(No Model.)

J. R. JONES.

DENTAL PLUGGER.

No. 549,872. Patented Nov. 12, 1895.

Fig. 1.

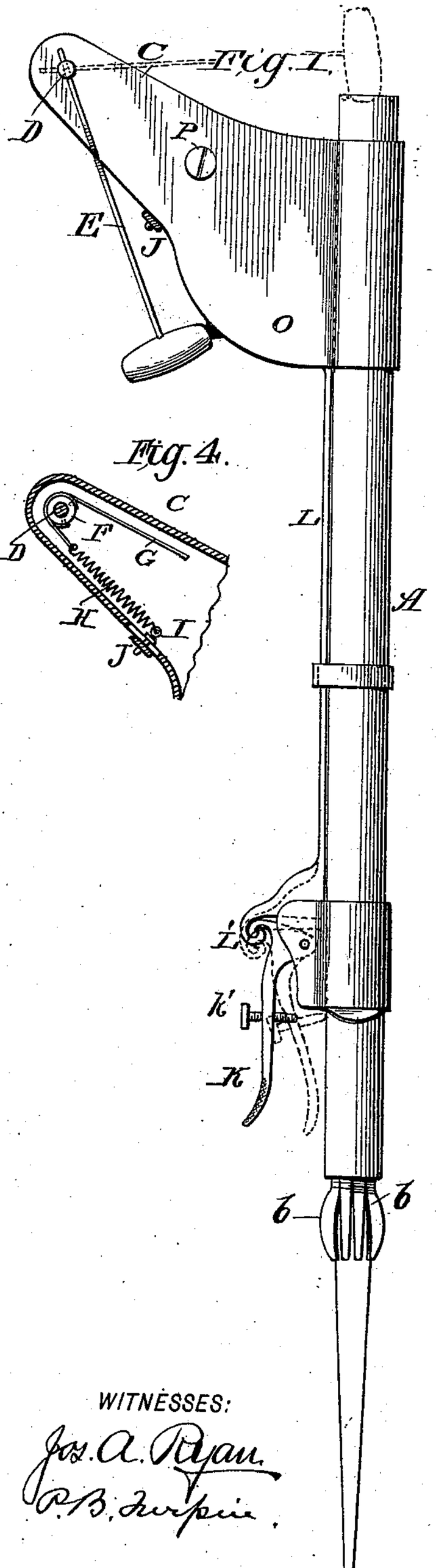

Fig. 2.

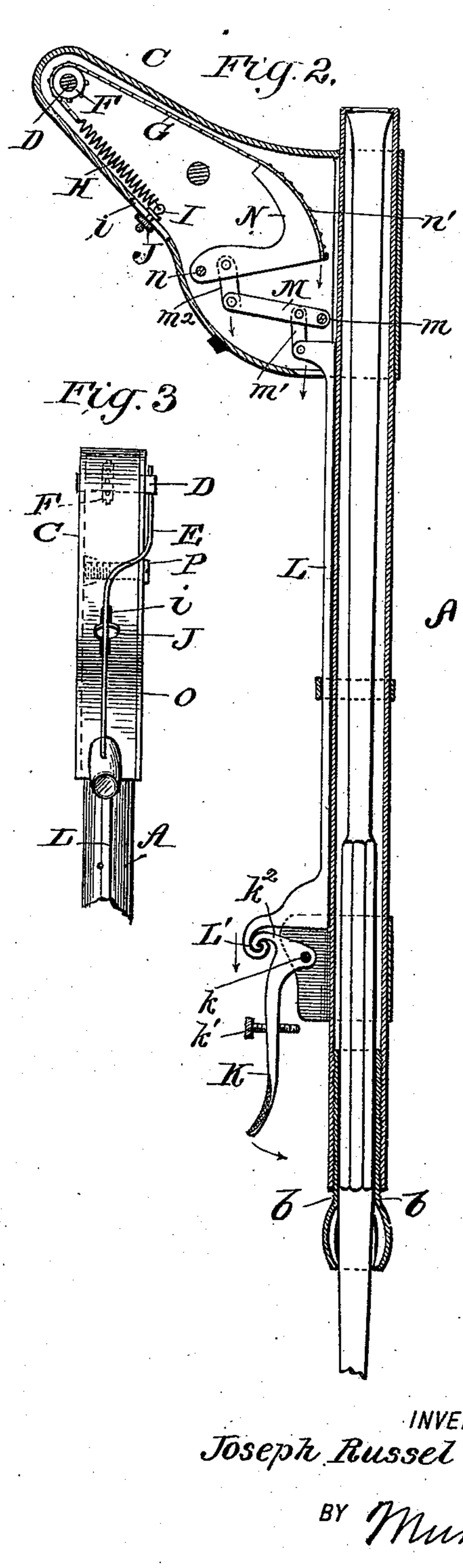

Fig. 3

Fig. 4.

WITNESSES:

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JOSEPH RUSSEL JONES, OF ONTONAGON, MICHIGAN, ASSIGNOR OF ONE-HALF TO WILLIAM W. WENDELL AND JAMES P. JORDAN, OF SAME PLACE.

DENTAL PLUGGER.

SPECIFICATION forming part of Letters Patent No. 549,872, dated November 12, 1895.

Application filed March 30, 1895. Serial No. 543,828. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH RUSSEL JONES, residing at Ontonagon, in the county of Ontonagon and State of Michigan, have invented a new and useful Improvement in Dental Pluggers, of which the following is a specification.

My invention is an improvement in dental pluggers, and particularly in the malleting-holders, whereby the operator may properly mallet the plugging-instrument in the operation of the improvement; and the present invention seeks to provide improvements in the holder-frame, whereby to fit the same to receive and grasp any of the usual forms of plugging-instruments; also, in the mechanism for supporting and manipulating the mallet, so that the operation thereof may be easily effected and controlled by the operator.

The invention consists in certain novel constructions, combinations, and arrangements of parts, as will be hereinafter described, and pointed out in the claims.

In the drawings, Figure 1 is a side view, and Fig. 2 is a longitudinal section, of my improved plugger. Fig. 3 is a detail edge view, and Fig. 4 shows a somewhat different connection between the operating chain or cord and the mallet-shaft.

The frame includes a tube-like holder A, having its upper end open and provided at such open end with inwardly-extended lugs, flanges, or other projections lapping over the upper end of the instrument and stopping the same from upward movement and leaving the head of the instrument exposed for the stroke of the mallet. At the lower end of the holder I provide a clamp for gripping the tool, formed, preferably, by slitting the end of the holder at *b*, which forms a spring-clamp, and threading the slitted portion in the main portion so it may be adjusted. By this construction the instrument may be firmly and positively secured in the holder in position to receive the stroke of the mallet.

Near the upper end of the holder I provide a lateral frame C, in the nature of a casing, supporting near its outer end the shaft D, supporting the mallet-handle E, and connected with the operating devices and the retracting-spring, preferably, in the manner shown. To this end I provide on the shaft D a sprocket-wheel F, over which passes a sprocket-chain G, which is connected to a spring H, which is held adjustably to the frame by means of a bracket or lug I, adjustable in a slot *i* in the frame and held in any suitable adjustment by a clamp J. This provides for adjusting the tension of the spring from time to time, as wear or circumstances may render necessary or desirable. Between the operating-lever K and the chain G, I provide intermediate devices, consisting, preferably, of the slide rod L, intermediate lever M, and chain or arc lever N, connected by link m^2 with the lever M, as shown.

The operating-lever is pivoted at *k* to lugs projecting from a sleeve encircling the holder A, has a set-screw *k'*, by which the movement of the lever may be limited, and at its upper end the operating-lever has an arm k^2, engaging a bearing L' on the lower end of the slide-rod L, so that as the hand-lever is pressed in against the holder it will pull the slide-rod down, the said slide being guided in keepers alongside the holder A. It is manifestly desirable that a slight movement of the operating-lever should accomplish a considerable throw of the mallet, not only because of the greater force given the mallet by such movement, but also because by a considerale throw of the hammer a delicacy in malleting can be accomplished, practically impossible with a limited movement of the mallet. In the construction shown the mallet moves through an arc approximately three-fourths of a circle, so that its stroke may be administered with great force, and it can be so swung as to deliver a light tapping stroke, the operation being entirely under the control of the operator.

In securing the long movement of mallet I provide between the operating-lever and the mallet the lever devices by which to secure the increase of movement desired, and in the special construction shown the intermediate lever M is pivoted at *m*, is connected by a link *m'* with the slide-rod L near its pivot *m*, and is connected by a link m^2 with the lever N near the pivot *n* of the latter. This lever N has a curved surface *n'*, along which the chain extends, and is secured at the lower end

of the curved edge, as shown, thus giving an evenness to the drag on the chain and tending to avoid any abruptness or jerkiness in the movement.

The frame C is open at one side and is provided with a cover-plate O for such side, which may be secured by a screw P, as shown.

The operation is simple, pressure on the finger-lever throwing the mallet from the full-line position shown in Fig. 1 to the dotted position shown in said figure, the dotted lines representing the mallet at the moment of delivering the blow, when it will strike the plugger and rebound slightly. The blow may be regulated by the screw-stop for the finger-lever, which will increase or reduce the rebound, and the lugs supporting the finger-lever form a firm bearing to be grasped by the operator. The blow given by the mallet is a sharp welding-blow, altogether different from a spring-blow, as the spring is simply used to retract the mallet, as in my improved plugger the operation and effect are similar to those produced by the hand-mallet and which requires the use of both hands or an assistant to do the malleting.

It will be seen that the improved plugger may be used as a hand-pressure instrument without requiring any changes or adjustments.

Any form of plugging instruments or points may be employed and may be fitted in the holder in any desired direction.

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

1. The combination in a dental plugger, of the mallet, the arc lever, the connection between said lever and the mallet, the intermediate lever connected with the arc lever, the finger lever, and connections between the finger lever and the intermediate lever substantially as set forth.

2. In a dental plugger the combination of the mallet, the arc lever, the flexible connection extending over the arc surface of the lever and connecting the latter with the mallet and devices by which to operate the arc lever substantially as set forth.

3. In a dental plugger the combination with the mallet and its shaft having a sprocket wheel of the chain engaging said wheel, the spring connected with one end of said chain and the operating device connected with the other end of the chain, substantially as set forth.

4. The combination in a dental plugger of the holder, the lateral frame at the upper end thereof, the mallet and lever devices supported in said frame and connected as described, the finger lever and the slide rod engaged by said finger lever and connected with the lever devices of the lateral frame substantially as set forth.

5. The improved dental plugger, comprising the holder having open upper end and provided at such end with an inwardly projected stop to limit the upward movement of the instrument and provided near its lower end with the clamp, the mallet having its shaft provided with a sprocket wheel, the chain engaging such wheel, a spring connected with one end of said chain, the arc lever connected with the other end of the chain, the intermediate lever, the finger lever and the slide rod all substantially as and for the purposes set forth.

JOSEPH RUSSEL JONES.

Witnesses:
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