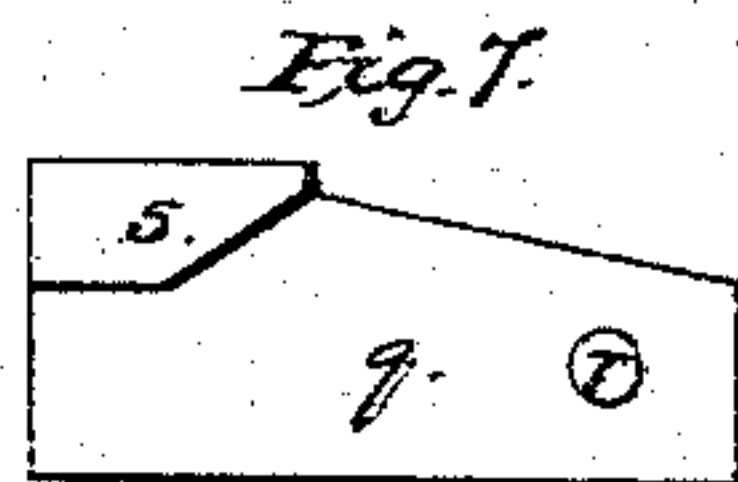
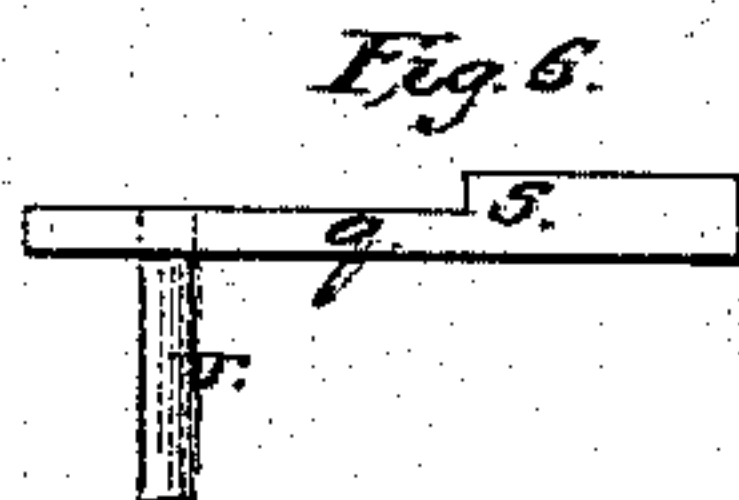
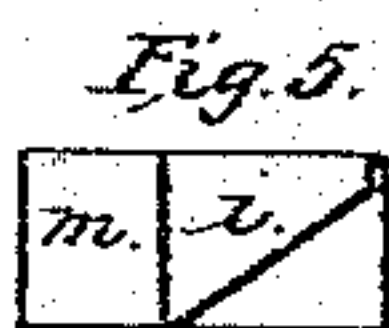
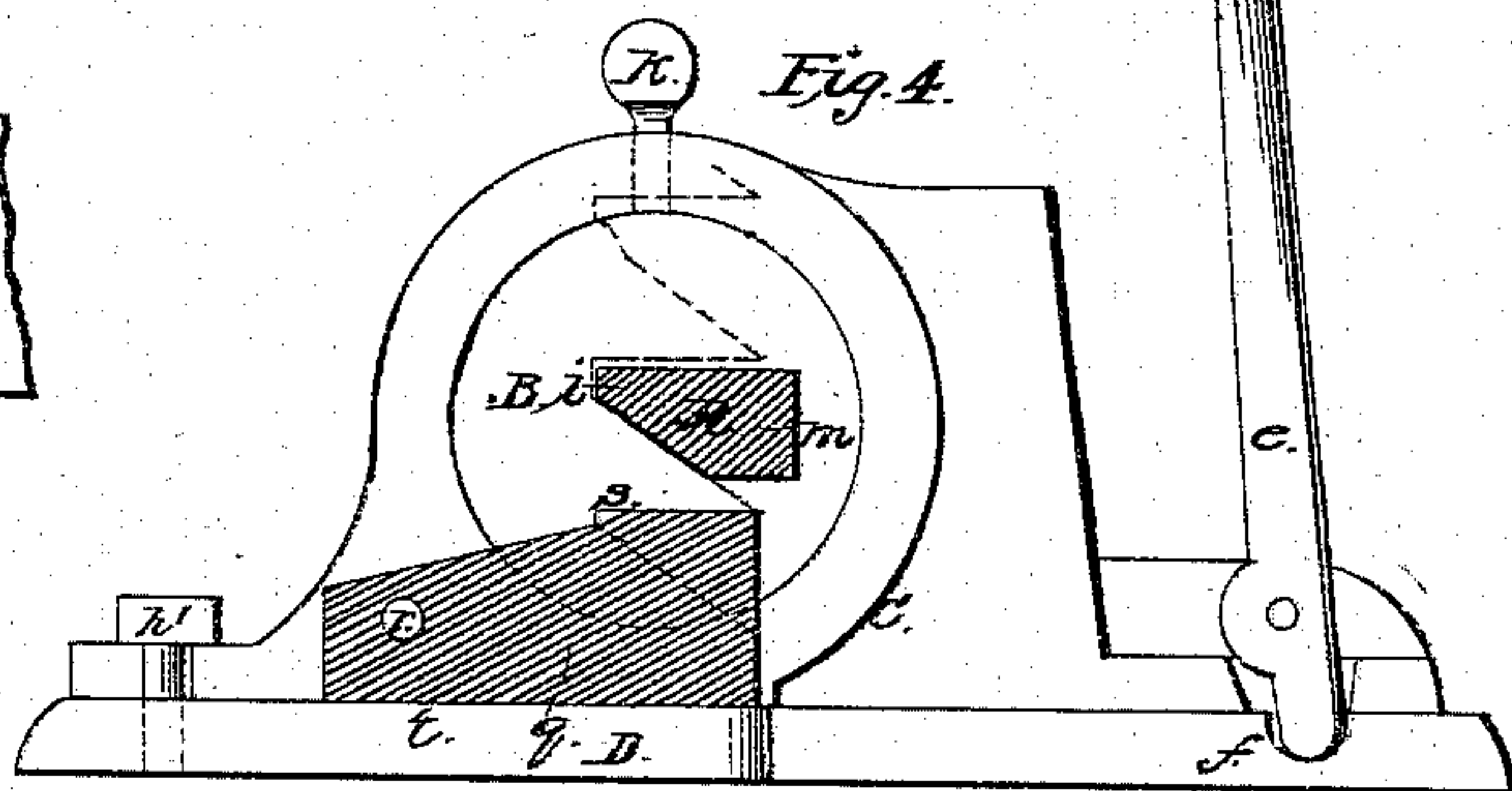
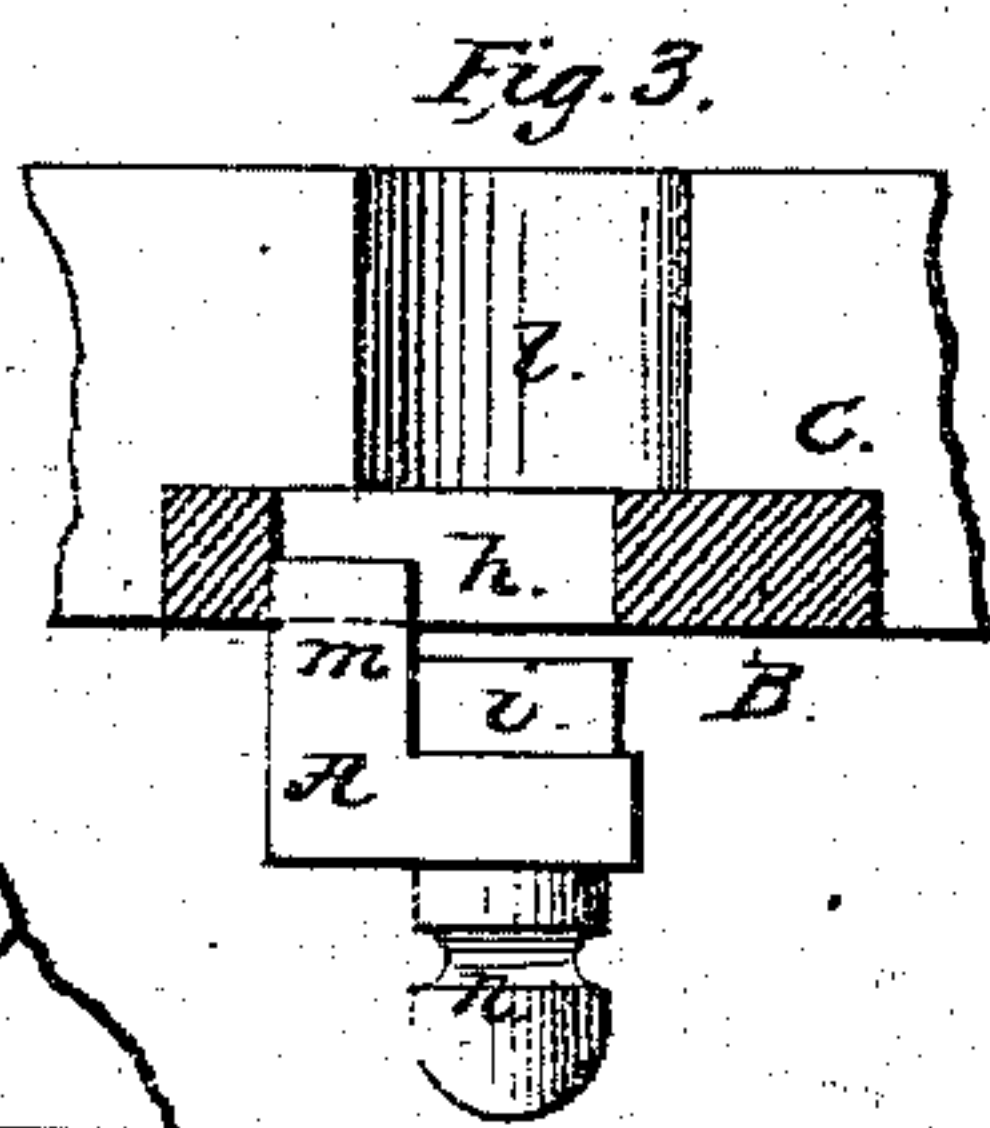
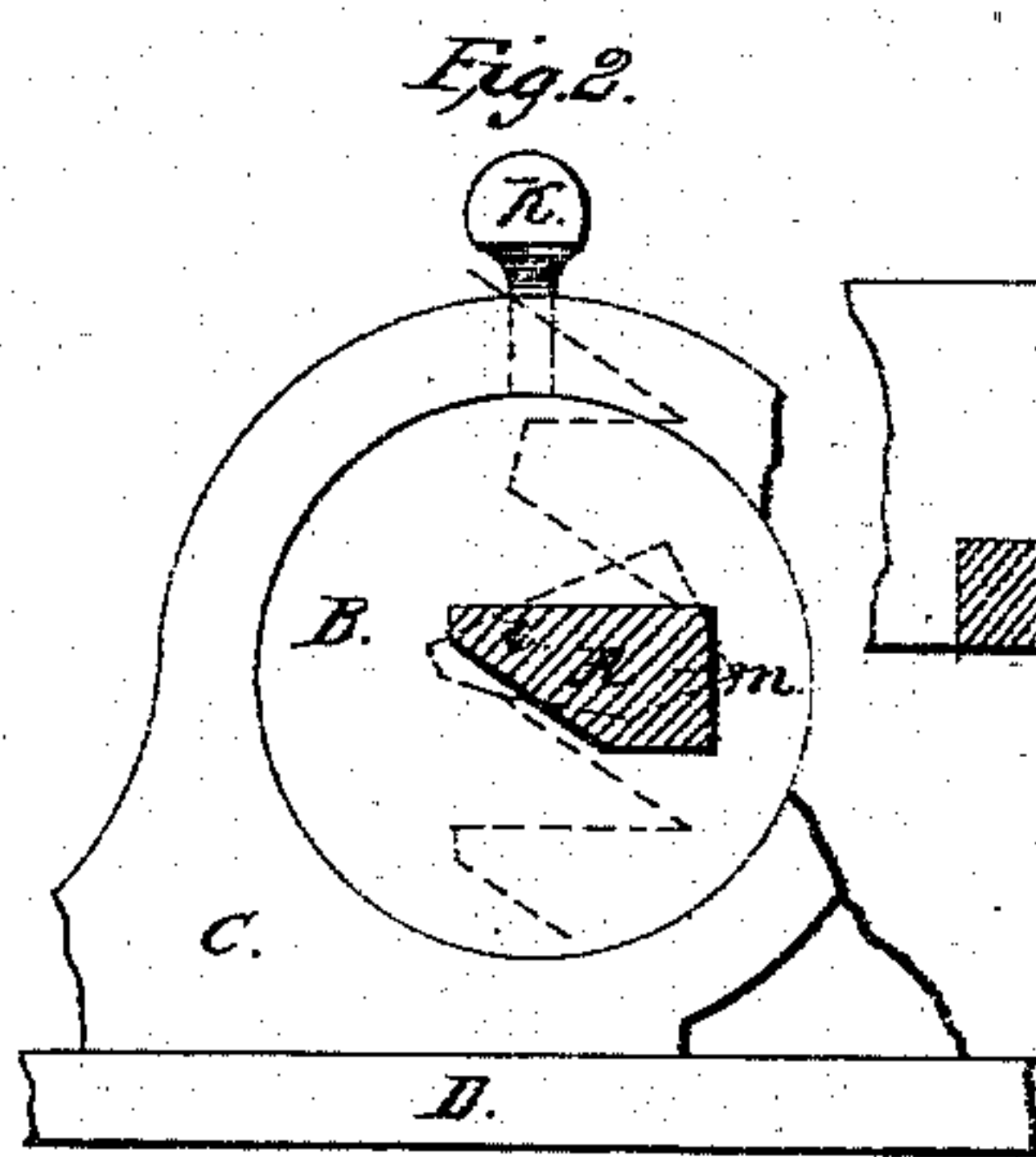
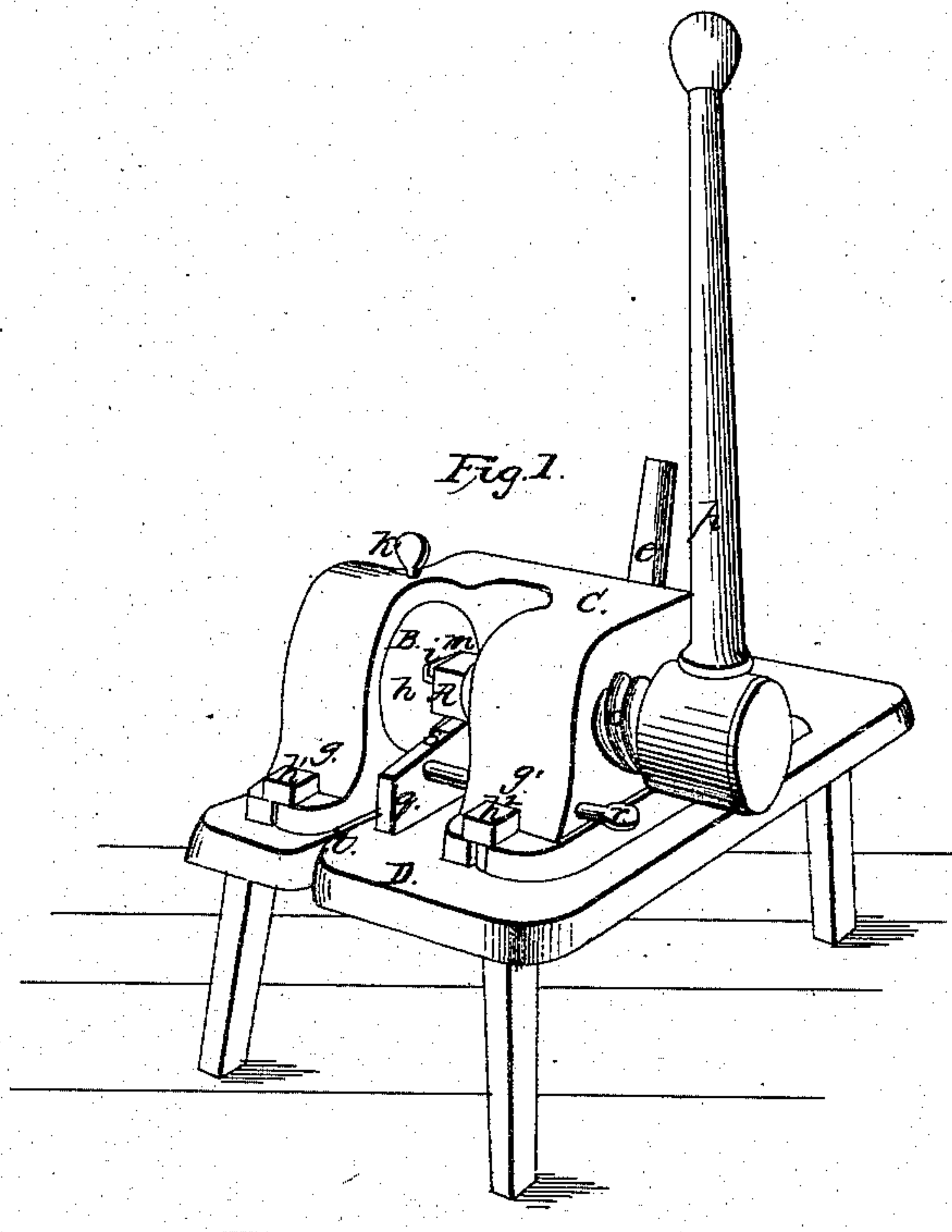


Lewis & Alston.

Saw Gummer.

N^o 15,811.

Patented Sept. 30, 1856.



Witnesses:

*William H. Allen
Thomas Bennett.*

Inventors:

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UNITED STATES PATENT OFFICE.

S. J. LEWIS AND W. ALSTON, OF BORDENTOWN, NEW JERSEY.

SAW-GUMMER.

Specification of Letters Patent No. 15,811, dated September 30, 1856.

To all whom it may concern:

Be it known that we, SAMUEL J. LEWIS and WILLIAM ALSTON, both of Bordentown, in the county of Burlington and State of New Jersey, have invented a new and useful Improvement in Saw-Gummers; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a perspective view; Figs. 2, and 4, vertical longitudinal sections; Fig. 3, an underside view of the punch, in connection with a horizontal sectional view of the die and its seat; Fig. 5, an end view of the punch; and Figs. 6, and 7, respective top and side views of an adjustable rest for keeping the tooth of the saw in position when the gum is being operated upon at the upper edge of the same, like letters in the different figures indicating the same objects.

The nature of our invention consists in a peculiar construction, combination and arrangement of a punch and die in a sliding carriage, whereby either a circular or straight saw can at any time be more rapidly and accurately gummed on both sides of a tooth than hitherto, and without removing the saw from its usual bearings or fastenings.

Referring to the drawings A, is the punch; B, the die; C, the sliding carriage in which they are made to operate; and D a table or bench which supports the whole.

The sliding carriage (C) consists of a solid piece of cast iron made so as to be moved horizontally back and forth upon the table (D), by means of a lever (e) which turns upon a pivot fixed at the outer end of the machine, so as to project down into and bear at either end of a shallow mortise (f) in the table—the opposite end of the carriage being divided by a recess so as to form two projecting ends (g, and g') which are held in position upon the table by means of the two screw bolts (h' and h²) which pass between two toes formed on each of the said projecting ends, so as to keep the carriage in position down upon the table, and also allow it to be moved back and forth thereon, by means of the lever (e).

The die (B) consists of a short cylinder of steel with an opening (h) through it (which is the die proper) and is an exact

counterpart of the cutting end (i) and steady (m) of the punch, and is seated flush in a recess adapted thereto in the inner side of the projecting end (g) of the carriage, so as to be capable of being rotated therein as well as being held fixedly by means of a thumb set-screw (k)—an open chip-way (l) being made from the back of the die entirely through the said projecting end (g).

The punch (A) is formed out of a rectangular block of steel so as to present a cutting end, or punch proper (i) whose transverse section will present the form of a trapezium, as seen at (i) Fig. 5. Projecting beyond and alongside of the punch proper (i), is a prism (m) which slides within and also in contact with the rectangular side of the opening (h) in the die block (B) while the machine is in operation, so as to serve the double purpose of a steadying guide to the punch proper (i), and a rest for the end of a saw tooth when the gum at the under edge of the latter is being removed, as will be hereinafter described. The under, or beveled side of the said punch (i) being cut back far enough to allow the punch (i) to pass nearly through the die block (B), as shown in Fig. 3. The other end of the punch block (A) is formed with a cylindrical and grooved stem (n) which fits in a hole in the end of a double threaded screw (o) which works horizontally across in the projecting end (g') of the carriage, and is retained therein by means of a pin which is inserted transversely through the end of the screw so as also to enter the groove on the stem (n) of the punch block, and admit of the said blocks being secured and rotated at the end of the said screw (o), as shown in Fig. 1; and so that the punch (i) and steady (m) may enter and slide within the die (h) in whatever position the latter may be held adjusted, in its seat by means of the set screw (k)—the said screw (o) being operated by means of a hand-lever (p), or its equivalent. Beneath the punch and between the two projections (g and g') of the carriage, the adjustable rest (q) is placed, and is designed for the purpose of supporting any tooth of the saw when the gum on the upper side of the said tooth is being removed. It consists of a plate of metal (q) placed on edge beneath the punch so as to be moved laterally by means of a rod (r) which is fixed thereto so as to be capable of being moved back and forth in

a hole made through the end (g') of the carriage. A small trapezoidal projection (s) is formed on the inner side of the plate so that when the said plate is pushed up it
 5 may pass under a tooth of the saw and support it in position while the punch is operating upon the gum at the upper edge of the same.

The bench or table (D), upon which the
 10 carriage is placed as described, has a slot (t) made longitudinally through its one end just beneath the cutting edges of the punch and die, so as to admit of the apparatus being brought up and placed firmly in posi-
 15 tion to operate upon the teeth of a saw of any kind, without removing the said saw from its usual mandrel, bearings, or fastenings. The punch and die are of course hardened or tempered as usual.

20 Operation: The whole apparatus being placed so as to bring the teeth of the saw which is to be gummed, in position to be moved up and down between the punch and die, when the carriage (D) is drawn back
 25 by means of the lever (e) as described; in order to remove the gum from the under side of a tooth (of a vertical mill-saw for instance), the carriage (D) is pushed forward by the lever (e) so as to bring the rest
 30 (m) to support the end of the tooth,—(see dotted lines Fig. 2)—when the lever (p) is pressed down, thus forcing the punch (i) into the die (h), carrying with it the gum from the under side of the tooth, to the chip
 35 way (l); the carriage is now moved back so as to allow the movement of the saw to present another tooth, and so on in succession until all are removed. The die and punch are now adjusted to suit the bevel

of the upper side of the teeth, and the gums 40 on the said upper sides successively removed by the same operation just described—excepting that in this operation the end of each tooth rests successively upon the pro-
 45 jection (s) on the adjustable sliding rest (q), which is pushed back and forth by means of the rod (r) for the purpose, as occasion requires—see dotted lines in Fig. 4.

It will now be manifest that either a circular or straight saw can be readily operated 50 upon with this machine without removing either from its usual mandrel, bearings, or fastenings; and that the same can be more rapidly and accurately gummed therewith than by any other apparatus hitherto known 55 or in use—because of its more easy adjustment and application; its accuracy of performance; and the rapidity with which the teeth are stopped and held in position for gumming by means of the rests (m) and (s) 60 respectively, operating as described.

We do not claim separately either of the respective devices constituting the saw gummer herein described, but

What we claim as our invention and de- 65 sire to secure by Letters Patent is—

The punch (A) constructed as described, in combination with the die (B) constructed and seated as described; the same being arranged in the carriage (C), so as to rotate 70 and operate together in the manner and for the purposes set forth and described.

SAMUEL J. LEWIS.
 WILLIAM ALSTON.

Witnesses:

WILLIAM H. ATKINSON,
 THOMAS BENNETT.