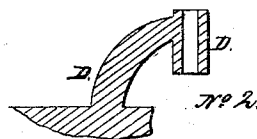
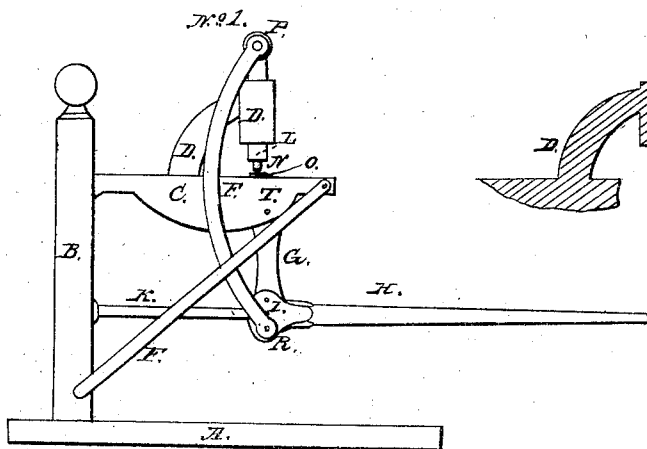
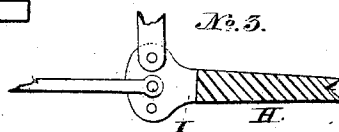
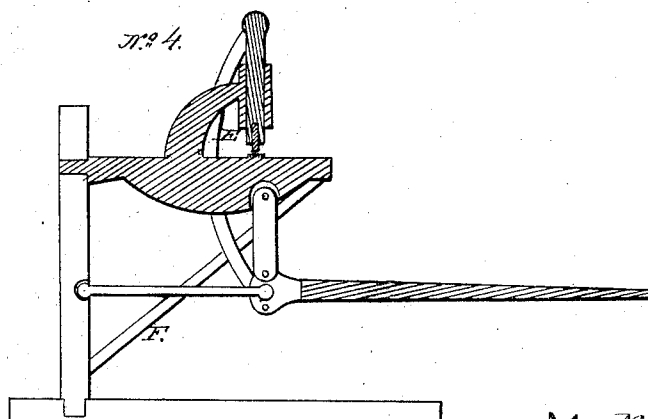


S. Kendall,
Metal Punch,
N^o 6,277, Patented Apr. 3, 1849.



UNITED STATES PATENT OFFICE.

STEPHEN KENDALL, OF KALAMAZOO, MICHIGAN.

PUNCHING-MACHINE.

Specification of Letters Patent No. 6,277, dated April 3, 1849.

To all whom it may concern:

Be it known that I, STEPHEN KENDALL, of Kalamazoo, in the county of Kalamazoo and State of Michigan, have invented a new and Improved Machine for the Punching of Iron, Steel, and other Malleable Metals, for Gumming of Saws, Mortising, &c.; and I do hereby declare the following to be a correct 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 side elevation of the whole machine. Figs. 2 and 3, sectional parts thereof.

Letter A, platform on which standard B is confined; C, head block, confined to standard B; D D, circular standard, attached to, and cast firmly, with head block C; E E, two wrought iron straps, attached to stock or piston L at P and also at lower end of knuckle I at R; F F, braces attached to outer end of head block C and lower end of standard B; G, pitman or connecting rod, attached to head block C at T, and upper end of knuckle at I; H, lever; I, knuckle attached to lever H at R; K, an iron brace, attached by a joint at standard B and by joint to center of knuckle I; L, stock or piston working through D; N, punch, inserted into stock or piston L; O, die, on which the metal to be cut or punched is laid; L No. 2, section of stock or piston to which straps E E are attached at letter P No. 1; D D No. 2, section of circular standard as seen at D D No. 1; I and H No. 3, section of knuckle and lever as seen at I and H No. 1.

The knuckle being connected at top, with a toggle G, in raising the lever, it makes a fulcrum from the top of the knuckle to the bottom, by its connection with pitman G thereby raising the punch a sufficient height to admit of any metal being placed on the die, for punching or cutting, without throwing the knuckle, materially of perpendicular line; on the descending of the lever the brace K being attached to the center of knuckle I forms a fulcrum from the center to the upper, also from the center to the lower end of knuckle I, thereby dividing the knuckle into two equal parts, which reduces the fulcrum, one half in the descent of the lever, to what it is in the ascent, thereby increasing the power one hundred per cent, and allows of the working the machine, with great rapidity, ease and power.

The machine is portable, of small expense, and one weighing 150 lbs., is of sufficient strength to punch a $\frac{5}{8}$ hole through $\frac{3}{4}$ in. boiler iron. And is intended by me to be applied to the purposes above set forth, and for mortising.

What I claim as my invention and desire to secure by Letters Patent, is—

The combination of the knuckle and its attached lever, with the toggle, G, and connecting rods, E, arranged and acting as described, so that by a motion in one direction of the lever the punch, can be both raised and repressed.

STEPHEN KENDALL.

Witnesses:

GEO. THOS. CLARK,
CHAUNCEY F. KELLOGG.