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C. M. WOODWARD

2,086,656

DENTAL FRACTURE WIRING SHIELD

Filed March 27, 1936

Fig. 1

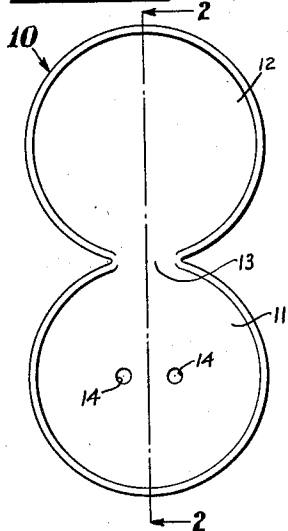


Fig. 2

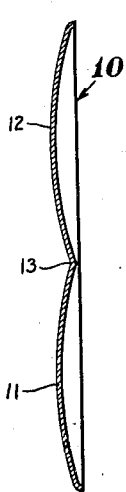


Fig. 3

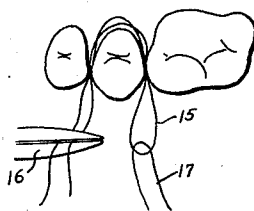


Fig. 4

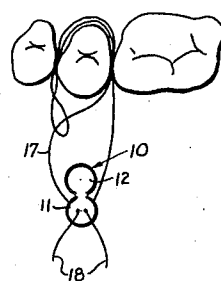


Fig. 5

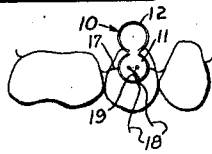


Fig. 6

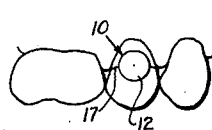


Fig. 7

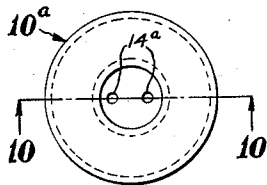


Fig. 8

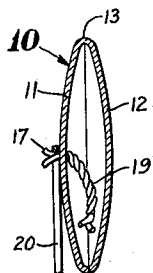


Fig. 9

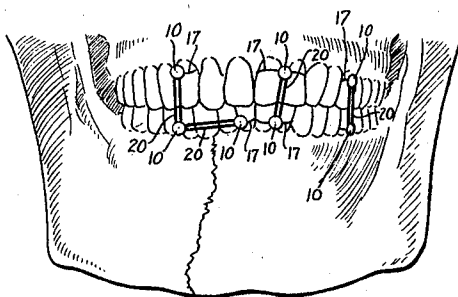


Fig. 10

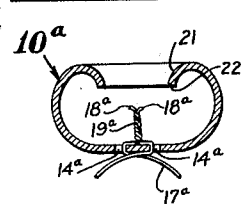


Fig. 11

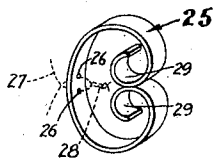


Fig. 12

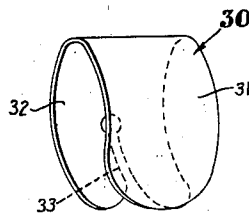
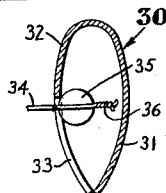


Fig. 13



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DENTAL FRACTURE WIRING SHIELD

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8 Claims. (Cl. 128—89)

This invention relates to combined dental fracture wiring buttons and shields.

The general object of the invention is to provide a shield for dental or interdental wiring of maxillary fractures of the jaws.

A particular object of my invention is to provide a novel combined button and shield for an interdental fracture wire which will protect the cheek against injury by engagement with the ends of the wire.

A more specific object of the invention is to provide a button and shield made of metal or other suitable material and comprising two parts, one of which receives the ends of the wire which are twisted to hold it in place, and the other part of which is folded over onto the first part to prevent the twisted ends from injuring the cheek.

A more specific object of the invention is to provide a metal button and shield including a body having means thereon to engage the ends of wire which are twisted and with a guard part on the body extending above the twisted ends of the wire to prevent the cheek from coming in contact with the twisted ends.

Another object of the invention is to provide a novel anchor or button for inter and/or intra-maxillary and interdental traction and/or retention.

Other objects and the advantages of the invention will be apparent from the following description taken in connection with the accompanying drawing, wherein:

Fig. 1 is a top plan view of my improved dental fracture wiring shield;

Fig. 2 is a section taken on line 2—2 of Fig. 1; Figs. 3, 4, 5, and 6 are diagrammatical, fragmentary, plan views showing the manner in which the shield is secured in position;

Fig. 7 is a central, sectional view through one of the folded shields;

Fig. 8 is a fragmentary, perspective view showing the use of the shield;

Fig. 9 is a top plan view of a modified form of shield;

Fig. 10 is a section taken on line 10—10 of Fig. 9 showing the wire in place;

Fig. 11 is a perspective view showing another form of shield;

Fig. 12 is a perspective view showing another form of shield; and

Fig. 13 is a central, sectional view through the modified shield shown in Fig. 12.

Physiological conditions surrounding the reduction and healing of fractures of the bones of the jaws are the same as those found in the

fractures of other bones but there are certain physical features involved in handling fractures of the mandible and maxilla which make the problem of their reduction radically different from that of the other bones.

Physical features found in fractures of the jaw which aid in reduction are that the mandible has a modified hinge joint fixed to a rigid base at both ends of the bone with the strongest muscles attached to the mandible so placed that they serve as partial splints. Also the muscular pull tending towards distortion is in most cases weak. Further, the teeth are in the nature of hard projections rigidly fastened to the bones and these become aids towards reduction. The bones of the jaw also seem to be more resistant to infection in compound fractures than other bones. These aids to reduction are taken advantage of in the technic of dental and interdental wiring and my invention relates to a simple wiring in reduction which includes novel appliances which can be very readily and effectively installed.

In the use of one embodiment of my invention I employ a combined wiring button and shield which is indicated in the accompanying drawing generally at 10. As shown this button comprises a circular base portion 11 and a guard portion or shield portion 12 connected by a neck 13. The portions 11 and 12 are slightly cupped as shown and the base portion 12 is provided with a plurality of apertures 14 which are arranged near the center thereof.

In practice with my improved wiring buttons and shields a loop of dental floss indicated at 15 in Fig. 3 is preferably grasped by the jaws of a pair of pliers 16 and by this means a loop 17 of steel wire is pulled around the tooth to the position shown in Fig. 4. The ends 18 of the wire 17 are then passed through the apertures 14 as shown in Fig. 4. These ends 18 are then grasped by a suitable device by means of which they may be twisted as shown at 19 in Fig. 5. As the wires are twisted tight the base portion 11 assumes the position shown in Fig. 5 in engagement with the tooth while the shield portion 12 is preferably disposed above the portion 11. The free ends of the wire are then cut off and the shield portion 12 is turned on the neck 13 to the position shown in Fig. 6.

After a sufficient number of buttons have been placed, small orthodontia rubber bands 20 are looped over the wires in the rear of the buttons and shields as shown in Fig. 8. These rubber bands serve to provide constant traction which is

exerted to bring the misplaced fragments into proper position.

It will be understood that the number of buttons employed and the arrangement of the rubber bands will depend upon the condition of the fracture also it will be understood that the arrangement of loops shown in Fig. 4 may be altered without departing from the spirit of my invention.

In Figs. 9 and 10 I show a slight modification of my invention wherein the wire 17^a has its ends 18^a passing through apertures 14^a in a button and shield member 10^a. This member 10^a is provided with a reentrant rim 21 so that the exposed edge 22 is inwardly directed where it will not be engaged by the cheek while the twisted portions 19^a are protected.

In Fig. 11 a combined button and shield is shown as comprising a spring wire clip 25 provided with apertures 26 through which the ends of a wire 27 are inserted and twisted as at 28. The ends 29 of the resilient member 25 are bent inwardly to form loops.

In Fig. 12 a combined button and shield indicated generally at 30 comprises a front member 31 and a rear member 32 which are sufficiently resilient to hold a set position such as shown in Fig. 13. The member 32 is provided with a slot 33 in which the ends of a wire 34 having a split shot 35 thereon may be inserted. This split shot 35 receives the ends of the wire 34 which are twisted beyond the shot as at 36 while my new guard 30 serves to protect the cheek from striking the ends of the wire.

The guard and shield members may be made of suitable metal or composition.

From the foregoing description it will be apparent that I have provided a novel fracture wiring button and shield which can be readily applied and which is highly efficient in use.

Having thus described my invention I claim:

1. For use in the wiring of maxillary fractures of the jaw, a button including a body, a wire having its ends twisted together and engaging the face of the body, said button including a guard portion arranged over the twisted ends.

2. For use in the wiring of maxillary fractures of the jaw, a button comprising a base portion and a guard portion, said base portion having a pair of apertures therein, a wire having its ends

passing through said apertures, said ends being twisted together on one face of the button, said guard including a portion overlying the apertures.

3. For use in the wiring of maxillary fractures of the jaw, a button comprising a metal member having a pair of apertures at one end, said button being cupped at said one end to engage a tooth on the convex side of the cup portion, a wire having its ends passing through said apertures, said ends being twisted together on one face of the button, said button including a portion overlying the apertures.

4. For use in the wiring of maxillary fractures of the jaw, a button having a pair of apertures therein, a wire having its ends passing through said apertures, said ends being twisted together on one face of the button, said button including two parts, one of said parts being adapted to be folded over upon the other part.

5. For use in the wiring of maxillary fractures of the jaw, a button including a cupped body having a pair of apertures therein, a wire having its ends passing through said apertures, said ends being twisted together on one face of the button, said button including a guard, said guard being adapted to be folded over upon the body to cover the ends of the wire.

6. In a wiring device for fractures, a button having a pair of apertures therein, a wire having its ends passing through said apertures, said ends being twisted together on one face of the button, said button comprising a cupped base member having a reentrant portion at its top.

7. In a wiring device for maxillary fractures, a button having a pair of apertures therein, a wire having its ends passing through said apertures, said ends being twisted together on one face of the button, said button comprising a base having a pair of spring metal members having their end portions bent to resiliently engage each other.

8. The method of wiring a maxillary fracture comprising inserting dental floss between adjacent teeth, pulling a metal wire through the space between the teeth, passing the ends of the wire through a button member which includes a guard portion and twisting the ends of the wire upon the button member and below the outer face of the guard portion to hold them in place.

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