

(No Model.)

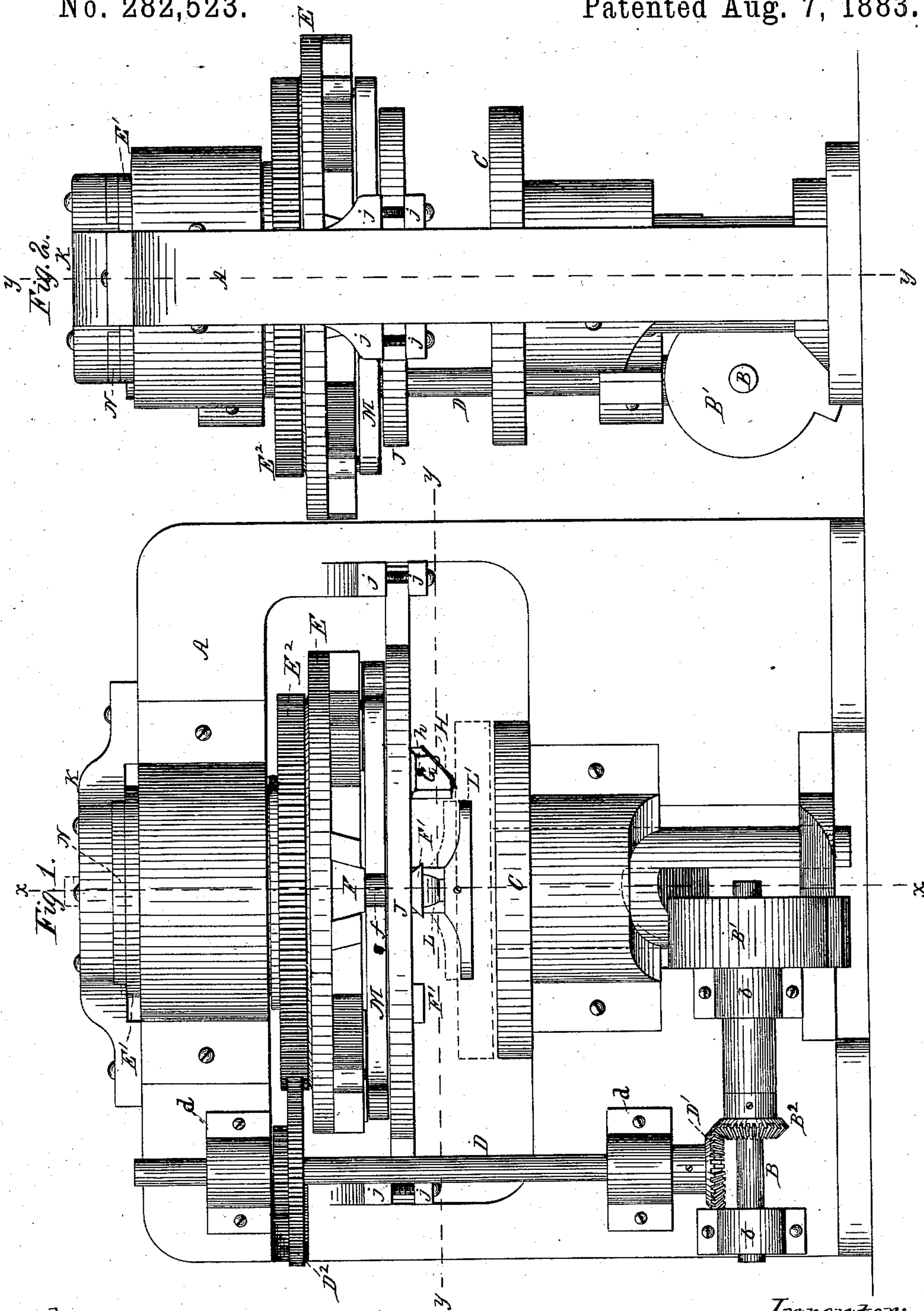
3 Sheets—Sheet 1.

S. M. HOYE.

MACHINE FOR CUTTING SHOE SOLES.

No. 282,523.

Patented Aug. 7, 1883.



Witnesses:
W. C. Jindiverton
A. Stewart

Inventor:
Stevie M. Hoyer
by
McNeill & Co.
his Attorney.

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Fig. 4.

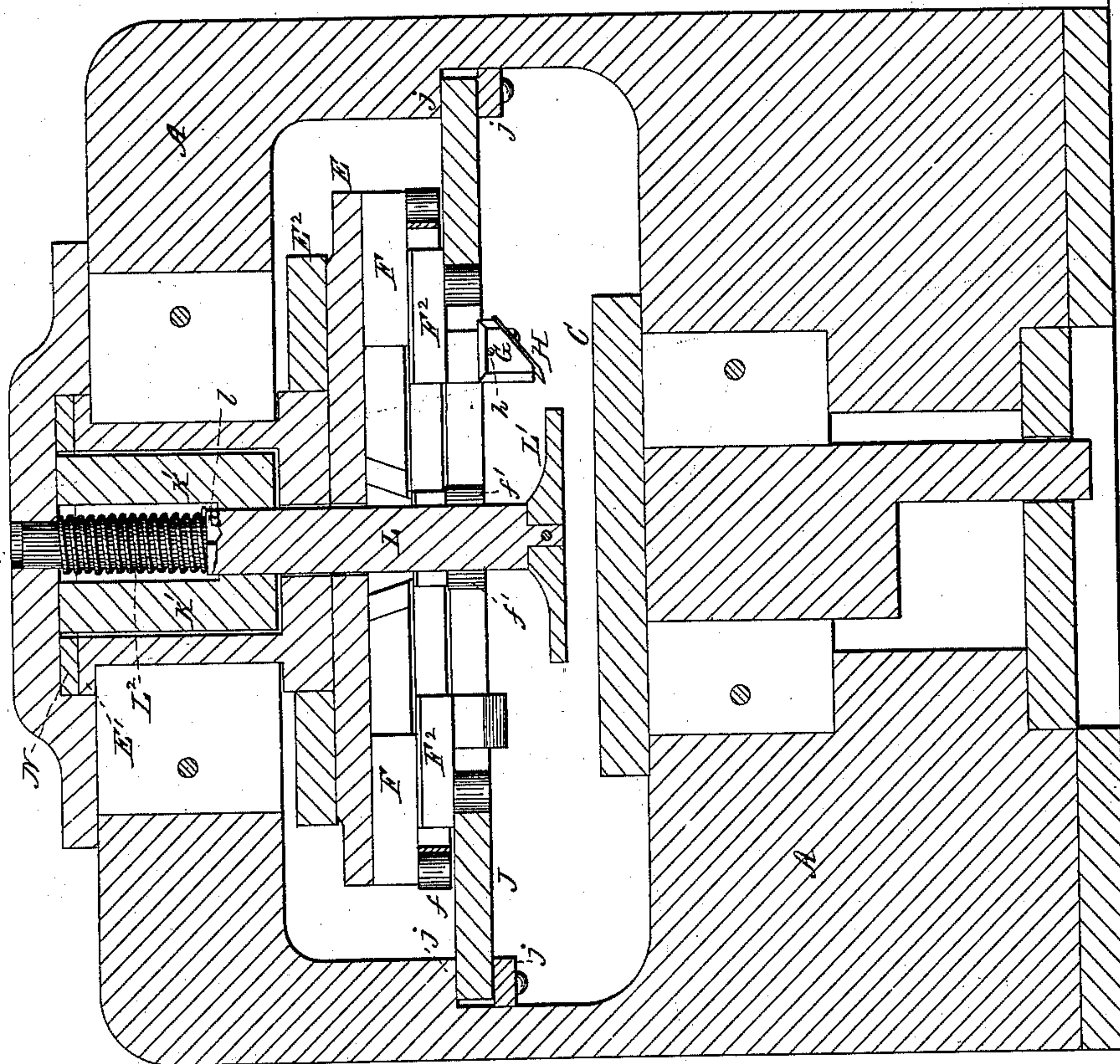
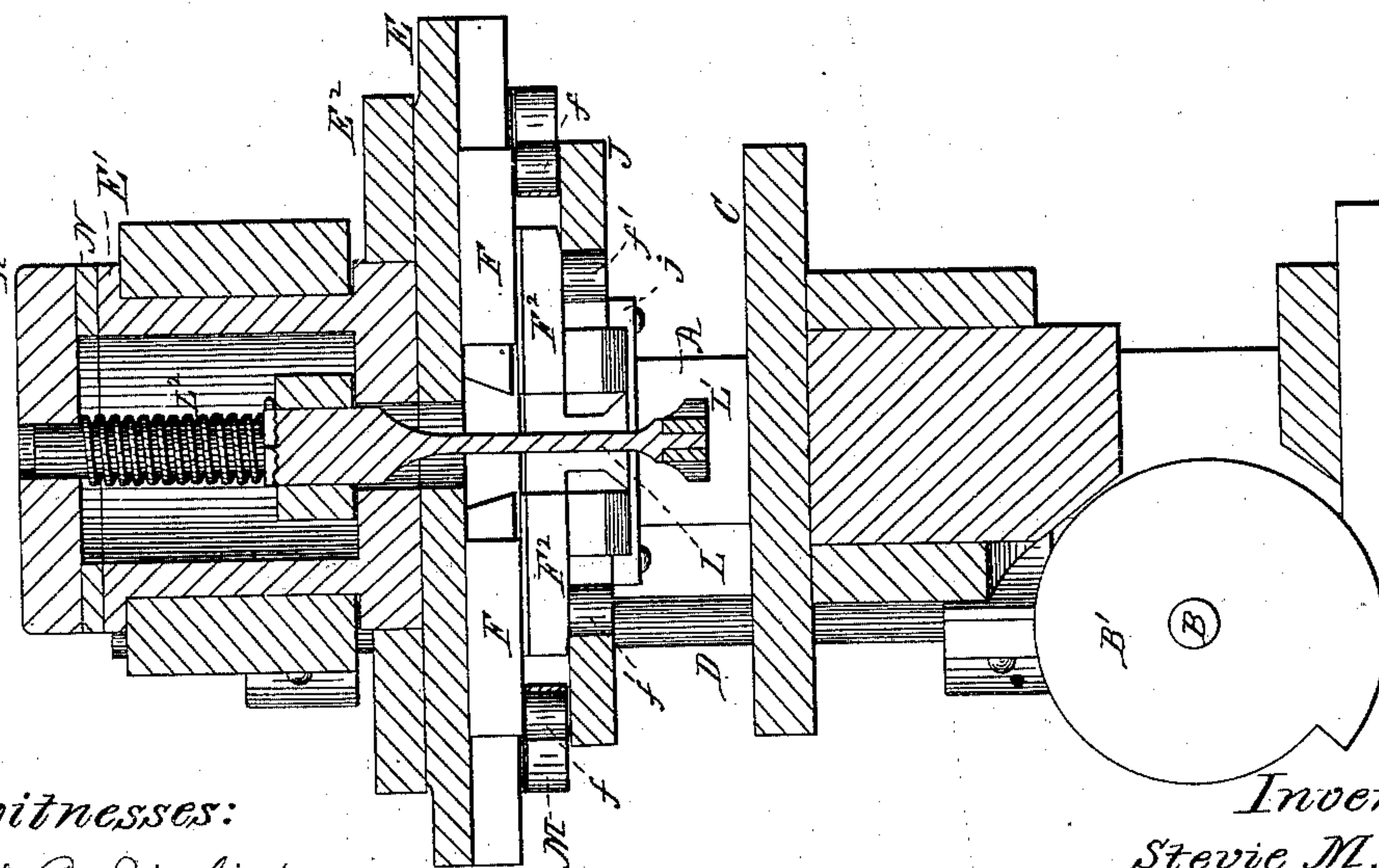


Fig. 3.



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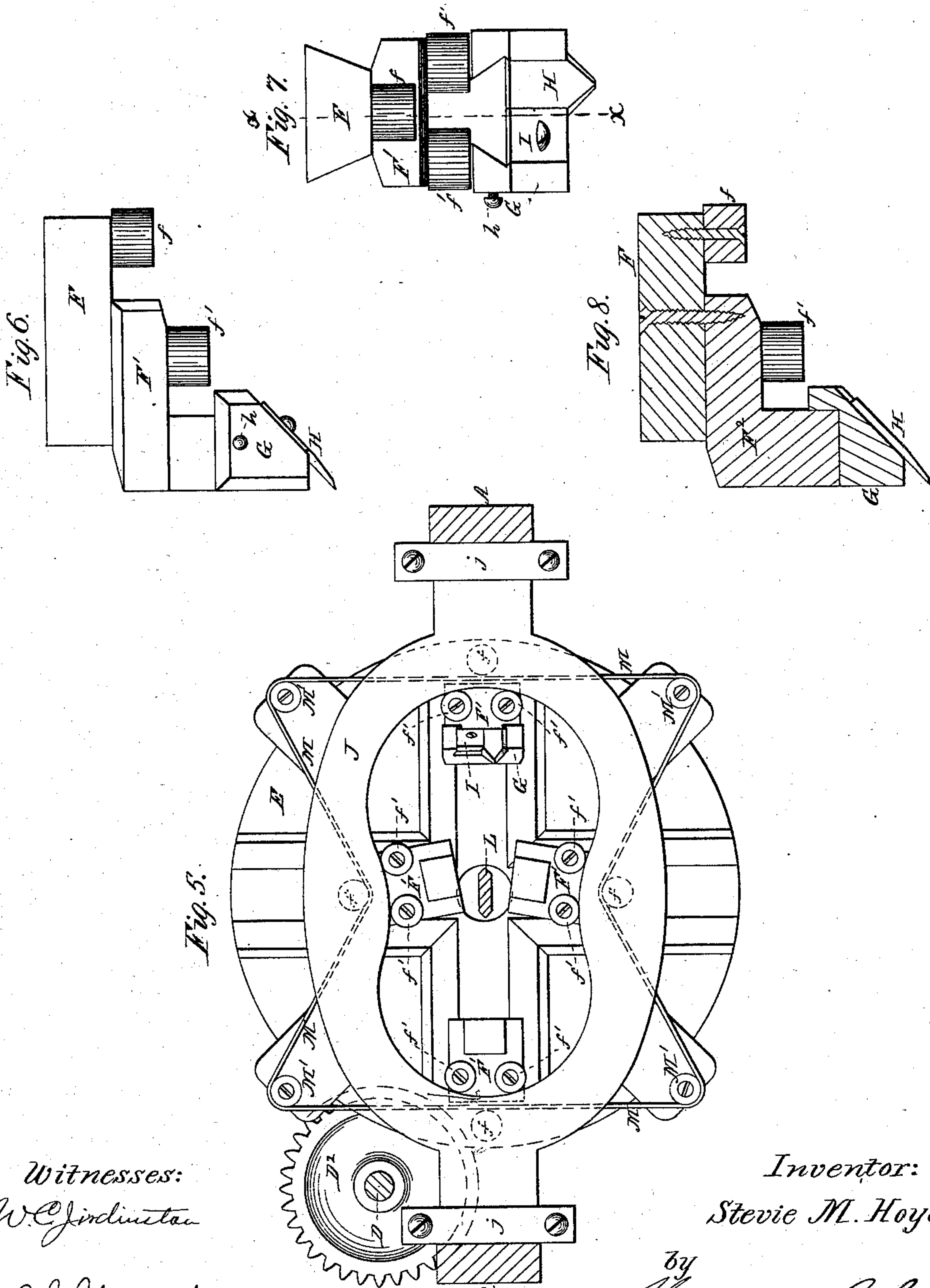
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UNITED STATES PATENT OFFICE.

STEVIE M. HOYE, OF BIRMINGHAM, CONNECTICUT, ASSIGNOR OF ONE-HALF
TO JOHN P. LEIN, OF SAME PLACE.

MACHINE FOR CUTTING SHOE-SOLES.

SPECIFICATION forming part of Letters Patent No. 282,523, dated August 7, 1883.

Application filed June 20, 1883. (No model.)

To all whom it may concern:

Be it known that I, STEVIE M. HOYE, of Birmingham, in the county of New Haven and State of Connecticut, have invented a certain
5 new and Improved Machine for Cutting Shoe-Soles, &c.; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference marked thereon.

My invention has for its object to provide an improved machine for cutting shoe-soles or other similar articles out of leather, rubber, or
15 similar material; and it consists in certain novel details of construction and combinations of parts, which I will first describe, and then point out particularly in the claims at the end of this specification.

20 In the accompanying drawings, Figure 1 is a side elevation of a machine constructed in accordance with my invention. Fig. 2 is an end elevation of the same; Fig. 3, a cross-sectional view taken on the line *x x* of Fig. 1; Fig. 4, a longitudinal sectional view taken on the line *y y*, Fig. 2; Fig. 5, a cross-sectional
25 view taken on the line *y y* of Fig. 1, looking up, showing the revolving head and the pattern-plate. Fig. 6 is a side view of one of the blocks sliding in the grooves in the revolving head. Fig. 7 is an end view of the same, and Fig. 8 is a sectional view taken on the line *x*
30 *x* of Fig. 7.

Similar letters of reference in the several figures indicate the same parts.

35 A represents the main frame of the machine, which supports all of the operating parts.

B is the horizontal main driving-shaft, supported in suitable bearings, *b b*, and having on
40 its inner end a large cam, *B'*, which operates at intervals to raise and lower a table, *C*, which slides in an upright bearing in the main frame, and has its lower extremity extended down and passed through a semicircular opening in the
45 bottom of the frame, to prevent the table from turning around in its bearings. This table *C* is for the purpose of supporting the material to be cut. Between its bearings the shaft *B* has keyed to it a bevel-gear wheel, *B²*, that

meshes with the corresponding gear, *D'*, keyed 50
to an upright shaft, *D*, supported in bearings *d d*, and having near its upper end a gear-wheel, *D²*, that meshes with gear-teeth *E²* on the revolving head *E*, carrying the cutting-knives. The revolving head *E* is formed with 55
the broad circular base and the upwardly-extending tubular central part, having the annular flange, *E'*, at its upper end, by which it is supported in the bearings in the main frame. The under side of the head *E* is provided with 60
two dovetailed grooves crossing each other at right angles at the center, and in each of these grooves are two sliding blocks, *F*, on which are pivoted the knife-carrying blocks *F'*. The blocks *F* are provided at their outer ends with 65
a roller, *f*, the purpose of which will be hereinafter explained. The pivoted blocks *F'* are each provided near their outer ends with two small friction-rollers, *f' f'*, that are adapted to travel around the inner side of the pattern- 70
plate *J*, and each of said blocks has also a small downward projection with dovetailed edges, on which is adapted to be placed a triangular piece, *G*, carrying the knife-blade *H*. This piece *G* is secured by a small screw, *h*, passing 75
through one of its sides and abutting against the projection. The knife-blade *H* is fastened in the dovetailed groove in the inclined side of the triangular piece by means of the wedge-shaped key *I*, which may be secured by a small 80
screw, as shown. The metal pattern-plate *J* is clamped at its ends in between the parts *j j* of the frame, and its inner circumference is formed to correspond to the shape of the sole to be cut, all as shown in Fig. 5. 85

K represents an arch-piece that extends over the top of the revolving head, as shown, and is fastened thereto by means of suitable bolts. Depending from near the center of this arch and passing into the hollow center of the revolving head *E* are two arms, *K' K'*, that support at their lower ends a square-shaped bearing-piece, through which a rod, *L*, supporting at its lower end the presser-foot *L'*, is adapted to slide. This rod *L* is for a part of its length 95
made round, and projects through a perforation in the arch-plate; and it is also encircled by a spiral spring, *L²*, which bears against the

shoulder 7 on said rod and tends to keep the rod normally pressed downward. A pin projecting from one side of the rod and striking against the upper part of the bearing prevents the rod from being pressed down too far.

M represents an elastic band, that is supported on the small rollers M', mounted on a projection fastened on the under side of the revolving head, and preferably between the grooves, as shown in Fig. 5. This band also extends between the small friction-roller on the sliding block F and the outer end of the pivoted block F', and tends to keep the slides at the outer ends of the grooves.

Situated between the upper end of the annular flange on the top of the revolving head and the under side of the arch-piece is a washer, N, for the purpose of preventing any possible vertical motion of the head.

The operation of my machine is as follows: The shaft B is revolved in the direction indicated by the arrow in Fig. 2, and, through the medium of the bevel-gears B² and D', shaft D, and gear D², revolves the head carrying the cutting apparatus. At every revolution of the shaft B the cam B' on its end raises the table C, on which the leather or other material to be operated upon is placed, to the position indicated by dotted lines in Fig. 1, against the pressure of the presser-rod, so that the presser-foot L' is caused to bear down and hold the material firmly in place while the head revolves, and the small frictional rollers f' f' on the ends of the pivoted block carrying the knife, by reason of the elastic band tending to press them outward, follow the inequalities of the pattern-plate, and the knives cut a corresponding piece out of the material on the table. Each time the table is raised by the cam the material upon the table is acted upon by the knives and a sole is cut therefrom, while each time the table is lowered the operator shifts the leather or other material, so as to present another uncut surface to the action of the knives.

Having thus described my invention, I claim as new—

1. In a machine for cutting soles for boots and shoes, the combination of a revolving head having grooves in its lower face, slides worked in said grooves and carrying cutting-knives, a pattern for guiding said knives, and means for revolving the head, substantially as described.

2. In a machine for cutting soles for boots and shoes, the combination of a revolving head

carrying movable knives, means for revolving said head, a pattern for guiding said knives, a vertically-movable table upon which the material to be cut is placed, and means for moving the table into position, so that the knives are enabled to operate upon the material, substantially as described.

3. In a machine for cutting soles for boots and shoes, the combination, with a revolving head carrying movable knives, means for revolving the head, and a pattern for guiding the knives, of a vertically-moving table upon which the material is placed, means for moving said table in such proximity to the knives as will allow them to operate upon the material thereon, and a spring presser-foot adapted to hold the material while being operated upon, substantially as described.

4. In a machine for cutting soles for boots and shoes, the revolving head provided with grooves extending transversely across its lower face, the movable blocks sliding in said grooves and carrying knives, and the elastic band for keeping the blocks in contact with a pattern, in combination with said pattern and means for revolving the head, substantially as described.

5. In a machine for cutting soles for boots and shoes, the combination, with the revolving head having the tubular central portion, and provided with the grooves in its face, in which move slides carrying knives, of the arch-piece provided with the downwardly-projecting arms supporting the square-shaped bearing, and the rod carrying the presser-foot, and the spring encircling said rod, substantially as described.

6. In a machine for cutting soles for boots and shoes, the revolving head having the grooves in its lower face, in combination with the slides adapted to move in said grooves, the blocks pivoted to said slides, having the friction-rollers on their outer ends, the knife-carrier proper, and the knife secured thereto, substantially as described.

7. In a machine for cutting soles for boots and shoes, the combination, with the revolving head, and the slides having a radial movement therein and carrying cutting-knives, of a pattern and means for holding the slides in yielding contact with the pattern, substantially as described.

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Witnesses:

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