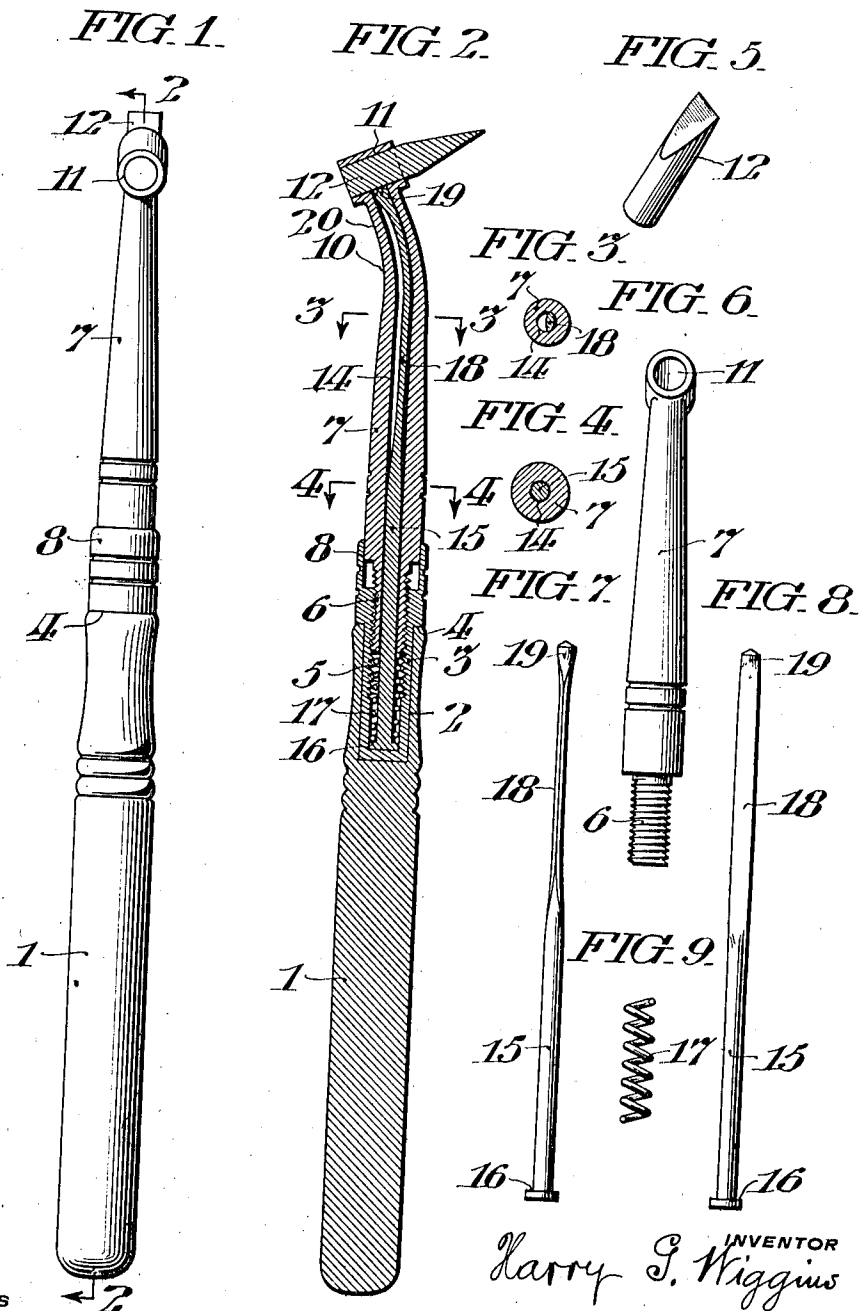


1,039,235.

Patented Sept. 24, 1912.



WITNESSES

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PORTE-POLISHER.

1,039,235.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HARRY G. WIGGINS, a citizen of the United States, residing in the city and county of Denver, State of Colorado, have invented certain new and useful Improvements in Porte-Polishers, of which the following is a specification.

My invention relates to improvements in porte-polishers and it has for its object broadly to provide an improvement in the means for detachably securing in proper position an operative element such as a wooden cleansing and polishing member of a polisher.

A further and more specific object of my invention is to provide a practicable means for detachably securing an operative element, as specified, to the handle or holder of the polisher, the forward end of which terminates in what is known in the art of dentistry as a "contra-angle."

One form of a convenient embodiment of my invention is illustrated in the accompanying drawings, but it is to be understood that changes in the details of construction and in the form and arrangement of the parts may be made within the scope of the claims without departing from the same.

In the said drawings:—Figure 1 is a rear elevation of a porte-polisher embodying my invention; Fig. 2 is a longitudinal section taken on the line 2—2 of Fig. 1; Fig. 3 is a transverse sectional view on the line 3—3 of Fig. 2; Fig. 4 is a transverse sectional view on the line 4—4 of Fig. 2; Fig. 5 is a perspective view of the polishing or cleansing element; Fig. 6 is a front view of a member of a polisher with the polishing or cleansing element removed therefrom; Fig. 7 is a view of a plunger employed for holding the polishing or cleansing element in its socket; Fig. 8 is a view of the plunger taken at right angles to the view shown in Fig. 7; and Fig. 9 is a view of a coiled spring employed for withdrawing the plunger from contact with the polishing and cleansing element.

Having reference to the drawing, 1 designates the handle section or member of the polisher which may consist of any suitable material. The upper or forward end of the handle section or member 1 is provided with a relatively deep axial hole or opening 2 in which is fitted or secured the reduced end of a thimble 3. The said thim-

ble is provided with a shoulder 4 which fits against the forward end of the handle section or member 1 surrounding the hole or opening 2 therein. The diameter of the thimble 3 is substantially the same as the adjacent portion of the handle section or member 1 so that the outer surface thereof constitutes practically a continuation of the surface of the said handle section. The thimble is internally screw-threaded as indicated at 5 for the reception of the reduced screw-threaded end portion 6 of the tubular section or member 7 of the polisher.

In order to insure a neat appearing joint between the thimble 3 and the tubular section 7 when the reduced end portion 6 of the latter is secured into the thimble, I have provided the thimble with a circular extension or flange 8 which extends beyond the body portion of the thimble and surrounds the adjacent body portion of the tubular section 7. By reason of the presence of the said flange-like extension 8 the depth to which the section 7 may be screwed into the thimble 3 may be varied without affecting the neat appearance of the joint between the handle section 1 and the tubular section 7.

The tubular section or member 7 is angular or is bent or curved as indicated at 10 so that its forward portion 20 extends angularly with respect to its main portion. The head 11 on the extremity of the tubular section 7 is disposed angularly with respect to said section. As illustrated, the head extends in a line at right angles to the forward portion 20 of the said tubular section. By this means the working end of the operative element 12, secured in the socket in said head, is brought nearer to the longitudinal axis of the implement than would be the case were the tubular portion straight throughout its length instead of being bent or angular as illustrated. Such a construction affords superior control of the operative element and also increases its range of operation. This combination of angles, known in dentistry as the "contra-angle", has been applied to other forms of dental appliances with marked success.

The operative element, in the construction shown, consists of a wooden wedge which is adapted for removing deposits of various kinds from the teeth and is particularly well adapted for removing deposits which may have formed between adjacent teeth; but it

may consist of any other operative element suitable for use upon the teeth or for a similar purpose and may be of metal instead of wood.

5 The bore or opening 14 of the tubular section or member 7 extends throughout the length of the latter and terminates at its forward end in the socket of the head 11. For the purpose of securing and holding
10 the operative element 12 in the said socket I have provided a plunger in the said bore or opening the basal end of which is seated upon or against the bottom of the thimble 3. The said basal end of the plunger 15 is held against the bottom of the thimble 3 by
15 means of a coiled spring 17 which surrounds the plunger and one end of which rests against the shoulder 16 thereon and the other end of which rests against the end of the screw-threaded portion 6 of the said section or member 7. This arrangement is
20 clearly shown in Fig. 2 of the drawings.

By reason of the presence of the bend at the forward end of the tubular section or
25 member 7, it is clear that in order that a plunger may be inserted in the said tubular section or member for the purpose of contacting with and holding the operative element 12 in its socket, it is necessary that
30 such plunger shall be flexible, as indicated in Fig. 2 of the drawings. The plunger, as illustrated, is provided with a reduced flattened portion 18 by reason of the presence of which the forward portion thereof is
35 flexible so that as the same is inserted in the bore of the said tubular section or member 7 it bends laterally to conform to the angle or bend at 10 in the said section.

Although not necessary to the operation
40 of the plunger, I prefer that the same terminate at its forward end in what may be termed a head 19 which is adapted to contact with and hold the operative element 12 in its socket. While the flexible part 18 of
45 the plunger is illustrated as being flattened or oblong in cross section, it should be understood that the cross sectional contour of said part may be changed as desired without departing from my invention.

50 Although I have shown my invention as applied to a construction of polisher in which the forward part thereof terminates in a "contra-angle", it will be understood that the same is well adapted also for use in
55 connection with a construction in which the tubular section 7 may be straight. In such case it will, of course, be understood that it is unnecessary to provide the plunger 15 with the flexible portion 18.

60 When the thimble is partially unscrewed from the reduced screw-threaded end portion 6 of the tubular section 7, the expansion of the spring 17 causes withdrawal of the plunger 15 so that its forward end may
65 be moved to a position either in alinement

with or below the surface of the socket in the head 11. The operative element 12 may be then removed, if its removal be desired.

The operative element 12 or any similar element is secured and held in position by turning the thimble 3 to the right so as to screw it forwardly upon the screw-threaded portion 6 of the section 7 and thus cause forward movement of the plunger 15 against the said element, such movement being in opposition to the expansive force of the spring 17.

It will be understood that the form of the socket in the head 11 may be changed as desired to adapt it for the reception of operative or working elements of shapes other than that shown.

Having thus described my invention, I claim:—

1. A porte-polisher comprising a tubular section or member having a socket at its forward end for the reception of an operative element, a plunger in said tubular section for engaging and holding the said operative element in said socket, means at the opposite end of the said tubular section from said socket for causing movement of the said plunger to project its forward end into said socket for engaging the said operative element, and a device controlled by said means for causing movement of the said plunger in the opposite direction.

2. A porte-polisher comprising a tubular section having at its forward end a socket for the reception of an operative element, the bore of the said tubular section terminating in the said socket, a plunger in said tubular section for engaging and holding the operative element in said socket, means for causing movement of the said plunger to project its forward end into the said socket for engaging the said operative element, and a device controlled by said means for causing movement automatically of the said plunger in a direction away from the said socket.

3. A porte-polisher comprising a tubular section having at its forward end a head provided with a socket for the reception of an operative element, a section having adjustable connection with the end of said tubular section opposite the said head, the said second-named section having an opening in alinement with the said tubular section, a plunger in the said tubular section for engaging and holding the operative element in said socket, the basal end of the said plunger being seated against the bottom of the opening in the said second-named section, movement of the said plunger into and from the said socket being caused by the relative adjustment of the said sections.

4. A porte-polisher comprising a tubular section having a head at its forward end provided with a socket for the reception of

an operative element, the bore of said tubular section terminating in the said socket, and the end portion of the said tubular section opposite the said head being screw-threaded, a member having an internally screw-threaded opening in engagement with the said screw-threaded end portion, a plunger in the said tubular section, the basal end of which rests against the bottom of the internally screw-threaded opening of the said member, the said plunger being moved forward to project the forward end into the said socket when the said member is screwed upon the said tubular section, and a spring acting to move the said plunger in the opposite direction when the said member is unscrewed from the said tubular section.

5. A porte-polisher comprising a curved or angular tubular section having an angu-

larly disposed head or member at its outer extremity, said head or member having a socket for the reception of an operative element, a handle section having adjustable connection with said tubular section, a plunger in said tubular section having a flexible portion, means controlled by said handle section for causing the forward end of said plunger to enter the socket, and means also controlled by said handle section for withdrawing said plunger from said socket.

In testimony that I claim the foregoing as my invention, I have hereunto signed my name this 20th day of March, A. D. 1912.

HARRY G. WIGGINS.

In the presence of—

JOHN M. REID,
FRANK H. MASON.