C. S. LONGSTREET.

Improvement in Instruments for Plugging-Teeth.

No. 129,483. Patented July 16, 1872.

Fig. 1.

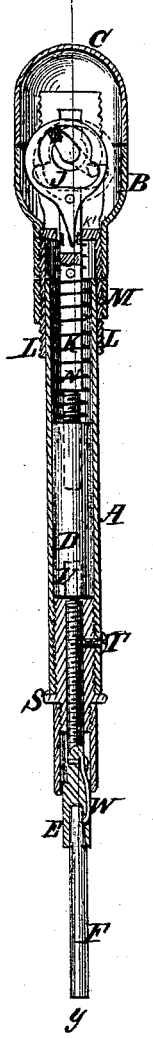

Fig. 2.

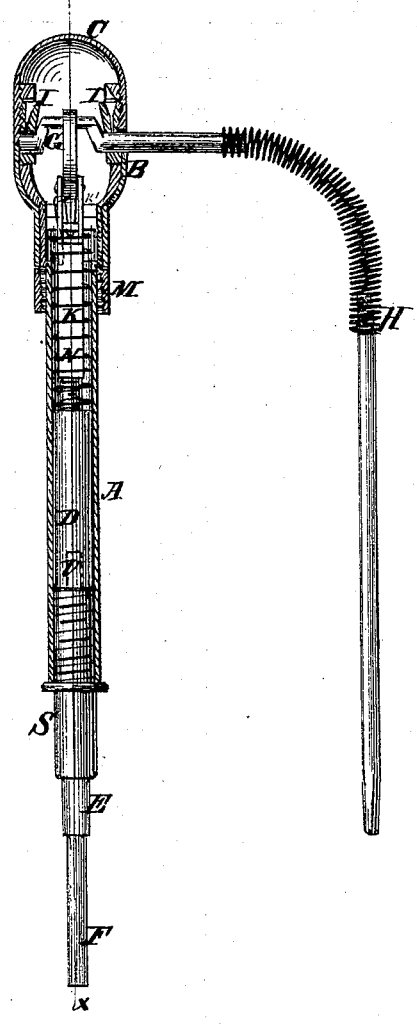

Fig. 3.

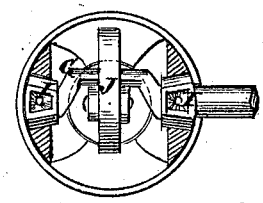

Fig. 4.

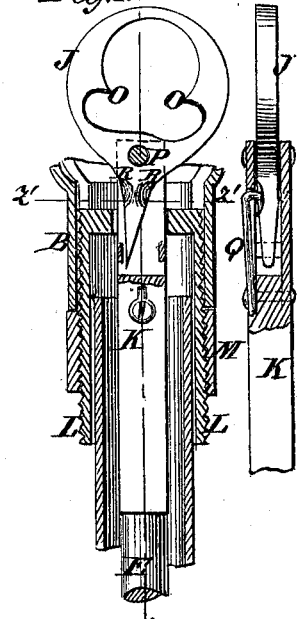

Fig. 5.

Fig. 6.

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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN INSTRUMENTS FOR PLUGGING TEETH.

Specification forming part of Letters Patent No. 129,483, dated July 16, 1872.

Specification describing a new and useful Improvement in Instrument for Plugging Teeth, invented by CHRISTOPHER S. LONGSTREET, of the city, county, and State of New York.

This invention relates to the practice of dentistry, whereby the operation of plugging teeth is greatly facilitated. The invention consists in combining a yoke, pin, and double crank with the plugging instrument; in adding to this device a tension adjustable spring; in providing the spindle with a sleeve and screw; in providing the flexible shaft with means of lubrication; in a spring support for yoke; and, finally, in providing the hammer with a sliding cross-piece attached by strips of metal—all as hereinafter fully described and indicated in claim.

In the accompanying sheet of drawing, Figure 1 is a longitudinal section of Fig. 2 taken on the line *x x*. Fig. 2 is a longitudinal section of Fig. 1 taken on the line *y y*. Fig. 3 is a cross-section of Fig. 2 through the bearings, looking down, with the cap off the instrument. Fig. 4 is a sectional view of Fig. 1 enlarged, showing the construction of the head of the instrument. Fig. 5 is a longitudinal section of Fig. 4 on the line *z z*. Fig. 6 is a cross-section of Fig. 4 on the line *z' z'*.

Similar letters of reference indicate corresponding parts.

This instrument is composed of a tube marked A, a head-piece, B, with a cap, C, a plunger or hammer, D, and spindle, E, to the lower end of which the plugging-tool F is removably secured. The blow upon the end of the spindle E is given by means of the double crank G on the flexible shaft H. This shaft is supported in the head-piece B in removable boxes, which are lubricated by means of oil-receiving orifices I I, as seen in Fig. 3, which project on the inside, as seen in Fig. 2. The cap C is conical in form and screws on to the head-piece, so as to make a smooth handle or knob to the instrument, as represented. The crank G revolves within the self-adjusting yoke J, and is connected with the hammer by the piece K, which has upon it a sliding cross-piece, K', upon the opposite sides of which is a narrow, thin strip of metal, L, which extends down upon the outside of the tube A, beneath the head-piece B, upon which a screw-thread is cut. *m* is a ferrule-nut, which screws on to these strips L L. N is a spiral-spring around the piece K, which bears with a constant pressure upon the hammer, the tension of which spring is increased and diminished (thus varying the weight of the blow) by turning the screw-ferrule *m*, which bears against the bottom of the head-piece B. As the crank G is rotated it catches under the projecting-lug O O of the yoke, (one or the other,) according to the direction the crank is turned. This yoke is made to oscillate on its pivot-pin P. When the crank is rotated continuously in one direction the yoke stands as seen in Fig. 4. When the direction of the crank is changed the crank strikes the opposite side of the yoke and throws it over the other way, so that the crank-pin will engage with the opposite projection O and raise the hammer in the same manner. The yoke is held in position when thus changed by the spring Q, which slips into the recesses R R (see Fig. 4) of the yoke. The spindle E screws into a sleeve, S, which is secured in the tube A by a screw-thread and the small screw I, which latter reaches and presses against the spindle, as seen in Fig. 1. In the lower end of the hammer D a piece of wood or similar material, U, is inserted, which strikes the spindle and prevents the two metallic parts from coming in contact with each other. The lower end of the spindle is a socket which receives the plugging-tool F. This tool is confined in the spindle by the spring W, which is attached to the spindle. The end of the spring is bent to a right angle and passes into the socket and engages with a recess or notch in the tool, as seen in Fig. 1. The actuating-shaft H is revolved by means of a lathe operated by the foot or other power, so that both hands of the dentist are left free to hold and guide the instrument. The shaft is made flexible, so that the instrument may be turned and varied in position to suit the circumstances of the case.

I do not limit myself to the precise form and arrangement of the parts described, as variations may be made without departing from my invention.

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

1. The self-adjusting yoke J, pin P, and

double crank G, in combination with a dental plugging instrument, substantially as shown and described.

2. The oil-orifices I I for lubricating the shaft-journals, as shown and described.

3. The combination, with elements of claim 1, of ferrule screw-nut *m*, for increasing or diminishing the tension of the spring N, and thereby regulating the weight of the blow, as shown and described.

4. The sleeve S and screw T, in combination with the spindle E, as and for the purposes described.

5. The spring Q, for holding the yoke J in position, substantially as described.

6. The sliding cross-piece K′, with the pieces L L thereon, substantially as and for the purpose described.

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