

July 10, 1928.

1,676,574

G. A. OSTERMEIER

PROCESS TRIMMER

Filed March 14, 1927

Fig. 1.

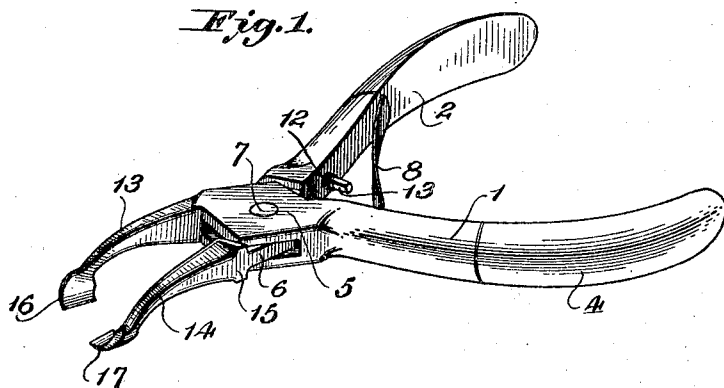


Fig. 2.

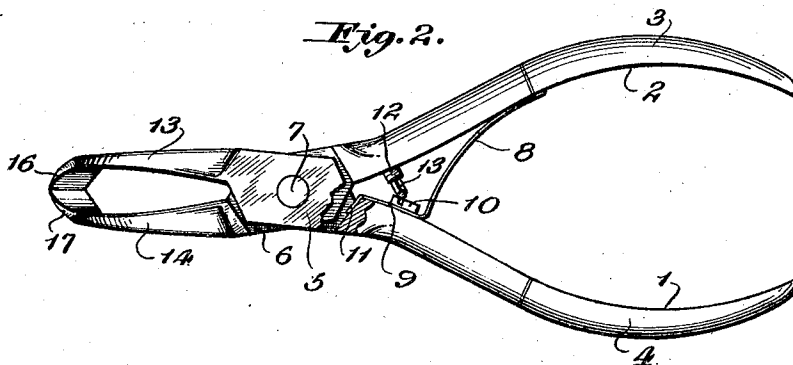


Fig. 3.

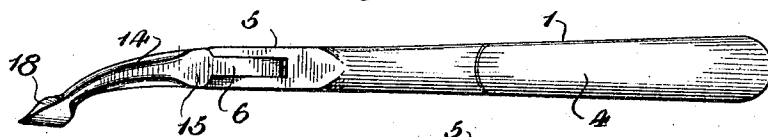
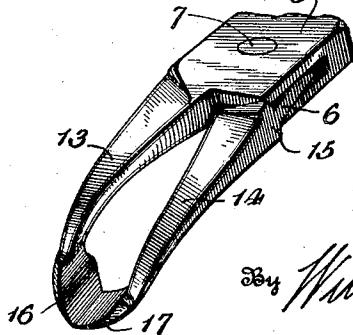


Fig. 4.



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UNITED STATES PATENT OFFICE.

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PROCESS TRIMMER.

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This invention relates to improvements in dental surgical tools, having for an object to provide an instrument particularly advantageous for use in the removal of superfluous bony structure, especially, the anterior plate of the superior maxilla and for the effectual trimming of irregular or sharp portions of process of upper and lower alveolar ridge subsequently to or during the extraction of teeth, whereby to afford greater comfort to a patient and to facilitate rapid healing as well as effecting a better foundation for artificial teeth, according the same greater strength and durability and better expression.

It is also an equally important object of the invention to provide an instrument of the character mentioned having the blades thereof so arranged and formed that a clear and unobstructed view may be had of the operating field, hence, facilitating an accurate operation together with the leaving of the edges of process or similar matter cut thereby more obtuse, where nature will rapidly heal.

The invention may be stated to also include amongst its principal desideratums, the provision of a dental instrument which, because of the peculiar formation of the blades thereof may be advantageously employed as an aid in the removal of the roots of teeth or as a means for effectually removing gum tissue from over erupting third molars and similar conditions; likewise, to remove gold caps and crowns with but minimum stressing.

Other objects of the invention will be in part obvious and in part pointed out hereinafter.

In order that the invention and its mode of operation may be readily understood by those skilled in the art, I have in the accompanying illustrative drawings and in the detailed following description based thereupon, set out one possible embodiment of my invention.

In these drawings:

Having more particular reference to the drawings, in connection with which like characters of reference will designate corresponding parts throughout, the improved instrument may be stated to comprise shafts 1 and 2 formed of a suitable grade of tool steel or other approved material having oppositely curved handle portions 3 and 4; certain of the ends of said shafts being adapted to be pivotally interconnected by

the forming of an enlarged and slotted portion 5 in one thereof, while the reduced and substantially flattened portion 6 is formed upon the opposite shaft and is passed through the slot of the enlarged portion 5 whereupon a pivot pin or other suitable element 7 is engaged through the tube, in the manner as shown in the Figures 1 and 2. Thus, it will be understood that a pivotal connection will be effected between the shafts 1 and 2 and with a view toward maintaining the handle portions of these shafts in relatively open or spaced relation, a curved leaf spring 8 is provided, having an angularly bent part 9 thereon flushly engaging with an adjacent portion of the inner side of the shaft 1 and being secured thereto through the medium of a screw 10; the free extremity of this angularly bent part being formed in a substantially right angularly disposed and reduced finger 11 engaging in a portion of the way through the enlarged part 5 of the shaft 1, thus serving as a means for anchoring the leaf spring 8 in a position whereat the free extremity thereof will engage with the adjacent inner side of the shaft 2 or its handle portion 3.

An adjusting or stop screw 12 is turned into engagement with a screw-threaded opening formed in the inner side of the shaft 2 in proximity to its pivotal connection with the shaft 1 and the outer end of this screw is formed with a reduced and squared shank 13 so disposed as to be engaged, at times, with the adjacent end of the screw 10 and to thereby limit the extent of inward pivotal movement of the shafts 1 and 2.

Substantially complementally formed or shaped shanks 13 and 14 are formed integral with the free extremities of the crossed and pivotally connected portions of the shafts 1 and 2; the shank 14 being formed, adjacent its point of jointure with the flattened portion 6 of the shank 2, with an enlargement or shoulder 15, while each of said shanks are correspondingly curved upon themselves throughout their respective lengths and also, have their cross sectional sides outwardly reduced, that is, the shanks are, in a fashion, outwardly tapered to the free extremities thereof. Upon these free extremities of the shanks 13 and 14, correspondingly shaped inwardly extending and opposed legs 16 and 17 are formed, said legs, as will be noted upon reference to the Figure 3, being offset from the longitudinal axis of

the shafts 1 and 2 and being curved upon themselves so that with relative inward movement between said shanks, the cutting edges of the blades will accurately meet, whereby to provide for the desired cutting or trimming of process or other matter.

The normally outer faces of the blades 16 and 17 are likewise curved upon themselves and as will be noted upon reference to the Figure 3, these faces are arranged at a slight angle with respect to the plane in which the shafts 1 and 2 are arranged. By this convexity of the outer faces of the blades 16 and 17 together with the angular positioning of the same, it will be understood that during usage thereof, they will be disposed away from the process or matter to be trimmed or cut and consequently thereupon, the edges of the process or matter cut or trimmed thereby will be left more obtuse and thus, will promote a more rapid healing.

Also, it is to be noted that the inner sides or faces of the shanks 13 and 14, by reason of their tapered formation, will provide therebetween an increasingly greater clearance as they approach the inwardly disposed blades 16, so that at their respective points of jointure with said blades, they will permit of a full or complete exposure of the upper sides of the blades and consequently thereupon, allow a user of the tool a clear view of an operating field, hence facilitating an accurate operation.

That rigidity and strength may be given the blades 16 and 17 whereby to partially insure an accurate meeting of the cutting edges of the same, said blades preferably taper from their respective points of jointure with the shanks 13 and 14 as indicated at 18 and thus, with inward or opposed movement under pressure of the handles 3 and 4 of the shafts 1 and 2 will be caused to effectually cut or sever the process or other matter engaged thereby due to the arrangement of the blades at substantially right angles to the said longitudinal axis of the instrument.

By reason of the curvature of the shanks 13 and 14, whereby the opposed blades 16 and 17 are laterally offset from the longitudinal axis of the instrument, it will be appreciated that a user of the instrument would be enabled to more readily and accurately engage the same in the mouth of a patient and as accurately reach the process, gum tissue or other matter to be treated thereby. Also, due to the peculiar formation of the shanks 13 and 14 and the resultant spacing of the inner side of the same from each other, it will be noted that a full and unobstructed view of the cutting or

meeting edges of the blades will be afforded and hence, such operator will be permitted to have a full and unobstructed view of an operating field.

By proper adjustment of the stop screw 12, it will be understood that the cutting edges of the blades 16 and 17 may be caused to meet with the desired nicety or accuracy necessary in a clean cutting of process or other matter engaged thereby and furthermore, that by limiting the extent of inward movement of these blades 16 and 17 through the stop screw 12, that dulling of the cutting edges of said blades or the stressing of the same to such an extent as to bring about an imperfect meeting or overlapping thereof will be positively prevented, thus enabling the tool to remain in a state or condition for efficient usage.

In finishing the improved instrument, the same may be polished to the desired extent and it is preferable that all corners of said instruments shall be rounded, especially at the hinge jointure between the shafts 1 and 2, whereby to prevent pinching of the operator's thumb or fingers when using pressure and similarly, to prevent pinching or scratching of the lip of a patient or other tissue.

Manifestly, the construction shown is capable of considerable modification and such modifications as is within the scope of my claims, I consider within the spirit of my invention.

I claim:

1. An instrument of the character described comprising pivotally connected shafts, shanks carried on the same, the adjacent and inner sides of said shanks being formed to effect their relative spacing when in closed position, and opposed complemental blades carried on the free ends of said shanks laterally offset from the longitudinal axis of the instrument, and the cutting edges of said blades being parallel, when meeting, to said longitudinal axis of the instrument.

2. An instrument of the character described comprising pivotally connected shafts, complementally formed and curved shanks carried on such shafts, decreasing outwardly in cross sectional size whereby the inner sides of the same will be relatively spaced when in closed position, and complementally curved inwardly disposed blades carried on the free ends of said shafts laterally offset from the longitudinal axis of the shafts.

In witness whereof I have hereunto set my hand.

GEORGE A. OSTERMEIER.