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No. 672,841.

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(No Model.)

DRAFTSMAN.

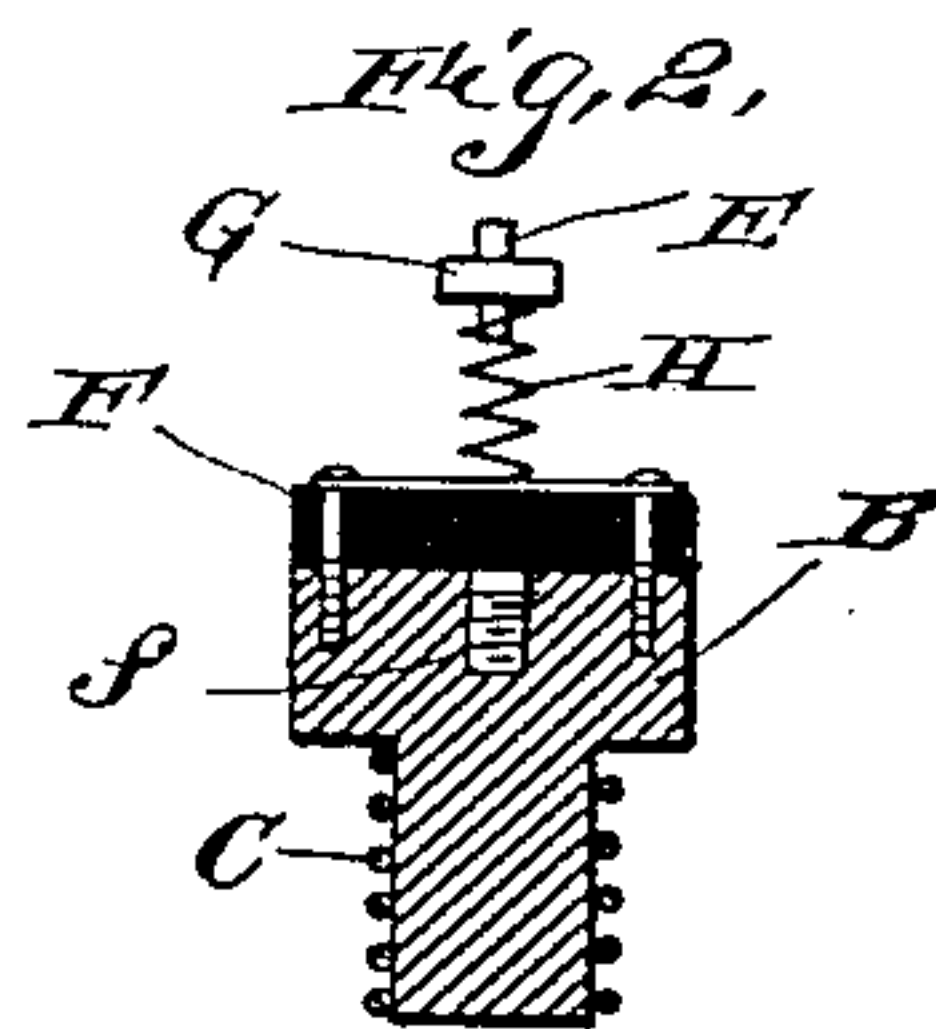
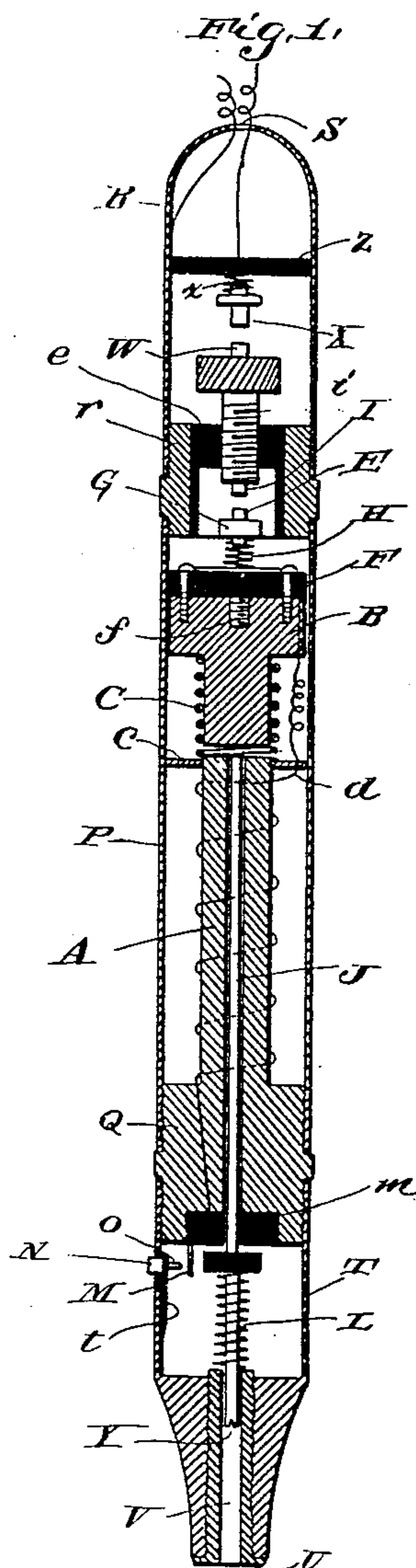
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Patented Apr. 23, 1901.

**C. D. OLSEN.**

**ELECTRIC Mallet OR HAMMER.**

(Application filed Jan. 18, 1900.)



*Witnesses:*

~~Edison~~ Bonn.  
Hering Huber

*Inventor:*

Charles Kent Owen

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**UNITED STATES PATENT OFFICE.**

CHARLES DAVID OLSEN, OF DENVER, COLORADO.

**ELECTRIC MALLET OR HAMMER.**

SPECIFICATION forming part of Letters Patent No. 672,841, dated April 23, 1901.

Application filed January 18, 1900. Serial No. 1,852. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES DAVID OLSEN, of Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Electric Mallets or Hammers; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention is an improvement in electric mallets and hammers of a peculiarly novel and simple type in which all the working parts are inclosed.

The invention can be used in connection with any direct voltage or alternating current, utilizing the electric energy thereof to strike slow or rapid and gentle or forcible blows upon any surface or object.

The invention is designed for use as a dental mallet, a calking-machine, a riveting-machine, and for pounding, chipping, and drilling generally, according to the size and form of construction, the principle always remaining the same.

The invention further consists in the novel constructions and combinations of parts hereinafter claimed, and the accompanying drawings illustrate apparatus embodying my invention, referring to which—

Figure 1 is a longitudinal sectional view of the machine exposing the various parts, as follows:

In the drawings, A represents main magnet (with or without solenoid) with a hole or opening drilled through the center to allow the plunger J to come in contact with the hammer B.

B represents the hammer, made of soft iron turned to size or laminated as desired.

C represents a main spiral spring of suitable gage fastened by solder or otherwise to brass shoulder or collar *c*. *c* is fastened to magnet A. C is also fastened by solder or otherwise to hammer B, first slipping over lower portion of hammer B and resting against the turned shoulder *b* of hammer B. At this end of magnet A the wire *d* is carried through brass shoulder *c* of magnet A and thence through a hole or opening bored through the upper portion of hammer B, enough wire be-

ing coiled before it is passed through the opening to allow for the working distance or play of the hammer B.

F represents a piece of insulation forced into place or otherwise made solid in the upper part of hammer B. Into F is screwed the small screw *f*. *f* passes through the center of a small spiral spring H, thereby fastening the spring H solid to the hammer B. The terminal of the wire *d* after passing through the hole in hammer B is then fastened to the screw *f*, holding small spiral spring H.

G represents a suitable weight fastened by solder or otherwise to upper portion of spring H. G carries contact-point E.

I represents contact-point attached to adjustable screw *i*.

*r* represents a cylindrical brass piece fitted onto the back end of case P. In the center of *r* is a piece of insulation *e*, which insulates screw *i* from case.

P represents the outer covering of the main or middle portion of the machine and consists of a cylindrical iron case which closes the magnetic circuit from the core Q to side of hammer B.

R represents a brass cap which incloses the battery connections. Brass cap R screws onto *r*. R has a hole or opening S in the end to allow twin cords to pass through.

W represents the contact-point on screw *i*.

X represents the contact-point on spring *x*.

*x* represents the spiral spring fastened to a piece of hard rubber or other suitable insulation Z. The battery-wires or twin cords are connected with spring *x* and brass cap R. The contact-points W and X merely close circuit when cap R is screwed onto *r*.

J represents a plunger, with an adjustable shoulder K, suitably screwed on the plunger J and locked to limit and adjust distance toward hammer B.

L represents a small spiral spring, which keeps the plunger J up to place to receive the blow from hammer B, the force of the blow varying with the tension of the spring L.

M represents the terminal point of the wire leading from the magnet-coil A. M is screwed into the insulation *m*. M forms a contact with contact O at the pressure of button N.

N represents a switch-button which passes



through a small opening in metal cylinder T and is supported by spring *t*, as hereinafter described.

T represents metal cylinder containing plunger J and button N, the spring *t* of button N being set on the inside of T.

U represents metal piece screwed on the front end of T. U regulates the tension of spring L, and thereby the force of blows struck by hammer B.

V represents opening in U for the introduction of the tool to be used in the machine, the tool being fastened at point Y within U.

V also serves to guide plunger J.

Fig. 2 is a separate longitudinal sectional view of hammer B and adjacent parts.

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

1. The combination of a hammer B, held in suspense by a spiral spring C, with a small spiral spring H, attached to the upper end of

the hammer B and holding a weight G, and contact E, in suspense.

2. The combination of a small spiral spring H, attached to the upper end of hammer B, supporting weight G, and contact E, with an adjustable screw *i*, having contact I, to make contact with contact E.

3. The combination of an adjustable screw *i*, having contact I, to make contact with contact E, with a spring *x*, having contact X.

4. The combination of a magnet A; hammer B; spiral spring C; small spiral spring H, carrying weight G and contact *e*; adjustable screw *i*, to which is fixed contact-point I; a plunger J; metal piece U, to adjust tension of spring L; and a switch to close and open circuit as set forth.

CHARLES DAVID OLSEN.

Witnesses:

JOSEPH K. BOZARD,  
CHAS. M. BROWN.