

1,059,508.

J. A. WATT.  
TOOTH BRUSH.  
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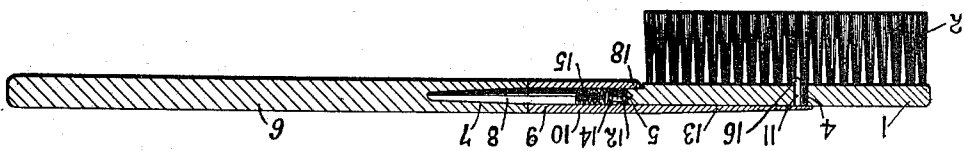


Fig. 1.

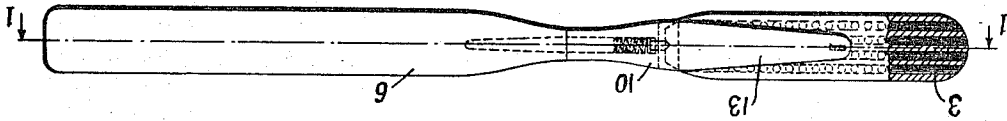


Fig. 2.

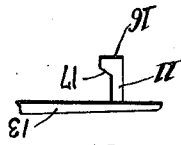


Fig. 3.

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# UNITED STATES PATENT OFFICE.

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## TOOTH-BRUSH.

1,059,508.

Specification of Letters Patent.

Patented Apr. 22, 1913.

Application filed August 2, 1912. Serial No. 712,846.

*To all whom it may concern:*

Be it known that I, JAMES A. WATT, a subject of the King of England, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Tooth-Brushes, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it ap-  
10 pertains to make and use the same.

This invention relates to brushes, and with respect to its more specific features, to brushes adapted to enter the mouth, such as tooth-brushes.

15 One of the objects of the invention is the provision of a simple and practical device of the character described and wherein the brush member may be readily connected to, and disconnected from, the brush-holding or  
20 handle member.

Another object of the invention is the provision of a practical device of the character described admitting of the connecting and disconnecting of the brush and handle  
25 while preserving the continuous smooth character of the part adapted to enter the mouth.

Another object of the invention is the provision of an efficient device of the character referred to and wherein the brush member and the handle may be automatically interlocked by the use of simple devices.

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

35 The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the applica-  
40 tion of which will be indicated in the following claims.

In the accompanying drawings, illustrating the preferred embodiment of the invention, and wherein similar reference characters refer to similar parts throughout the  
45 several views of the drawings,—Figure 1 is a central longitudinal section through the brush and holder, on line 1—1, Fig. 2; Fig. 2 is a plan view looking at the back of the  
50 implement; and Fig. 3 is a detail showing one of the retaining jaws.

Referring now more specifically to the drawings, the brush member comprises an elongated bristle support or back 1, to which  
55 the bristles 2 are attached in any efficient

manner, preferably having portions threaded through longitudinal slots 3. Preferably the back 1 is of substantially stiff material, such as celluloid or bone, and intermediate of its longitudinal extent the back is provided  
60 with a clamp seat, in the present instance provided by a slot or perforation 4 through the back of the brush. Preferably this perforation is between the slots 3 and of such a size as to clear said slots. The end of the  
65 back 1 is provided with a clamp-engaging portion, preferably a concavity 5, for a purpose hereinafter described.

The brush-holding member comprises a handle 6 of any suitable material, having  
70 a slot 7 in one end into which is driven and cemented one end of a cylindrical connecting pin 8, the other end of said pin being soldered in a tubular portion 9 of a preferably  
75 metallic member 10 forming an extension of said handle. It will, of course, be understood that the handle 6 and member 10 may be connected in any other efficient manner.

The member 10 is provided with spaced clamping jaws 11 and 12, between which the  
80 brush member is removably held, the extension 13 of the member 10 serving to support and connect said jaws, and with them forming a seat for the brush member. The jaw  
85 12 preferably comprises a pin adapted to move back and forth in the tubular portion 9, being provided with a shoulder 14 to limit its outward movement, a spring 15 being  
90 interposed between the end of said jaw pin and the pin 8 and operating to yieldingly maintain the jaw 12 or end of the pin in its  
outer position but permitting said jaw to be thrust inwardly against the resistance of  
said spring.

The jaw 11 is preferably fixed to the ex-  
95 tension 13 and projects at an angle thereto, and in the present embodiment is of such a size as to pass through the perforation 4 in the back of the brush member. And the jaw 11 is enlarged toward its outer end,  
100 preferably by the provision of a lug 16 projecting toward the jaw 12 providing a catch member adapted to engage the lower surface of the back 1, said lug being provided  
105 with an inclined surface 17, tending, when the brush is pressed thereagainst by the jaw 12, to seat the brush back against the extension 13. Preferably, the extension or connection 13 is rigid, forming, in effect, a tension or brace member connecting the jaw 11  
110

with the member carrying the jaw 12. In applying the brush member to the handle, the back 1 is applied against the jaw 12, which latter has preferably a conical end, said end being adapted to seat in the concavity 5 of the back. The brush member is then pressed toward the handle, causing the jaw 12 to recede against the resistance of the spring 15, whereupon the opening 4 will register with the end of the fixed jaw 11, which latter may then be passed through said opening. The strength of the resilient member or spring 15 is sufficient to maintain the brush member in contact with the jaw 11 under such strains as may be encountered in use, the lug 16 positively preventing the brush member from being withdrawn from the jaw 11 without compressing the spring 15 and the inclined surface 17 causing the brush back to be firmly seated against the brace 13.

Inasmuch as a tooth-brush necessarily contacts with the delicate surfaces of the mouth and lips, it is highly important that a smooth and regular surface be preserved throughout the brush; a surface free from roughness and abrupt projecting portions. In the present embodiment, the member 13 extends exteriorly and longitudinally of the back 1 from one end thereof, and terminates intermediate the ends of the back and preferably at such a point that its end does not enter the mouth at all when the front teeth are being cleaned. The member 13 is made as thin as will comport with proper strength, so that it adds very little to the thickness of the brush, and in the present embodiment its outer surface is transversely rounded and smoothly merges into the upper surface of the back 1. The member 13 is preferably narrower than the width of the brush so as not to encroach upon the smooth, preferably straight lateral edges of the brush back, the lateral edges of said member 13 being within, and spaced from, the lateral edges of the brush back. When the brush is retained between the jaws in the manner before explained, lateral movement of the brush in the plane of the back is resisted by the jaw 11 and the interlocking of the jaw pin 12 with the concavity 5, and rocking movement on a longitudinal axis is substantially prevented by means of a lip 18 extending from the member 10 over the end of the brush back. The lip 18 also forms a guide which assists in the assembly of the brush and handle.

By the above-described construction it will be noted that it is a simple matter to assemble and disassemble the brush and the brush-holder, and that in connecting the members no manipulation of the parts is required other than the mere pressing back of the jaw 12 in the operation of applying the brush member. When the brush mem-

ber is attached to the handle member it is held by the clamping jaws, and in order to detach the members the brush member may be moved toward the jaw 12 substantially in the line of the direction of pressure, or clamping axis, whereupon it may be readily withdrawn, the opening 4 being of such a size relatively to the jaw 11 as to permit such movement. The brush member once being seated in the position for use, is automatically locked in said position by the resilient jaw, no further manipulation being required, the parts being so designed as to accurately fit and make close connection with each other. The members may be readily separated by exerting longitudinal pressure upon the end of the brush.

It will be further observed that by the above-described construction a removable brush member and holder are provided wherein a simple character of the brush member is preserved. Merely by the provision of a jaw seat or opening intermediate the ends of the back of the brush, an efficient and secure fastening device is provided. Thus, by the above-described construction is accomplished, among others, the objects hereinbefore stated.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention, which, as a matter of language, might be said to fall therebetween.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a device of the character described, in combination, a handle member comprising clamping jaws, a brush member comprising a clamp seat intermediate its ends adapted to be engaged by one of said jaws, and means permitting relative movement between said members in the line of the clamping axis, whereby said members may be attached or detached.

2. In a device of the character described, in combination, a handle member comprising clamping jaws, a brush member comprising a clamp seat intermediate its ends and sides adapted to be engaged by one of said jaws, and means permitting relative movement between said members in the line of the clamping axis, whereby said members may be attached or detached.

3. In a device of the character described, in combination, a handle member comprising clamping jaws which resiliently cooperate, and a detachable brush member comprising a back having an opening of a size adapted to receive one of said jaws and permit movement of the jaw in the line of the clamping axis.

4. In a device of the character described, in combination, a handle member comprising fixed and movable cooperative clamping jaws, and a detachable brush member comprising a back having an opening intermediate its ends adapted to engage the fixed jaw, said opening being of a size to permit movement of the brush member relative to said jaw in the line of the clamping axis and said fixed jaw having a catch adapted to restrain movement of the brush member away from the handle member.

5. In a device of the character described, in combination, a handle member comprising a brace, clamping jaws carried by the brace, means adapted to relatively move the jaws to brush member retaining position, a

brush member adapted to be removably retained by said jaws and comprising a back the lateral edges of which are spaced from the sides of the brace, said back having a clamp seat intermediate its ends adapted to be engaged by one of the clamping jaws.

6. In a device of the character described, in combination, a handle member comprising a fixed clamping jaw projecting at an angle to the longitudinal extent of the handle, a second clamping jaw, resilient means adapted to press the second jaw toward the first, and a brush member adapted to be removably retained by said jaws comprising a back having an opening intermediate its ends adapted to engage the fixed jaw, and a concavity in its end face adapted to be engaged by the second jaw.

In testimony whereof I affix my signature, in the presence of two witnesses.

JAMES A. WATT.

Witnesses:

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