

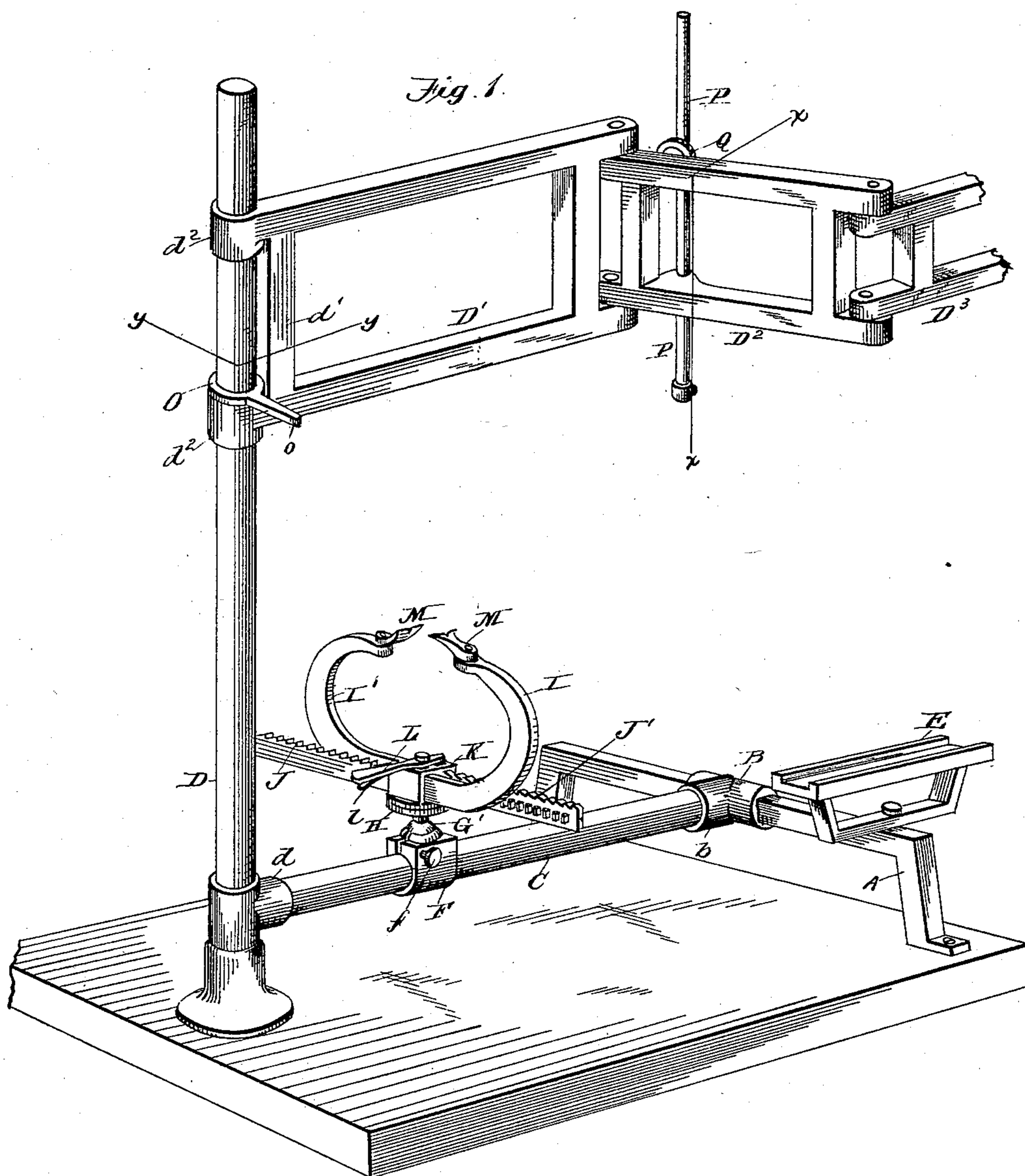
(No Model.)

2 Sheets—Sheet 1.

A. F. SKINNER.
ENGRAVING MACHINE.

No. 285,695.

Patented Sept. 25, 1883.



WITNESSES

W H H Knight
O Bernhard.

INVENTOR

A. Frank Skinner
per Edscomb &
Attorneys

(No Model.)

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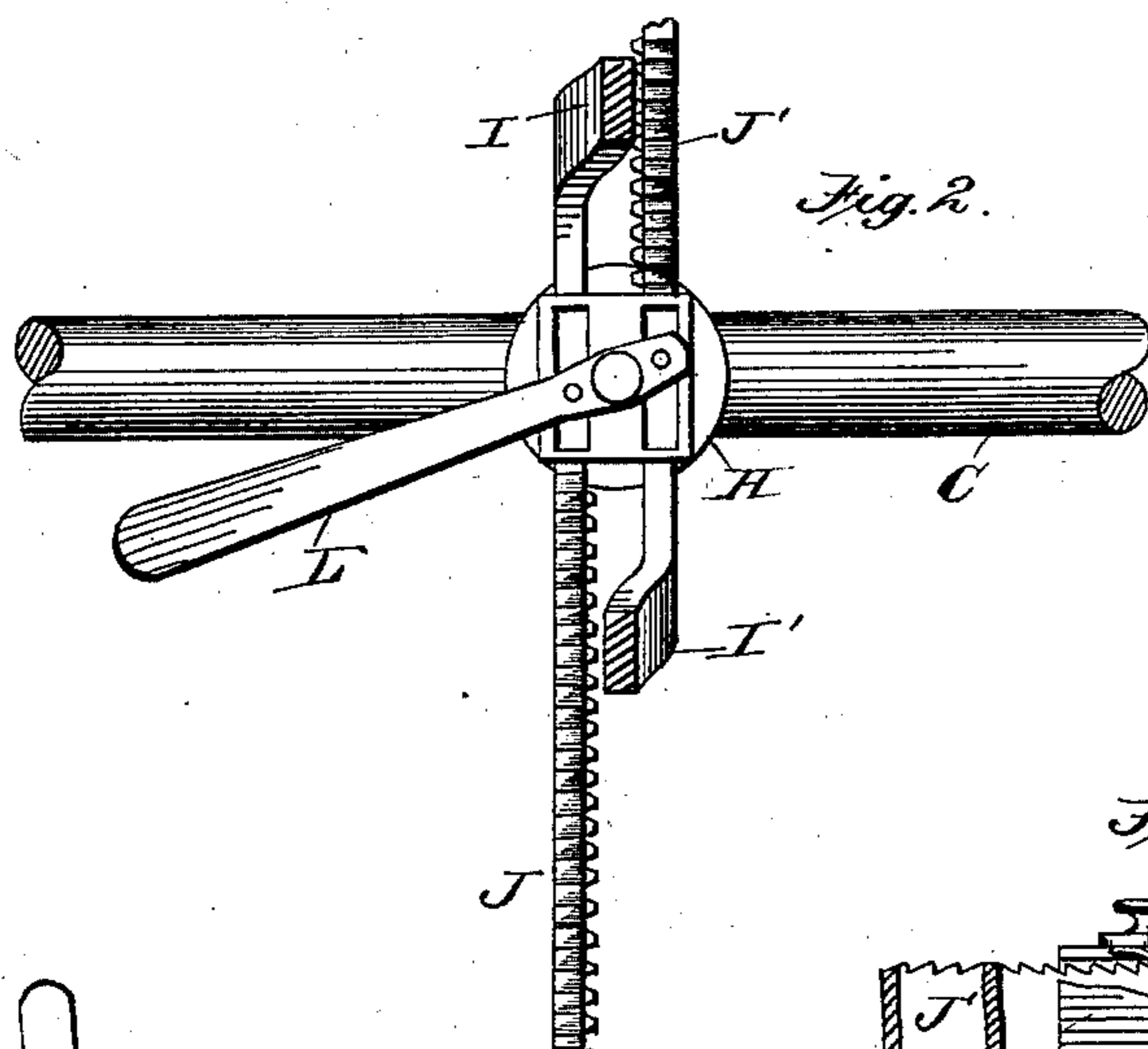


Fig. 2.

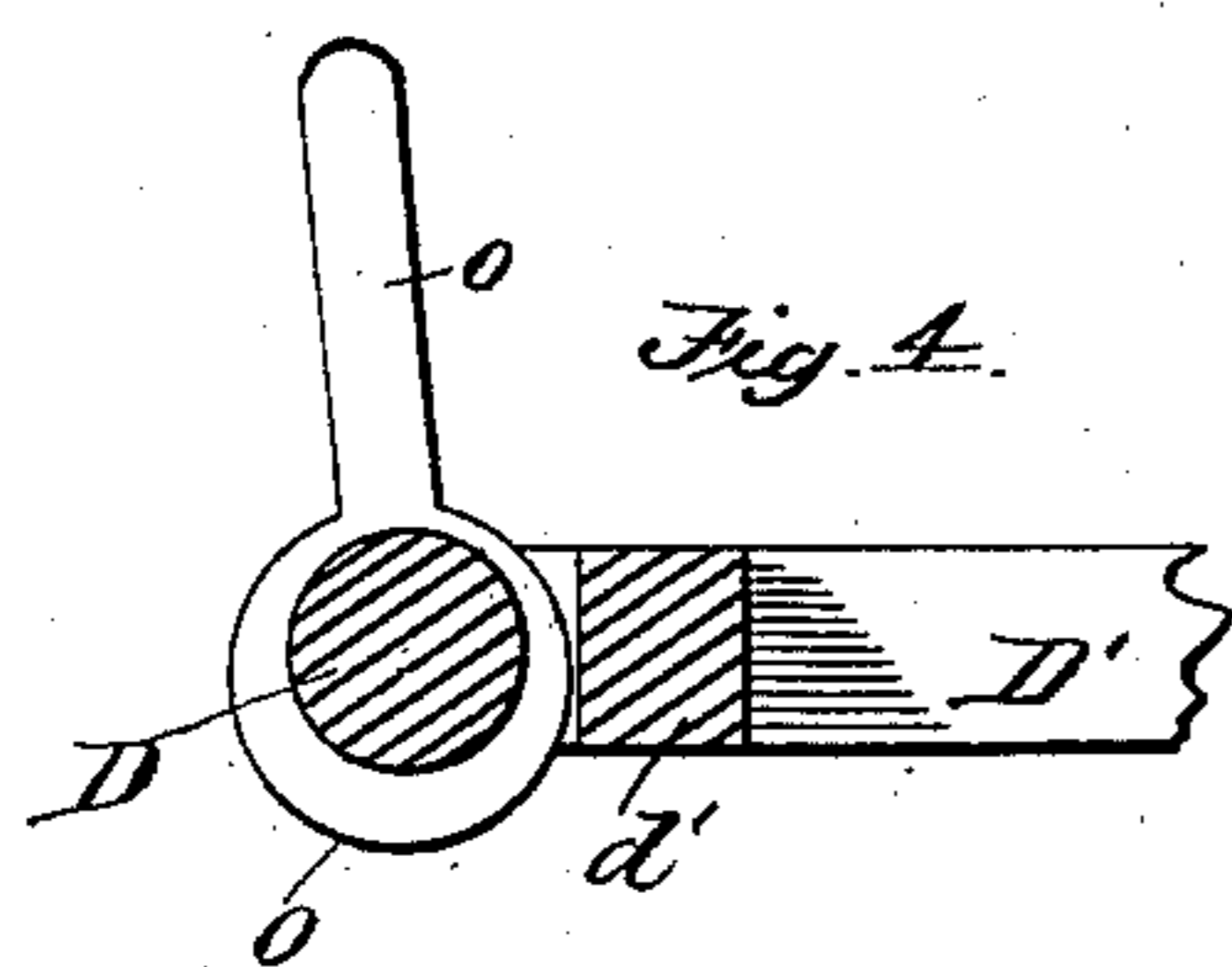


Fig. 4.

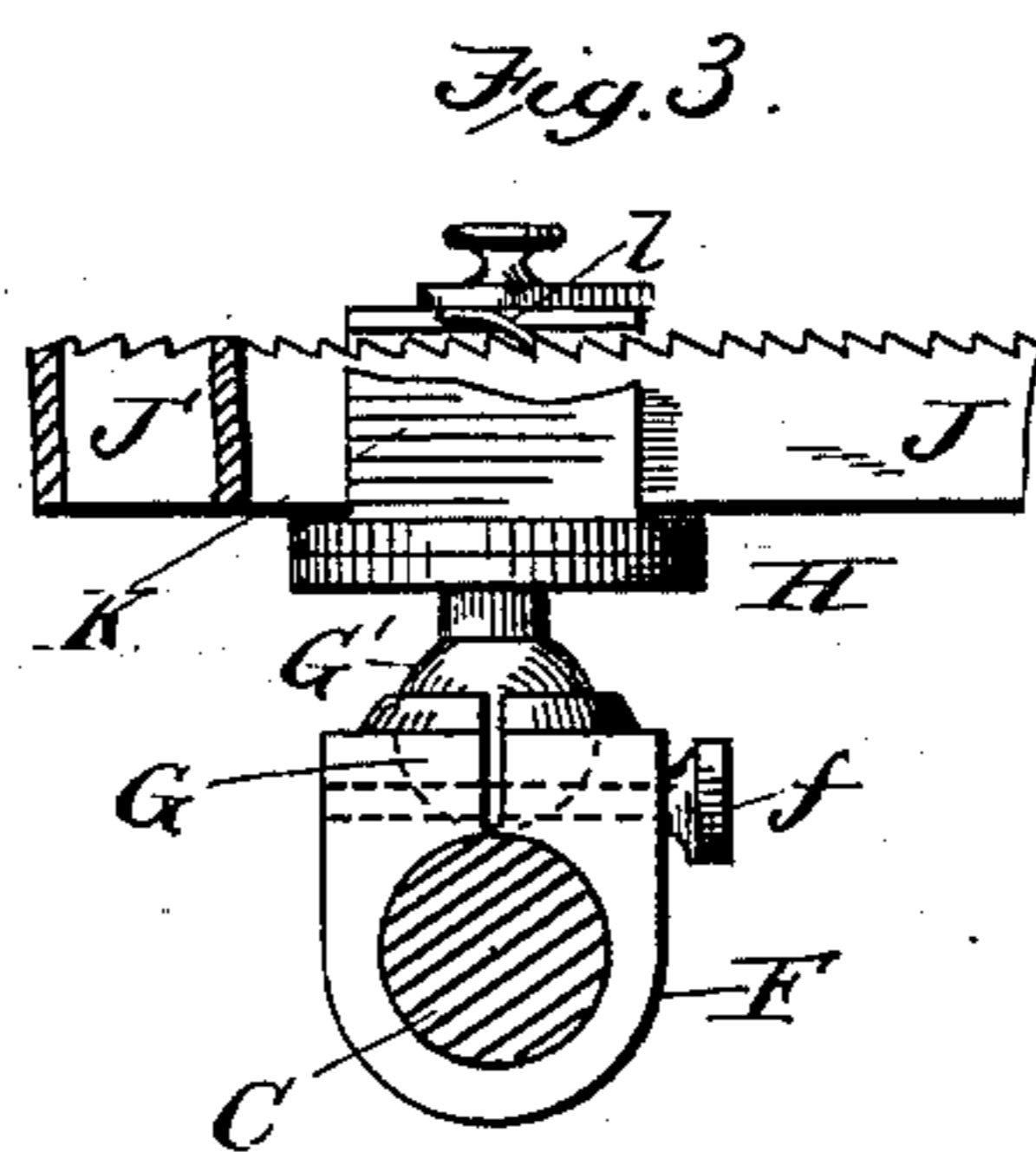


Fig. 3.

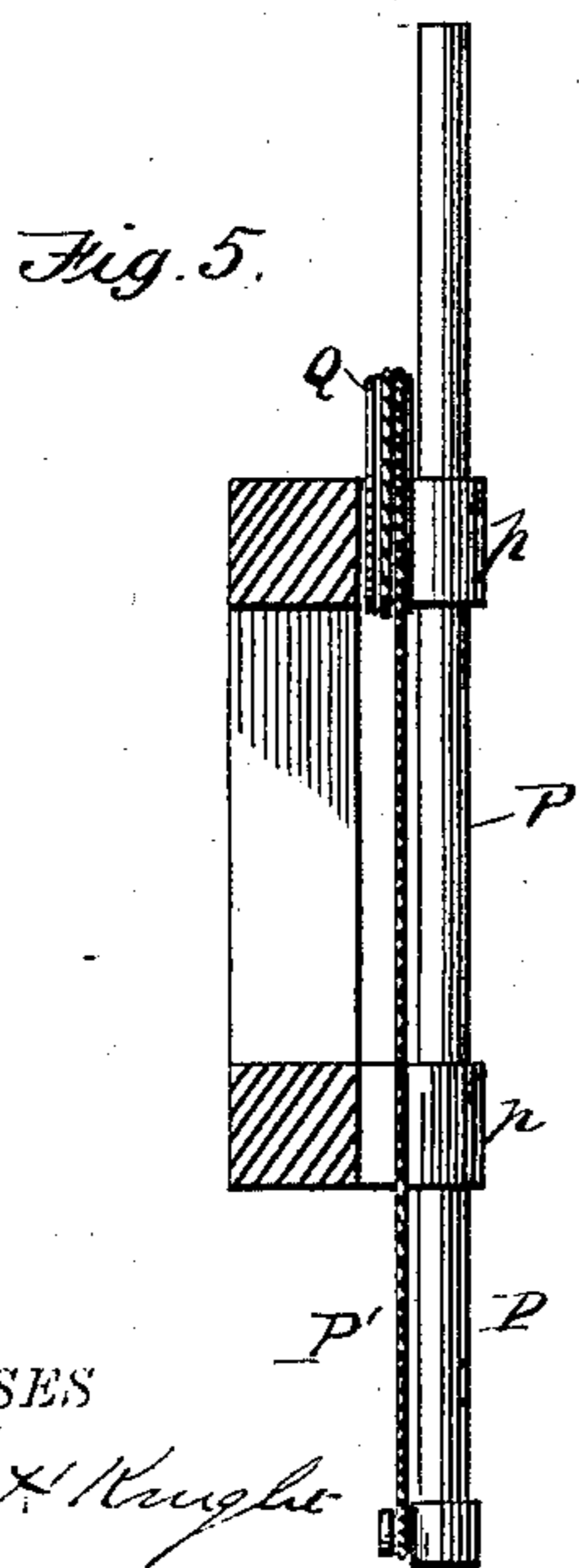


Fig. 5.

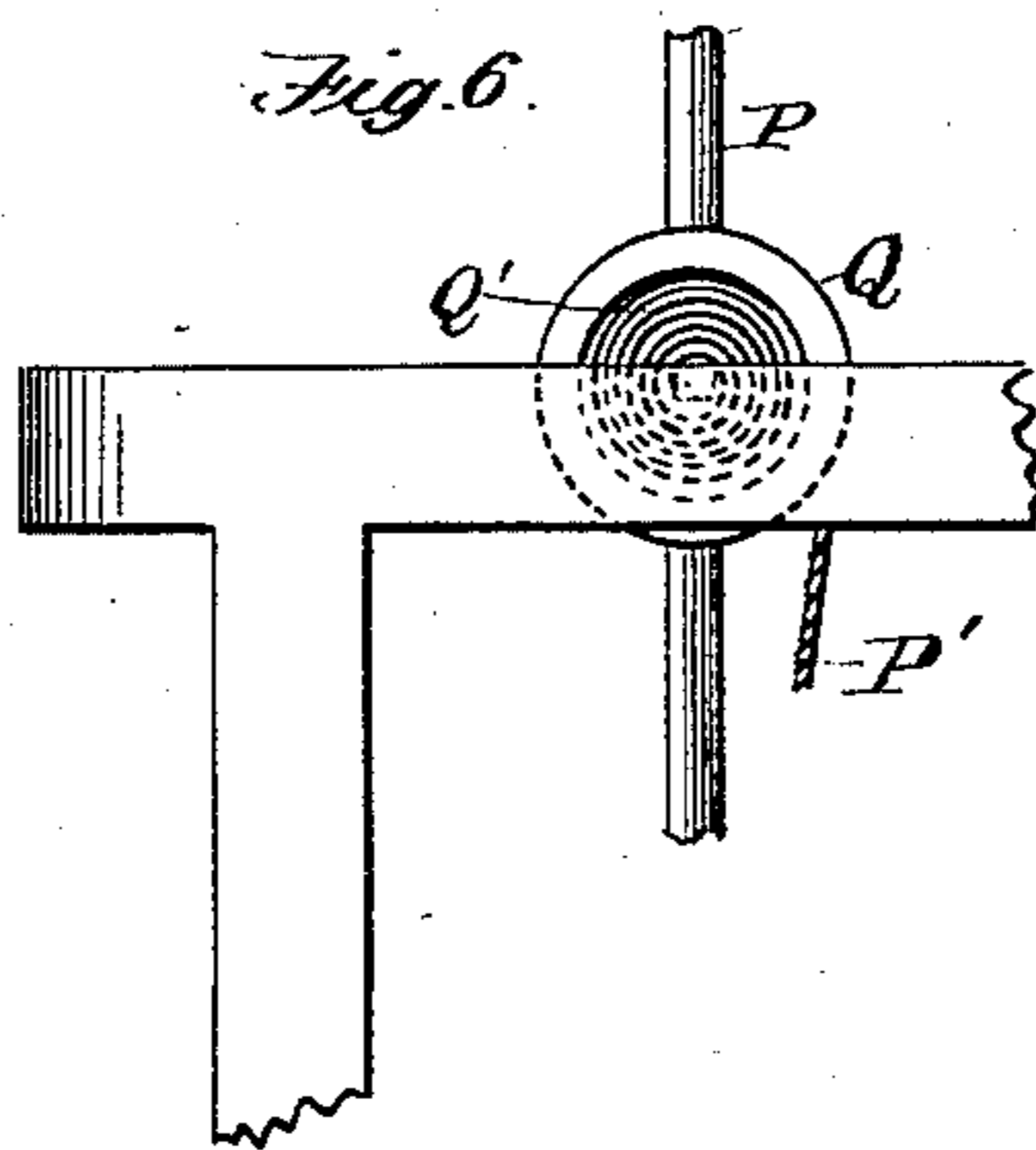


Fig. 6.

WITNESSES

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UNITED STATES PATENT OFFICE.

A. FRANK SKINNER, OF TAMA CITY, IOWA.

ENGRAVING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 285,695, dated September 25, 1883.

Application filed February 23, 1883. (No model.)

To all whom it may concern:

Be it known that I, A. FRANK SKINNER, a citizen of the United States, residing at Tama City, in the county of Tama and State of Iowa, have invented certain new and useful Improvements in an Engraving-Machine; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to machines for engraving flat, concave, or convex or uneven surfaces; and the novelty consists in the construction, arrangement, and adaptation of parts, as will be more fully hereinafter set forth, and specifically pointed out in the claims.

The object of the invention is to provide an engraving-instrument which will be simple and efficient in operation, which shall allow an independent vertical movement of the cutter-shank and provide for its automatic return, which shall present novel and useful means for holding the work to be operated upon, which shall provide novel and useful means for holding the pantograph-arm in any desired position, and which shall present other novel features and combinations, as will be fully illustrated in the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of the invention; Fig. 2, a horizontal section through the holding-arms, showing the rack-bars of the said arms and the operating-lever; Fig. 3, a vertical section through the junction of the holding-arms with the horizontal bar, some of the parts being in elevation. Fig. 4 is a section through the lines *yy* of Fig. 1, showing the eccentric ring and lever which lock the pantograph-arm. Fig. 5 is a vertical section through the lines *xx* of Fig. 1, and Fig. 6 a detail taken at right angles thereto.

Referring to the drawings, in which similar letters of reference indicate like parts in all the figures, A represents a suitable base-frame, upon which is adjustably hung an elbow-frame, B, which forms a bearing, *b*, for a horizontal bar, C, the opposite end of which is supported in a socket, *d*, of the standard D. Upon the horizontal base-frame A is pivotally supported the pantograph-table E, so as to give to the pantograph (not shown) a universal horizontal movement.

Adjustably hung upon the bar C is a clamp-bracket, F, held in any desired position by a suitable set-screw, *f*, and in this clamp is formed a socket, G, which receives the globular end G' of the arm-holder H, which has a swiveled joint.

I and I' designate the curved arms, which are adapted to hold the work to be operated upon, and they are provided with rack-bars J and J', respectively, which racks reciprocate in guides formed in the frame K, which is swiveled to the holder H. A lever, L, pivoted to the frame K, having spring-pawls *l*, which engage the racks J J', allows the operator to bring the holding-arms I I' close together or separate them at will. It will be observed that the holding means, as described, have longitudinal adjustment on the bar C, a universal pivot through the parts G and G', and a rotary or oscillating movement through the swivel-joint, thus enabling the operator to present the work to the instrument at any desired angle. For different kinds of work different engaging-jaws are required, and to provide for this I have the arms I I' formed to receive interchangeable jaws M, so that jaws of different sizes or form may be readily placed in position.

Loosely hung upon the standard D is the horizontal frame D', to which is pivoted the frame D², and to the latter is pivoted the frame D³. Between the collars *d'* of the frame D', which embrace the standard D, and operating loosely on such standard, I provide an eccentric ring, O, having a convenient handle, *o*. When the proper vertical and radial point of the frame D' is reached, the said frame may be fixed at that point by turning the ring O until its cam portion wedges between the standard D and the bar *d'* of said frame, and the bearing-surfaces of these parts may be roughened, to make the friction more certain in its action, if desired. This construction forms a cheap, simple, and efficient adjusting means, and I deem it of especial importance in this invention.

Properly journaled in the frame D² is an annular grooved pulley, Q, having secured to it and to the said frame a spiral spring, Q'. A rope, P', secured to the pulley and passing over the same in the annular groove thereof, has its other end secured at *p'* to the vertical

cutter-shank P, which is loosely supported in the frame D² at p. When a depression in the article being operated upon and held in the jaws M occurs, the shank P may be forced down 5 to its work, without changing any of the adjustments, by overcoming the constant force of the spring, which is wound up by the action; but as soon as this depressing force is released, the said spring automatically elevates the 10 shank to its normal position. This feature I also deem to be important in this construction.

Modifications in details of construction may be made without departing from the principle or sacrificing the advantages of my invention, the essential features of which will be 15 readily understood from the foregoing description, taken in connection with the drawings.

Having thus fully described the invention, what I claim, and desire to secure by Letters 20 Patent, is—

1. In an engraving-machine, the combination of the bar C and adjustable clamp F, having socket G, the holder H', having ball G'

and swivel H, the frame K, holding-arms I and I', racks J and J', and lever L, having 25 pawls l, as and for the purposes set forth.

2. In combination with the holding-arms I and I', and with means for universal adjustment, as described, the interchangeable jaws M, as and for the purposes set forth. 30

3. In an engraving-machine, and in combination with the standard D and frame D', having bar d' and sockets d², the eccentric ring O, having handle o, and adapted to serve as and 35 for the purposes specified.

4. The combination, in an engraving-machine, of the frame D² and cutter-shank P, of the pulley Q, spiral spring Q', and rope P', as and for the purposes set forth.

In testimony whereof I affix my signature in 40 presence of two witnesses.

A. FRANK SKINNER.

Witnesses:

C. B. BENTLEY,

B. A. HALL.