

(No Model.)

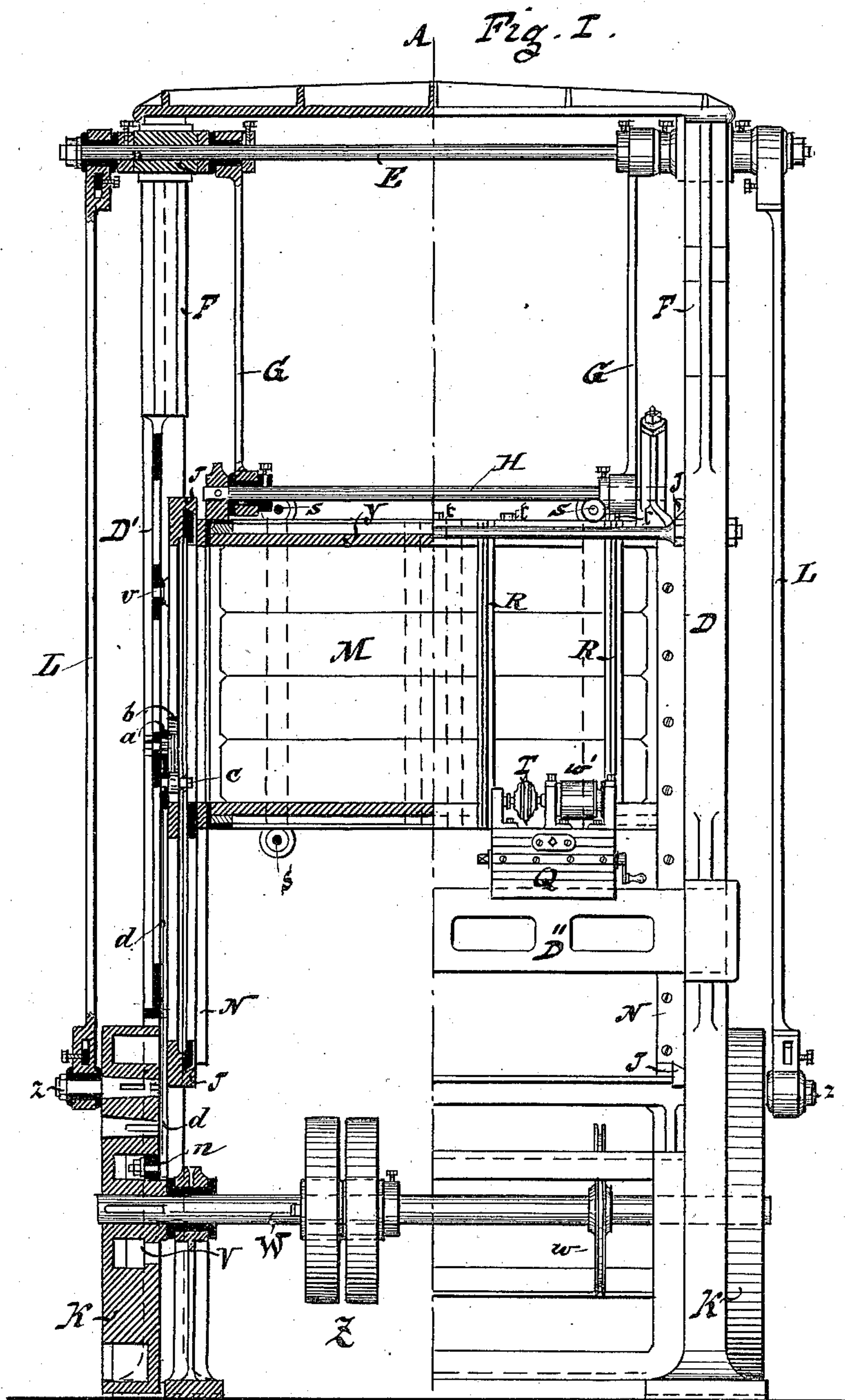
4 Sheets—Sheet 1.

F. A. SCHMIDT.

PROFILE CUTTING MACHINE.

No. 309,316.

Patented Dec. 16, 1884.



Witnesses.

C. Pauls

J. Gemmel, Jr.

Inventor.

A. Friedrich August Schmidt
per *Henry E. Roscher*
attorney.

(No Model.)

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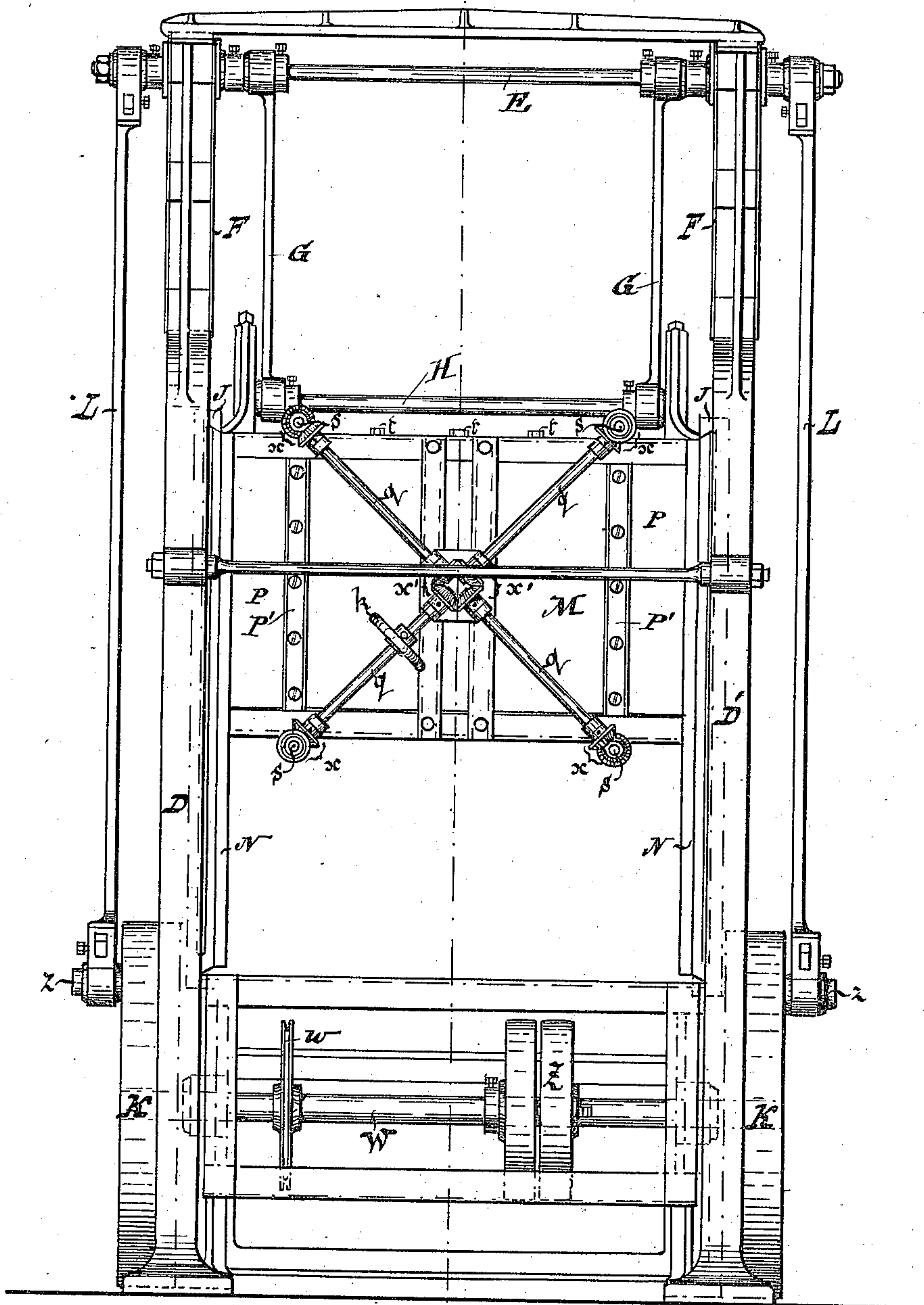
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Fig. II



Witnesses.

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(No Model.)

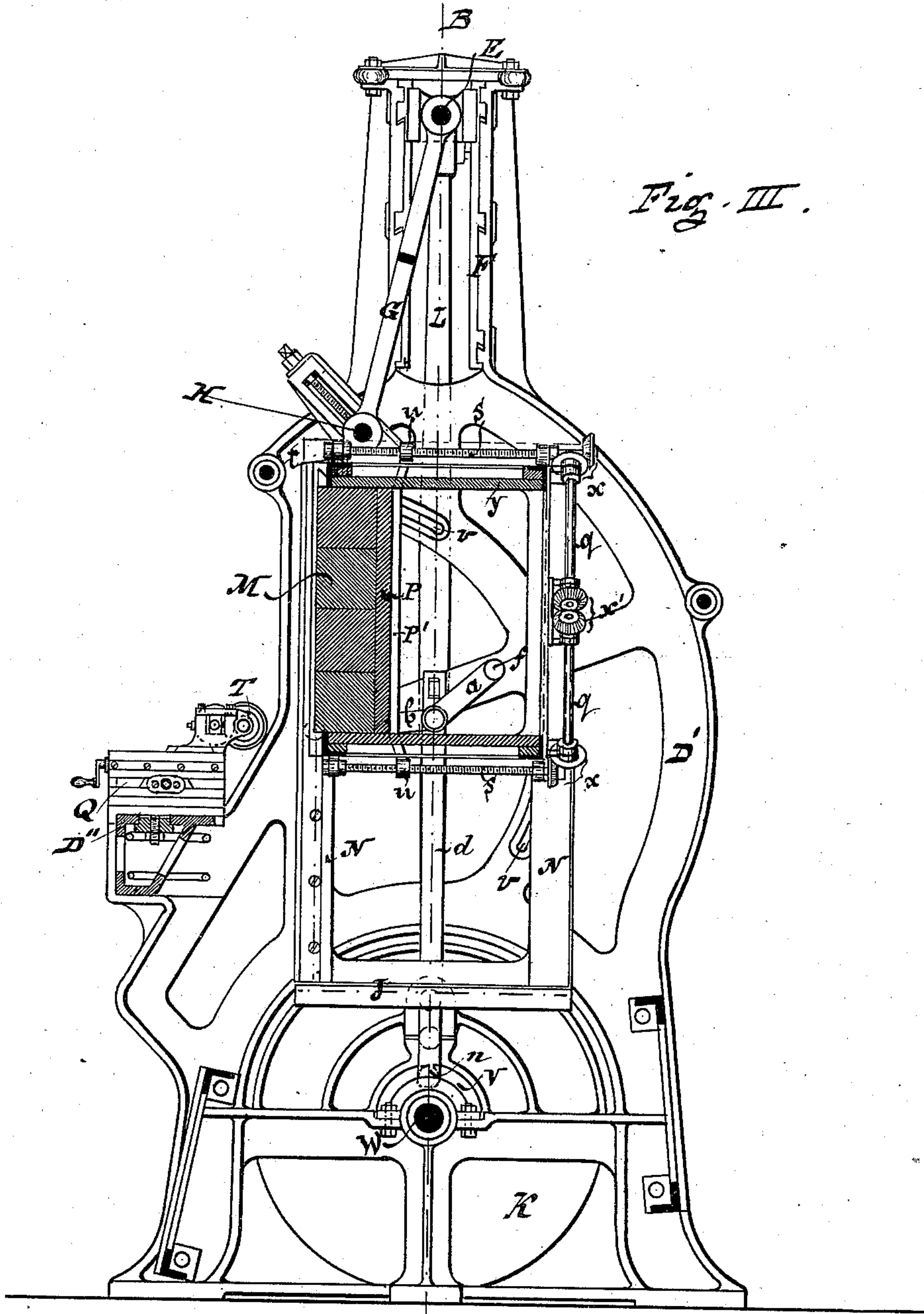
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Witnesses.

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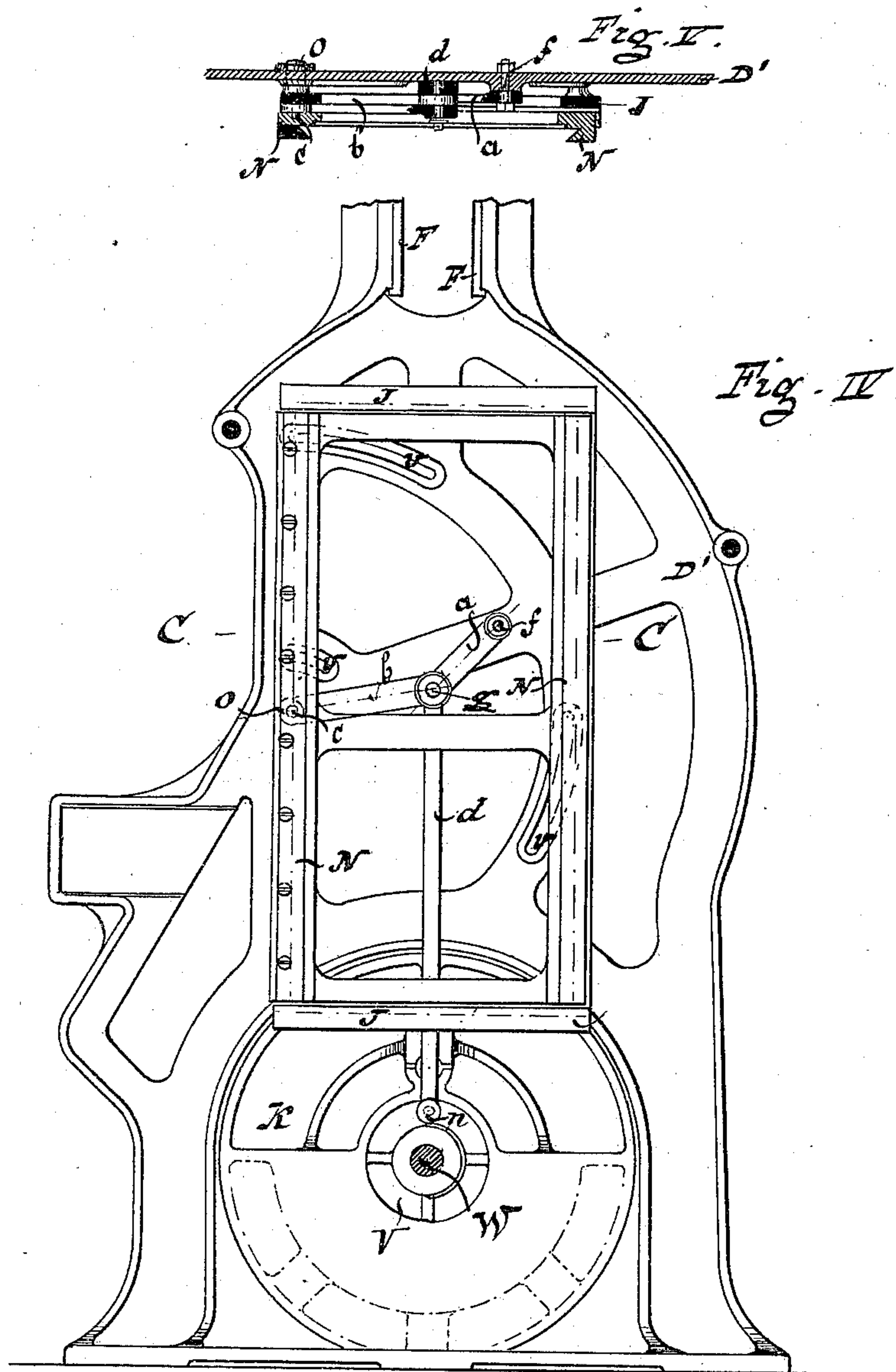
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PROFILE CUTTING MACHINE.

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Witnesses.
E. Pauls
J. Gummel, Jr.

Inventor
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UNITED STATES PATENT OFFICE.

FRIEDRICH AUGUST SCHMIDT, OF LEIPSIC, GERMANY, ASSIGNOR TO ALBIN FISCHER AND JOHANNE CAROLINE SCHMIDT GEB. BECKER, OF SAME PLACE.

PROFILE-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 309,316, dated December 16, 1884.

Application filed July 30, 1883. Renewed May 26, 1884. (No model.) Patented in Germany January 31, 1882, No. 20,499.

To all whom it may concern:

Be it known that I, FRIEDRICH AUGUST SCHMIDT, a citizen of Germany, and a resident of the city of Leipsic, Germany, have invented new and useful Improvements in Profile-Cutting Machines, (patented in Germany by Letters Patent dated January 31, 1882, No. 20,499,) of which the following is a specification.

10 In the accompanying drawings, Figure I represents one half a front view and one half a vertical section, at line B B, Fig. III, of the machine embodying my improvements. Fig. II shows a back view of the machine. Fig. 15 III is a cross-section at line A A, Fig. I. Fig. IV is a cross-section of part of the machine with some of the parts removed. Fig. V is a horizontal section at line C C, Fig. IV.

Similar letters represent similar parts in all 20 the figures.

In the lower part of the frames D D' the driving-shaft W is arranged, provided with suitable pulleys, Z, and carrying at its ends the fly-wheels K, which act at the same time 25 as cranks having the pins *z* attached, to which connecting-rods L are attached, the upper ends of which connect with the cross-bar E, guided in suitable guides, F, in the upper ends of the frames. This cross-bar E is connected through 30 the rods G G with a cross-bar, H, attached to the box or frame M, into which the articles to be operated upon are fastened, thus giving to said box M the required up-and-down motion.

35 To the inner sides of the frames D D' plates or (as shown in the drawings) skeleton frames J are arranged, fixed and turning on bolts O, attached to the frames, and secured in any desired concentric position by suitable bolts 40 passing through the concentric slots or openings *v v v*, provided in the main frames D D', Figs. III and IV. In these skeleton frames J J guide-frames N N are arranged, capable of moving horizontally in suitable grooves provided at the upper and lower part of the 45 frames J J, and at the same time supported by the same. In these guiding-frames N N the box or frame M is guided in its upward and downward motion, communicated to the 50 same in the manner above described, either

perpendicular when the skeleton frames J J are fixed in a perpendicular position or at a slight inclination, corresponding with the position given to said frames J J when fixed and turned on the bolts O O, and secured in the 55 concentric slots or openings *v v v* by suitable bolts. This arrangement of moving the front of the box M, either perpendicularly or at a slight inclination, past the cutting-tool T, and consequently the articles fastened in said box M, 60 enables a greater variety of work to be done than would be the case if this motion were always the same.

The cutting-tool T, which may be of any desired construction, is, as represented in the 65 drawings, fixed on a shaft provided with a suitable pulley, *w'*, and receives its motion from a cord or band passing over said pulley *w'* and a corresponding pulley, *w*, attached to the main shaft W. The cutting-tool T, with 70 its shaft and pulley, is attached to a suitable support, Q, moving on a cross-frame, D'', attached to the frames D D', capable of being moved inward and outward, as well as longitudinally, as may be required. 75

For the purpose of securing a number of 80 articles, as well as articles of various size and shape, into the frame M, the same is constructed with movable back and top plates as well as side braces. 85

To regulate the back plate, P, and also to brace the same, straps P' are attached to the back of the same, the ends *u u* of which form hubs provided with suitable screw-threads and work and screw shafts, S S, arranged at 85 the top and bottom of the frame M. At the ends of these screw-shafts S S miter or bevel wheels *x* are attached, meshing into corresponding wheels attached to shafts *q*, which latter are connected together through the miter-wheels *x' x'*, and receive motion from a 90 hand-wheel, *k*, attached to one of the shafts *q*, (see Fig. II,) whereby a simultaneous motion is communicated to the screw-shafts S S, and consequently to the straps P' and back P of 95 the frame M. The top plate, Y, is screwed down by means of suitable screws, *t t*, and in case the range of motion of this plate Y should not be sufficient, suitable blocks must be placed upon the top of the articles. The ar- 100

articles are secured sidewise in the frame M by bars R R, (see Fig. I,) fixed in their places by suitable bolts.

The cutting operation upon the face of the article exposed to the action of the tool T is performed during the downward motion of the frame M, to which the articles are secured, as above described. To prevent, during the upward motion of said frame M, any damage to the cutting-tool, this frame M, and consequently the articles contained therein, are, during this upward movement of said frame M, moved slightly backward to clear the cutting-tool, for which purpose the guide-frames N N, in which the frame M is guided, are arranged capable of moving horizontally in the frames J J, as above described. This horizontally-backward motion during the upward movement of the frame M is produced by the toggle-levers *a b* and rod *d*. (See Figs. IV and V.) One end of the lever *a* turns on a fixed center or stud, *f*, attached to the main frame, and the outer end of the lever *b* is attached to a center, *c*, fast on the guide-frame N, and situated in the same plane with the bolt O, around which the frames J can be moved. To the connecting-joint *g* of these levers *a* and *b* a rod, *d*, is attached, the lower end of which is provided with a suitable pin or roller, *n*, working in a suitable eccentric cam or groove, V, made in the fly-wheel K. (See Figs. I and IV.) This groove V is so shaped that during the downward movement of the frame M the fixed center, *c*, will be retained exactly in a line with the bolt O, while during the upward movement of this frame M said groove V will be caused through the rod *d* to act upon the levers *a b*, so that their rela-

tive position and action will cause the frames N, and consequently the frame M, to move some distance backward, so as to clear the edge of the cutting-tool T.

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

1. The combination of a wheel having a cam-groove, V, formed therein with a rod, *d*, which is vertically reciprocated by the rotation of said cam-grooved wheel, the toggle-levers *b d*, which are connected to said rod at their joint, the outer end of one of said levers turning on a fixed stud, a box or frame, M, which contains the material to be operated on, and is connected to the free end of the other toggle-lever, so that it may be moved backward thereby, and guide-frames which allow the backward movement of said frame N therein, substantially as and for the purpose set forth.

2. In combination with a hand-wheel and intervening gear operated thereby, a pair of screw-threaded rods rotated by turning said wheel, the back plate, P, of the material-carrying box or frame, the sides or body of said box, cutting devices for acting on the material in said box, guides for said back plate and the straps P', which are extended across its back and secured thereto, serving as braces, the projecting ends of said straps having screw-threaded hubs formed thereon, which receive the screw-threaded rods aforesaid, substantially as described.

FRIEDRICH AUGUST SCHMIDT.

Witnesses:

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