

(No Model.)

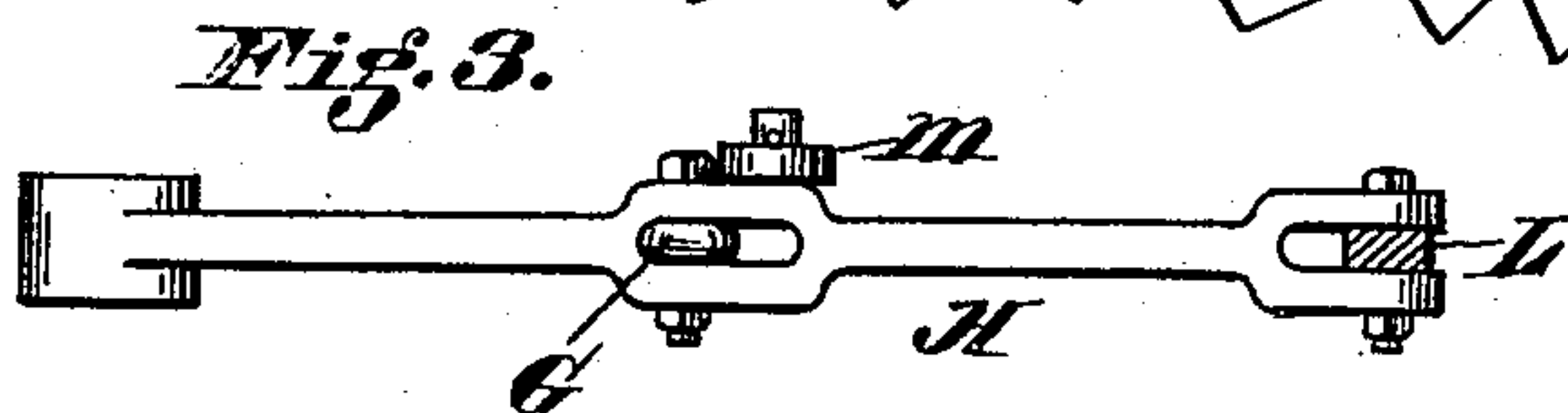
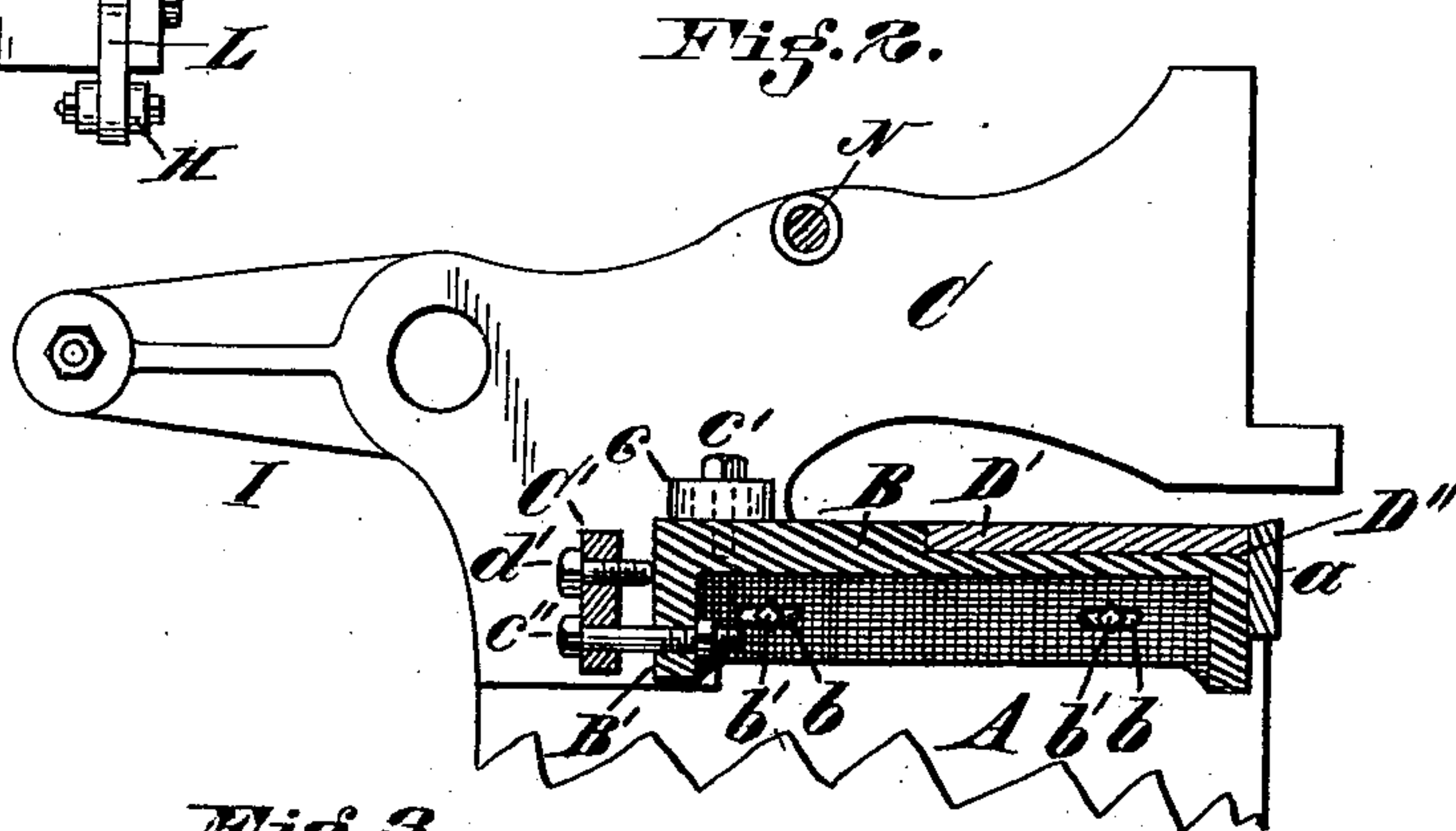
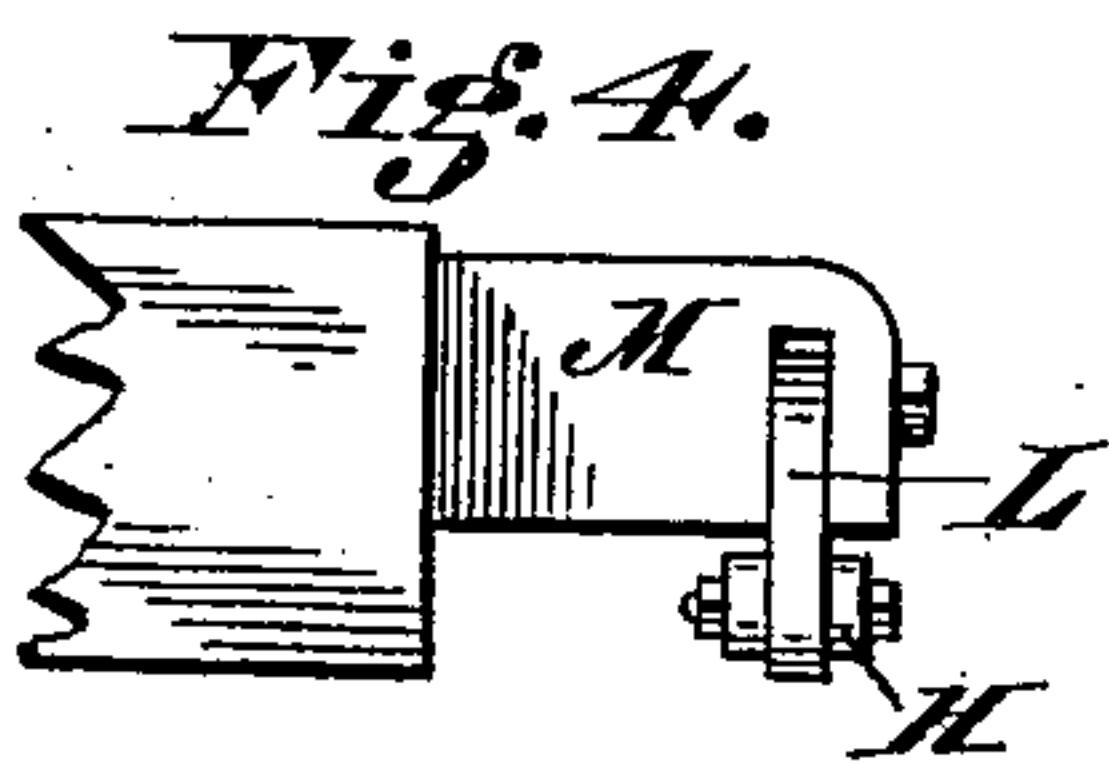
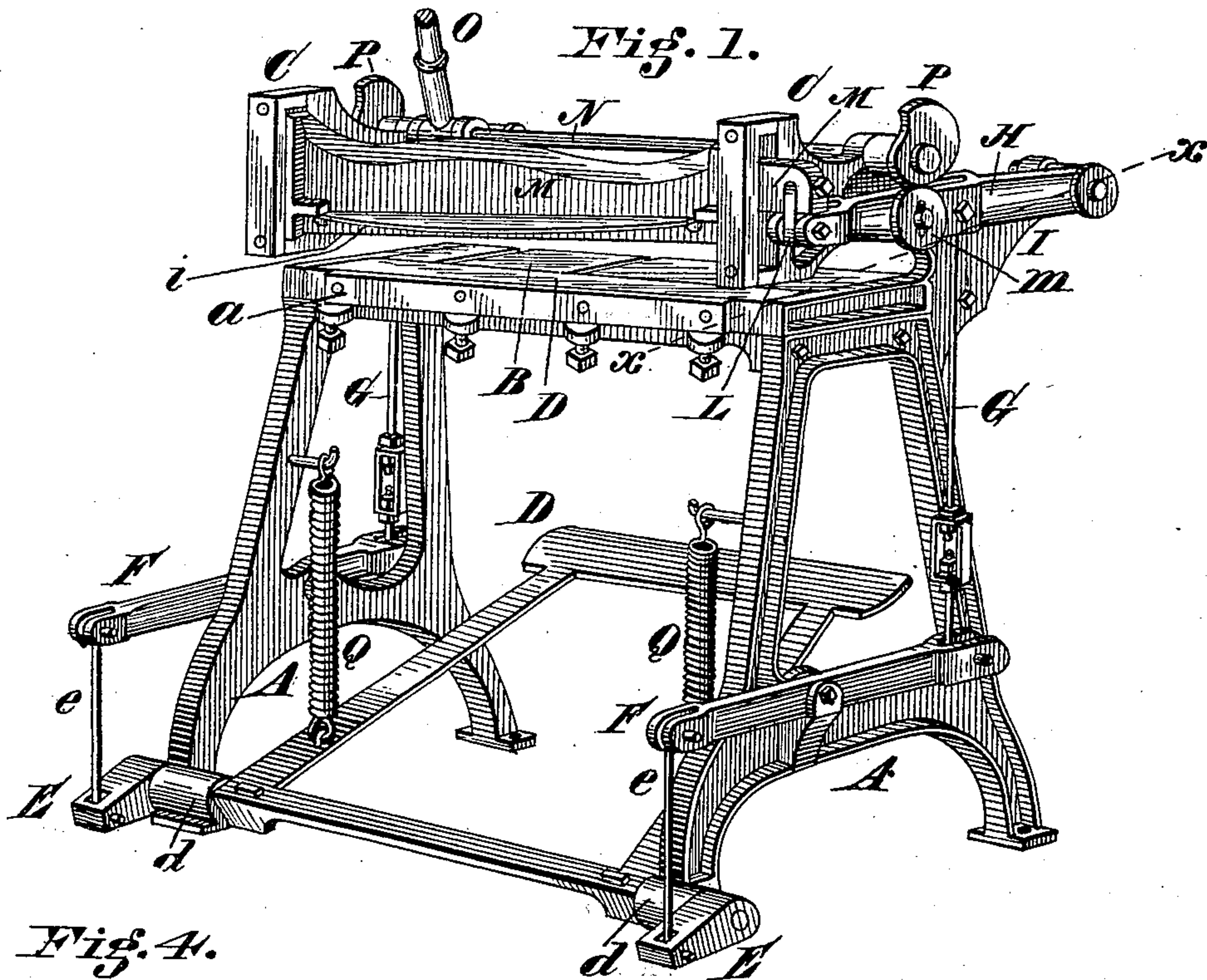
2 Sheets—Sheet 1.

C. WAIS.

SHEET METAL CUTTING MACHINE.

No. 312,236.

Patented Feb. 10, 1885.



Attest
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Inventor
Christian Wais
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His Attorneys

(No Model.)

2 Sheets—Sheet 2.

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Fig. 5.

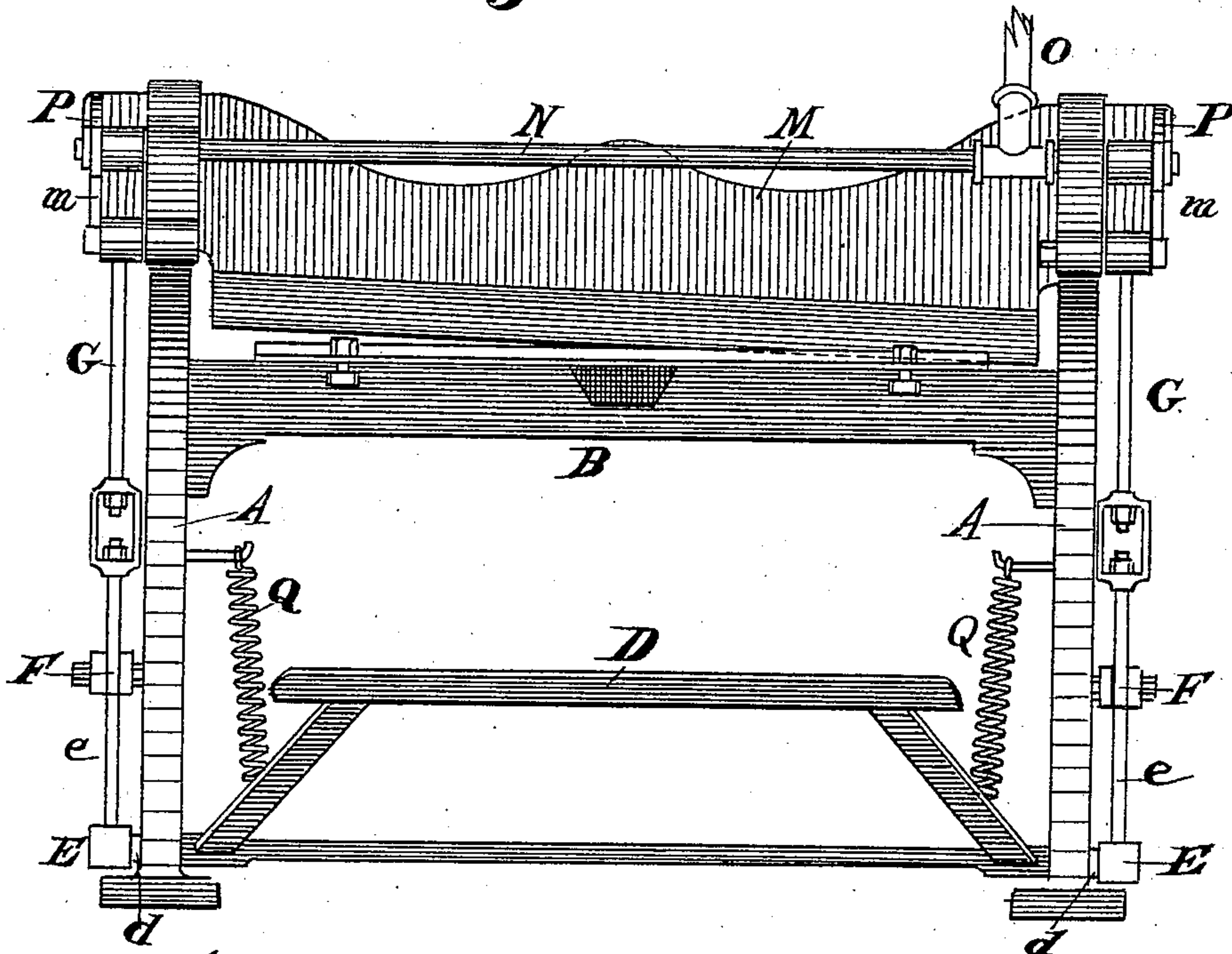
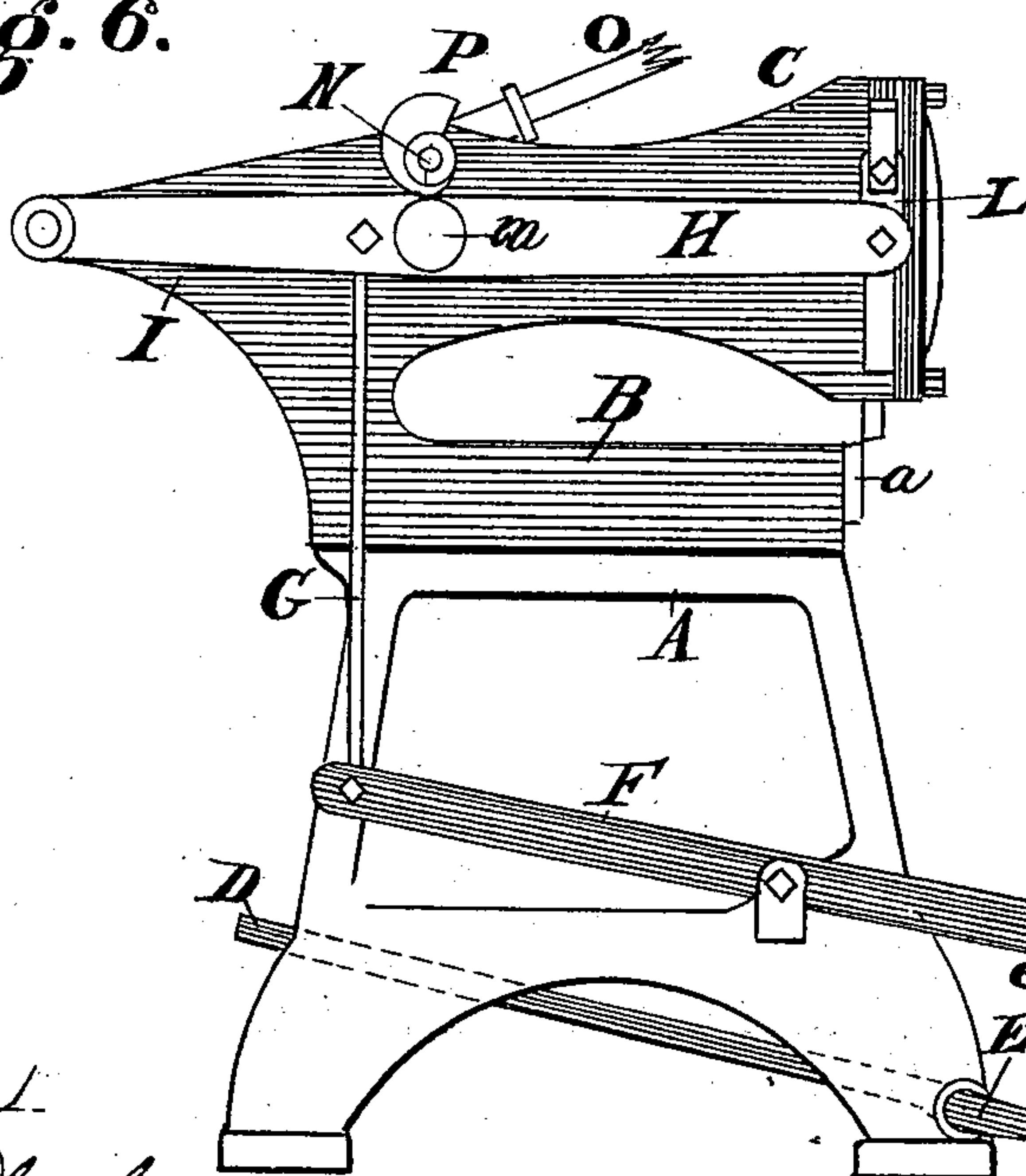


Fig. 6.



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UNITED STATES PATENT OFFICE.

CHRISTIAN WAIS, OF NEWPORT, KENTUCKY.

SHEET-METAL-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 312,236, dated February 10, 1885.

Application filed January 19, 1884. (No model.)

To all whom it may concern:

Be it known that I, CHRISTIAN WAIS, a citizen of the United States, and a resident of Newport, in the county of Campbell and State of Kentucky, have invented certain new and useful Improvements in Machines for Trimming, Splitting, and Squaring Sheet Metals, of which the following is a specification.

My invention relates to an improved shear-cutting machine adapted to the cutting of sheet metal and other similar substances.

The object of my invention is to provide a machine in which the shears can be operated by foot-power or by hand-power, or by both conjointly, as occasion may require.

My invention also relates to a new mode of hinging and applying power to the fulcrum-arms carrying the shears, all of which will be fully set forth in the description of the accompanying drawings, in which—

Figure 1 is a perspective view of my invention. Fig. 2 is a sectional elevation on line *x*, Fig. 1. Fig. 3 is a top plan view of the fulcrum-shear arm, and its connections. Fig. 4 is a broken elevation of one end of the shear-blade and link-connections. Fig. 5 is a front elevation of the machine. Fig. 6 is an end elevation of the same.

A represents the frame of the machine.

B represents the table rigidly secured to the frame.

a represents the lower shear-blade, which is affixed to the table B in the ordinary way.

C represents overhanging shear-arms, which are secured to the frame of the machine substantially as shown in Letters Patent granted me February 6, 1883, No. 271,956.

My invention herein relates to a new means for operating the movable shears. Table B is preferably secured in an adjustable manner to frame A, so as to be moved forward or backward to make provision for the wear of the shear-blades *a* and *i*.

b b represent slots in the ends of table B.

b' b' represent bolts passing through slots *b* and holes in the frame A for securing table B upon said frame.

c represents lugs on the frame A, one at each end of table B. These lugs are slotted for the passage of a screw or bolt, *c'*, into the upper face of the table for further securing said table in place when adjusted. The table

is adjusted rearwardly by means of bolts *c'*, passing through lugs C', also projecting from the inner rear faces of frame A, at or near both ends of table B. The table is adjusted forwardly by first releasing the bolts *c'* and *c''* and then turning screws or taps *d'* so as to enter the lugs C' and press against the flange B' of said table. It is obvious that by means of these adjusting devices the table B with shear-blade *a* can be arranged so as to readily bring both shear-blades *a* and *i* in proper operative relation with each other at all times.

D' is a removable plate, forming a part of table B, being set into the opening or depression D'' made in the face of the table, with its face flush with said face of the table. Plate D' when removed leaves the depression D'' open for the operation of trimming or chipping off the rough edges of sheet metal when passed through the machine from the front. The chips resulting from this operation drop into the receptacle formed by said depression, and are readily removed therefrom.

D represents a foot-treadle fulcrumed in journals *d* at the foot of the machine.

E represents crank-arms keyed upon the outer ends of the treadle-shaft.

e represents links connecting crank-arms E to the pivoted levers F, which are fulcrumed upon the outer ends of the machine, as shown in Fig. 1. These arms F are shown as forked for the better mode of connecting the same to links *e*.

G represents links connecting the other ends of forked levers F with the shear-arms H, which arms are journaled upon brackets I, which are rigidly secured to the frame of the machine. The forward end of arm H is connected by a link, L, to the stock or frame M, which carries the shear-blade *i*. The stock or frame M has a guide-piece at each end, which projects through a slot in each end of the overhanging frame C, so as to guide the shear-frame and its blade in the up and down movement, the shear and its stock being raised by the springs Q, pivoted arms F, and pitman G, connected to the link-arms. The operating mechanism at each end of the machine is the same, being duplicates of each other. The shear-arm H is made to oscillate by the movement of the treadle D and the intermediate crank-and-link connection, so as to raise or

lower the shear-frame M by the power of the foot operating upon treadle D.

In order to employ hand-power to assist in the operation of shearing, or to operate the shear alone, I provide a friction-roller, *m*, journaled upon the arm H.

N represents a through-shaft journaled upon the arms C. The hand-lever O and cams P are keyed to the shaft N, so as to come in frictional contact with the friction-rollers *m*. As the arm O is pulled toward the treadle the cams P are carried around by the shaft, and the shear-arms H are forced down, bringing the movable shear *i* down toward the stationary shear *a*.

In order to raise the shear *i*, I provide springs Q, one end of each of which is attached to the frame of the machine and the other to the treadle D, so that as the power for moving the shear down is released the spring will raise the treadle and through the link and crank connections the movable shear-frame.

It is obvious that the springs to raise the shear-arm might be attached to the shear-frame M itself, or be located in different positions, and still accomplish the same result.

I claim—

1. In a shearing-machine, the combination of the shear-arms H, fulcrumed at one end to the frame of the machine, the stock carrying the shear and connected to the free ends of the arms H, the treadle formed with the cranks E, the lever F, pivoted to the frame and con-

nected at the rear of the latter to the cranks E of the treadle, and the adjustable links G, connecting the forward ends of the levers F to the arms H intermediate of their ends, substantially as described.

2. The shear-arms H, fulcrumed at one end to the frame of the machine and connected by a link at the other end with the shear-frame, in combination with the shaft N, provided with lever O and cams P to operate on the arms, and the links G, connecting the levers F of the treadle D with said arms, substantially as described.

3. In a shearing-machine, the combination, with the frame A, of the slotted horizontal lugs *c*, extending inwardly from the face of said frame at opposite ends thereof, the vertically-arranged lugs C', extending inwardly from the face of the same frame below lugs *c*, the adjustable table B, the bolts *b' c'*, for holding said table to its adjustment, and the screws *d'* and bolts *c''*, passed through lugs C' for adjusting said table, substantially as described.

4. In a shearing-machine, the table B, provided with a depression or receptacle, D, and a removable filling-plate, D', substantially as and for the purpose specified.

In testimony whereof I have hereunto set my hand.

CHRISTIAN WAIS.

Witnesses:

JNO. E. JONES,
A. GLUCHOWSKY.