

G. F. GREEN.

ELECTRO-MAGNETIC DENTAL-PLUGGER.

No. 173,619.

Patented Feb. 15, 1876.

Fig 1.

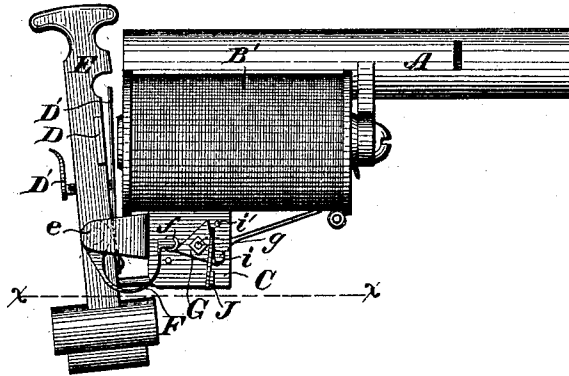


Fig 2

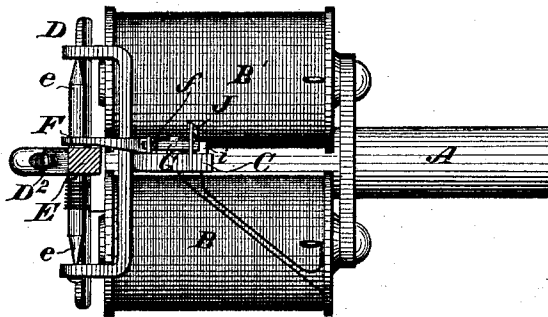


Fig 3

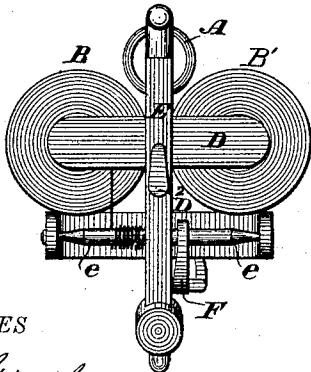
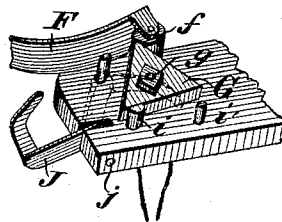


Fig 4.



WITNESSES

Wm A Skinkle
J. Lick

INVENTOR

George F Green.

By his Attorney

Wm Baldwin

UNITED STATES PATENT OFFICE.

GEORGE F. GREEN, OF KALAMAZOO, MICHIGAN, ASSIGNOR TO SAMUEL S. WHITE, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN ELECTRO-MAGNETIC DENTAL PLUGGERS.

Specification forming part of Letters Patent No. **173,619**, dated February 15, 1876; application filed August 5, 1873.

To all whom it may concern:

Be it known that I, GEORGE F. GREEN, of Kalamazoo, Michigan, have invented certain new and useful Improvements in Electro-Magnetic Dental-Mallet Pluggers, of which the following is a specification, reference being had to the accompanying drawings, which show one of the forms in which I have embodied my invention, and in which—

Figure 1 represents a side view; Fig. 2, a bottom plan view, partly in section, on the line *xx* of Fig. 1; and Fig. 3 an end view of so much of the implement as is necessary to illustrate the subject-matter herein claimed. Fig. 4 represents a view, in perspective, of portions of the circuit-breaking mechanism detached.

The plugging-tool is inserted in the bore of a tube, A, mounted upon a frame, C, which also carries a two-coiled electro-magnet, B B, of well-known construction. An armature, D, is mounted on a bar, E, rocking on trunnions *e* in the frame C. The magnets and armature are similar to those of the common telegraph-sounder, the bar delivering its blow on the end of the plugger-spindle. The armature is separated from the magnet by means of a light spring, D¹, the armature closing on the face of the magnet only when the circuit is closed, as usual with the telegraph-sounder. The tension of the spring D¹ is regulated by a set-screw, D², passing through the bar E. A spring, F, on the trunnion *e*, carries a small wheel or friction-roller, *f*, of some non-conducting material, which roller vibrates with the bar and traverses first one side and then the other of a triangular or wedge-shaped brake-piece, G, which oscillates on a pivot, *g*, on the frame being alternately brought in contact with and separated from a contact-point, *i*, connected with one wire of the circuit, the other being connected with the pivot *g*. The backward oscillation of the brake-piece is limited by a stop, *i'*. A switch-lever, J, rocking

on the pivot *j*, can be swung in, when desired, between the stop and the brake-piece, to shorten the movement of said brake-piece, and thus vary the rapidity of the blow. The bar E has each end weighted or enlarged so as not only to give increased force to the blow, but also to counterbalance the armature, to insure a uniform stroke in any position in which the instrument may be held while working.

The operation of the device, including the automatic making and breaking of the circuit, will readily be understood from the foregoing description.

I do not broadly claim herein mounting the circuit-breaking mechanism upon a dental-mallet plugger, or counterbalancing the mallet, as means for attaining these ends are shown and broadly claimed in an application filed simultaneously herewith, on which Letters Patent No. 171,121 were granted to me December 14, 1875; but

What I do claim herein as new, and desire to secure by Letters Patent, is—

1. The combination of the frame, the plugger-tube, the double-coil electro-magnet, the oscillating mallet, the brake-piece and its actuating circuit-breaker, mounted directly on the axle of the mallet, these members being constructed, arranged, and operating substantially as hereinbefore set forth, whereby the circuit-breaking mechanism is actuated directly from the mallet.

2. The combination, with the electric mallet-plugger, of the spring and set-screw, whereby the blow of the mallet is adjusted, as hereinbefore set forth.

In testimony whereof I have hereunto subscribed my name.

GEORGE F. GREEN.

Witnesses:

LEVI TEAL,
WM. E. MORGAN.