F. W. WALLACE.

DENTAL TOOL.

APPLICATION FILED MAY 1, 1913.

1,067,696.

Patented July 15, 1913.

Fig. 1.

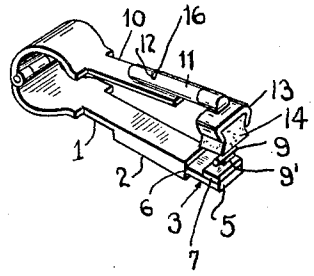


Fig. 7.

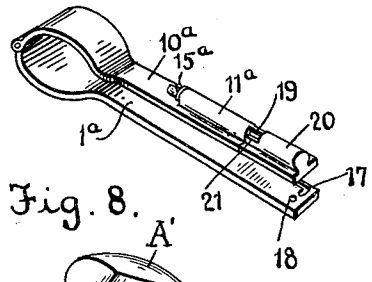


Fig. 8.

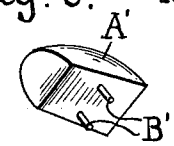


Fig. 5.

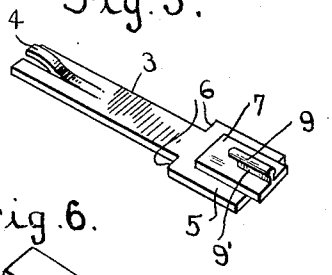


Fig. 2.

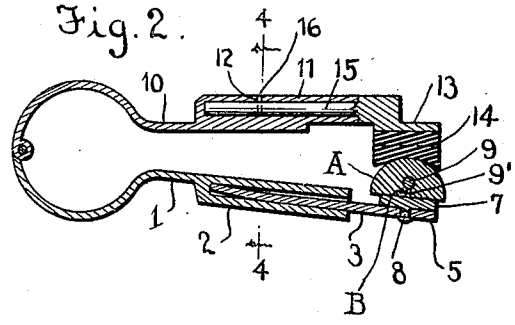


Fig. 6.

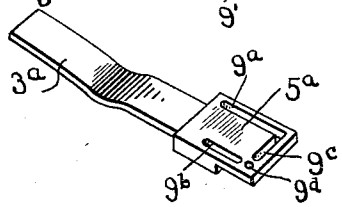


Fig. 4.

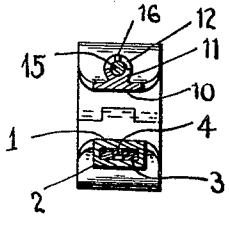
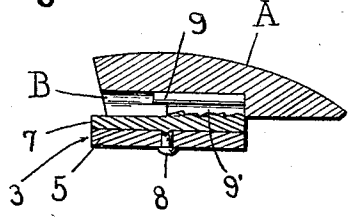


Fig. 3.



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UNITED STATES PATENT OFFICE.

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DENTAL TOOL.

1,067,696. Specification of Letters Patent. Patented July 15, 1913.

Application filed May 1, 1913. Serial No. 764,898.

To all whom it may concern:

Be it known that I, FRANK W. WALLACE, D. D. S., a citizen of the United States, residing at Chattanooga, in the county of Hamilton and State of Tennessee, have invented certain new and useful Improvements in Dental Tools; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in dental tools and more particularly in tools for holding artificial teeth or facings therefor while grinding the same.

One object of the invention is to provide a tooth facing holder which will automatically adjust itself to facings of varying contour and firmly clamp them between the jaws thereof without danger of crushing.

Another object of the invention is to provide a tool of this character in which the facing seats are interchangeable and the tips of which are adjustable.

With these and other objects in view, the invention consists of certain novel features of construction and the combination and arrangement of parts as will be more fully described and claimed.

In the accompanying drawings: Figure 1 represents a perspective view of one form of this improved tool; Fig. 2 is a longitudinal vertical section thereof showing a facing in position between the jaws of the tool; Fig. 3 is a transverse section through the tool carrying end of one jaw with the tooth facing in position thereon and shown in section; Fig. 4 is a transverse section taken on the line 4—4 of Fig. 2; Fig. 5 is a detail perspective view of the tooth carrying plate or tip; Fig. 6 is a similar view of a slightly different form thereof; Fig. 7 is a perspective view of another form of the tool; Fig. 8 is a perspective view of a tooth facing having laterally extending securing or anchoring pins.

In the embodiment illustrated in Figs. 1 to 5 the tooth holding tool or vise is shown composed of two arms 1 and 10 having one end curved with the terminals of said curved ends hingedly connected thus forming hinged jaws. The jaw 1 which will be termed the tooth carrying jaw has a longitudinally extending socket 2 on its outer face extending from the free end of said jaw inward, said socket being here shown open at both ends. Removably mounted in this socket 2 is a tooth carrying tip 3 in the form of a metal bar or plate having a spring tongue 4 at its inner end for frictionally engaging one wall of the socket and thus holding the tip in operative position in the socket. This tip 3 is enlarged at its outer end, said enlargement 5 providing on opposite side edges of the tip shoulders 6 which forms stops for limiting the insertion of the tip in the socket. Swiveled on this enlargement 5 is a tooth engaging element in the form of a plate 7 having a laterally extending stud 8 on one face which extends through an aperture in said enlargement 5 and has its outer end upset as shown clearly in Fig. 2. A pin 9 extends parallel with the plate 7 and is fixed to the face thereof opposite that from which the stud 8 projects, said pin being preferably secured to said plate by a web 9′. This pin is adapted to slidingly engage what is known as a "Steele" facing. This peculiar style of facing shown at A has in its rear face an undercut longitudinally extending slot B to receive a securing pin on the backing to which the facing is to be applied while in other forms of facing laterally extending securing pins are provided as shown in Fig. 8. The plate or tip 7 here shown may be removed and a similar plate 3^a such as that shown in Fig. 6 substituted when it is desired to clamp a facing having lateral securing pins. This plate 3^a is bent laterally intermediately of its ends to form socket engaging means but it may be provided with a tongue if desired. The enlargement 5^a of the tip 3^a is provided with longitudinally extending parallel slots 9^a and 9^b and a transverse slot 9^c communicates with the slots 9^b which are designed to receive the pins of the facing, an aperture 9^d being provided at one corner of said plate. The tooth gripping or holding jaw 10 has a cylindrical socket 11 on its outer face with a slot 12 extending transversely thereof for a purpose to be described. The tooth clamping element is here shown in the form of a cushion carrying member 13 composed of a plate having its opposite sides bent downwardly and inwardly to receive and hold a rubber or other yieldable tooth engaging cushion 14 as shown in Fig. 1. This cushion 14 is designed to yieldably grip a tooth or facing and prevent danger of crushing thereof when extreme pressure is applied

to the jaws of the tool. This member 13 has a shank 15 extending parallel with the cushion 14 and adapted to fit and rotate within the socket 11 to adapt the clamping element to automatically adjust itself to the outer face of the tooth or facing to be clamped. A pin 16 extends laterally from the shank 15 and projects through the slot 12 in the socket 11 and engages the opposite ends of the slot 12 to limit the rotation of the clamping member in opposite directions.

In the use of this tool a facing to be ground is engaged with a tip 7 which is inserted within the socket 2 of the jaw 1 and the cushion carrying clamping jaw 10 is then closed upon said facing, the rubber cushioning member thereof automatically adjusting itself to the contour of the facing to be clamped, the operator holding the jaws in operative position between his fingers and the facing may be then conveniently ground.

In the form shown in Fig. 7, the jaw 1^a is provided at its free end with tooth receiving means here shown in the form of a longitudinally extending slot 17 and an aperture 18 into which the pins B′ on the tooth A′ shown in Fig. 8 are adapted to extend and thereby hold said tooth in position to be clamped by the opposing jaw 10^a at the free end of which is mounted a gripping element constructed similarly to that shown on the other figures with the exception that the cushioning member is omitted and the tooth is gripped between the two metal plates. The mounting of this partially rotatable member 18 is slightly different from that shown in the other figures the socket 11^a being provided at its outer end with a longitudinally extending finger 19 and the front end of the pin or shank 15^a is enlarged as shown at 20 and the inner end of said enlargement is recessed as shown at 21 to receive the finger 19 which engages the opposite ends of said recess and limits the rotary movement of the clamping element 18.

While I have described my invention with more or less minuteness as regards details and as being embodied in certain precise forms, I do not desire to be limited thereto unduly any more than is pointed out in the claims. On the contrary, I contemplate all proper changes in form, construction and arrangement, the omission of immaterial elements and substitution of equivalents as circumstances may suggest or render expedient.

I claim as my invention:

1. An instrument for holding artificial teeth comprising coöperating jaws, one of said jaws having an automatically adjustable tooth gripping member and the other jaw having means for detachable connection with a tooth.

2. An instrument for holding artificial teeth comprising coöperating jaws, an oscillating tooth engaging member mounted on one of said jaws, said jaw and member one having a socket and the other a shank adapted to fit in said socket, said socket having a slot therein, and a pin extending laterally from said shank and projecting through said slot to limit the turning movement of the shank in opposite directions.

3. An instrument for holding artificial teeth comprising coöperating jaws, one of said jaws having a socket, and a tooth carrying tip removably mounted in said socket, said tip having means for frictionally engaging the wall of said socket to hold it in operative position.

4. An instrument for holding artificial teeth comprising coöperating jaws, one of said jaws having a tooth carrying tip removably mounted thereon, a swiveled plate mounted on said tip and having a tooth engaging member.

5. An instrument for holding artificial teeth comprising coöperating jaws, one of said jaws having a socket, a plate having means for frictionally engaging said socket to hold it in operative position, shoulders near the opposite end of said plate for limiting its insertion within the socket, a plate swiveled on said plate beyond said shoulders and having thereon a tooth engaging element.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FRANK W. WALLACE.

Witnesses:
L. M THOMAS,
S. R. MCWHORTER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."