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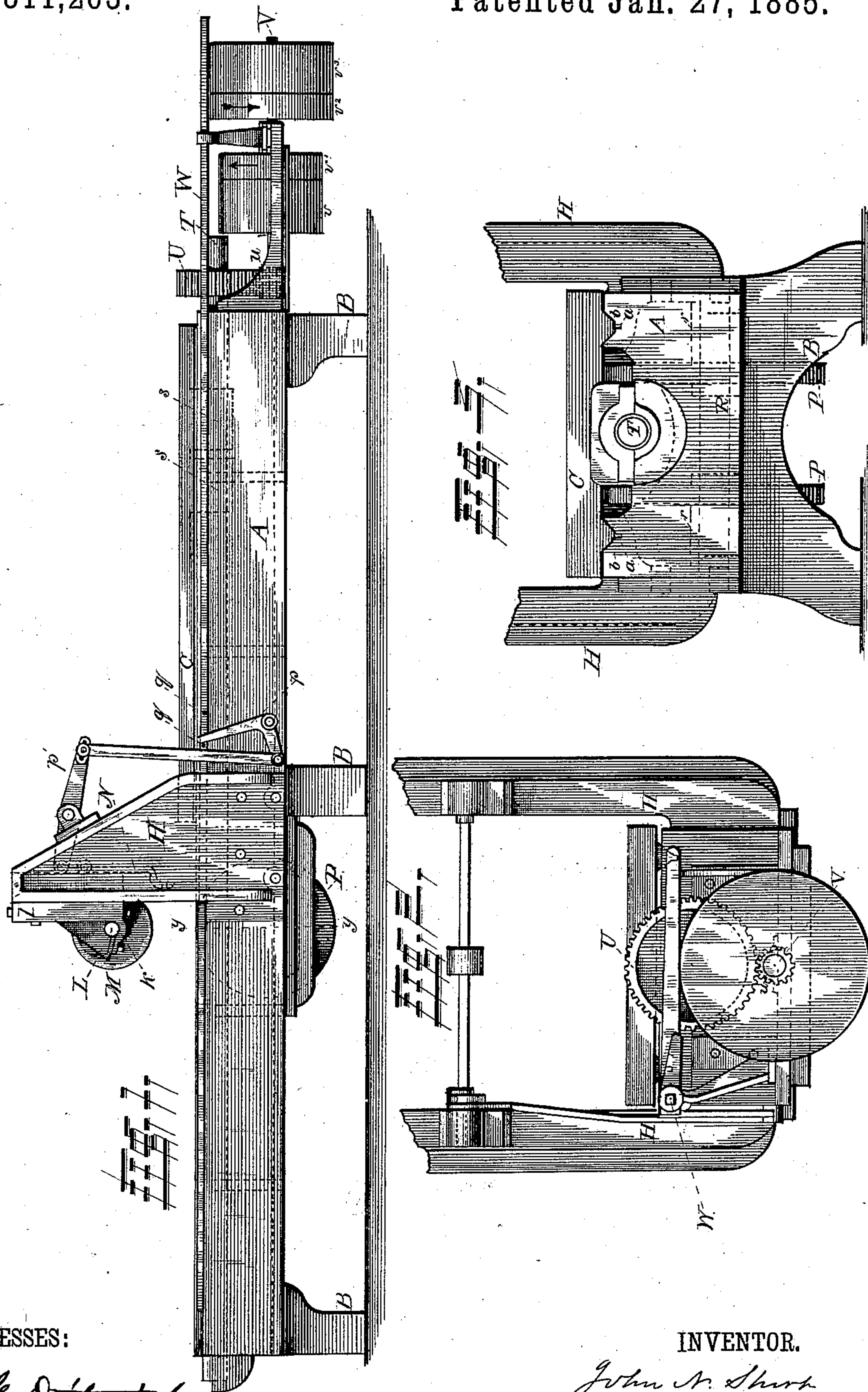
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J. N. SHORT.

MACHINE FOR SLITTING METAL.

No. 311,263.

Patented Jan. 27, 1885.



WITNESSES:

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*John M. Frank, Jr.*

INVENTOR.

*John N. Short*  
*by Cyrus Eder*  
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(No Model.)

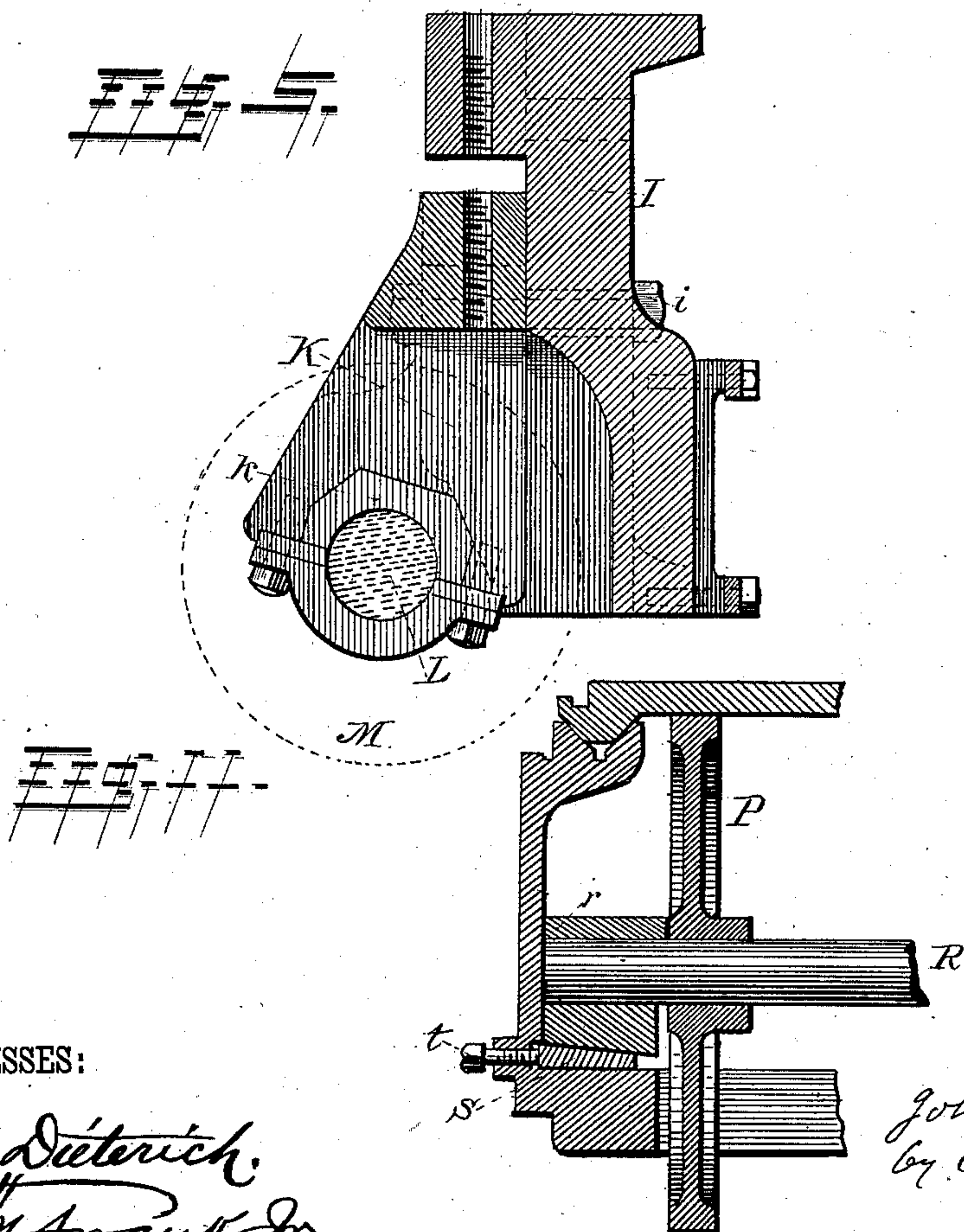
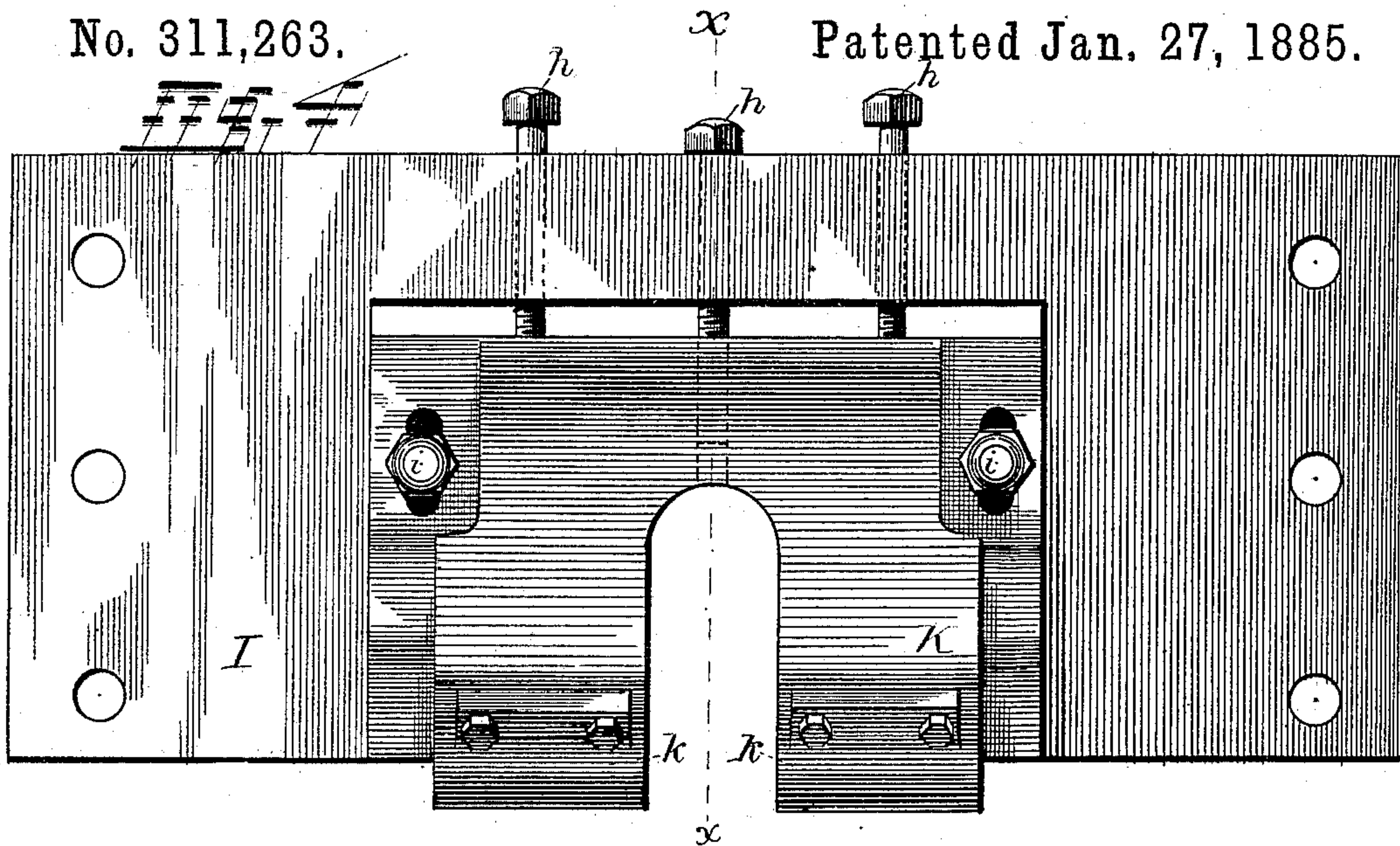
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WITNESSES:

*Fred. L. Dieterich,*  
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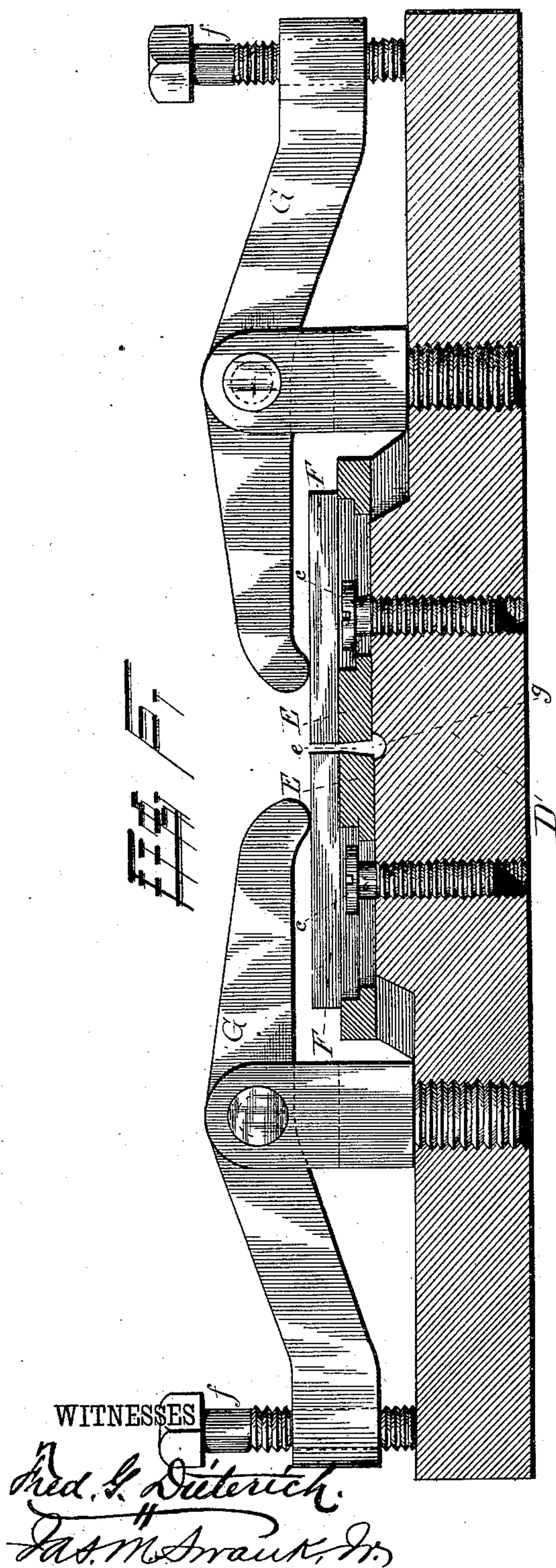
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J. N. SHORT.

MACHINE FOR SLITTING METAL.

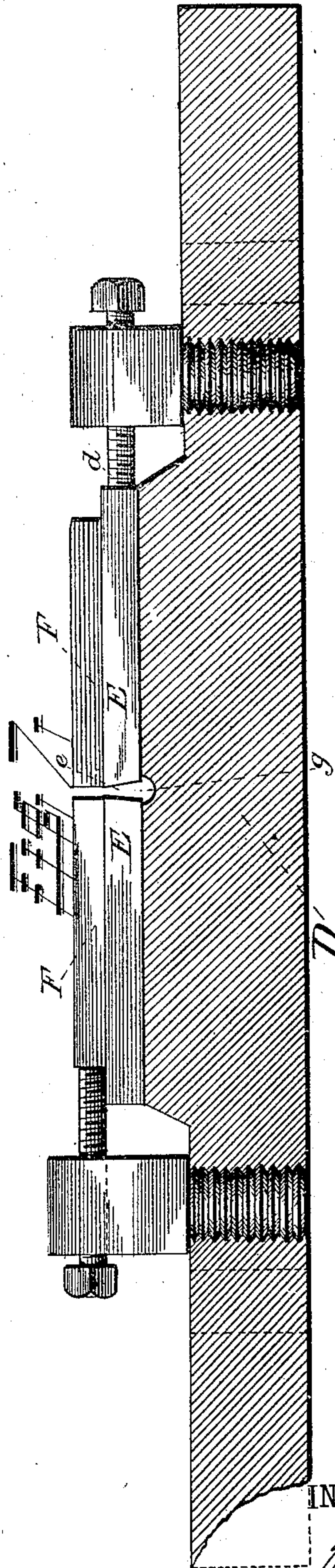
No. 311,263.

Patented Jan. 27, 1885.



WITNESSES

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INVENTOR.

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(No Model.)

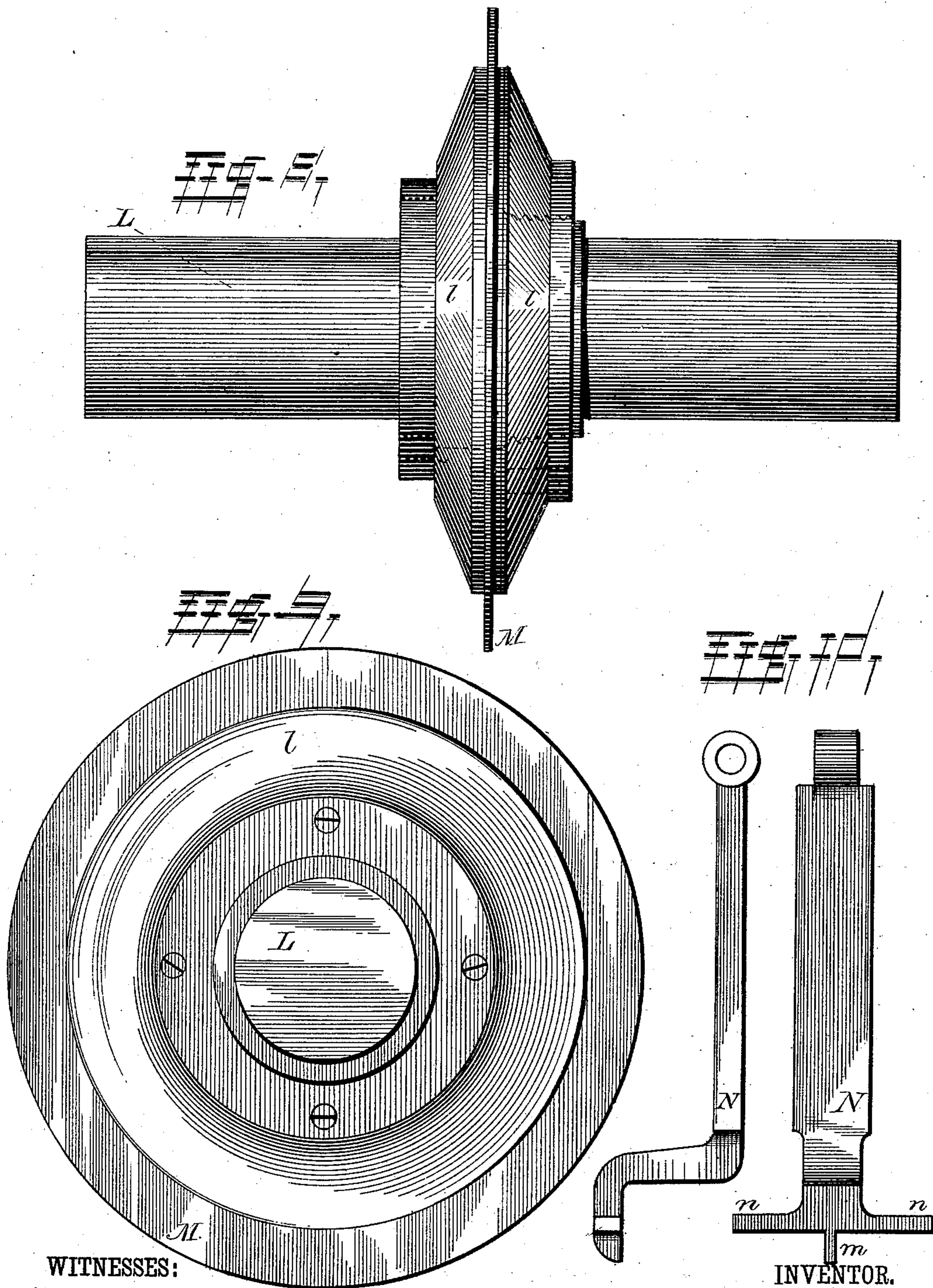
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MACHINE FOR SLITTING METAL.

No. 311,263.

Patented Jan. 27, 1885.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JOHN N. SHORT, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR TO THE  
CAMBRIA IRON COMPANY, OF SAME PLACE.

## MACHINE FOR SLITTING METAL.

SPECIFICATION forming part of Letters Patent No. 311,263, dated January 27, 1885.

Application filed March 29, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN N. SHORT, a citizen of the United States, residing at Johnstown, in the county of Cambria and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Slitting Metals; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of my improved slitting-machine. Fig. 2 is an enlarged end view of said machine at the foot thereof. Fig. 3 is an enlarged end view of said machine at the head thereof. Fig. 4 is a front view of cross-head and head-block. Fig. 5 is a transverse section through  $x x$  of Fig. 4. Fig. 6 is a cross-section of top of machine, showing plate, knives, holding-levers, and piece to be operated upon. Fig. 7 is a similar section showing set-screws. Fig. 8 is a detached view of rotary cutter and shaft. Fig. 9 is a side view of rotary cutter. Fig. 10 shows detached views of sweep, being front and side of the same. Fig. 11 is a transverse section through  $y y$  of Fig. 1.

My improved slitting-machine is more particularly described by reference to the drawings, as follows:

A is the bed of the machine, supported by feet B B B, or in any other suitable manner, and it is provided with longitudinal V-shaped grooves, as shown at  $a a$ .

C is the platen, provided with projections  $b b$  fitting into the corresponding grooves,  $a a$ , of the bed.

D is a plate attached to the upper surface of the platen.

E E are knives running the entire length of the plate D. They are held firmly in position by screws  $c c$ , &c., and butt against set-screws  $d$ , &c. These knives do not touch each other, there being a space,  $e$ , between them equal to the thickness of circular knife M. The position of these knives E E may be varied by means of the set-screws  $d$ , &c. On the top of these knives is the piece of metal to be operated upon. (Shown at F F after it has been slit.)

G G are levers operated by screws  $f f$  for holding the piece in position. In the plate D

there is a slot,  $g$ , running its entire length directly beneath the space  $e$  between the knives, and intended to take the section of metal removed by the knives.

H H are uprights secured to the sides of the bed A, supporting cross-head I, to which is fitted head-block K, which head-block may be raised and lowered by means of the screws  $h h$ , and is secured in any position by bolts  $i i$ . The central portion of head-block K is cut away, and at each side of this opening are boxes  $k k$ , to furnish bearings for the spindle L, which carries the narrow circular knife M, between washers  $l l$ .

N is a sweep, having its end or lower extremity in the shape of a T, formed so that when it is thrown down the point  $m$  will pass between the knives E E and into the slot  $g$ , the side projections,  $n n$ , then being in position just above the knives E E.

In Fig. 1 the sweep N is represented by dotted lines in the position it occupies when not in use—i. e., when the machine is cutting—the levers  $p p'$  and fins  $q q$  serving to throw it down on the arrival of the platen at the end of its cutting-stroke, and to throw it up when the platen comes to the end of its return-stroke.

P P are rollers secured to a short shaft, R, which revolves in bearings  $r r$  in the sides of the bed of the machine, directly under the spindle L and parallel with it. The boxes or bearings  $r r$  in which shaft R turns are movable, and may be raised and lowered by means of wedges S operated by set-screws  $t$ , &c. These rollers support the platen, and their function is to take the strain of the cutting from the other parts of the machine.

Between the projections  $b b$  of the platen, and on its under side, are attached in a suitable manner the two nuts  $s s$ , through which nuts passes a threaded shaft, T, which rotates in suitable bearings at each end of the machine.

U is a gear-wheel which meshes with a smaller gear-wheel,  $u$ , secured to a short counter-shaft, V, rotating in suitable bearings and carrying four pulleys,  $v v' v^2 v^3$ , two of which are tight and two are loose. These pulleys are driven by belts from a counter-shaft overhead. There will be two belts, one straight and one crossed, occupying a tight and loose, and two



loose pulleys, respectively. I do not confine myself to this arrangement, as any other suitable driving-gear may be used.

W is a bar running the entire length of the machine and occupying a position just under the outer edge of the platen. To this bar are attached the belt shifters, the bar being moved backward and forward either by hand or by adjustable stops suitably located on the platen. This bar also carries the pins *q q*, which operate the levers *p p'*, by which the sweep N is thrown down and elevated.

The operation of this machine is described as follows: The platen C being at the left-hand end or head of the machine, and the plate D, with the knives E E, having been bolted to their proper places, the piece of metal to be cut is slipped in between the top of the knives E E and the inner ends of the levers G G. The screws *f f* are then turned in such a manner as to raise the outer ends of the levers G G, thus bringing a pressure to bear upon the upper side of the metal to be cut, holding it firmly in a proper position. During this time both belts are on the loose pulleys at the right-hand end or foot of the machine. All being ready, the belts are thrown by hand and by a movement of the bar W to run upon a tight and loose pulley. The platen C is thereby given a motion to the right, which carries it, with the attached piece of metal, under the cross-head I and the circular knife M, and the joint operation of this knife and the knives E E removes a narrow strip from the metal, which strip is pressed down between the knives E E into the slot *g*. The platen having passed out from under the knife M, the belts are thrown upon the loose pulleys by means of pins in the bar

W and platen C, which come in contact with each other. The screws *f f* are then loosened and the belts thrown by hand to such a position as to give the platen a motion to the left. At the same time a pin properly located in the bar W acts upon the extremity of the bell-crank lever *p*, and thereby lowers the sweep N to such a position that the T-shaped extremity of the same will push the pieces of slit metal and the chip out from under the levers G G and out of the slot *g*. The platen having completed its return motion to its first position, the belts are thrown automatically upon the loose pulleys and the machine is thereby stopped. The operation is then repeated for slitting another piece of metal in the same manner.

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

1. The circular cutter M, secured upon the spindle L, and rotated by friction with the piece being operated upon, in combination with two flat cutters or knives provided with means for operating the same, substantially as and for the purpose set forth.

2. The combination of a circular cutter, M, head-block K, flat cutters or knives E E, and platen C, substantially as and for the purpose set forth.

3. The combination of the platen C, operated by a screw or other means, the knives E E, and adjustable pressure-rollers P P, substantially as and for the purpose set forth.

JOHN N. SHORT.

Witnesses:

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