

C. F. TULLY.
DENTAL PLUGGER.
APPLICATION FILED JUNE 9, 1909.

944,115.

Patented Dec. 21, 1909.

FIG. 3.

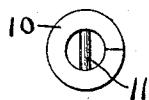


FIG. 2.

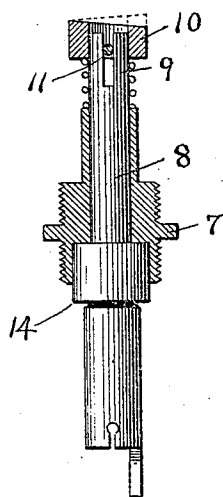


FIG. 1.

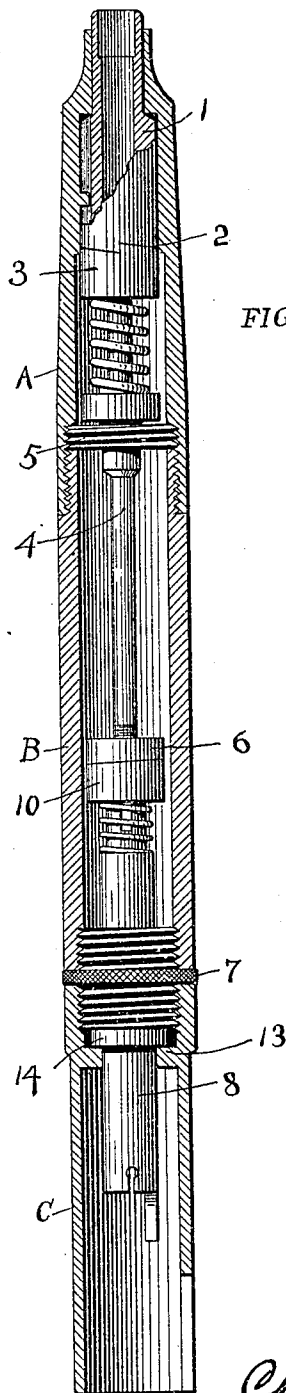
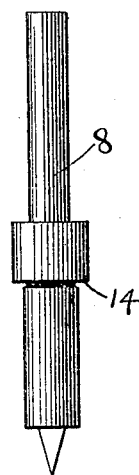


FIG. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

CHARLES FRED TULLY, OF MADERA, CALIFORNIA.

DENTAL PLUGGER.

944,115.

Specification of Letters Patent.

Patented Dec. 21, 1909.

Application filed June 9, 1909. Serial No. 501,034.

To all whom it may concern:

Be it known that I, CHARLES FRED TULLY, a citizen of the United States, residing at Madera, in the county of Madera and State of California, have invented certain new and useful Improvements in Dental Pluggers, of which the following is a specification.

My invention relates to an improvement in dental pluggers.

The object is to provide means whereby the motion or movement transmitted to the plugger will be stopped if for any reason the engine is reversed.

The great difficulty has been that if for any reason the engine should reverse while the tool was being used it would either cause the breaking of some of the parts of the tool or the band which drives the shaft which transmits the motion to the plugger. The shaft which has been used to great extent and which is rotated by the belt of the engine is adapted to transmit motion to the plugger by a clutch connection, the face of the clutch on the shaft being engaged by the clutch face on the plugger holder when the plugger is placed against the tooth or against the gold to be hammered into the tooth so that a connection is formed between the shaft and plugger holder which could not be broken upon the reversing of the engine without breaking the shaft or belt.

The object of my invention is to provide a secondary shaft which will have a clutch connection with the shaft which engages the plugger holder so that upon the reverse motion the secondary shaft will disengage itself from the main shaft and thereby prevent any breakage of the parts.

The invention consists of certain novel features of construction and combinations of parts which will be hereinafter described and pointed out in the claims.

In the accompanying drawings—Figure 1 is a view in longitudinal section of the invention; Fig. 2 is a side elevation of the secondary shaft showing the ratchet face 10 mounted thereon; Fig. 3 is an end view of the cam, and Fig. 4 is a view in side elevation of the secondary shaft.

A, B, and C represent three sections of the tubular casing which contain the movable parts and serve as an endpiece of the tool. In section A the plugger holder, 1, is keyed to slide therein and is provided at its inner end with a ratchet faced cam, 2, which is adapted to be engaged by the ratchet faced

cam 3 mounted on the shaft, 4. The cam, 3, is spring controlled, and the shaft, 4, is held in the casing, A, by a nut, 5, which is loosely mounted therein and which is adapted to engage the screw threads of the casing. The outer end of the shaft, 4, is provided with a ratchet faced cam, 6.

The section B is adapted to be connected to section A of the casing, and a bushing, 7, is screwed into the end of the casing B, and journaled in the bushing is an engine shaft or secondary shaft, 8, which is provided with a split end, 9, the other end having an attachment to be connected to the dental engine. A coil spring surrounds the engine shaft and rests against the bushing, 7. A ratchet faced cam 10 is mounted on the shaft, 8, and a pin 11, passing through the cam enters the split end of the shaft, 8, so that the cam is locked thereto, but is capable of being removed. The cam 10 is adapted to engage the cam 6 on the shaft 4, and thereby rotate the shaft as the tubular shaft is rotated by the engine causing the plugger holder to be operated. If the engine should be reversed for any reason the engine shaft 8 would be the first to receive the reverse motion. This would disengage the ratchet teeth of the cam 10 and cam 6, and as this cam 10 is movably mounted upon the shaft 8, the bevel surfaces of the two cams would not rock and therefore only shaft 8 would rotate, the shaft 4 remaining idle. By this connection there would be no danger of either the shaft 4 or the shaft 8 being broken by reversing the engine. Upon the forward motion of the engine the cams 10 and 6 will engage with each other and thereby impart rotary motion to the shaft 4, which imparts the desired motion to the plugger holder. The cam 10 being loosely mounted on the shaft 8 can be easily removed and a new cam substituted in case the cam being used becomes worn. In fact the cam 3 on the shaft 4 is capable of being removed as it is screwed upon the shaft 4 and a new cam can be easily substituted. Section C is now screwed onto the bushing 7 and the shoulder 13 in the section engages the shoulder 14 on the engine shaft 8 thereby locking the engine shaft in the bushing 7 and retaining the moving parts in operative relation with each other.

From the foregoing it will be seen that I have provided a very simple device for obtaining the results specified and consisting

of few parts which can be easily removed and assembled.

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

1. In a dental plugger, the combination with a casing, a plugger holder slidably mounted therein and having a cam on its inner end, of a shaft rotatably mounted in said casing, a cam on the shaft adapted to engage the cam of the plugger holder, a second cam on the shaft, an engine shaft journaled in the casing, and a cam loosely and removably mounted on the shaft adapted to engage the second cam of the first-named shaft.

2. In a dental plugger, the combination with a casing, a plugger holder slidably mounted therein and having a cam on its inner end, of a shaft rotatably mounted in said casing, a cam on the shaft adapted to engage the cam of the plugger holder, a second cam on the shaft, an engine shaft journaled in the casing having a split end, a spring-controlled cam loosely mounted on the engine shaft adapted to engage the sec-

ond cam of the first-named shaft, and means on the cam adapted to enter the split end of the engine shaft for connecting the cam to the shaft.

3. In a dental plugger, the combination with a casing made in sections, a plugger holder mounted in one section having a cam thereon, of a shaft mounted in said section having a cam adapted to engage the cam of the plugger holder, a second cam on the shaft, an engine shaft, a cam loosely mounted thereon adapted to engage the second cam of the first named shaft whereby a rotary motion is transmitted to the first named shaft upon the rotation of the engine shaft in one direction, said shaft having a shoulder thereon, and a section of the casing having a shoulder adapted to engage the shoulder of the engine shaft for holding the parts in operative relation to each other.

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

CHARLES FRED TULLY.

Witnesses:

D. E. K. BEEFELS,
G. J. HELY.