

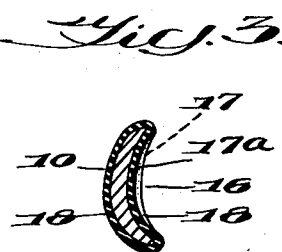
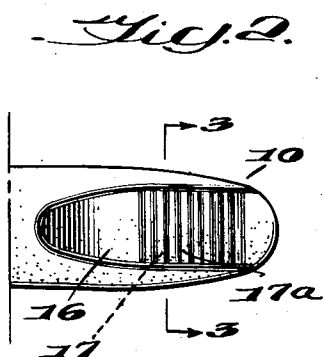
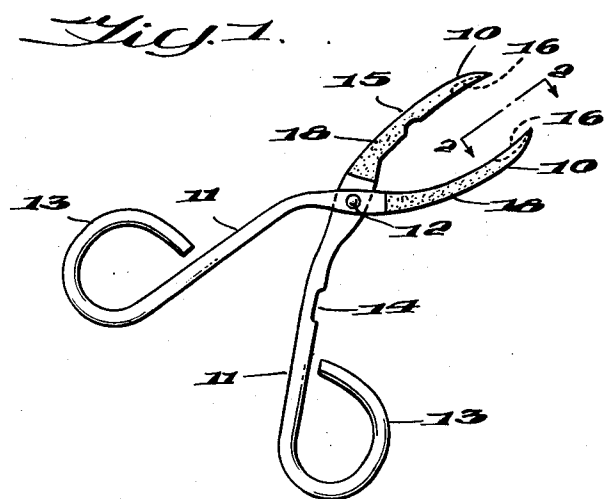
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LOOSE TOOTH REMOVER

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LOOSE TOOTH REMOVER

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1

2

This invention relates to the removal of loose baby teeth and aims to provide a simple and effective, and above all a safe and confidence-inspiring means for removal thereof.

It is well-known that when children are losing their baby teeth, the shedding of each tooth is more than likely to involve several days of discomfort, peevishness, and difficulty of eating on the part of the child. During this period the tooth is so loose that, each time anything touches it, it tilts about and hurts the adjacent gum.

Attempts of parents to dislodge the tooth with the fingers during this period are usually unsuccessful, as the sizes and locations of the teeth usually make it very difficult to grasp the tooth with the fingers for a straight or slightly twisting pull, and as the parents are so afraid of hurting the child that they refrain from the painful process of forcing the tooth forward or backward to break it loose from the gum.

At one time or another most parents have tried to remove such loose baby teeth by the many times ridiculed method of attempting to tie a string or a thread about the tooth, to enable it to be pulled voluntarily or by tying the other end of the string to a door-knob or other object which, when put into motion, is supposed to extract the tooth without the volition of the child. But this procedure is rarely successful, as the shape of baby teeth is such that knotted threads have a habit of sliding off the tooth, and as few people know how to tie the knots sufficiently tightly, without pinching the gums and causing discomfort, to successfully remove a tooth having any degree of firm attachment to the gum.

As a result, most parents either put up with the loose tooth problem for the several days of each duration thereof, or take the child to the dentist to have the tooth removed. This is a nuisance to the parents and discomforting to the child because the trip having been made the dentist will usually pull the tooth even though it is really not yet ready to come out easily. Moreover, this practice is a nuisance to the dentist, who frequently feels that he is not justified in making a charge for the few moments' time required, even though the visit has to be worked into an already full schedule, as an emergency matter, and even though several such visits in the course of a day may completely upset the dentist's schedule and greatly inconvenience him.

Thus there has been for many years a continuing need for some safe, simple and effective device for removal of these loose baby teeth at home, without frightening the child or producing pain-

ful psychological reactions on his part or the part of the parents. It is the principal object of the present invention to satisfy this need. The invention consists in the provision of a loose tooth remover, for home use, and in the provision of features of construction therein especially adapting the device for its intended purpose, as herein-after described by example and defined in the appended claims.

In the accompanying drawings of an exemplary embodiment of the invention:

Fig. 1 is a side elevation of a preferred form of the invention;

Fig. 2 is an enlarged detail of one of the tooth-gripping jaws, viewed from the line 2—2 of Fig. 1 in the direction of the arrows;

Fig. 3 is a cross-section through such tooth-gripping jaw, taken on the line 3—3 of Fig. 2 looking in the direction of the arrows.

The shedding of baby teeth is a phenomena in which the tooth root seems first to undergo a dissolution. As this dissolution proceeds to the point at which the tooth is no longer attached to the osseous tissue of the jaw, the tooth becomes looser and looser. Finally it remains secured in place substantially only by gum attachment adjacent the neck of the tooth, and is ready to come out. It is at this period that the looseness of the tooth for several days may cause discomfort and difficulty in managing the child.

Furthermore, the nerve chamber of a baby tooth is relatively large compared to the size of the baby tooth and the tooth is thus a hollow body apt to be crushed by excessive gripping pressures. Moreover, there is a psychological aversion on the part of the child and on the part of the parent to the use in the child's mouth of any instrument having a formidable appearance, or producing metallic noises, or which is apt to pinch the gum or cause damage or scratching of adjacent teeth.

Finally the premature extraction of a tooth not fully ready to come out causes excessive discomfort and bleeding and clearly should be avoided.

With these factors in mind the device of the present invention comprises a pair of opposed jaws 10 adapted to grip the loose baby tooth, and lever elements, shown as crossed scissors-like arms 11, pivoted together at 12, carrying the jaws 10 and associated to move the jaws toward each other. In the embodiment shown, the lever elements 11 are preferably formed of wire approximately one-eighth inch in diameter, flattened at the crossing regions 12 and provided with bent finger loop portions 13, but the invention is not limited to the particular form of the lever ele-

ments or their construction of metal. For example, they may be formed in other ways and of relatively rigid but somewhat yieldable plastic composition, though metal is preferred.

Suitable means is provided for limiting the closing force applicable to the jaws 10 through the lever elements 11, to an amount insufficient to crush a loose hollow baby tooth and insufficient to extract a tooth until the securement of the tooth root to the osseous tissue of the jaw has substantially dissolved leaving the tooth secured substantially only by gum attachment. This means may be provided by limiting the strength of the lever elements 11 as a whole, or locally, as exemplified herein by providing the levers 11 with at least one weakened or flexible region 14 or 15 adapted to flex when an attempt is made to apply excessive force to the jaws 10, so as to limit the force applied to the amount indicated. As the overall strength of a lever is no greater than that of its weakest portion this provision effectively limits the strength of the lever as a whole.

The jaws 10 in the form shown are undercut to obtain a good, but not excessive grip on the neck of the tooth adjacent the gum-line. In the preferred form this undercutting is effected by giving each jaw 10 a cusped shape 16 as best shown in Figs. 2 and 3. The basic material of which the cusped jaws are made, as above mentioned, is preferably metal or some other material having a rigidity similar to that of metal. The jaws themselves are preferably coated or enrobed with rubbery material, as hereinafter described, and the jaws themselves may be scored or ribbed as at 17, underneath the coating, to impart to the coating a scored or ribbed surface 17a and improve the non-slip character thereof.

In the preferred form shown, the jaws 10 and the adjacent portions of the lever elements 11, are coated or enclosed in a rubbery coating 18, preferably extending over the tips thereof and over the cusped or undercut gripping faces of the jaws 10. It will be understood that the term "rubbery" applied to this coating connotes natural or synthetic rubbers and polymerized materials similar thereto.

This rubbery coating is preferably employed in overlying relation to all parts of the device entering the mouth of the child. When so employed it has various advantages among which are the facts that it prevents slippage, within the limits of pressure employed, between the jaws and the preferably dry tooth surface; aids in insuring against tooth breakage; avoids metallic contact noises apt to frighten a child, when the device strikes against the teeth, and thus is psychologically better for a child than a bare metal instrument; protects adjacent teeth from possible scratching; protects the gums from pinching and contact with sharp edges; insulates against the shock experienced when metal objects touch an amalgam filling, for example; aids in conforming the cusp to the shape of various tooth necks; and gives psychological relief to the parent by assuring the parent that the device is safe to use and cannot harm the child.

Preferably the coating, as indicated in Fig. 3, is relatively thin. A coating about one sixty-fourth of an inch thick has been found suitable. Also, as above mentioned, the coating is preferably ribbed, scored, or otherwise provided with a non-skid surface or tread 17a, which preferably does not exceed one one-hundredth of an inch in depth when the coating is about one sixty-

fourth of an inch thick. As above noted this tread may be provided by appropriately forming the metal portion 17 of the cusped surface, or otherwise, as desired. The coating 18, which preferably extends over the tips and undercut parts of the jaws 10, may extend considerably therebeyond as shown in Fig. 1. It may be secured to the jaw bodies in any suitable way, as by well-known vulcanizing processes, for example. The rubbery material selected for the coating composition is preferably one adapted to withstand boiling water, alcohol, or other sterilizing procedures. The arms of the levers 11 are preferably bent or otherwise formed to offset the jaws from the axis of the handles at an angle, say of 10° to 30°, to facilitate use of the device.

As will be apparent from the foregoing description, in use of the present invention, the jaws 10 may be suitably sterilized, and are closed about the neck of the loose tooth, close to the gum. The rubbery cushioning coating 18, in the preferred embodiment, prevents grating noises and jarring and scraping during the application of the device to the tooth, prevents pinching of the gums, and prevents twinges if the device should contact an amalgam filling. If the tooth is so loose that it is ready to come out, the pressure applicable through the force-limiting levers will be sufficient to enable quick and easy withdrawal of the tooth by a direct axial pull, coupled with a slight axial rotation of the tooth if desired. If the tooth is not yet ready to come out, the force-limiting nature of the levers 11 will not afford a sufficient grip to break off any part of the tooth, or break off the top of it and leave any small portions in the jaw. Instead, regardless of the force applied to the handles 13, the jaws will spring the levers, or the weaker portions 14 or 15 thereof, and free themselves from a tooth that is still firmly attached to the osseous tissue. And in so doing, if the ends of the device should strike against any other tooth, grating noises and danger of scratching or chipping thereof are minimized.

As a result loose baby teeth which are really ready to come out may be removed with a minimum of pain and mental anguish both to the child and the parent; and the parent, though totally unskilled, may use the device with full confidence that no harm can come to the child.

It is to be understood that the specific embodiment herein described is illustrative and not restrictive of the invention, the scope of which is defined in the appended claims. All modifications which come within the meaning or range of equivalency of the claims are therefore intended to be included therein.

We claim as our invention:

1. A loose tooth remover comprising a pair of opposed jaws, lever elements carrying said jaws and associated to move the jaws toward each other, said lever elements having a limited overall strength restricting the closing force applicable to said jaws therethrough to an amount insufficient to crush a loose baby tooth and insufficient to extract a tooth until the tooth root has dissolved leaving the tooth secured substantially only by gum attachment, said opposed jaws having cusped tips tapering toward one another to each engage the neck of a tooth, and said jaws having on the gripping surfaces thereof and extending over their tips a coating of rubbery material cushioning their operative surfaces.

2. A loose tooth remover comprising a pair of

5

opposed tooth gripping jaws, lever elements carrying said jaws and associated to move the jaws toward each other, said lever elements having a limited overall strength restricting the closing force applicable to said jaws therethrough to an amount insufficient to crush a loose baby tooth and insufficient to extract a tooth until the tooth root has dissolved leaving the tooth secured substantially only by gum attachment.

3. A loose tooth remover comprising a pair of opposed tooth gripping jaws, lever elements carrying said jaws and associated to move the jaws toward each other, said lever elements having a limited overall strength restricting the closing force applicable to said jaws therethrough to an amount insufficient to crush a loose baby tooth and insufficient to extract a tooth until the tooth root has dissolved leaving the tooth secured substantially only by gum attachment, the gripping faces of said tooth gripping jaws each being covered exteriorly and interiorly with rubbery material preventing slippage within the said force limits, protecting the gums from pinching and contact of sharp edges, insulating against shock from filling contacts, and avoiding frightening contact noises and scratching of other teeth.

4. A loose tooth remover comprising a pair of opposed tooth gripping jaws, said jaws having undercut tips for engaging the neck of a tooth, lever elements carrying said jaws and associated to move the jaws toward each other, said lever elements having a limited overall strength restricting the closing force applicable to said jaws

6

therethrough to an amount insufficient to crush a loose baby tooth and insufficient to extract a tooth until the tooth root has dissolved leaving the tooth secured substantially only by gum attachment.

5. A loose tooth remover comprising a pair of opposed tooth gripping jaws, said jaws having undercut tips for engaging the neck of a tooth between them, lever elements carrying said jaws and associated to move the jaws toward each other, said lever elements having a limited overall strength restricting the closing force applicable to said jaws therethrough to an amount insufficient to crush a loose baby tooth and insufficient to extract a tooth until the tooth root has dissolved leaving the tooth secured substantially only by gum attachment, said jaws being formed of relatively rigid material and having their undercut tooth contacting portions and their adjacent external portions continuously coated with rubbery material.

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