

Sept. 14, 1965

W. H. PFEIFER
APPARATUS FOR FORMING AND/OR CLOSING
THE MOUTH OF A CORPSE
Filed July 7, 1961

3,205,553

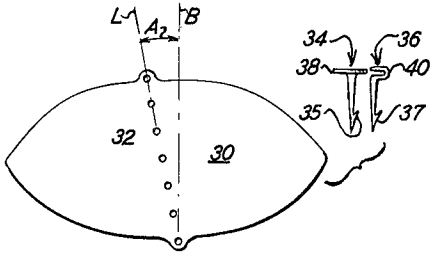


Fig. 1

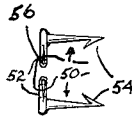
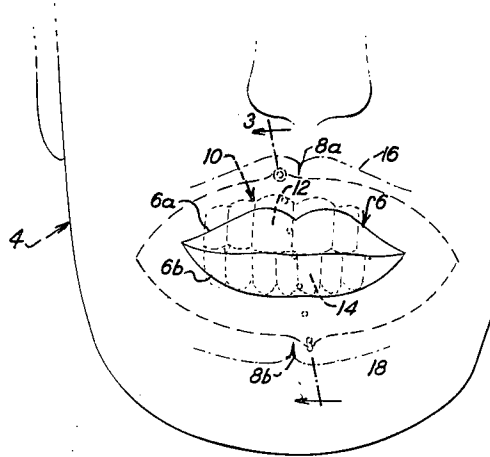


Fig. 2

Fig. 3

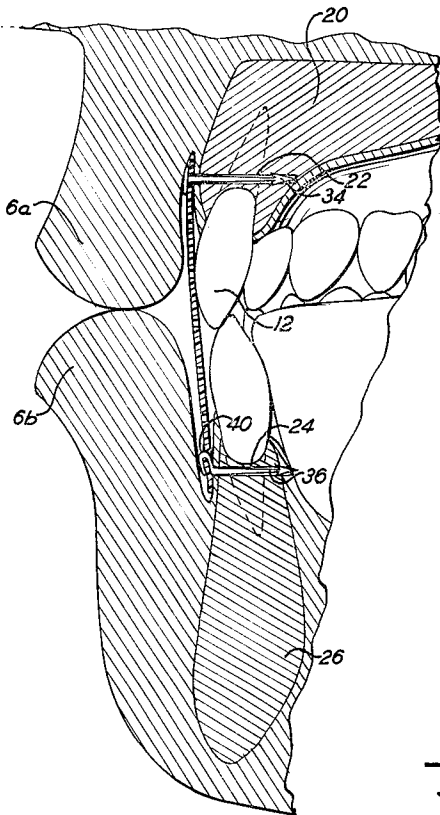


Fig. 4

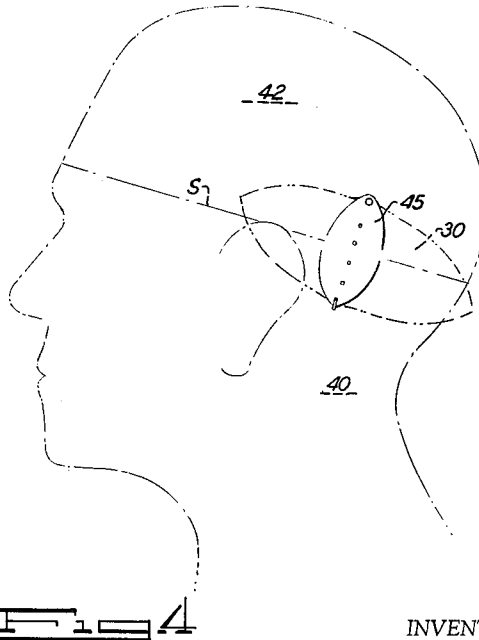


Fig. 5

INVENTOR

WOODROW H. PFEIFER

BY

Jacki x Jacki

ATTORNEYS

1

3,205,553 APPARATUS FOR FORMING AND/OR CLOSING THE MOUTH OF A CORPSE

Woodrow H. Pfeifer, 110 W. 8th St., Lexington, Nebr.

Filed July 7, 1961, Ser. No. 122,523

1 Claim. (Cl. 27—21)

This invention relates to apparatus to be utilized by undertakers and embalmers for holding the jaws and mouth of a corpse in place, and for securing separated portions of a skull in desired position.

In preparing an individual for burial, embalmers or undertakers face the problem of forming the mouth of the individual so that the facial appearance simulates the facial appearance before death. In order to obtain the proper facial appearance, the jaws must be maintained in a desired position, and the lips should be properly interiorly supported. To hold the jaws "closed," and to control the lip position in some manner, various practices utilizing different types of devices have been heretofore suggested.

One of the customary practices employed for securing the jaws makes use of sharp pointed devices adapted to be driven into the bony structure of the jaws or between the teeth, and of a cord or wire adapted to be wrapped around the devices once in place. Following this practice requires forcing the devices under impact pressures into brittle structure, and as a result difficulties are normally encountered because the bony structure tends to crack as the pointed devices are forced therein, and often the devices do not hold. Moreover, driving of the devices into the bony structure must be done carefully and requires considerable time.

Another practice which has heretofore been suggested, and which may be regarded as "traditional," provides for securing the jaws in place by utilizing a line of sutures, or stitches in the gum tissue in front of the jawbone or in the lip tissue. This procedure is not only unpleasant, but is very tedious, and does not provide positive securing of the jaws because the soft tissues through which the stitches or sutures pass readily bunch together, and with moisture the stitches often stretch.

Recognizing the difficulties encountered with the practices discussed hereinabove, other inventors have suggested the utilization of devices adapted to connect muscles in the mouth, and/or devices incorporating forwardly projecting prongs which would be pressed into the inner lip tissue to maintain the mouth portion of a corpse in a desired position. These devices, however, do not provide an adequate solution to the problem, because securing of the inner lips and/or jaws in a desired position by means of prongs or hooks projecting into tissues and/or muscle does not result in a positive positioning due to the inherent weakness of the tissues and/or muscles.

The prior art methods and/or devices, regardless of type, do not provide for proper interior support of the lips, whereby they are free to conform with the normal facial expression before death.

Aside from the problems encountered in securing the jaws of the corpse in proper position and simulating the facial appearance before death, embalmers and undertakers have heretofore also encountered a securing problem when preparing a corpse on which a brain or head autopsy has been performed. During the performance of such an autopsy, the top portion of the skull or cranium must be removed in order that the brain may be examined. This is normally achieved by cutting the scalp across the top of the head between the ears, then peeling the scalp from the skull, and thereafter sawing the skull horizontally and circumferentially of the head, thus allowing for complete removal of the cranium. After the brain or other portion

2

of the head has been examined, the removed portion of the skull, namely, the cranium, is replaced, secured in position, and then the scalp is stitched together along the cut or incision.

Securing the cranium in place on the base portion of the skull is difficult. In attempts to achieve the necessary result crude wiring methods have been employed, and the utilization of screws with an apertured metal strip has been suggested. Moreover, certain clamp-type devices have been devised, which clamp onto the base portion of the skull and then onto the cranium portion of the skull. The crude securing methods are time-consuming and generally result in some projection from the skull at the front part thereof which is visible after the scalp has been returned to original position and the corpse has been prepared for burial. Moreover, screws must force bone structure apart, and thus often crack the structure and do not hold. The clamp-type devices not only are subject to some of the above-mentioned disadvantages, but, in addition, maintain the cranium in spaced relation from the base of the skull so that in many instances a line of separation is viewable after the scalp has been stitched back in place.

The present invention has as its primary objects (a) the provision of a simple and efficient apparatus which can be utilized for securing the jaws of a corpse in a desired position and which does not require fracture or separation of bone tissue, or gripping of tissue, for securing purposes and (b) the provision of such an apparatus which provides for supporting the lips of the corpse in a natural position whereby the facial appearance of the corpse simulates the facial appearance before death. More generally, primary objects of the present invention are to provide means for securing jaws and lips in desired positions, which means are not subject to the disadvantage heretofore existent.

Still further and more specific objects of the present invention are to provide devices conforming with the preceding objects (a) which devices can be used on infants, children, or adults; (b) which apparatus eliminates problems encountered by cracking of bone structure, and problems encountered in attempting to obtain the desired securing by relying on tissue and/or muscle strength; (c) which devices can be easily and inexpensively manufactured; and (d) which devices can utilize flexible pads which readily and automatically conform with the structure over which they are placed.

Still a further, specific, and most important object of the present invention is to provide an apparatus for securing the jaws of a corpse in place, which apparatus results in supporting the inside surface of the lips in natural position, whether or not the corpse has missing front teeth or no teeth at all.

In accordance with the invention, bores or pin sockets are drilled in particular bone structure and preferably in particular locations, then irremovable pins are placed in the pin sockets by pressing the same in position with the hand. No force which has a tendency to crack the particular bone structure is encountered in placing the pins in the sockets. The pins are irremovable, and in some instances flexible cord cooperates with the pins, while in other instances pairs of pins cooperate with a flexible pad, which pad is, in accordance with the preferred embodiment of the invention, attached to one of the pins prior to the time that such pin is inserted into its socket.

The invention will be better understood, and objects other than those specifically set forth above, will become apparent to those of ordinary skill in the art, after reading the following detailed description of the invention. Such description refers to the annexed drawings, wherein:

FIGURE 1 is a plan view of an assembly or device provided in accordance with the present invention for

3

(a) securing the jaws of a corpse in desired position and for supporting the lips of the corpse whereby the same simulate the facial appearance of the corpse before death, and (b) when modified for securing the cranium to the base portion of a skull;

FIGURE 2 is a schematic representation of the face of a corpse on which the method of the invention has been practiced, and to which the assembly of the invention is attached;

FIGURE 3 is a cross-sectional fragmental view taken on the line 3—3 of FIGURE 2, and presents the manner in which the assembly of the invention is positioned when the method of the invention is practiced;

FIGURE 4 is a schematic representation of a corpse on which a cranium autopsy has been performed, and on which the method of the invention has been practiced by utilizing the device of the invention to secure the cranium portion of the skull to the base portion thereof; and

FIGURE 5 is a perspective view of a pair of modified pins provided in accordance with the invention for use with a flexible cord in instances where a flexible pad unit is not required.

By referring to FIGURE 2 it will be noted that the face of the corpse shown therein is generally designated by the numeral 4, and the lips of such corpse are generally designated by the numeral 6; the upper lip being designated as 6a, and the lower lip being designated as 6b. Also, in FIGURE 2, the frenum muscles which extend between the inner lips and the gums covering the jaw bones are shown in dotted lines, the upper frenum muscle being designated by the numeral 8a, and the lower frenum muscle being designated by the numeral 8b. The teeth of the corpse in FIGURE 2 are designated generally by the numeral 10, the upper left central tooth being designated specifically by the numeral 12, and the lower right central tooth being designated specifically by the numeral 14. The lines of jointure between the inner lips and the gums covering the jaw bones, which are shown in phantom, are designated for the upper connection by the numeral 16, and for the lower connection by the numeral 18. Like numerals are used in the cross-sectional view comprising FIGURE 3.

To carry out the invention, initially, as in the usual case, the mouth is cleaned and disinfected as the particular circumstances require. After the cleaning operation has been performed in accordance with conventional practice, the invention provides for drilling a first bore into the upper jaw bone 20 (FIGURE 3) just to the left of the frenum muscle 8a, as shown, and adjacent the line of jointure 16 between the upper inner lip and the upper outer gum. Preferably, a small light electric drill which will fit in one hand is used for purposes of drilling, and the free hand is used to turn back the upper lip 6a whereby the drill bit (not shown) can be easily placed in the desired location. The first bore 22 (FIGURE 3) opens forwardly, i.e., faces the inner lip, and is disposed above the left front tooth 12, as shown. The depth of the hole will vary in accordance with the securing device used, but I have found that a depth of one-half to three-fourths of an inch is satisfactory.

After the first bore 22 has been drilled, then the lower lip 6b is folded back and a second bore 24 is drilled to the right of the frenum muscle 8b, as shown, and immediately adjacent the lower line of jointure 18 between the lower lip and the lower gum. The second bore is in all respects like the first bore, and the dimensions thereof can be exactly the same. Once the two bores have been drilled in the jawbones 20 and 26, then the method of the invention provides for placing first and second irremovable attaching elements into each of the bores by pressing the same therein with the hands, and connecting between such attaching elements a flexible pad. Preferably, the flexible pad is formed of a thin tough plastic, such as, for example, irradiated polyethylene. It should be understood here that, while the pad is under consideration initially,

4

a cord may be used in certain instances, as explained below, in place of the pad. In any event, the flexible coupling means is readily flexed in various directions, i.e., at least two perpendicular directions.

The apparatus embodiment of the invention provides for forming the pad as shown in FIGURE 1, wherein the pad is designated by the numeral 30. The pad 30 is generally oval in shape, is thin and flexible, as suggested, and is adapted to cover the front gums of the mouth of the corpse. The pad 30 is provided with a plurality of spaced apertures 32 which preferably extend across the pad along a line L making an acute angle A with the minor axis B of the pad. In accordance with the apparatus embodiment of the invention, the device used for securing the jaws in position not only includes the pad 30 but also incorporates first and second attaching devices which are generally designated by the numerals 34 and 36 in FIGURE 1, and which are of a suitable length whereby they can be pressed within the bores projecting a minimum amount above the gums. Each of the attaching devices is barbed at the lower end thereof, the barbs of attaching device 34 being designated by the numeral 35, and the barbs of attaching device 36 being designated by the numeral 37. The barbs are of a dimension whereby when pressed into the bores, they engage the side walls thereof, and serve to irremovably secure the attaching devices 34 and 36 in position. Conversely, the bores in the jawbones and into which the attaching devices are to be inserted are made of a size to irremovably receive the barbed ends of the attaching devices 34 and 36.

Preferably, the first attaching device 34 is provided with a flat head 38 at the one end thereof and a barb or spring arm 35 on the shaft portion thereof. This first attaching device is, in accordance with the preferred embodiment of the method of the invention, inserted through one of the apertures of the pad 30, preferably the top-most aperture 32, prior to the time that such attaching device is pressed into the first bore 22 provided in the upper jawbone, as described above. Thereafter, the second attaching device 36 is pressed into the second bore 24 in the lower jawbone 26. Once the attaching devices 34 and 36 have been pressed into position, they are irremovably held with the jawbone due to the engagement of the barbs with the bore walls.

The second attaching device 36 is provided with a hook 40 on one end thereof and a barb or spring arm 37 on the shaft portion thereof, and when in place, as described, the pad 30 is hooked onto the hook portion 40 of the second attaching devices. The hook faces downwardly as shown in FIGURE 3, and can be inserted through any of the apertures 32.

In accordance with invention, after the first and second attaching devices are pressed into place, then with one hand, the embalmer or undertaker holds back the lower lip 6b and presses up on the bottom of the jaw to bring the jawbone to the desired location. Once the jawbones have been moved to the desired location, then the pad is hooked onto the hook 40 with the free hand. Of course, the pad is pulled tight as this operation takes place, and in the event the corpse has teeth the securing would be achieved when the teeth have come together with a normal bite. After the pad is in position and secured between the first and second attaching elements, then, if necessary, any excess material of the pad can be trimmed off below the hook.

It should be apparent that the pad covers the front gums of the mouth, and in the event some tooth is missing the pad serves to support the lip properly at such point. Moreover, the pad conforms with the contour of the front of the mouth readily, being thin and flexible. Accordingly, the lips are supported in the desired location. It will be noted that in accordance with the method of the invention, and when the device of the invention is utilized, all securing is done in the bone structure, yet there is no chipping thereof and/or no fracturing thereof caused by

the insertion of screws or impact driving of sharp pointed pins, because the method provides for utilizing pin seats or bores adapted to receive the irremovable attaching devices. Preferably, as shown, each of the attaching devices 34 and 36 has a central shaft extending carrying the barbs intermediate the ends thereof and either a head 38 or hook 40 is provided at one end of the shaft depending on the particular attaching device. The barbs of course are directed away from the head or hook and toward the opposite ends of the shafts.

The method which is utilized for securing the cranium portion of a skull to the base portion thereof after a brain or head autopsy is generally the same as the method used in connection with securing the jaws together, as described above. In FIGURE 4, the head of a corpse is shown in phantom, and the cranium portion is shown as secured in place on the base portion by means of the device provided by the invention.

While the method of securing the cranium portion of the skull in place is generally the same as the method used for securing the jaws in place, in both methods the position of the pins or bore sockets is of particular importance. To carry out the method of securing the cranium portion of the skull to the base portion thereof, after the scalp has been peeled back in the usual manner, two pin sockets or bores like those designated by numerals 22 and 24 in FIGURE 3, are drilled just behind the ear and on opposite sides of the base portion of the skull. Preferably, these bores or recesses are approximately three-fourths of an inch below the line of severance S between the base portion 40 of the skull and the cranium portion 42 thereof. Vertically above the first bores or apertures drilled in the base portion of the skull, two apertures are drilled in the cranium portion thereof. The line extending through the pair of bores on each side of the skull when the same is assembled as shown in FIGURE 4 extends, in accordance with the preferred embodiment of the invention, perpendicular to the line of severance S between the skull portions. The bores in the cranium portion of the skull are preferably approximately three-fourths of an inch from the line of severance also.

After the bores have been provided, the pad 30 shown in FIGURE 1 is cut so that it assumes the shape of the pad designated by the numeral 45 of FIGURE 4. This only requires trimming of the sides off of the pad 30. After the pad has been so trimmed, the first attaching device 34 is passed through the top aperture 32 therein and pressed into a bore in the cranium portion 42 of the skull. Of course, a first attaching device such as that designated by numeral 34 is placed in each of the bores in the cranium portion. Then the second attaching devices 40 are pressed into the bores in the base portion of the skull. Thereafter, the pad 45 is stretched so that the hook 40 on the second attaching member in the base portion extends through one of the apertures and maintains the skull tightly in position.

By providing a coupling on opposite sides of the reassembled skull behind each of the ears, the cranium portion is maintained in the desired location, and the scalp can be returned to its original position, and stitched along the incision originally made therein. The slight projections caused by the insertion of the attaching devices and the pad are hidden by the ear as well as the hair, and when the body is prepared for burial, there is no indication that a brain or head autopsy has been performed thereon. It is important to note that the cranium portion of the skull is attached and mates directly with the base portion of the skull so that no line of jointure appears when the skin is stitched back into position.

While the pad 30 has been shown as assuming a particular shape, and does assume such shape in accordance with the preferred embodiment of the invention, and while the devices or pins 34 and 36 have been designated as being inserted in particular bores, it is to be understood that

the pad can take any suitable shape and can be trimmed to the desired configuration by the embalmer, and that the pins or devices can be inserted in the bores in the reverse order from that stated. In fact, the attaching devices may be somewhat modified without departing from the scope and spirit of the present invention.

The pad construction explained in detail above is essential in certain instances, as where, for example, the front teeth of the corpse are missing and proper interior support must be provided. However, in other instances, the pad construction is not essential and the body components can be adequately maintained in position by means of thread.

Consider the modified attaching devices 50 presented in FIGURE 5. These devices comprise an elongated shaft having barbs or spring arms 54 projecting laterally thereof, and apertured heads 52. The apertured heads provide eyelets through which a suitable cord 56 can pass.

When the pins or attaching devices of FIGURE 5 are to be used, as described above, the mouth is cleaned and disinfected initially as the particular circumstances require.

In using the pin-thread method for closing the mouth and skull of a corpse, sockets or bores would be drilled in just the same manner as described previously. The pins placed in the sockets, however, will have eyelets in the head of each pin instead of hooks as when the plastic closer and former is used.

Through these loops will pass a small fine, preferably nylon thread, about one foot in length, so that after the pins have been placed in position in the sockets or bores, the pin in the upper jawbone will have the loop of the pin head pointing down toward the lower jawbone with the loop laying tight and flat against the upper gum. The lower pin in the lower jawbone will have the loop pointing toward the upper jawbone, with the loop laying flat and tight against the lower gum.

The thread that passes through these loops or eyelets should then be passed through the upper loop. The lower lip is then rolled down and back and the little finger of the right hand is placed on the outside and point of the chin. Then by pressing up with the little finger of the right hand on the point of the chin, the mouth can be closed in the desired position.

Then the thread should be passed through the loop of the lower jaw pin, and a knot tied to secure the jaws together. Scissors will easily permit cut-off of excess thread.

By using these pins and thread secured into the jawbones, there will not be any change in the expression of any muscular portion, nor will there be any fracture or crack in jawbone structure.

As should be apparent, the pin and thread method is basically the same as the method utilizing a pad. Instead of using a plastic pad, thread and pins with loops at the head of each pin are used. Of course, the pin and thread embodiment is readily adapted for use in securing the skull in place as described above, and repetition of this procedure is therefore believed unnecessary.

Regardless of the particular embodiment used, the attaching elements are generally similar and include enlarged heads, i.e., heads 38 and 40 (FIGURES 1 and 4) and heads 52 (FIGURE 5). Thus, the term "enlarged head" is used generically in the appended claim.

After reading the foregoing description of the invention, various modifications, other than those specifically suggested, may appear to those of ordinary skill in the art.

Accordingly, what is claimed:

1. An undertaker's device for retaining the jaws and mouth of a body in position after death to simulate the facial appearance of the body before death, said device comprising a generally oval thin flexible pad adapted to cover the front gums of the mouth and having a plurality of spaced apertures therein between opposite sides thereof, said aper-

7

tures extending across said pad along a line making an acute angle with the minor axis of said pad, and first and second attaching elements adapted to enter bores in the jawbone of the body, each of said attaching elements passing through one of said apertures and being barbed at one end and adapted to pass through said bores, one of said attaching elements having a head at the other end thereof to maintain said pad thereunder, and the other of said attaching elements having a hook at the other end thereof adapted to extend through any one of said apertures and over said pad for maintaining the same in fixed position.

5

10

8

References Cited by the Examiner

UNITED STATES PATENTS

1,870,566	8/32	Heitritter	27—21
2,172,252	9/39	Moore	27—21
2,212,339	8/40	Cullen	27—21
2,494,229	1/50	Collison	128—92.6
2,587,292	2/52	De Voe	27—21
2,779,083	1/57	Eaton	27—21
2,839,815	6/58	Reeves et al.	27—21

RICHARD A. GAUDET, *Primary Examiner*.
JOSEPH D. SEERS, *Examiner*.