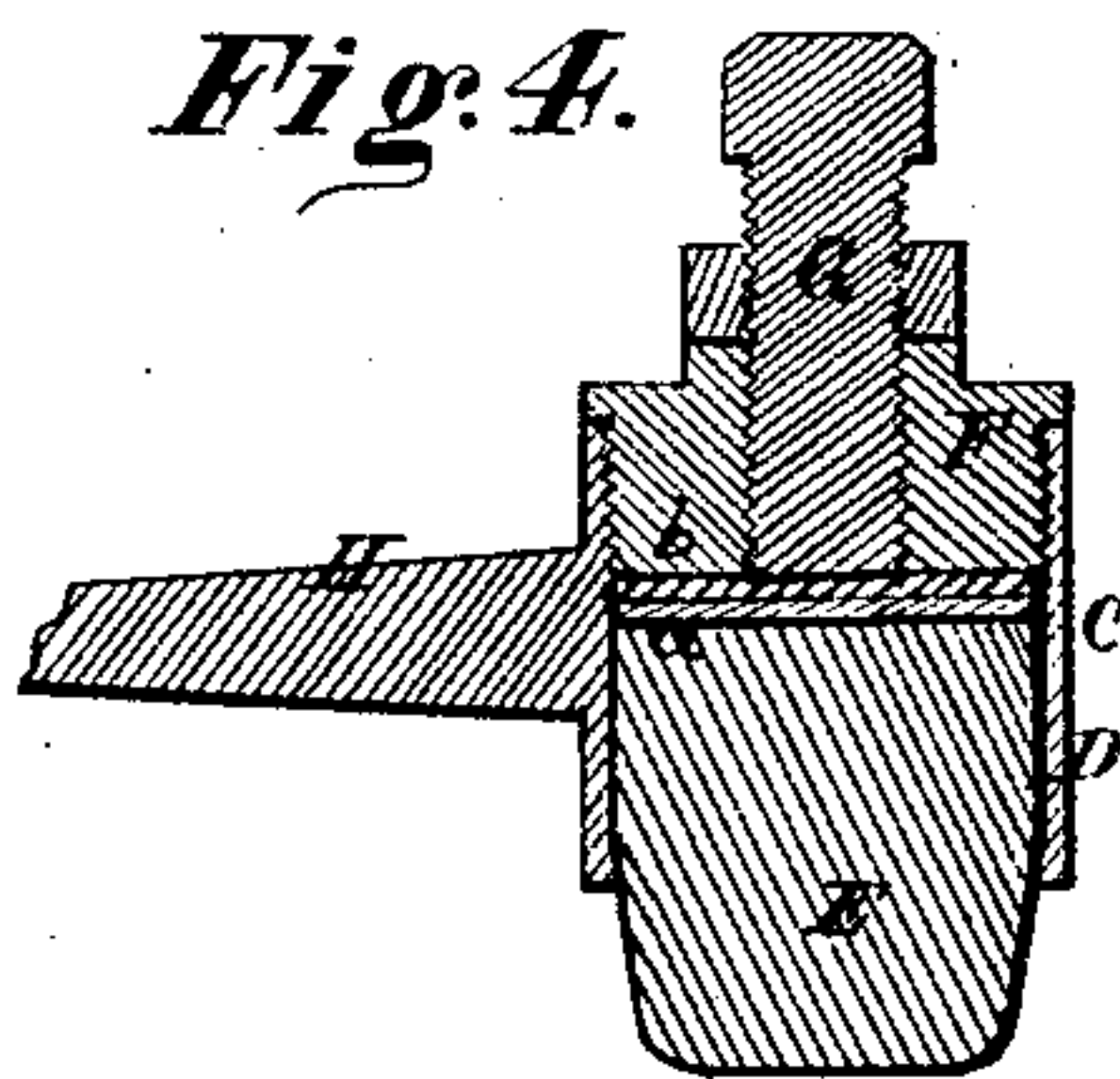
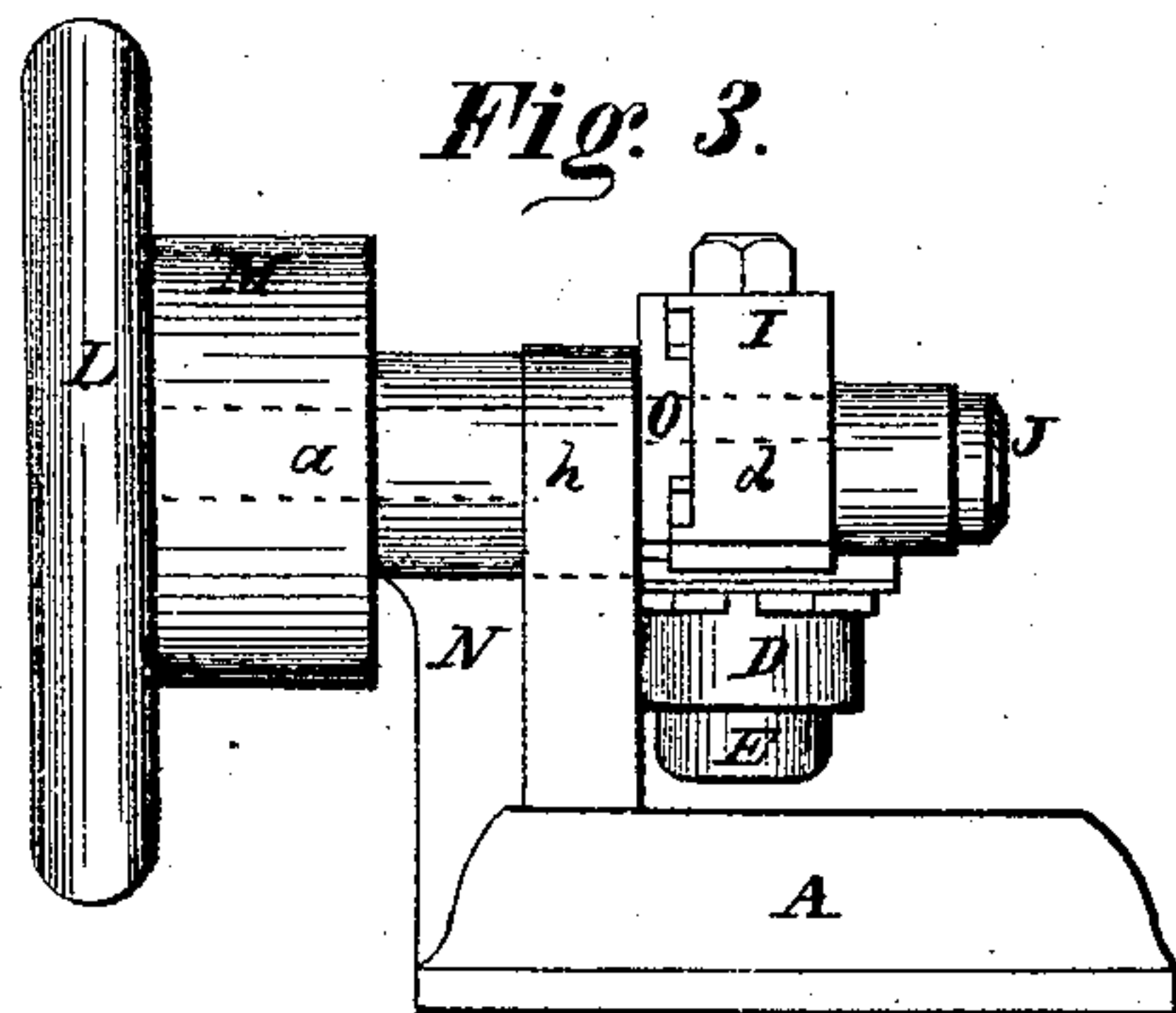
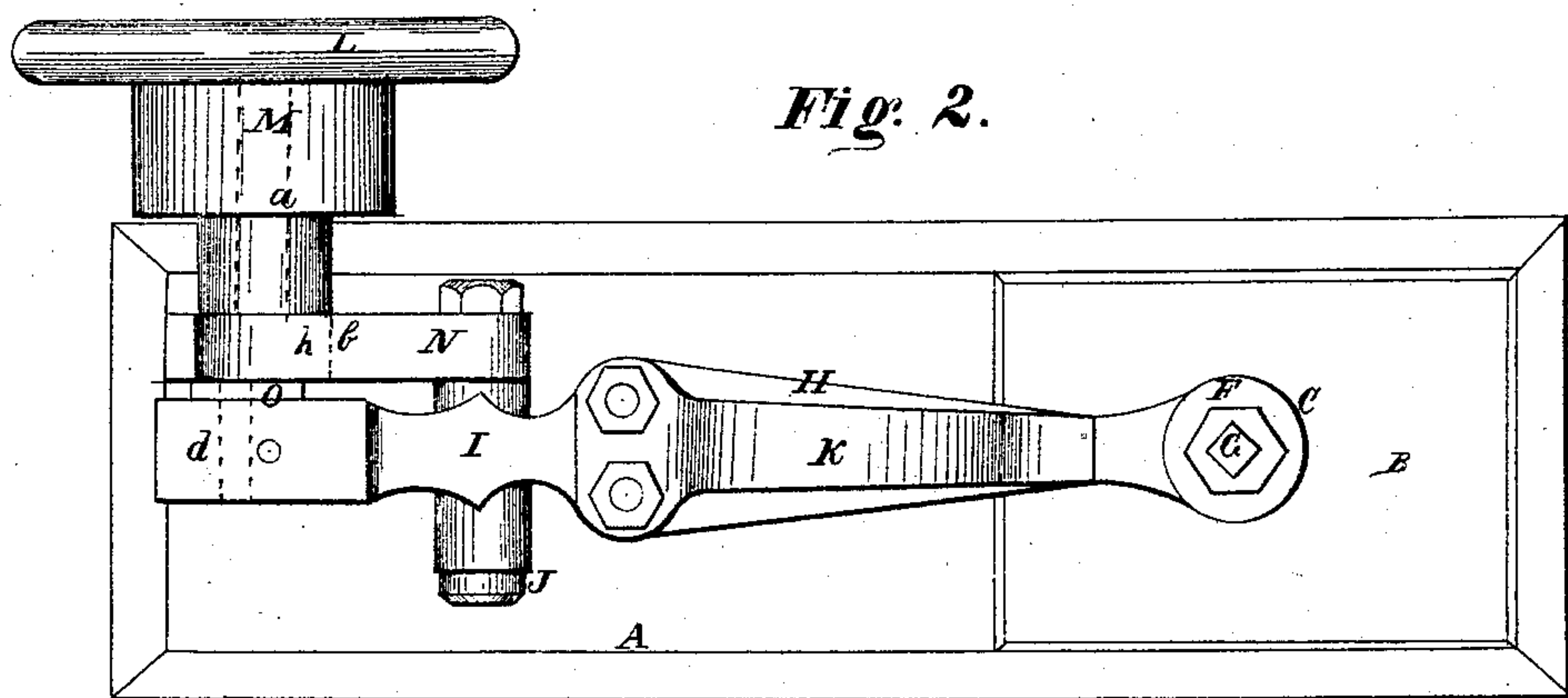
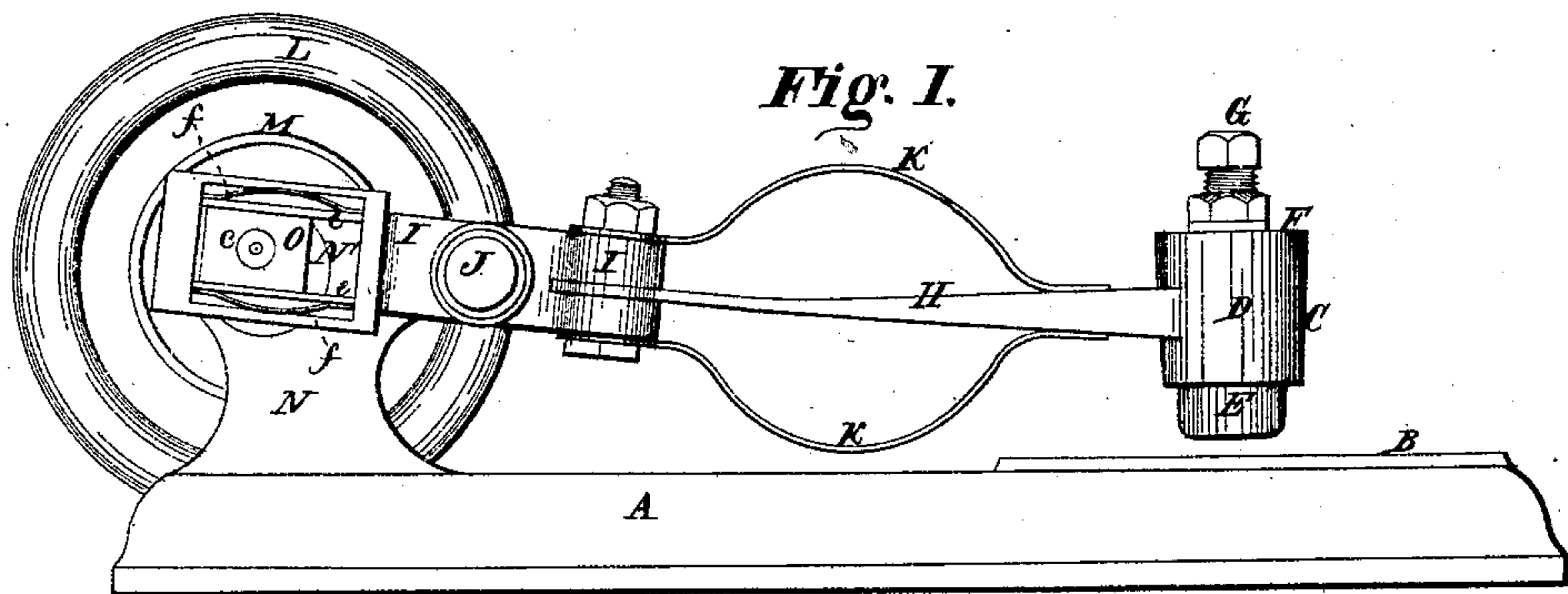


W. H. CLARK, A. O. KITTREDGE & W. J. CLARK.

Mallets for Smoothing Sheet-Metal.

No. 153,663.

Patented Aug. 4, 1874.



Witnesses.

A. T. Leornell
D. Tracy Porter

Inventors.

W. H. Clark & W. J. Clark & A. O. Kittredge
Per. Burridge & Co.
Attys.

UNITED STATES PATENT OFFICE.

WILLIAM H. CLARK, ANSON O. KITTREDGE, AND WILLIAM J. CLARK,
OF SALEM, OHIO.

IMPROVEMENT IN MALLETS FOR SMOOTHING SHEET METAL.

Specification forming part of Letters Patent No. **153,663**, dated August 4, 1874; application filed
May 4, 1874.

To all whom it may concern:

Be it known that we, WILLIAM H. CLARK, ANSON O. KITTREDGE, and WILLIAM J. CLARK, of Salem, in the county of Columbiana and State of Ohio, have invented a certain new and Improved Mallet for Smoothing Sheet Metal; and we hereby declare that the following is a full, clear, and complete description thereof, reference being had to the accompanying drawings making part of the same.

Figure 1 is a side elevation of the machine. Fig. 2 is a plan view. Fig. 3 is an end elevation. Fig. 4 is a detached section.

Like letters of reference refer to like parts in the several views.

The nature of this invention relates to a tilt hammer or mallet, and the object thereof is to rapidly and effectually smooth down the burr from the edges of sheet metal caused by cutting the same with shears or other implements, and also to correct, by smoothing out, inequalities in the surface of the sheet without subjecting the same to such force as would tend to stretch the work and cause it to crinkle. Heretofore this has been done by the strokes of a mallet in the hands of a workman—a slow and necessarily tedious process, but which, by the use of this invention, is greatly expedited, and accomplished in a less wearisome manner.

Of the construction and operation of the machine, the following is a full and complete description:

In the drawings, A represents a bed-plate, on which the tilt-hammer or mallet is erected. The fore part B of the plate is raised above the face of the bed, and forms an anvil or striking-surface for the mallet C. Said mallet consists of a shell or thimble, D, Fig. 1, slightly tapering from the top downward. In the shell is fitted a wooden block, E, the lower end of which is allowed to project below the shell, as shown in the drawing. The block E is introduced into the shell from the top, and is secured therein by a cap, F, screwed into the shell. Interposed between the block and the end of the screw of the cap is a rubber cushion, *a*, Fig. 4, on which is imposed a plate of metal, *b*, to afford a bearing for the screw G, to compensate for the wearing of the block.

H is the handle of the mallet. Said handle is a spring, consisting of a broad flat piece of steel, the end of which is fitted to and secured in the end of the walking-beam I, whereof the pin J is its axial point of vibration. The handle is guarded and strengthened by springs K, one above and one below the handle, and secured thereto, as shown in Fig. 1. On the end of the shaft carrying the fly-wheel and pulley L M (which shaft has its bearing in the standard N, and is indicated by the dotted line *a*, Fig. 3) is a crank-wheel, N', Fig. 1, also indicated by the dotted line *b*, of which *c*, Fig. 1, is the crank-pin. Said pin is also indicated by the dotted line *d*. In the open end of the vibrating beam I is fitted a sliding journal-box, O, Fig. 1, in which the crank-pin *c* revolves for operating the said beam. The box O referred to slides upon plates *e*, Fig. 1, held in close-fitting contact therewith by springs *f*, one above and one below each of the plates, as shown in Fig. 1.

Having described the construction and arrangement of the several parts of the machine, the practical operation of the same is substantially as follows:

Motion is imparted thereto by a belt upon the pulley M, thereby causing a lively vibratory action of the beam I, and consequently that of the mallet. The piece of sheet metal to be acted upon is laid upon the anvil B under the hammer or mallet, in the proper position to receive the strokes thereof, which is thereby quickly smoothed and straightened by the rapid and repeated blows given by the mallet. In consequence of the springs *f*, in combination with the sliding box O, and the springs or guards K secured to the handle H of the mallet, together with the spring or cushion *a* in the mallet, the rigidity of the blows is broken, and in lieu thereof is given an elasticity to the strokes, producing the necessary percussion required to accomplish the work. Instead of the metallic springs *f* rubber may be used, and in place of the rubber cushion in the mallet a metal spring may be used without in any way effecting the general result.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination of the mallet C, con-

sisting of the shell D, cap F, block E, cushion *a*, and handle H, provided with springs K, in the manner as described, and for the purpose set forth.

2. The crank-wheel N', sliding box O, plates *e*, and springs *f*, in combination with the vibratory beam I, substantially in the manner as described, and for the purpose specified.

3. The combination of the handle H, springs

K, mallet C, vibratory beam I, sliding box O, and crank-wheel N', in the manner as described, and for the purpose set forth.

WILLIAM H. CLARK.

ANSON O. KITTREDGE.

WILLIAM J. CLARK.

Witnesses:

ROLLIN B. CLARK,

CHARLES OBORN.