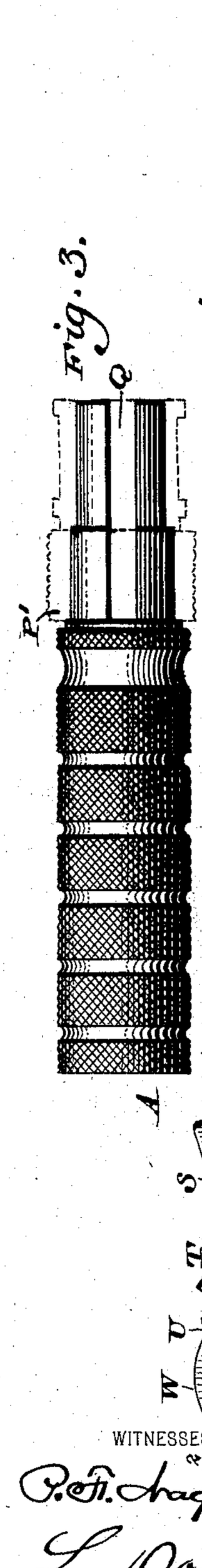
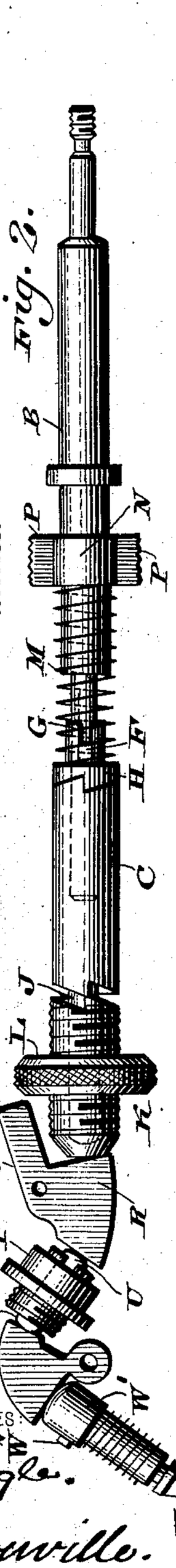
(No Model.)

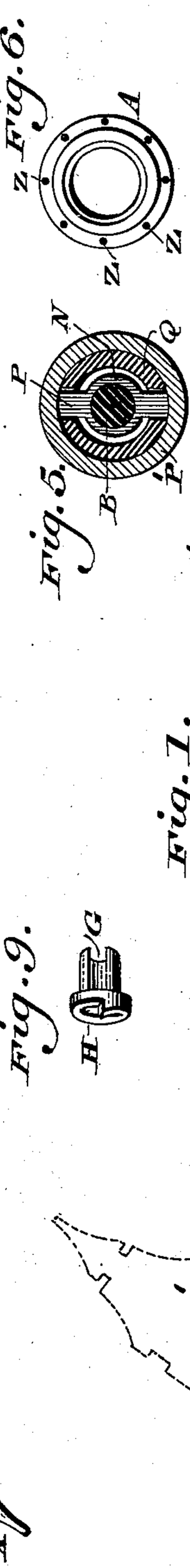
F. S. AVIL.

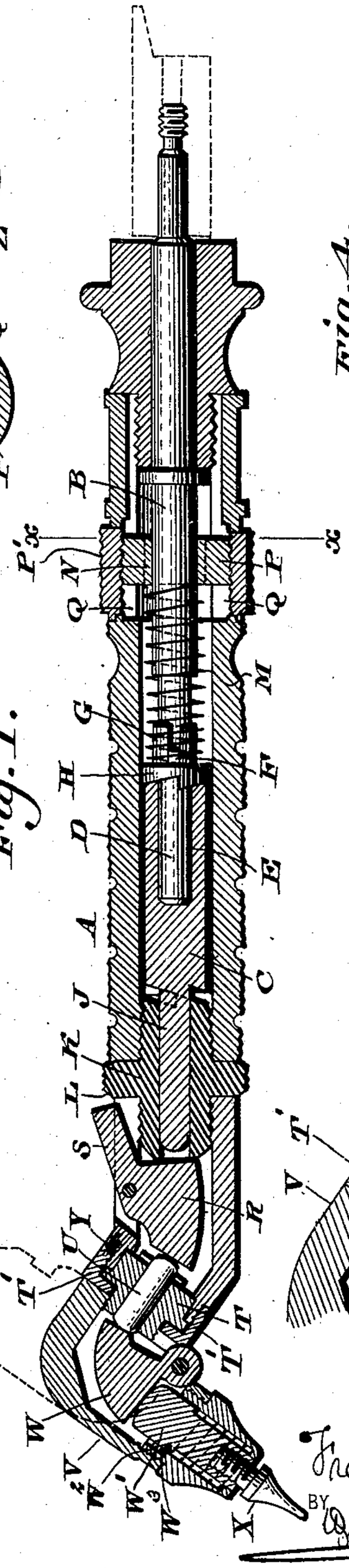
DENTAL PLUGGER.

No. 605,171. Patented June 7, 1898.









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DENTAL PLUGGER.

SPECIFICATION forming part of Letters Patent No. 605,171, dated June 7, 1898.

Application filed November 10, 1897. Serial No. 657,992. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS S. AVIL, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Dental Mallets, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists in adapting a dental mallet to be adjusted in different positions of a circle around the casing or handpiece without necessarily turning or moving the latter or affecting the power which operates the mallet.

Figure 1 represents a longitudinal section of a dental mallet embodying my invention. Fig. 2 represents a side elevation of the parts of the same removed from the casing or handpiece. Fig. 3 represents a side elevation of the casing thereof. Fig. 4 represents a side elevation of portion of the spindle of the device. Fig. 5 represents a transverse section on line *x x*, Fig. 1. Fig. 6 represents an end view of the casing. Fig. 7 represents a longitudinal section of a portion of the nose of the device and parts adjacent thereto on an enlarged scale. Fig. 8 represents a transverse section of a portion of the inner rim of the nose, a dog or catch therein, and the adjacent end of the casing, whereby said nose may be held in either of the positions to which it may be rotated. Fig. 9 represents a perspective view of a detached part.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings, A designates a casing within which is mounted the spindle B, to which power may be imparted in any suitable manner, said spindle being provided with the stem D, which freely enters the opening E in the plunger C. Projecting from the stem D is the stud F, which freely enters the bifurcation of the neck G of a collar H, which freely encircles said stem D, contiguous to the end of the plunger C, the opposite faces of said collar and plunger being helical, so as to interlock or couple the spindle and plunger when the spindle is rotated in one direction and permit said collar to slide on said stem when the spindle is rotated in the reverse direction. The plunger C has connected with it the stem J, which is thus capable of receiving both rotary and reciprocating movement when the device is operated, said stem J being guided in the stationary nut K, the latter being screwed into the casing A and having a milled rim L, which is accessible outside of said casing, so as to readily adjust said nut, it being noticed that the adjacent ends of the nut and plunger C are helical and shouldered, so that when said plunger has made its revolution it will drop from the shoulder on said nut. The plunger then receives an advance motion with the power of a blow by the action of the spring M, which encircles the inner end of the spindle B and the neck G of the collar H and bears at one end against said collar and at the other end against the sliding collar N, which freely encircles the spindle B and has wings P radiating therefrom, the same freely occupying the longitudinally-extending slots Q in the casing A, said wings being screw-threaded and engaged by the sleeve P′, which encircles the slotted portion of the casing and serves when rotated to move the collar N, and thereby adjust the tension of the spring and the force of the blow. When the spindle is rotated in reverse order and the collar H rides freely on the plunger, as has been stated, the plunger is held immovable, owing to the engagement of the shoulders of the helical faces of said plunger and coupling-nut.

The nut K, which is struck by the plunger C, acts as a stop for said section and limits the play thereof. Within the casing in front of the nut is the segmental plate R, which is mounted on said casing, and is provided with a thumb or finger piece S, which projects outside of the casing, it being noticed that said plate is in the path of motion of the stem of the plunger C and so is adapted to receive the blow of the latter.

T designates a collar which has a flange on its periphery, the same being freely engaged by the flanged rim T′, the latter being screwed to the front end of the casing, thus retaining said collar within said rim. To the forward end of said collar T is screwed the nose V, which may be rotated with said collar, said nose being of elbow form and containing the segmental plate W, which is pivotally connected with said nose and has one side in the path of motion of the pin U, which freely

occupies the bore or perforation of said collar T, so as to be advanced by the said pin, the side of said plate opposite to said pin being adapted to strike the head W′ of the plugger-point X of the device, said head being fitted within said nose and pressed inwardly by the action of a spring suitably applied.

In the inner edge of the rim T′ is the spring-pressed dog or catch Y, which is adapted to enter either of the openings Z in the edge of the casing A opposite to said rim, so as to lock the rim T′ and prevent improper rotation thereof as the nose is rotated.

The operation is as follows: The nose is turned on the casing so as to bring the point X to the desired position or degree in the circle said nose may turn. As the spindle is rotated the plunger C is drawn back and then dropped, it being noticed that said plunger slides on the stem D, but remains connected therewith, owing to the stud F and bifurcated neck G, in which said stud is adapted to play. As the plunger drops its stem J strikes the plate R and the latter strikes the pin U, and thus by means of the intervening segment or plate W the blow is imparted to the plugger-point, the effect of which is evident.

While the engine or motor is running the mallet may be rendered inoperative by pressing the thumb-piece S, whereby the segment R is removed from the adjacent end or stem of the plunger, so that the latter while receiving its reciprocating motion is prevented from striking said segment.

The end of the casing which forms the bearings of the nose is deflected, so that said nose presents the mallet proper or tool therein at an angle to the casing, and the angular position of the nose is preserved at any part of the circle which the nose may describe in its rotation on its casing.

Projecting from the head W′ of the plugger-point is a stud or lug W^2, which is adapted to enter the groove or recess W^3 on the inner face of the adjacent portion of the nose, whereby said head is prevented from rotation either while screwing the plugger-point to said head or during the operation of the mallet.

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

1. In a dental mallet, a casing, a perforated rotatable collar mounted in the outer end thereof, a nose-piece secured to said collar and rotatable therewith, a point or tool fitted to slide in said nose-piece, a sliding pin in said collar, means for freely connecting said collar with said casing, a plunger, and means for transmitting a blow from said plunger to said pin and consequently to said point.

2. In a dental mallet, a casing, a perforated rotatable collar mounted in the outer end thereof, a nose-piece secured to said collar and rotatable therewith, a point or tool fitted to slide in said nose-piece, a sliding pin in said collar, swinging plates at opposite ends of said pin in said nose and casing respectively, and a plunger, the latter being adapted to strike the plate in the casing.

3. In a dental mallet, a casing, a perforated rotatable collar mounted in the outer end thereof, a nose-piece secured to said collar and rotatable therewith, a point or tool fitted to slide in said nose, a sliding pin in said collar, a flanged rim secured to said casing, a plunger, and means for transmitting a blow from said plunger to said pin and from said pin to said point, said collar having a peripheral flange which is freely engaged by said flanged rim.

4. In a dental mallet, having a casing, a nose rotatively mounted thereon, and a movable pin fitted in said casing, swinging plates at opposite ends of said pin, one plate being mounted on said casing and the other plate being mounted on said nose, the plate on the casing being adapted to be engaged by the blow-delivery mechanism of the device, and furthermore adapted to be removed from the action of said mechanism.

5. In a dental mallet, a swinging plate mounted in the casing, adapted to be engaged by the blow-delivery mechanism, and to transmit the blow to the plugger-point or mallet proper, said plate having a finger-piece thereon, which may be engaged from outside of the casing to remove said plate from the action of said mechanism and avoid the impartation of a blow or blows to said point.

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