.

Figure 5 represents a perspective view of another modified form of my improved impression wax holder, employing a removable separator.

Figure 6 represents a perspective view similar to Figure 5 except that wire gauze is employed instead of sheet metal.

Figure 7 represents a detailed vertical section through one of the wax retaining plates showing the method of attachment of the metal separator, and,

Figure 8 represents a perspective view of the devices embodying my invention applied to a

form or mould for securing the impressions for the complete upper and lower set of teeth.

Described in general terms, it has heretofore been the practice in securing the impression from a patient's teeth to place beeswax or other soft plastic substances in a holder comprising two side plates and threads connecting these plates at their middles, so that when wax is placed about the threads and between the plates the patient may bite down on the wax from both above and below and the threads will prevent the side plates from spreading and will hold the wax to make a perfect impression of the entire outer contours of the teeth.

With this type of holder for the impression on wax, however, the patient, upon making a "bite" would force all of the wax out from between his upper and lower set of teeth, and would leave apertures or holes in the wax between the upper and lower impressions, so that when plaster of Paris was run into the moulds afterwards this moulding material would run through these apertures into the adjoining lower impression and spoil the same.

Further the impression of the "bite" of the teeth between the biting ends of the teeth would be distorted and a true impression could not be secured at this point.

It is one of the applicant's present intentions to not only prevent the "bite" of the patient on the wax from meeting and making holes in the wax, but to provide means for retaining an accurate impression of the contacting portions of the teeth of the upper and lower jaw.

To this end the invention consists as shown in Figures 1, 2 and 3 of side plates, formed of cardboard or other light flexible material which may be easily cut or trimmed to fit into and about the gums of different patients. These side plates 1 are connected longitudinally along their middle lines with a very thin copper plate 2, about 1/1000th" in thickness. This plate, as best shown in Figure 7 has downwardly and upwardly turned flanges 3 and 4. The stitches 5, either of thread or wire are passed through the plates 1 and through the flange 3; the flange 4 being afterwards doubled up over the threads to provide a smooth surface at this point. This securing of the thin copper plate 2 to the plates 1, is for the purpose of preventing the plates 1 from being forced away from each other when the soft wax is placed about the upper and lower channels and impressed by the patient "biting" down upon the wax in these channels. As the wax is forced laterally by the patient's teeth it

impacts against the plates 1 and is forced upward towards the patient's gums and is held so rigidly against lateral expansion as to take a complete impression of the entire length of the patient's teeth. Further, as the patient continues his bite the upper and lower teeth contact with the thin copper plate 2 and this plate being very flexible because of its thinness receives the exact impression of the biting ends of the teeth, but the copper is tough enough to prevent the teeth biting entirely through. A mould is thus left not only of the sides of the teeth, but also of the ends of the teeth. This is particularly desirable in the larger teeth such as the molars, and by reference to Figure 1 the indentation of the plate 2 can be plainly seen.

As the patient's teeth cannot at any time form holes in the plate 2, it will be seen that when the mould is completed that while the patient's teeth have practically met, the thin copper sheet was interposed to receive the exact impression and to prevent the formation of any holes such as the wax alone would have developed. The plates 1, 1, are far enough apart so that the curvature of the bite of any portion of the patient's jaw is taken care of without the plates 1, 1, being curved, but if desired these plates may be curved to fit different portions of the jaw as shown in Figure 1.

In applying the beeswax to the holders it is first slightly heated to make it soft and then wound about the upper and lower channels in one continuous loop. When the patient bites down upon the mould it thereupon assumes the form shown in Figure 1. If the bite secured is longer than the length of the plates 1, then in this event the wax mould which extends slightly beyond the plate 2 at each end will still not have holes in it where the teeth come together, as the interposition of the plate 2 prevents the teeth at each end of the plate from entirely meeting and thus leaves a thin film of wax so that this part of the mould, as well as the mould that is directly upon the plate 2, is also available for taking impressions.

In the modified form of my device shown in Figure 4, the entire impression holder is formed of a single sheet of metal of the proper gauge which is doubled upon itself in the manner shown, so as to form not only the plate 2 but both of the end plates 1. It will be seen that the sheet of metal is doubled back on itself to make a three-ply thickness at the middle so as to provide sufficient rigidity to hold the side plates in position while still leaving the "gage" of the plate 2 proper for receiving impressions that can be made with the ordinary "bite" of the patient.

In the modified form of my invention shown in Figure 5 I provide rigid aluminum side plates 6. These are formed with longitudinal slots 7 and a metal impression plate 8. Each side edge of the thin copper plate 8 is rolled into a small tube 9 which may be passed through its respective slot 7 and the whole secured together by a longitudinal wire 10 which may be slipped through the tube 9; and is of sufficient length to project beyond the slots 7 and hold the plate 6 against lateral movement when the "bite" is being made.

The particular utility of this form of device is that if the patient has made a bite on to the plate 8 and the wax, the pins 10 may be withdrawn and the side plates 6 drawn off laterally

leaving the wax impression with the plate 6 imbedded therein.

With this type of device a separate plate 8 may be used for each impression without throwing away the side plates 6, 6 as is necessary in the other cardboard form of the device.

In Figure 6, which is another modified form of my invention, the construction is practically the same as in Figure 5 except that instead of a solid copper plate 8, a wire gauze plate 11 is employed. The attachment of this plate to the aluminum sides 12 being substantially the same as shown in Figure 5.

In the further modified form of my invention shown in Figure 8, I provide a mould holder for securing the impression from the entire upper and lower set of teeth or the gums if necessary. In this form the palate piece 13 is connected to the horse-shoe shape gum piece 14 by a flexible copper plate 15 which is stitched to the parts 13 and 14 just as it is stitched to the plates 1, 1. A suitable handle 16 is provided for inserting the device into the mouth. The impression is taken in practically the same way in this device as it is in other modified forms of the invention.

As the bulk of devices of this kind, in being shipped from the place of manufacture about the country would be so great, the devices are packed flat in boxes in the position shown in Figure 3, which I have termed the "knock down" position. Such position is permitted because the widths of the side plates 1, 1 are such that when the flexible copper 2 is bent as shown, the adjoining edges of the plates 1, 1 lie approximately together.

It will be understood that I can substitute for the metal plates 2, any form of material that is susceptible of being impressed without permitting the "bite" to entirely pass through.

It will be understood that in view of the peculiar collapsible feature of the invention, as best shown in Figure 3, that long strips collapsed in this way, may be provided and the dentist in using them may cut off the right length of the strip with the scissors, as the cardboard and thin copper can easily be cut with ordinary shears. Thus the dentist can get the exact length that he wishes for the particular imprint that he wishes to obtain.

It will be understood that the side plates as shown in Figures 1, 2 and 3 may be removed after the impression has been taken by simply cutting the side stitches with a sharp instrument. In some instances this is desirable.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. In an impression holder the combination with flexible side plates for receiving the impression material of an impression plate connecting the middles of the side plates and stitching for securing the edges of the impression plate to the side plates.

2. In an impression holder the combination with flexible side plates for receiving the impression material of an impression wall for connecting the side plates longitudinally to separate the impression material into upper and lower "bites" and stitching for securing the edges of the impression wall to the side plates.

3. An impression holder comprising spaced side plates for holding material for taking meeting impressions of the upper and lower sets of teeth, a thin impression retaining metal plate,

said plate constituting the sole connecting means of the side plates and adapted to be deformed by the teeth in taking an impression and to retain such deformation.

5. In an impression holder, the combination with spaced side walls, of a thin flexible double impression retaining wall, said wall forming the sole connecting means between the side plates and limiting the spreading range of the plates away from each other, and means connecting the edges only of the impression wall to the side plates, leaving the entire wall free and adapted to be deformed by the teeth in taking an impression and to retain such deformation.

5 4. An impression holder comprising spaced side plates for holding material for taking meeting impressions of the upper and lower sets of teeth, a flexible impression retaining gauze wall, said wall constituting the sole connecting means
10 of the side plates and adapted to be deformed by the teeth in taking an impression and to retain such deformation.

SALVATORE R. SALVIO.

15	90
20	95
25	100
30	105
35	110
40	115
45	120
50	125
55	130
60	135
65	140
70	145
75	150