2 Sheets—Sheet 1.

G. CRETER.

Machine for Making Heels for Boots and Shoes.

No. 205,948. Patented July 16, 1878.

Fig. 2.

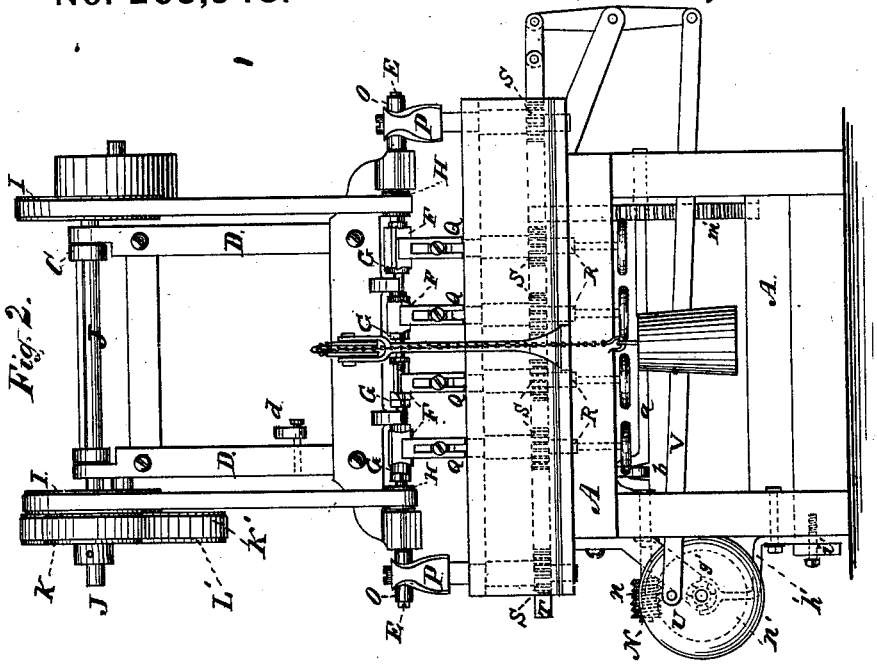
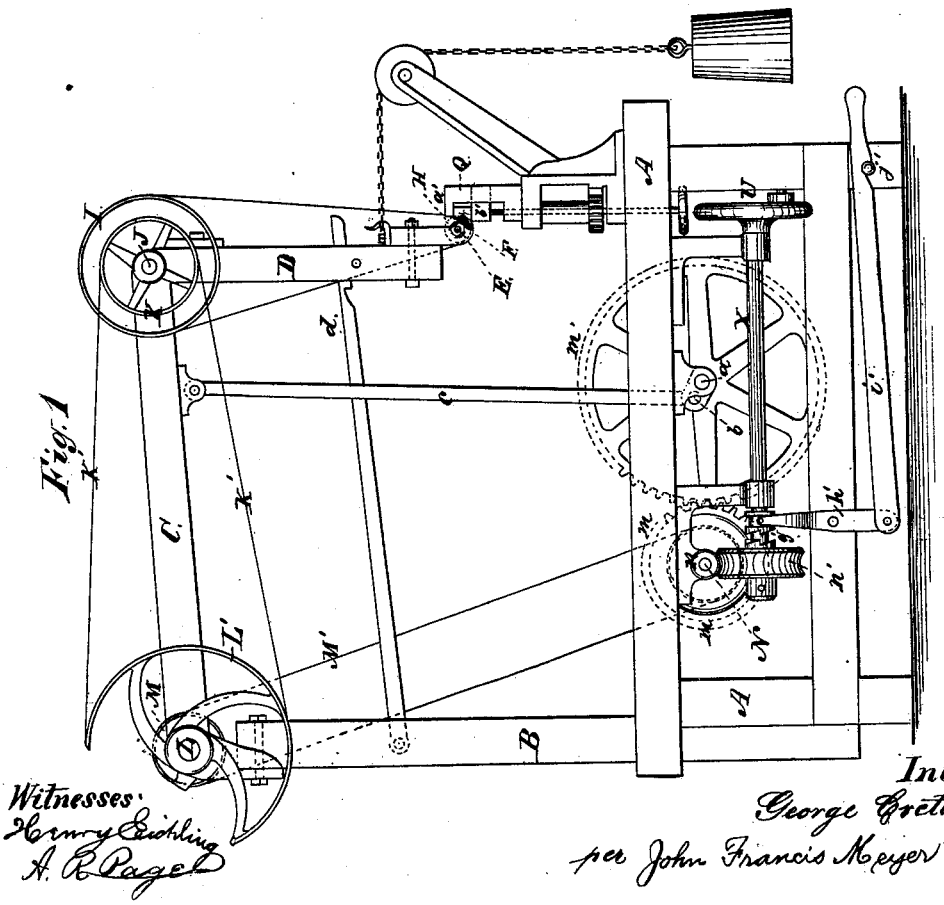


Fig. 1



Witnesses:
Henry Eichling
A. R. Paget

Inventor:
George Creter
per John Francis Meyer
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2 Sheets—Sheet 2.

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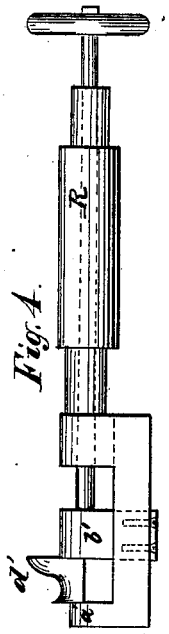

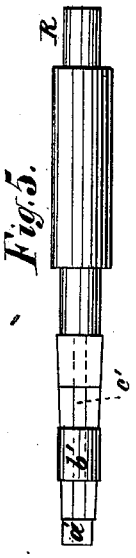

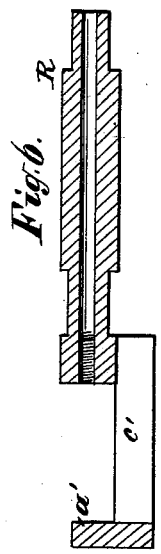

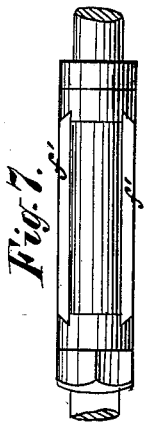

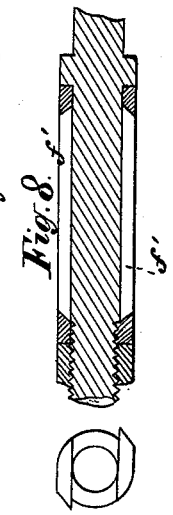

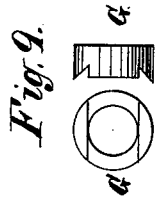

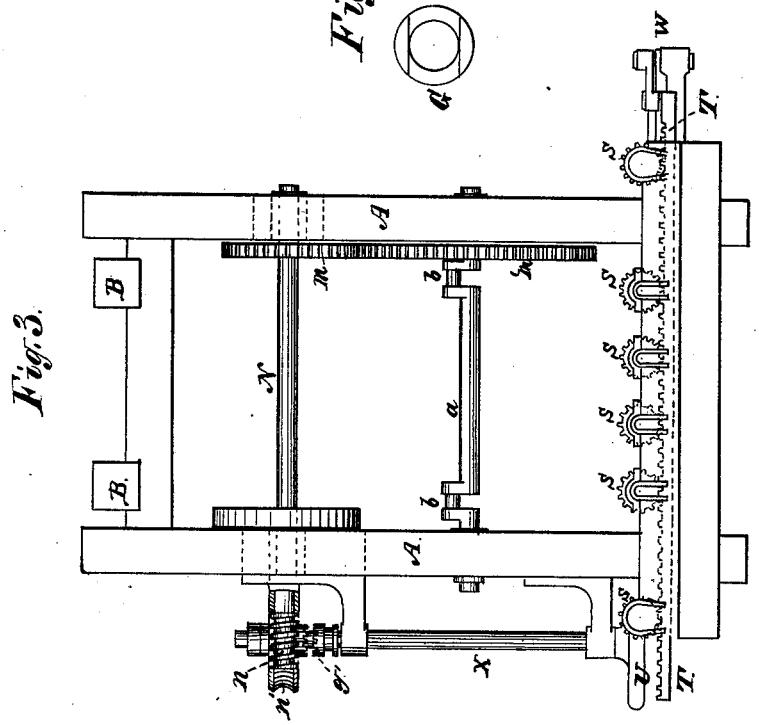

Witnesses:
Henry Bichling
A. R Page

Inventor
George Creter
per John Francis Meyer

UNITED STATES PATENT OFFICE.

GEORGE CRETER, OF NEW YORK, N. Y.

IMPROVEMENT IN MACHINES FOR MAKING HEELS FOR BOOTS AND SHOES.

Specification forming part of Letters Patent No. **205,948**, dated July 16, 1878; application filed June 28, 1878.

To all whom it may concern:

Be it known that I, GEORGE CRETER, of the city and State of New York, have invented certain Improvements in Machines for Making Boot and Shoe Heels, of which the following is a specification:

My invention relates to machines for making heels for boots and shoes of wood, leather, or other materials capable of being worked with revolving cutting-tools.

Such machines as have been hitherto made have been capable of turning out only one heel at a time.

My said invention is designed to cheapen the manufacture by providing an apparatus in which a number of heels may be simultaneously shaped; and it consists in several novel combinations of parts, whereby a simple, efficient, and economical machine for the purpose is provided.

Figure 1 is a side, and Fig. 2 a front, elevation of a machine made according to my invention. Fig. 3 is a horizontal sectional view; and Figs. 4, 5, 6, 7, 8, and 9 are detail views of certain of the parts embraced in the various combinations.

On the frame A are standards B, at the top of which is pivoted one end of a swinging frame, C. To the free end of the latter is pivoted the upper end of a hanging frame, D. At the lower end of the hanging frame are bearings, which sustain a horizontal shaft, E, on which are pivoted rotary cutters F. Each of these rotary cutters is composed of two knives fixed on opposite sides of a cutter-head, G, which is attached in any usual or suitable manner to the shaft E. This shaft receives a rotary motion by means of pulleys H, provided near each end thereof, and from which extend belts to pulleys I, similarly arranged on a shaft, J, which also forms the pivot connecting the hanging frame D to the swinging frame C. Another pulley, K, on the shaft J has a belt, K′, extending to a pulley, L′, on driving-shaft L. From a second pulley, M, on the last-named shaft, L, extends a belt, M′, to the shaft N below. On each end of the shaft E, which carries the cutters F, is a friction-roller, O, which bears against an adjacent pattern or form, P. The friction-rollers in their up-and-down movement follow the shape of the patterns, and carry with them, of course, the cutters. QQQQ are vises for holding the wooden blanks to be shaped into heels. Each of these is arranged in front of one of the cutter-heads with the cutters, and works on a vertical shaft, R. On each shaft R is a spur-wheel, S. A rack, T, is arranged in such relation with the spur-wheels that a reciprocating motion of the rack will turn the vises alternately in opposite directions. This reciprocating movement of the rack is derived from a crank, U, connecting, by a rod, V, and lever W, with one end of said rack. Motion is given to the patterns P by means of like spur-wheels S, and from the same rack that gives motion to the vises. The shaft X, which carries the crank U, derives its rotary motion from the shaft N by means of a worm, *n*, and a worm-wheel, *n′*, on the latter. This shaft connects, by gears *m m′*, with a crank-shaft, *a*, from each of the two cranks *b* of which extend two rods, *c*, to the swinging frame C, so that a rising-and-falling motion is given to the frame by the working of the shaft. The hanging frame D is automatically drawn forward by a cord and weight. This frame may be pushed back and kept there, when desired, by means of a catch or other device, *d*. Each of the vises Q is composed of a fixed jaw, *a′*, and a movable jaw, *b′*, working in a slot in the back *c′* of the vise, retained in any position by means of a screw.

In the operation of the machine, the cutters, being drawn forward, act upon the wood held by the clamps. The extent to which the cutters move forward is controlled by the patterns, which latter, being rotated or turned much after the fashion of the well-known Blanchard lathe, control the action of the cutters upon the wood *d′*. The up-and-down movement given to the cutters by the motion of the swinging frame causes them to act from top to bottom, and vice versa, of the pieces of wood, or other material to be worked, which are held in the vises. These vises, with the pieces of wood or other material, are moved at the same time, in the same direction, and by the same arrangement as the patterns.

The knives *f′* of the cutters should be made with straight edges, as being more simple in form and more easily kept in condition for use.

On the shaft X is a clutch, *g′*, by which the

spur-wheels may be disconnected, so that the movement of the patterns and vises may be arrested at will. This clutch is operated by a pivoted lever, *h'*, and an arm, *i'*, the latter having a shoulder, *j'*, by placing which upon a stop the clutch may be held in place and the spur-wheels thus connected with the driving-shaft.

What I claim as my invention is—

1. The combination of the system of rotary cutter-heads, carrying straight-edged knives F, and mounted on the end of a swinging frame, D, with the system of vises Q, patterns P, and rolls O, for making boot and shoe heels of wood or other material, substantially as herein set forth.

2. The combination of the system of vises Q, having spur-wheels upon their spindles or shafts R, with the spur-wheels S, rack T, and a system of suitable cutters, the whole arranged for joint operation by connecting mechanism, substantially as herein described, for the purposes specified.

3. The combination of the crank-shaft *a*, rods *c*, swinging frame C, and hanging frame D, the latter carrying a system of rotary cutters, all substantially as and for the purpose set forth.

GEO. CRETER.

Witnesses:
JOHN S. WALKER,
GEORGE V. SHEFFIELD.