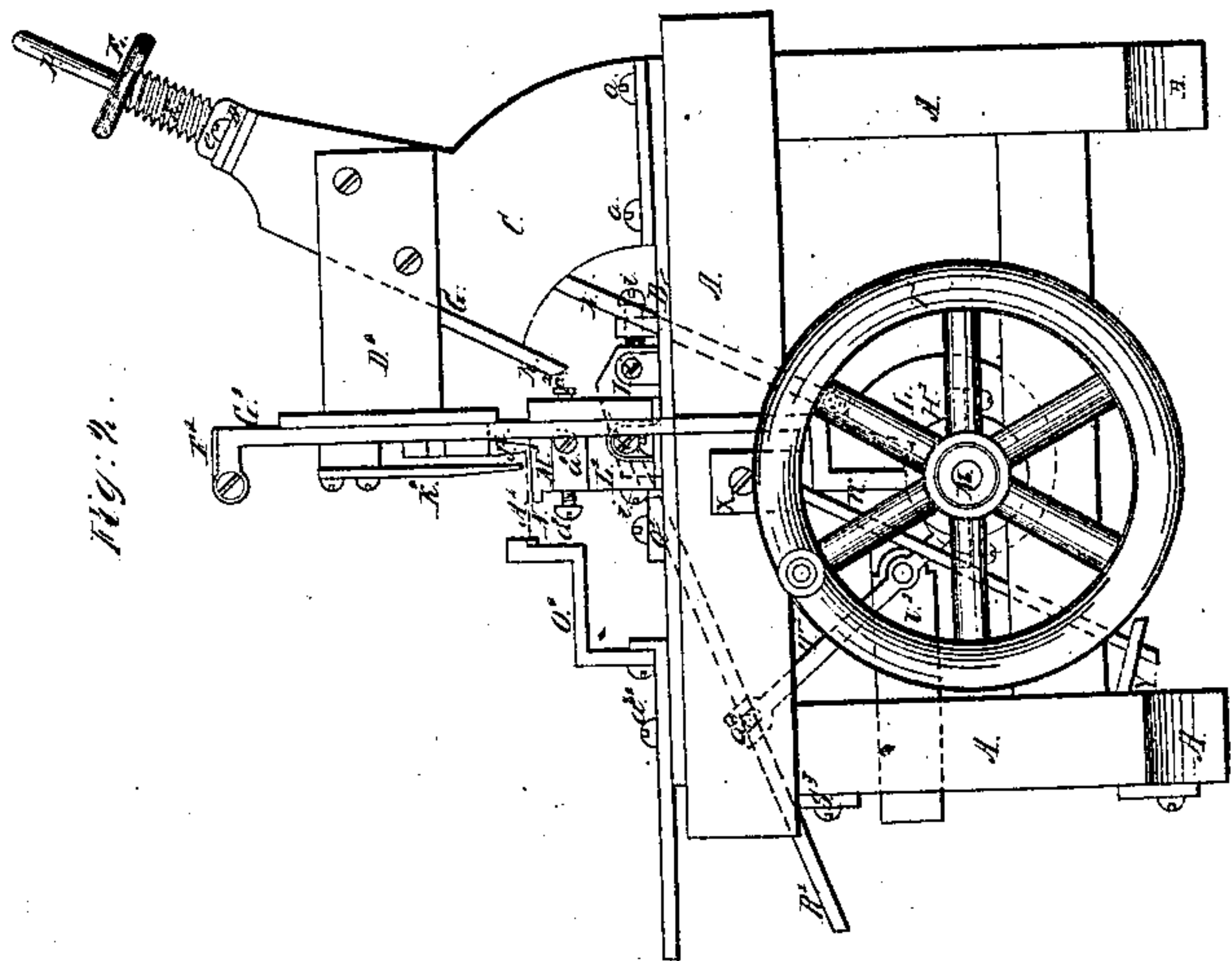
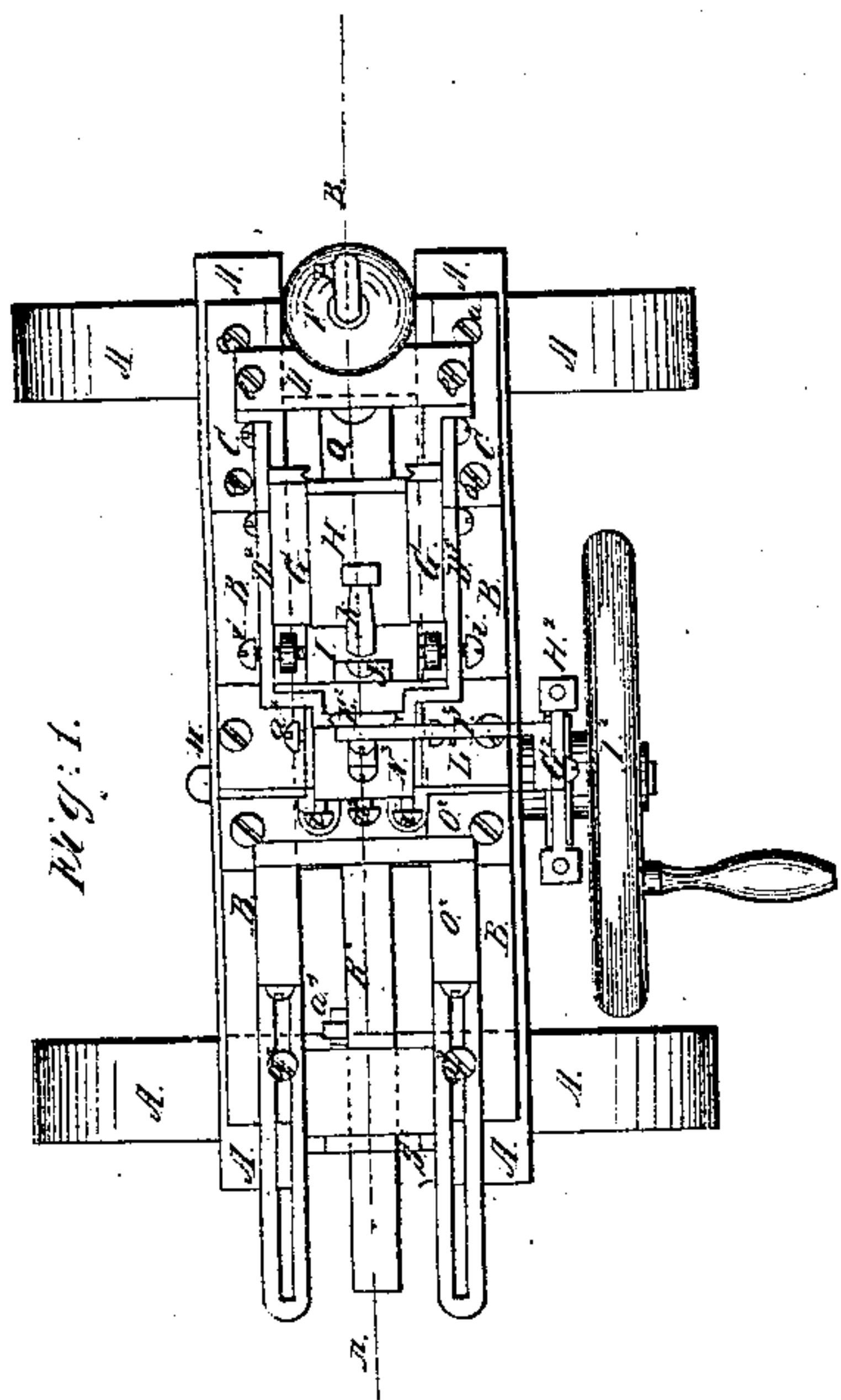
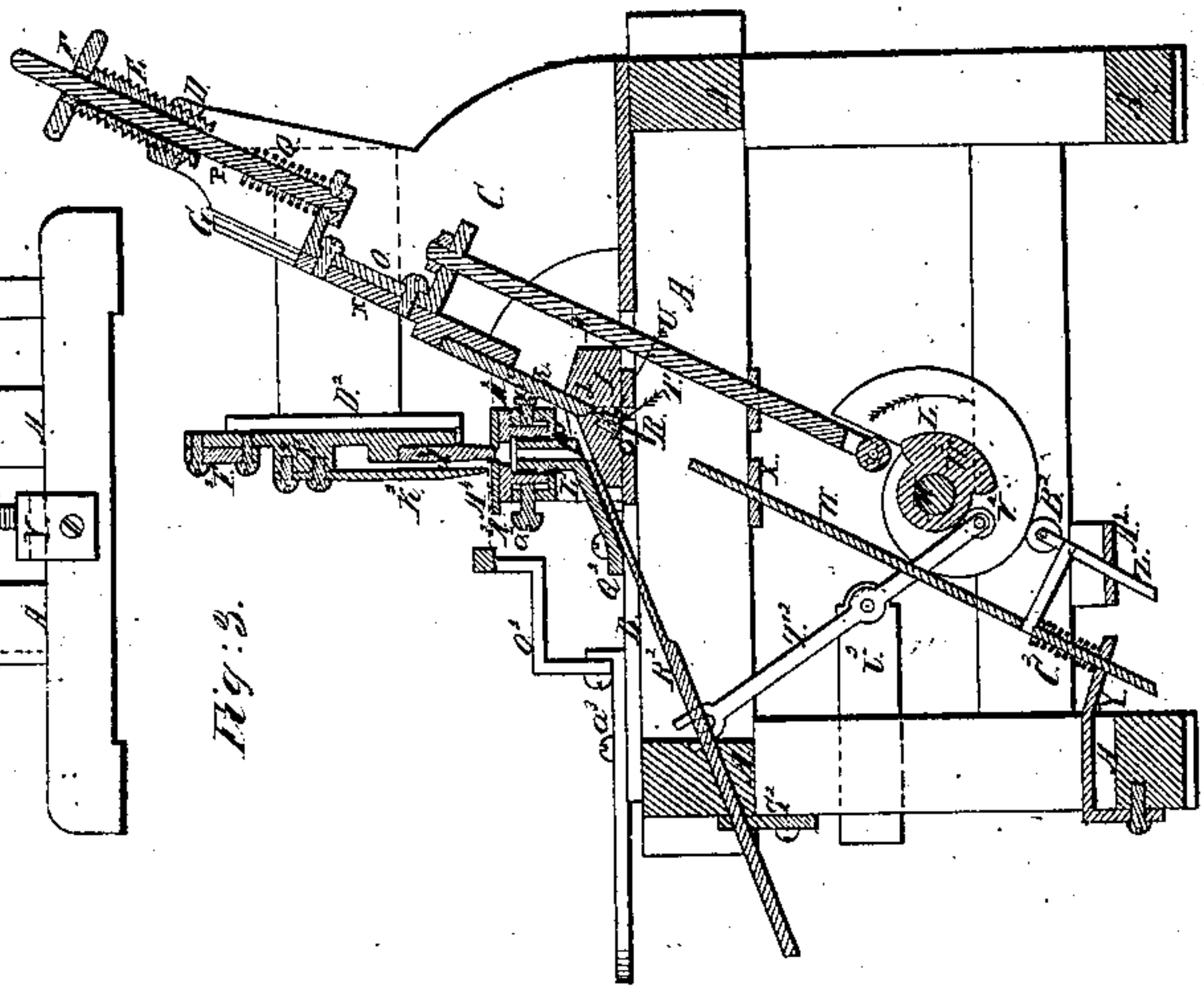
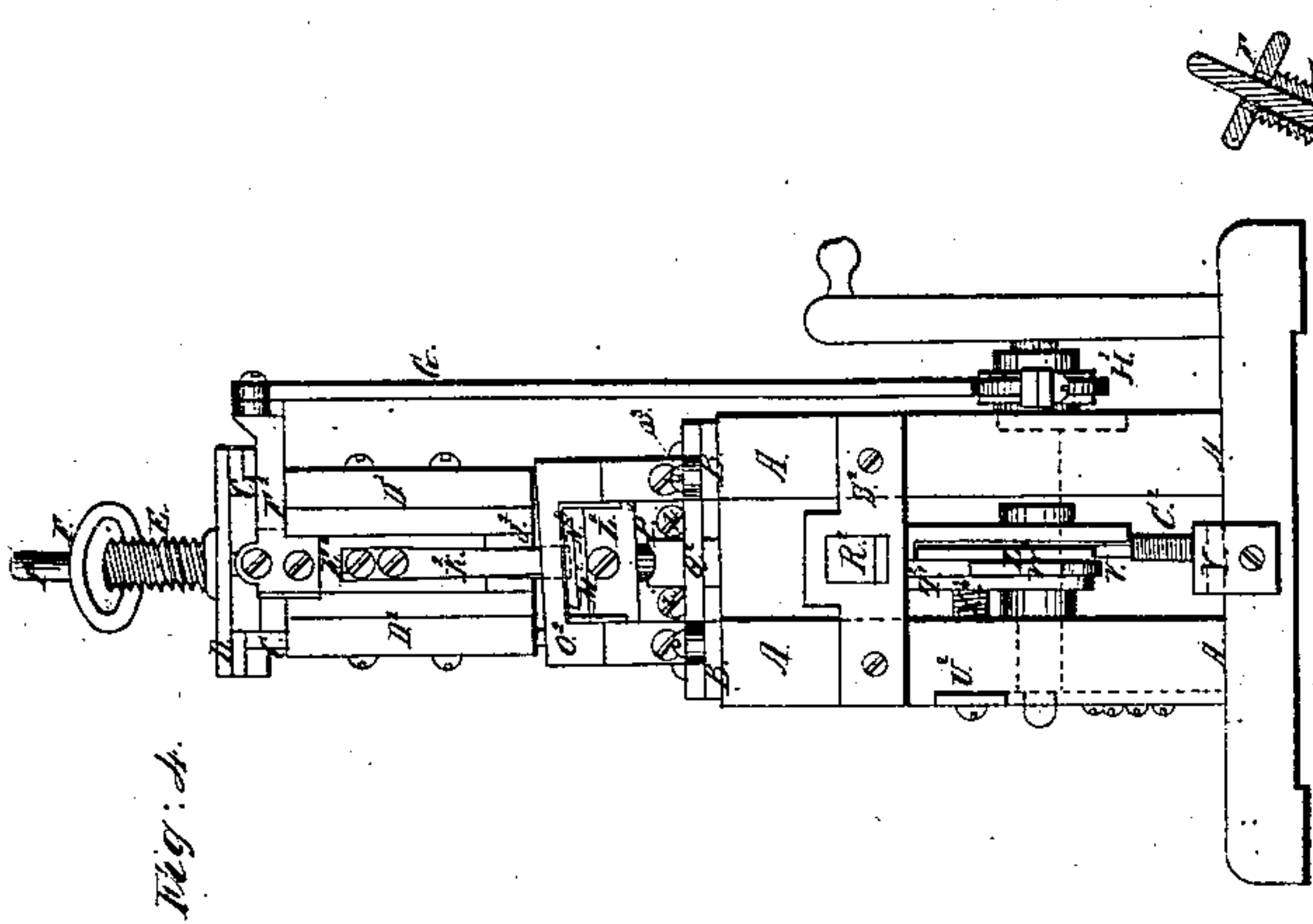


Bearce & Peck,
Leather Working Machine,

No 29,756,

Patented Aug. 28, 1860.



Witnesses:
Theodore L. Lamb,
J. Lamb.

Inventor:
Horace M. Bearce,
Lewis C. Peck
By C. W. Goss
Att'y

UNITED STATES PATENT OFFICE.

H. M. BEARCE, OF NORTH AUBURN, AND LEWIS C. PECK, OF LEWISTON, MAINE.

MACHINE FOR CUTTING AND SWAGING SHOE-TIPS.

Specification of Letters Patent No. 29,756, dated August 28, 1860.

To all whom it may concern:

Be it known that we, HORACE M. BEARCE, of North Auburn, and LEWIS C. PECK, of Lewiston, both in the county of Androscoggin and State of Maine, have invented a new and useful Machine for Cutting and Swaging Boot and Shoe Tips; and we hereby declare that the following specification, in connection with the accompanying drawings and references thereon, constitute a lucid, clear, and exact description of the construction and use of the same.

In referring to the said drawings, Figure 1, denotes a plan or top view; Fig. 2, a side elevation of the same; Fig. 3, a longitudinal vertical section on line A, B, of Fig. 1; Fig. 4, a front end elevation of our machine.

Invention.—The nature of our invention consists in our hereinafter described machine so constructed that it will cut blanks from sheet metal or any suitable material or substance, and then swage or shape these blanks to conform to, and protect the toes of boots and shoes. These tips being cut from the sheet, and shaped, on our machine at one operation, all as will be hereafter seen.

Construction.—To enable persons skilled in the art nearest to which our invention appertains to construct and carry out the same, we will describe it as follows: We construct a frame of wood seen at A, in the several figures of the drawings. To the top of this frame A, we secure a metal plate seen at B, to the top and back end of which we secure two uprights C, by means of screws *a*. The tops of uprights are secured by cross bar D, uniting each together by screws *e*. To the center of cross bar D, is threaded a screw cylinder E, made hollow for the purpose hereafter seen. The screw cylinder E, is turned up or down by balance wheel F, firmly affixed to its top end.

The front G, of each upright C, is grooved or made a sliding way in which a slide H, is fitted to move up and drop down freely. A die is constructed seen at I, and held in position firmly on plate B, by screws *i*. This die has a cavity formed in its upper surface, seen at J, Figs. 1 and 3, the same shape as the tip is designed to be made. To this cavity a metal plunger K is fitted so as to strike, drop, or be moved therein. Its end is of the same shape of cavity J, and less the thickness of material to be worked. The plunger K is secured to slide H, and is moved with, and by it.

The slide H is operated by cam L on main shaft M acting on lower end of rod N or its pulley while its upper end is secured to slide H by stand O. To the upper part of stand O is secured a rod P around which a helical spring Q is placed and which is between this stand and lower end of screw cylinder E before described, so that when the slide H is raised and stand O, with it, this spring Q is brought directly in contact with end of cylinder E to force the plunger K into die I, with greater or less force as may be desired, and this forced blow may be regulated by turning screw E up or down at pleasure. Thus by the downward movement and concussive force of plunger K the tip is formed in the die, and to remove the tip after the plunger K is raised out of the die, there is a small rod R, provided and fitted to a hole drilled through the die under the tip. The upper end of this rod is just flush with cavity J in die, its lower end passing down through a guide plate S, on which rests the rod plate T, which has a spiral or helical spring U between it and upper part of cavity J, in die I. This keeps the rod R always down unless forced up by some superior pressure, which is necessary to apply each time a tip is to be removed which may be done as follows: A rod W is fitted to slide up and down in stands X and Y, the lower portion having a prong Z, guided in stand A², the prong Z having a pulley B² so fitted as to come in contact with cam L (answering for this double purpose) at its under side, so that when the cam L is turned and lets off pulley B², the spring C² will throw up rod W so that its upper end will violently come in contact with lower end of rod R throw it up and consequently throw the tip from the die, the rod R regaining its position by spring U.

Thus far the description is to swaging the tip but prior to that the blank for each tip must be cut from the sheet and deposited in the die I at the right moment. We secure two guide pieces D² to uprights C. Between these we fit a slide E² to move vertically or nearly so by its arm F², connected by rod G² with eccentric H² on main shaft M on which the balance or drive wheel I² is placed. The slide E² is provided with a cutter J² and stamp K². Underneath these we erect a stand seen at L², in which the die holder M² is placed adjustably by screws *a*². The die holder M² carries die N² the top of which is

placed on an angle so that the cutter J^2 will cut the blank a shearing stroke. Of course the cutter and the hole in its die must be shaped as the blank is required to be. The stamp K^2 stamps the next contiguous blank on the sheet the date of patent of tip.

The guide is seen at O^2 , and is secured to plate B, by screws a^3 . This guide gages the distance or relation of the sheet A^4 to the cutter J^2 and must be set each time a row of tips is cut from the edge of the sheet seen in red line A^4 . After the blank is cut, it drops through die N^2 into tube P^2 of stand Q^2 and down forward of slide bar R^2 and by this bar is forced forward over cavity J, in die I, to be set, and the movement must be so timed as that the cutting and setting will harmonize with each other. The slide bar R^2 moves in stand S^2 and channel in die I and the movement imparted to it by its pin a^4 and the forked rod T^2 swinging on stand U^2 its lower end having a pulley V^2 which comes in contact with and is operated by cam W^2 on main shaft. The pulley V^2 is kept against cam by spring X^2 .

Fig. 3 represents our machine with a tip just formed in die I and the other figures represent the plunger K raised and the cutter J^2 cutting the blank from sheet A^4 which is fed along by hand.

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

1. The die I constructed in the manner described and in combination with plunger K operated by cam L, gravity, or adjustable percussive force, or both, the latter being imparted to the plunger by screw E and helical spring Q or otherwise, for swaging the tip essentially in the manner and for the purposes fully set forth.

2. The cutter J^2 , stamp K^2 and die N^2 constructed and arranged as described for cutting the blank when combined with die I for swaging the tip essentially as set forth.

3. The combination of the tube P^2 , stand Q^2 and slide bar R^2 operated by cam or otherwise, to receive and feed the blanks direct from the cutting die to the swaging die, essentially as set forth.

4. The rod R and its plate T, guide plate S and helical spring U combined with die I, the rod R being operated by percussive force to throw the swaged top from the die, essentially in the manner and for the purposes fully set forth.

H. M. BEARCE,
LEWIS C. PECK.

Witnesses:

P. NOYES,
E. L. LUCAS.