

No. 864,569.

PATENTED AUG. 27, 1907.

G. H. SHANNON.
DENTAL PLUGGER.
APPLICATION FILED NOV. 23, 1906.

Fig. 1.

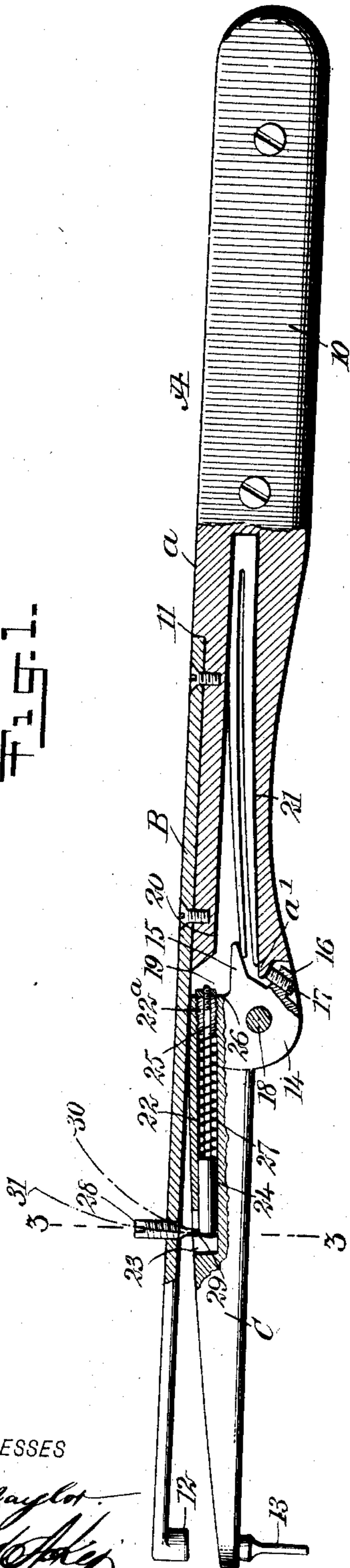


Fig. 3.

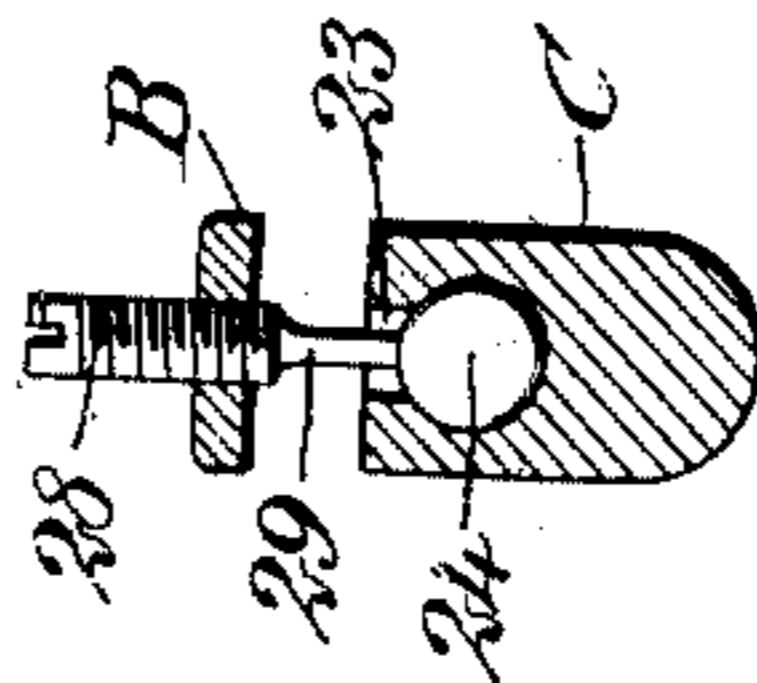
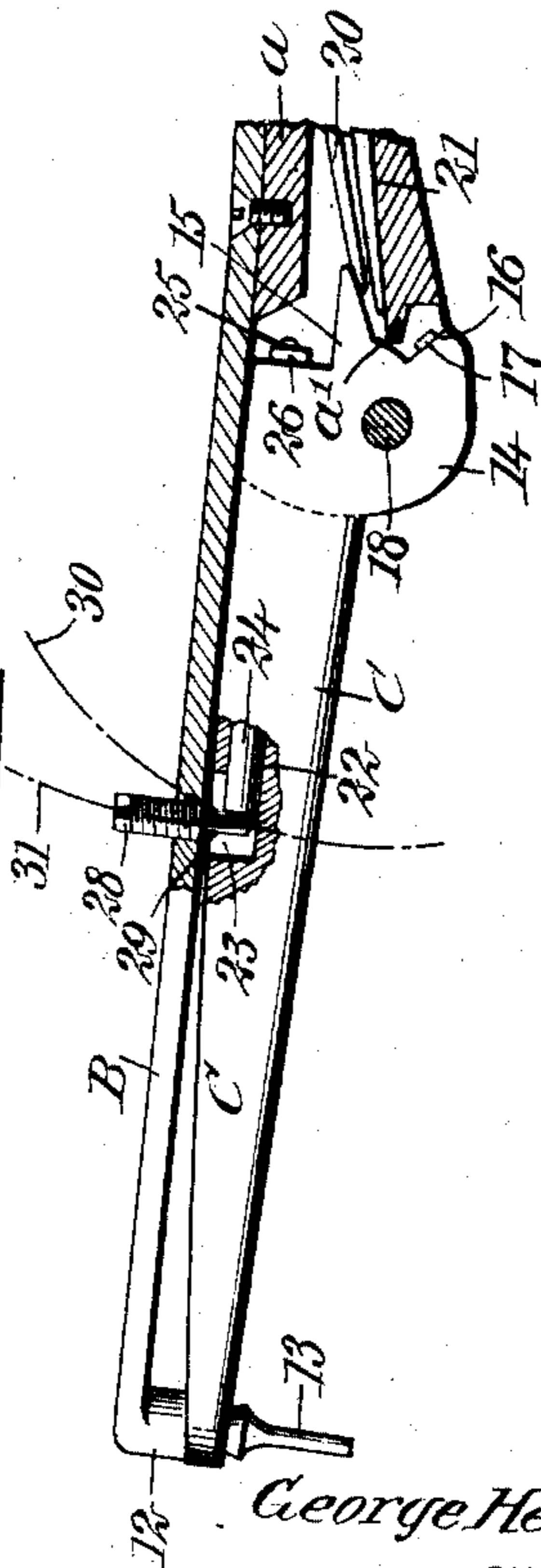


Fig. 2.



WITNESSES

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DENTAL PLUGGER.

No. 864,569.

Specification of Letters Patent.

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Application filed November 23, 1906. Serial No. 344,718.

To all whom it may concern:

Be it known that I, GEORGE H. SHANNON, a citizen of the United States, and a resident of Cambridge, in the county of Washington and State of New York, have invented a new and Improved Dental Plugger, of which the following is a full, clear, and exact description.

The purpose of the invention is to provide a dental plugger having an exterior surface free from projections, and in which all of the operative mechanism is so far removed from the mallet section and is in such angular relation thereto as to be well without the mouth of the patient being operated upon, thus rendering it possible with this instrument to reach cavities in the teeth, which by reason of the confined or limited space in the mouth and the close approximation of the jaws have heretofore been more or less inaccessible.

A further purpose of the invention is to provide means for regulating the stroke of the mallet, which means are conveniently accessible and are capable of expeditious manipulation.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of the improved mallet, the parts being in position for action; Fig. 2 is a sectional side elevation of a portion of the improved mallet, said mallet being shown as having struck the point of the instrument; and Fig. 3 is a transverse section taken substantially on the line 3—3 of Fig. 1.

The handle section A of the device is made elongated and exteriorly smooth and is provided with a detachable member 10. In general contour the handle is shaped so that it can be conveniently and restfully grasped, its forward end being more or less rounded off and enlarged, and the upper edge of the said handle at its forward end is provided with a longitudinal recess 11, adapted to receive the rear end portion of a spring member B, which is firmly attached to the handle at its said recessed portion. The spring member B is in the form of a straight flat bar at whose outer end a mallet 12 is formed.

The anvil section C of the instrument consists of an arm whose upper face is tapering, rendering said arm widest at its rear or inner end, and by preference the under face of the said anvil arm C is straight and is rounded off at its edges. At the forward or outer end of the anvil arm C provision is made for the removable reception of a point 13, which by the action of the mallet 12 impelled by the spring B is driven against

the filling of a tooth to tamp the same. The inner or rear end of the anvil arm C is provided with a segmental knuckle extension 14 from its under edge, and a spur 15 extends from the inner edge of said anvil arm about midway between the upper and the lower edges of the said arm as is shown in Figs. 1 and 2; and below the said spur 15 the said knuckle extension 14 is more or less cut away to form a smooth inclined surface 16 through which the adjusting screw 17 is passed, accessible from the bottom portion of the instrument.

The knuckle extension 14 of the anvil arm C is pivoted in the forward end of the handle section A by means of a suitable pivot pin or bolt 18, the body portion *a* of the said handle section having a recess 19 therein for such extension. The recess 19 is so shaped as to provide an offset *a'* from the lower portion of its rear wall, which offset has an inclined under face, against which the adjusting screw 17 has bearing. By moving the screw 17 upward the distance between the point 13 and the mallet is increased, providing for a heavy blow of the mallet, while by moving the screw 17 downward, the distance between the mallet and the point 13 is decreased and the force of the blow of the mallet is proportionately lessened.

A longitudinal recess 20 is made in the body portion *a* of the handle section A, the said recess 20 connecting with the recess 19; and in said recess 20 a spring 21 is secured, or is stationarily held, said spring being preferably a V-spring; and the spur 15 of the angle extension 14 of the anvil arm C bears downward upon the upper member of the said spring as is shown in Figs. 1 and 2. When the point 13 is pressed against a surface, a filling for example, the spring 21 is placed under tension, and when the pressure on the point is discontinued the spring 21 returns the anvil arm C and point 13 to normal position. It may be here stated that the set screw 17 in addition to its other functions also acts to limit or extend at will the action of the spring 21, thus regulating the distance between the extreme point of the member 13 and the top of the mallet 12, thereby making it possible at all times to keep the working radius of the instrument at a minimum to suit the available space in the mouth.

A longitudinal channel 22 is made in the anvil arm C above its pivot 18 and parallel with its upper inclined surface. This channel extends from a point at or near the center of the anvil arm through its inner end, being provided at the latter point preferably with a bushing 22^a, and the said channel 22 at its forward or outer end extends through the upper inclined edge of the anvil arm C as is shown at 23 in the drawings.

An adjusting bolt 24 is mounted to slide in the channel 22 at its forward open portion 23, and a rod 25 from the said bolt is loosely passed the length of the channel 22 out through the bushing 22^a. Within the channel

22 the rod 25 extending from the bolt 24 is surrounded by a spring 27, bearing against the said bolt and bushing, as is shown in Fig. 1; and a nut 26 is located upon the outer end of the rod 25, which outer end is threaded, 5 as is also shown in Fig. 1.

An adjusting screw 28 is passed through the bar or arm B carrying the mallet 12, at a point about centrally between the outer or forward end of said arm or bar and the forward end of the handle section A. This 10 adjusting screw 28 is provided with a pointed or tapering lower end 29, that extends down through the opening 23 leading into the channel 22 to a bearing against the spring controlled bolt 24. The movement of the mallet-carrying arm B with reference to the anvil 15 arm C is on the radius indicated by the dotted lines 31 in Figs. 1 and 2 of the drawings; the movement of the bolt 24 relatively to the screw 28 is on the arc of a circle indicated by the dotted lines 30 in said figures the center of which is the pivot 18 for the anvil arm. The 20 force of the blows of the mallet upon the anvil arm C is regulated primarily by the adjustment of the bolt 24. If the bolt 24 is adjusted rearward, the force of the blow of the mallet will be proportionately weak, whereas, if the bolt 24 is adjusted forward, the force of the blow 25 of the mallet will be proportionately strong.

The purpose of the nut 26 above referred to is to limit as may be desired, the distance to which the bolt 24 may project under the point 29 of the adjusting screw 28, thus in fact, making the radius of the circle 30 30 (whose center is the pivot 18) changeable at will, and so, by reason of the point 29 of the adjusting screw 28 having to pass through a greater or less radius, before being released and allowed to pass the bolt 24, the tension of the spring B being controlled, thus determining the force of the blow delivered by the mallet 12. 35

It may be here remarked that the forward end of the bolt 24 is more or less rounded off, so that the point 29 of the adjusting screw 28 can readily pass by it.

In operation, the parts of the instrument being in the 40 position shown in Fig. 1, if the point 13 is pressed down against an object, the anvil arm C carrying the said point will be moved upward on its pivot 18; and at the same time, by reason of the point 29 of the adjusting screw 28 affixed to the spring B, being in contact with 45 the bolt 24 of the anvil arm C the spring B is placed under a tension. When the point 29 of the adjusting screw 28 reaches the end of the bolt 24, the point 29, of

the said screw 28 will be forced down by the spring B, into the outer section 23 of the channel 22 and the mallet 12, will strike the anvil arm above the point 13 50 with greater or lesser force according to the adjustment of the bolt 24.

Having thus described my invention I claim as new and desire to secure by Letters Patent:—

1. In a dental plugger, a handle, a spring arm secured 55 to the handle, extending beyond the same, a mallet at the outer end of the spring arm, a tension-controlled anvil arm located below the extending portion of the mallet carrying arm, both arms being free to operate, and both arms being unincased, a plugger point for the anvil arm, and an an- 60 justing device for regulating the throw of the mallet arm.

2. In a dental plugger, a handle, a spring arm secured to the handle and extending beyond the same, a mallet at the other end of said spring arm, a tension-controlled anvil 65 arm located below the mallet carrying arm, a plugger point for the anvil arm and controlled mechanism for the anvil arm and mallet carrying arm located within the handle and partially in said arms at the rear of the mallet, thereby providing a skeleton construction for entering the 70 mouth.

3. In a dental instrument, a handle, a straight spring arm secured to the upper edge of the handle, extending forwardly therefrom, a mallet at the outer end of said spring arm, an anvil arm pivoted to the forward end of the handle below the arm carrying the mallet, the upper 75 edge of the said anvil arm being tapering, a plugger point secured to the forward end of the anvil arm below the mallet, a tension-controlled bolt adjustable in the anvil arm, and a screw adjustable in the mallet-carrying arm, which screw is adapted to normally engage with the said 80 bolt and in action to pass by the same.

4. In dental instruments, the combination with a handle, a straight spring arm secured to the upper edge of the handle, extending parallel with the same, and a mallet at the outer end of said arm, of a spring-controlled anvil arm 85 pivoted to the forward end of the handle below the mallet-carrying arm, the anvil arm having an inclined upper edge, said arm being narrowest at its forward end, a plugger point located at the forward end of the anvil arm below the said mallet, the anvil arm being provided with a 90 channel parallel with its inclined edge, a spring-controlled bolt adjustable in said channel, and an adjusting screw located in the mallet carrying arm, which screw normally engages with the said spring-controlled bolt and in the operation of the instrument passes said bolt to permit the 95 mallet to strike the anvil arm with more or less force.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE H. SHANNON.

Witnesses:

ALFRED G. HILL,
WM. ELDREDGE.