

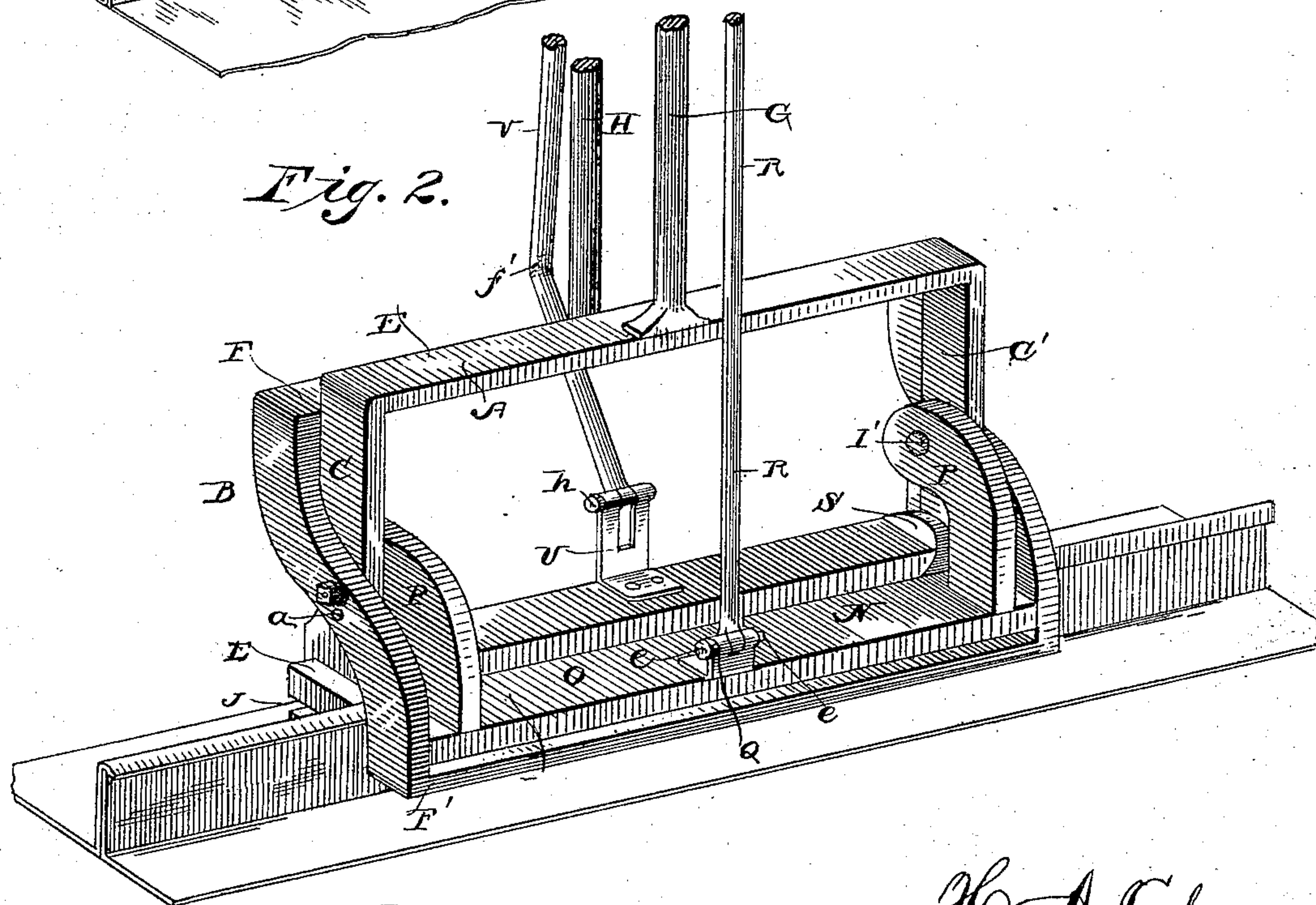
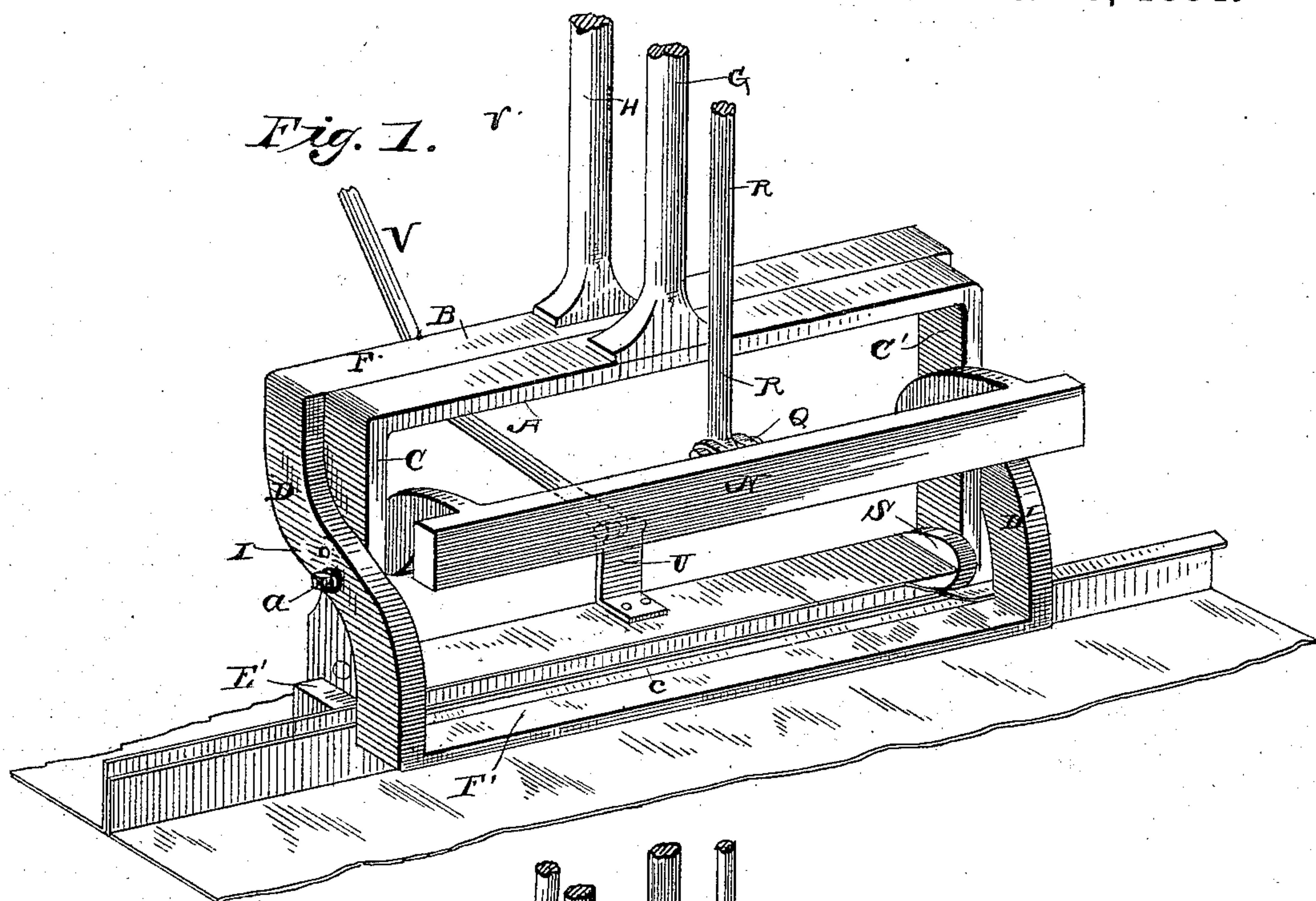
(No Model.)

3 Sheets—Sheet 1.

H. A. LEHER.  
ROOFING MACHINE.

No. 309,472.

Patented Dec. 16, 1884.



WITNESSES

*W. N. Kortimer.*  
*E. G. Siggers.*

*H. A. Leher*  
INVENTOR

by *C. A. Snow & Co.*  
Attorneys

(No Model.)

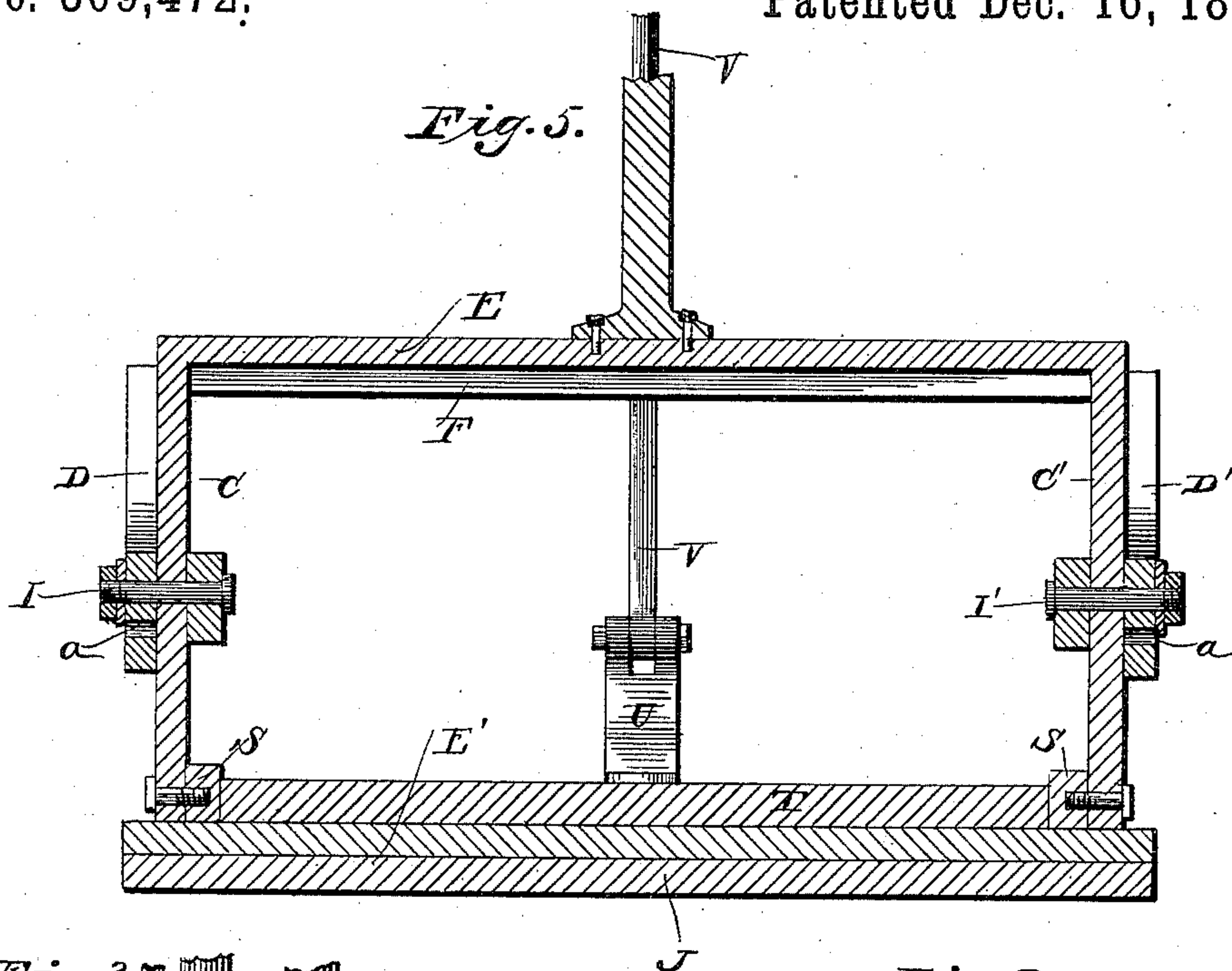
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H. A. LEHER.  
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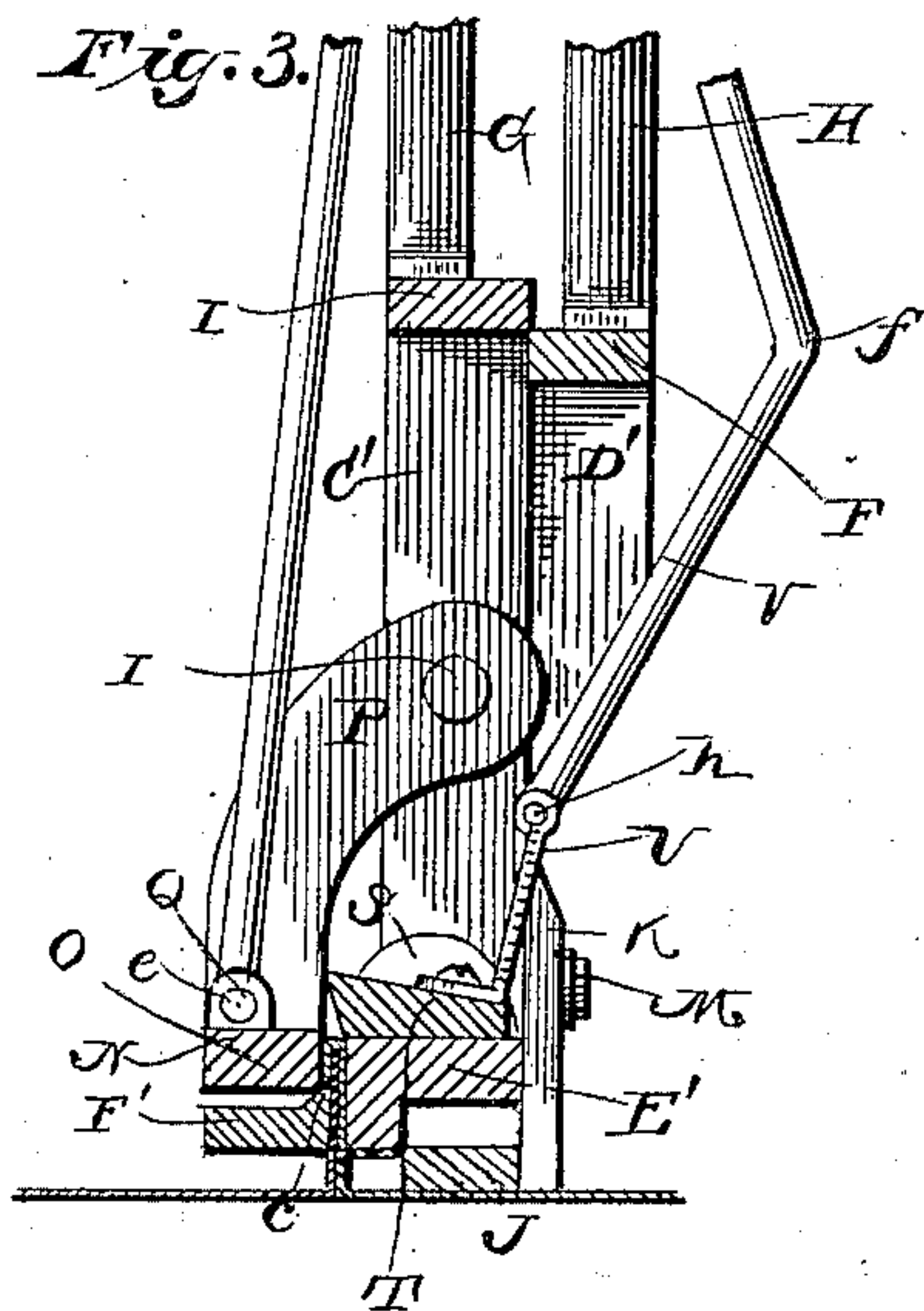
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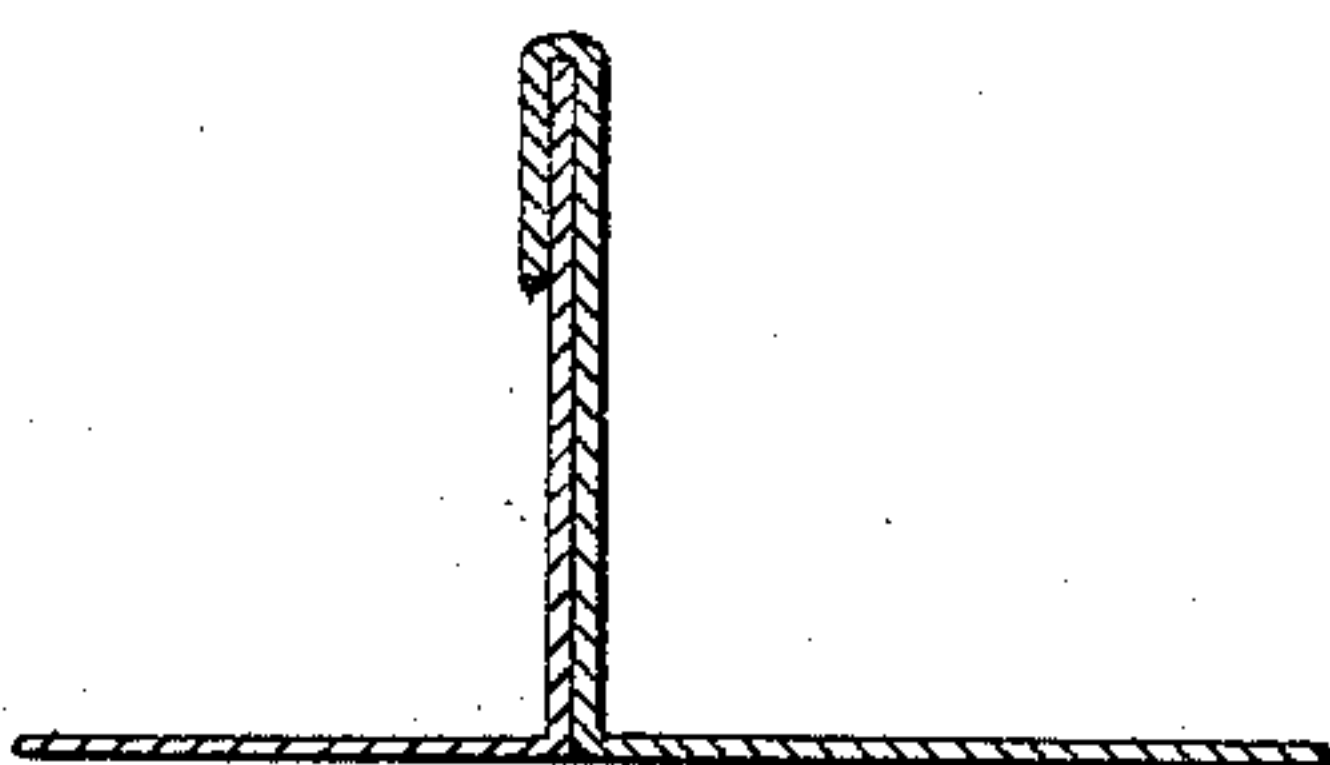
*Fig. 5.*



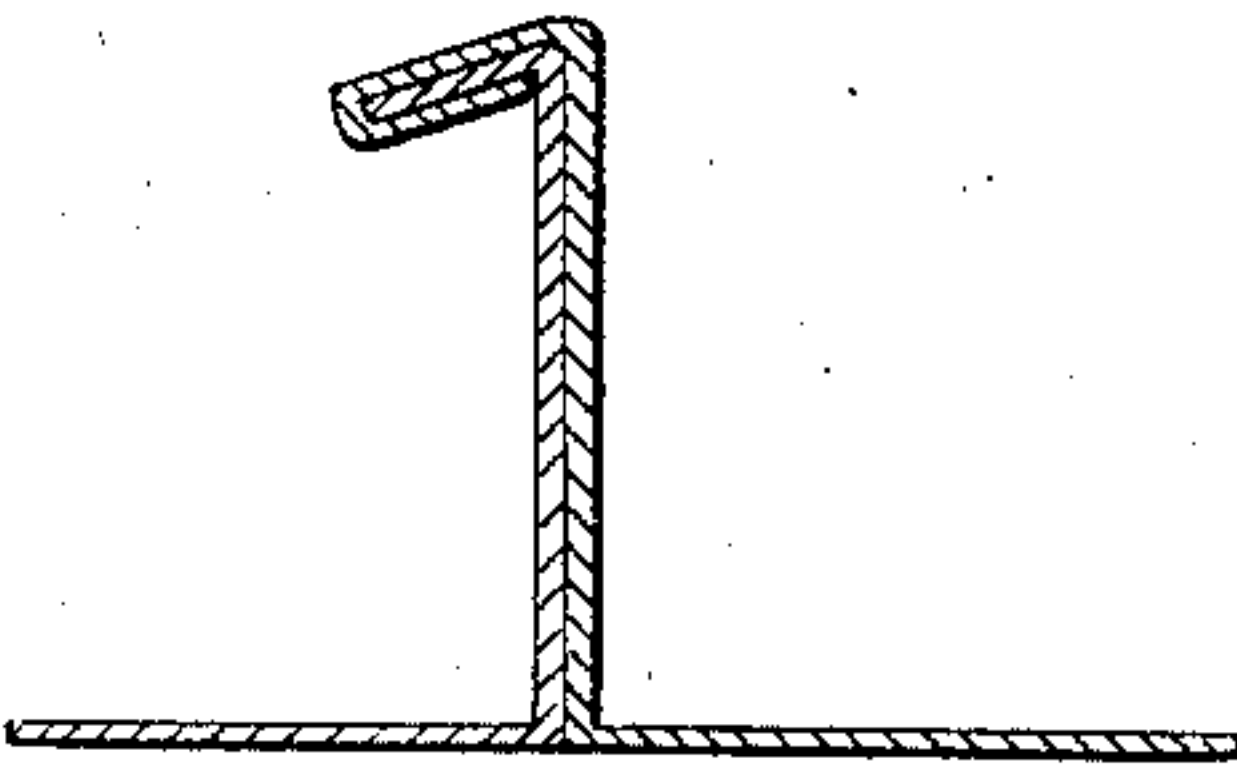
*Fig. 3.*



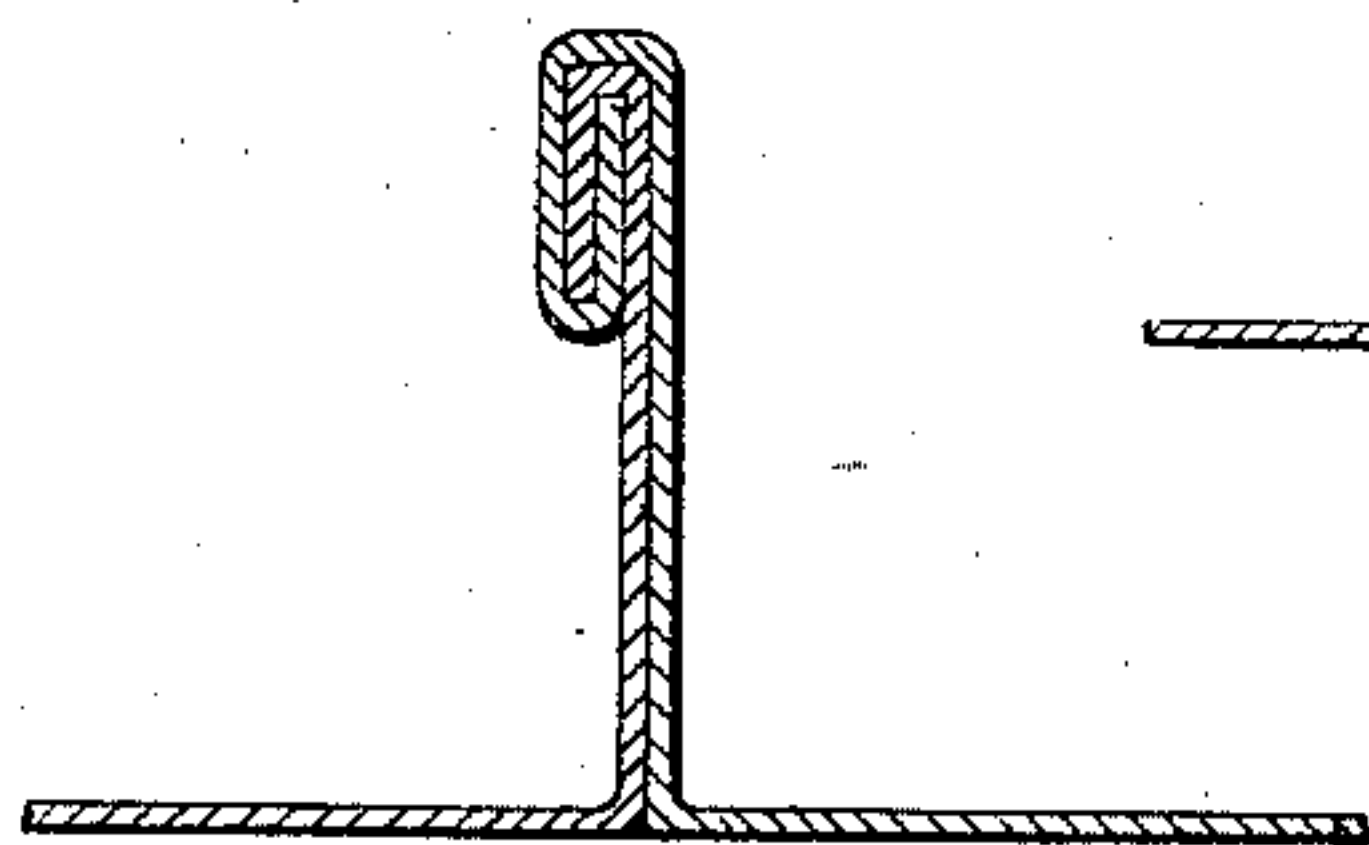
*Fig. 6.*



*Fig. 7.*



*Fig. 8.*



WITNESSES

*W. Mortimer.*  
*E. G. Siggers.*

*H. A. Leher*  
INVENTOR

by *C. A. Snow & Co.*  
Attorneys



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3 Sheets—Sheet 3.

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Fig. 4.

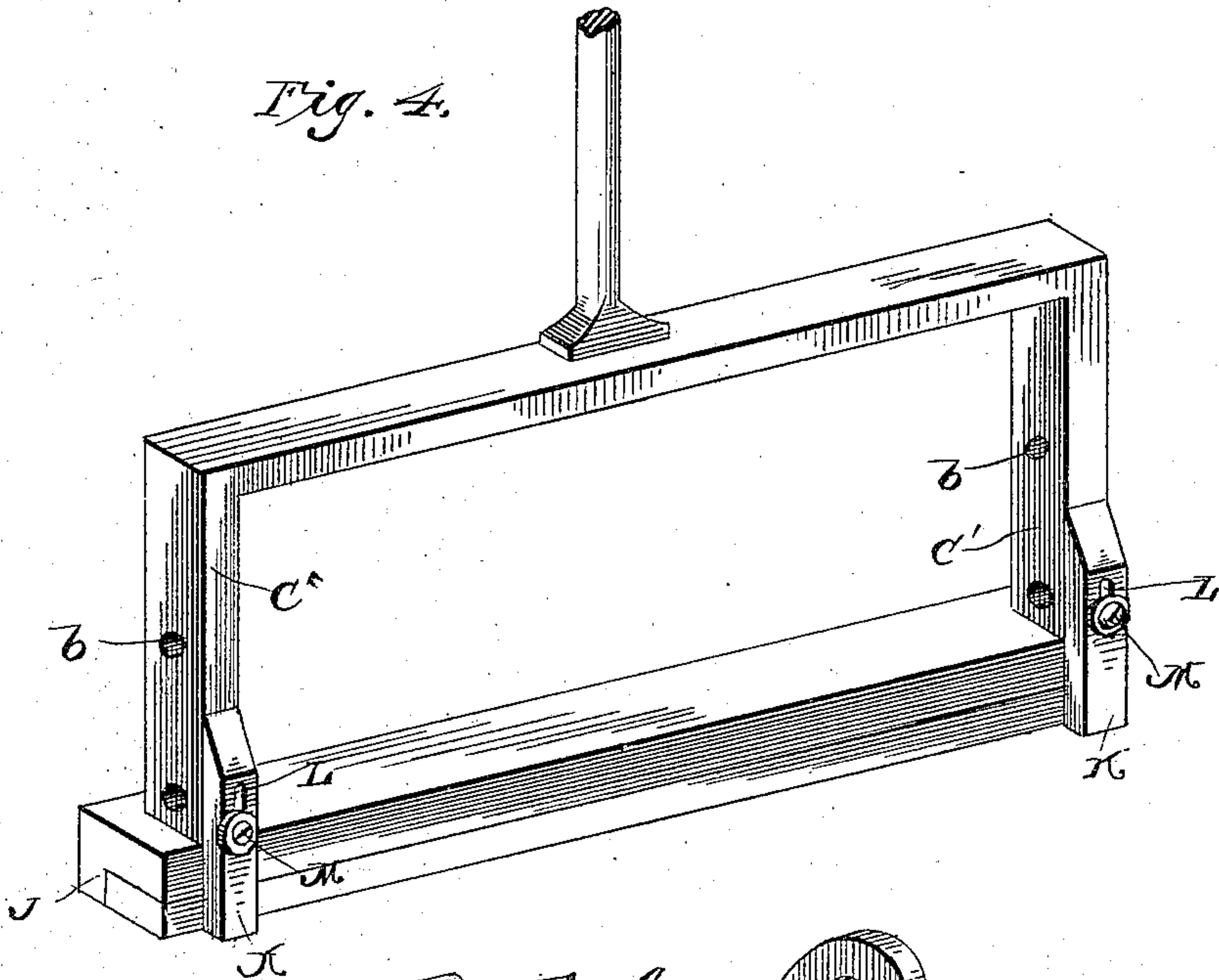


Fig. 9.

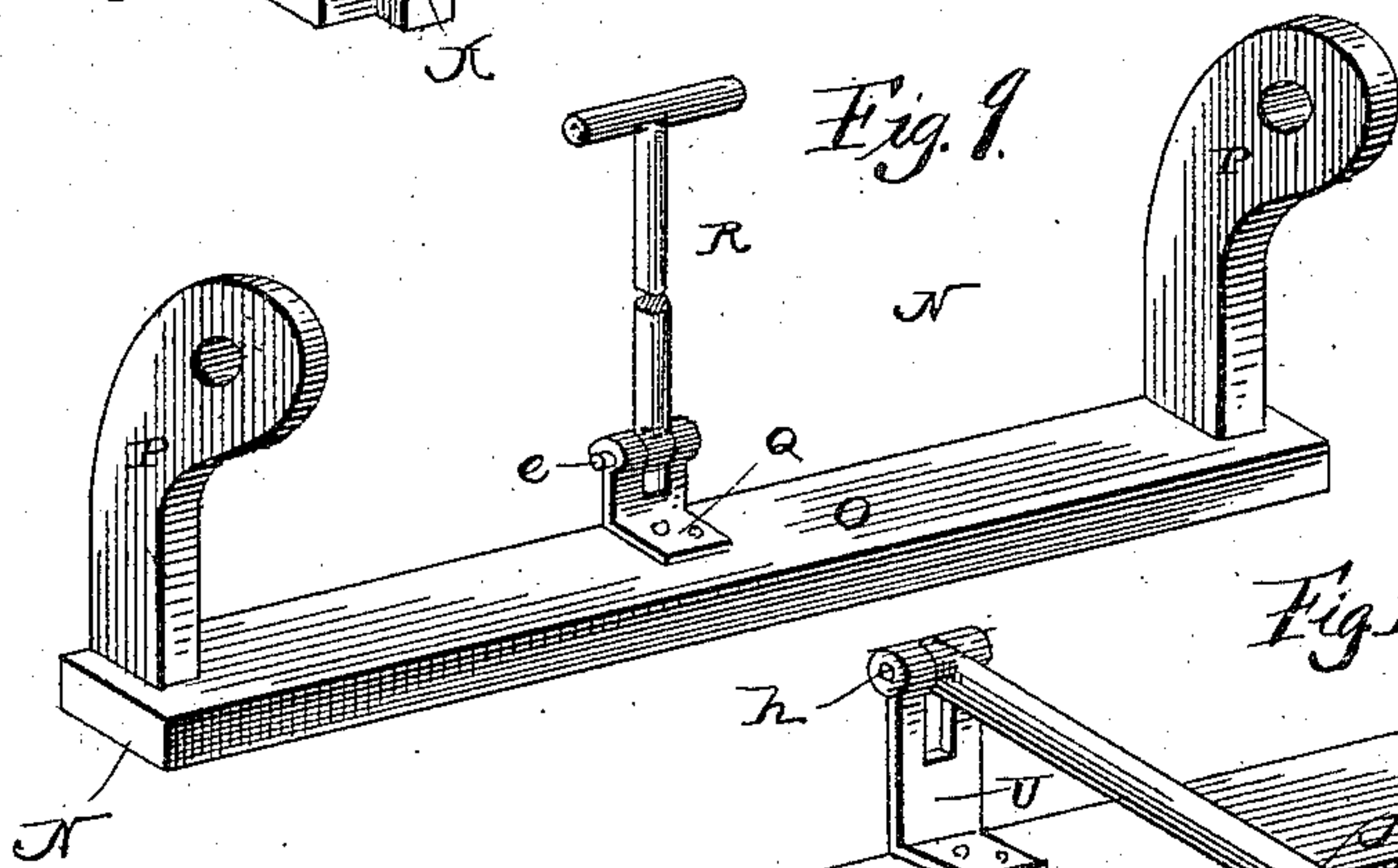


Fig. 10.

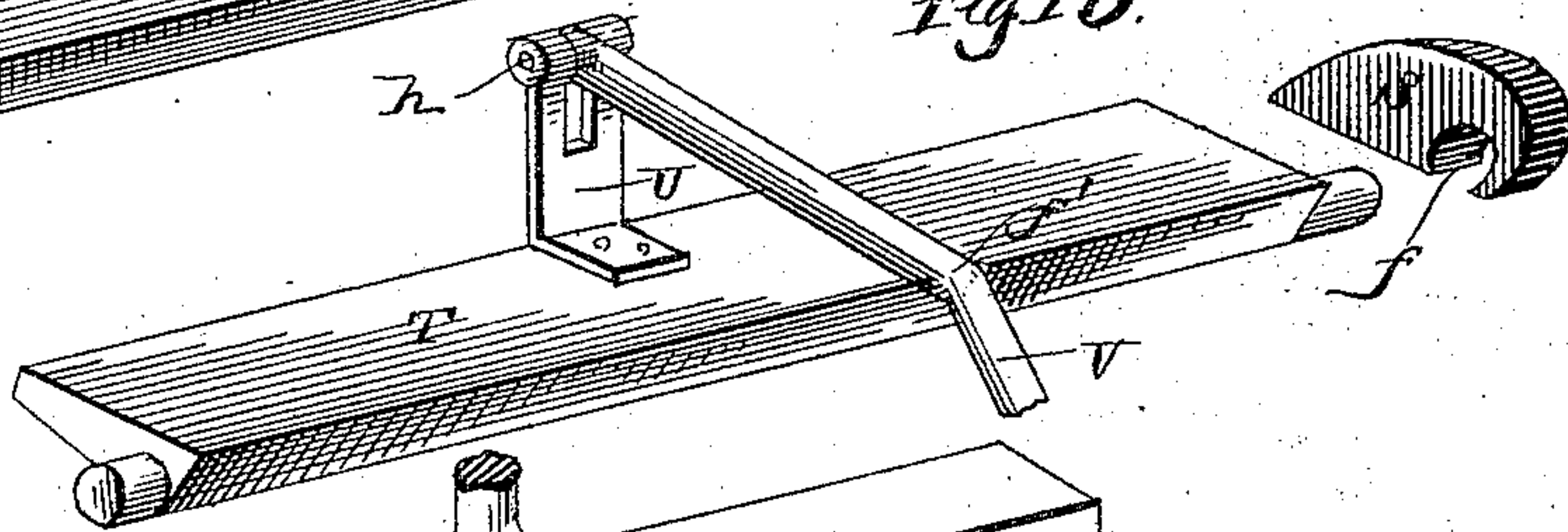
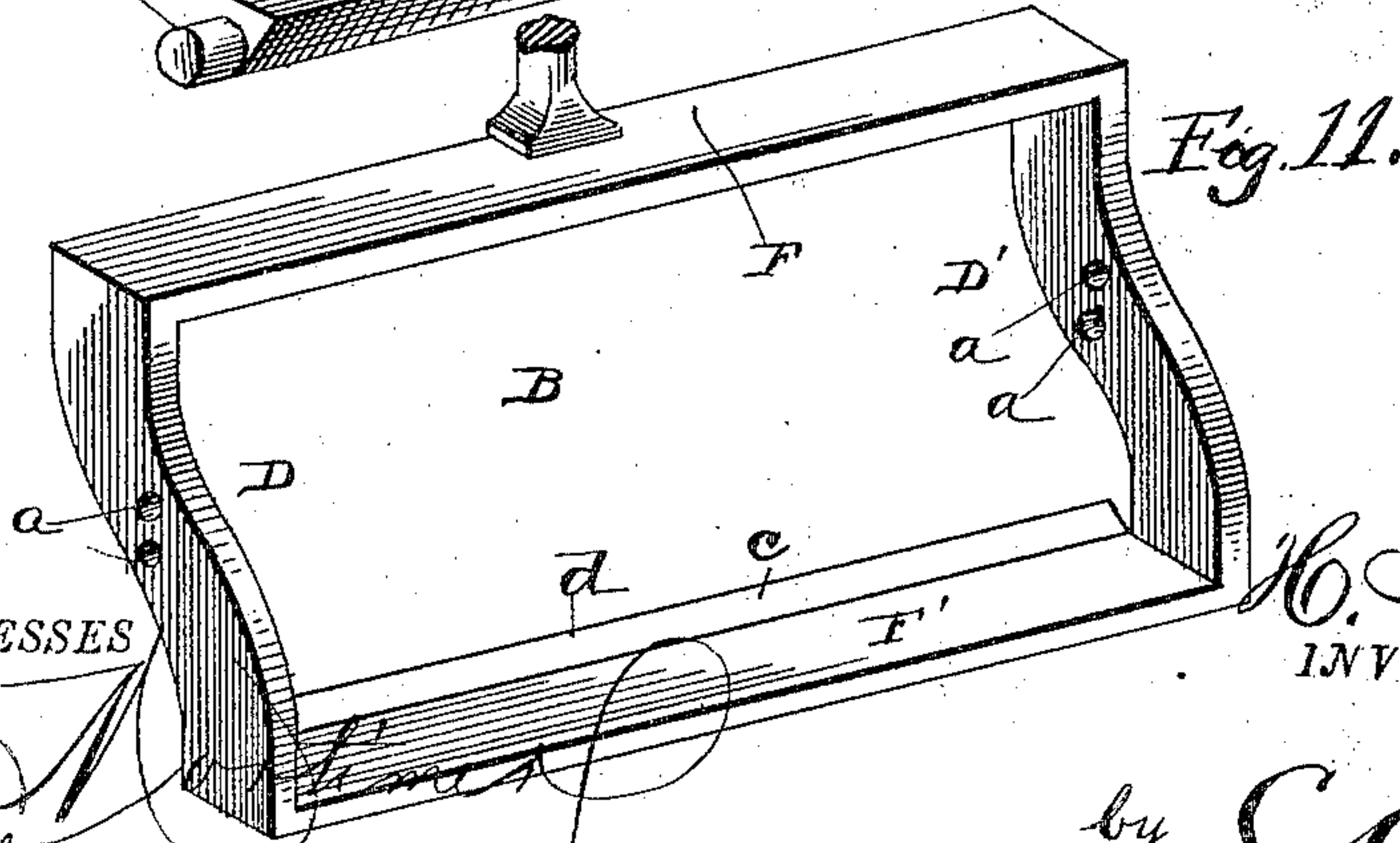


Fig. 11.



WITNESSES

*E. G. Siggers.*

H. A. Leher  
INVENTOR

by *C. A. Snow & Co.*  
Attorneys



# UNITED STATES PATENT OFFICE.

HENRY A. LEHER, OF CAPE GIRARDEAU, MISSOURI.

## ROOFING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 309,472, dated December 16, 1884.

Application filed September 5, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY A. LEHER, a citizen of the United States, residing at Cape Girardeau, in the county of Cape Girardeau and State of Missouri, have invented a new and useful Improvement in Roofing-Machines, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to roofing-machines; and it has for its object to provide means which can be operated with ease and efficiency, and do much better work than those in present use.

A further object of the invention is to provide a machine of this class which can be operated to produce either single or double seams on the meeting edges of the tin forming the roofing.

With these and other objects in view the said invention consists in certain details of construction and combination of parts, as hereinafter set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view showing the machine in position for bending over the meeting edges of the tin. Fig. 2 is a similar view showing the parts in position for turning in the edges to form the single seam. Fig. 3 is a transverse section of Fig. 2. Fig. 4 is a perspective view of the clamping-frame, which has the adjustable gage. Fig. 5 is a longitudinal section. Fig. 6 is a sectional view showing the single seam complete. Fig. 7 is a similar view illustrating the first action of the machine in changing from a single to a double seam. Fig. 8 is a sectional view showing the double seam complete. Fig. 9 is a detached view of the hammering-frame. Fig. 10 is a similar view of the bending-block, and Fig. 11 is a similar view of the other clamping-frame.

Like letters of reference are used to designate corresponding parts in the several figures.

Referring to the several drawings, A B designate a pair of pivoted clamping-frames arranged to hold the meeting edges of the tin forming the roofing while being seamed.

The frame A consists of vertical side bars, C C', connected at their upper and lower ends by longitudinal bars E E', and the frame B comprises curved side bars, D D', having their

upper and lower ends connected by longitudinal bars F F', handles G H being secured, respectively, to the upper end bar, E E', of each frame A B. The side bars, D D', of the frame B are in the form of a compound curve, and extend across the central portion of the vertical side bars, C C', of the other frame, and pivoted at their centers thereto by bolts I I', one or more holes, a, being formed in the side bars, D D', and registering with a hole, b, in the side bars, C C', so that the bolts may be withdrawn and placed in either one of the holes a, to adjust the frame B vertically, as required. The lower longitudinal end bar, F', of the frame B has its inner edge provided with an upwardly-extending wall, c, which extends along the length of the bar, the inner face of the wall being vertical and extending up to a pointed edge, d, and the outer face inclining downwardly from the latter, so as to allow the bending of the tin roofing over the same in the manner hereinafter explained. A piece, J, is arranged parallel with the lower longitudinal bar, E', of the frame A, and has its outer face connected at the ends by strips K K, the other ends of which are slotted at L L, to receive headed screws M M, passing into the side bars, C C', of the frame A. It will be seen that by loosening the screws the piece J can be adjusted away from or nearer to the lower longitudinal end bar, E', and then, by tightening the screws, the parts will be held in the adjusted position.

N designates the hammering-frame, consisting of a longitudinal end contact-piece, O, and curved side bars, P P, the latter having their ends pivoted upon the inner ends of the bolts I I', within the frame A. The inner face of the piece O is arranged to come in contact with the lower longitudinal bar, E', of the frame A and press the edge of the tin against the same in seaming. A plate, Q, is attached to the upper face of the contact-piece O, and is slotted to receive the lower end of a handle, R, a pin or stud, e, pivoting the handle to the said plate, so that by the downward movement of the handle the contact-piece O bears against the bar E' of the frame A, to form the seam in the manner which I will presently set forth. It will be seen that the hammering-frame N is allowed a free swing-



ing movement to work in and out against the meeting edges of the tin forming the roofing, and may be raised, when not in operation, in order not to interfere with the free movement of the other parts of the machine.

To the inner faces of the side bars, C C', of the frame A are attached curved brackets S S, which are cut out at *f* to form bearings for the journals of an oscillating bending-block, T, the latter fitting flat against the under side of the bar E' of the frame A when not in use, its inner face inclining downward and coming on a line with the inner face of said bar E'.

To the upper face of the bending-block T is attached an angle-plate, U, which has its upper end slotted to receive the lower end of a handle, V, bent at an obtuse angle near the center, as at *f'*, a pin or stud, *h*, connecting and pivoting the handle-lever to the angle-plate. The bending-block oscillates on its bearings to cause its inner face to work inward and partly downward by the inward movement of the handle, the latter being adapted to be drawn up, so as to withdraw the bending-block from action.

It will be seen that the clamping-frames A B are forced together by the holding of the handles thereof in the position shown in the drawings, the meeting edges of the tin being held between the inner faces of the lower longitudinal end bars, E' F', of each frame.

The operation of my invention will be readily understood from the foregoing description, taken in connection with the annexed drawings.

The roofing is applied in the usual manner to the roof of the building, the meeting edges of the tin being turned up at right angles to the roof and soldered together at the lower ends. One of the turned-up ends of the tin is shorter than the others, so that the longer one may be bent over and turned in flat against the shorter end to form a single seam. (Shown in Fig. 6.)

In the operation of forming the seams the clamping-frames A B are opened by the handles G H, to enable them to fit around and clasp the meeting edges of the tin roofing, the turned-up ends of the edges projecting between the bars E' F' of the clamping-frames. The short turned-up end of the tin has its upper edge on a line with the upper edges of the wall *c* of the bar F', while the long turned-up end projects above the bar E'. Then by operating the handle V inward, the bending-block T is caused to oscillate inward, its inner face bearing against the end of the tin projecting above the bar E' and causing said long end to bend over, as seen in Fig. 1. During this operation the hammering-frame is upheld by its handle, so as not to interfere with the free movement of the bending-block. When the latter has sufficiently bent the long turned-up end over the shorter one, it is withdrawn from engagement and held away by its handle, the hammering-frame N coming into action. The ends of the meeting edges of the tin roofing are still

held by the clamping-frame, and the hammering-frame is operated by its handle to cause the inner face of the contact-piece O to bear against the inwardly-bent end of the tin and turn in said end flat against the other meeting edge, as seen in Fig. 2. This completes the single seam, which is in the shape shown in Fig. 6, and if it is desired to form the double seam for additional strengthening purposes the operation hereinbefore described is repeated—that is, the adjustable piece J is adjusted about three-eighths of an inch nearer to the bar E' to allow for the seam which has just been made and permit the upper end of the seam to project a sufficient distance above the bar E' of the frame A. The hammering-frame N is drawn up out of the way, and the bending-block T worked or oscillated to cause its inner face to bend the seam over the inclined wall *c*, in the form shown in Fig. 7. The bending-block is itself drawn up and the hammering-frame N comes into action, the frame B being adjusted or lowered to allow the operation of the latter. By working the hammering-frame inward its contact-piece O turns in the bent upper end of the seam flat against the tin to complete the double seam. (Shown more clearly in Fig. 8.) In this manner, after the workman has covered the roof and turned up the meeting edges of the tin, this machine may be used to seam the edges so as to form a tight joint.

My machine provides means which can be operated with ease and efficiency to do much better work than by present form of machines and with less expenditure of time. It is also used to produce single and double seams by the same machine, and without requiring any change except in the adjustment of the piece J.

My machine is simple in construction, inexpensive to manufacture, and efficient in use.

When the bending-block is in operation, the hammering-frame should be held out of the way, and vice versa, and after the movement of the bending-block the frame B should be lowered about three-eighths of an inch to permit the action of the hammering-frame.

While using the machine the operator should hold the handles of the frames A B and the bending-block together with one hand and use the other hand to operate the hammering frame, the same course being pursued when working the bending-block.

Having described my invention, I claim—

1. In a roofing-machine, the combination, with the adjustably-pivoted clamping-frames, one of which has an adjustable gage, of the oscillating bending-block and hammering-frame, as set forth.

2. In a roofing-machine, the combination, with a pair of clamping-frames, of a bending-block and a hammering-frame, for the purpose set forth.

3. The herein-described roofing-machine, comprising a pair of adjustable clamping-frames, an oscillating bending-block, and a



hammering-frame, each of which is provided with a handle, said bending-block being adapted to be upheld out of the way when the hammering-frame is in operation, and vice versa, as set forth.

4. In a roofing-machine, the combination, with a pair of clamping-frames rectangular in form, the sides of one frame being curved and extending across the sides of the other frame, at or about the center, and adjustably pivoted thereto, of an oscillating bending-block and the hammering-frame, as set forth.

5. In a roofing-machine, the combination, with a pair of clamping-frames, one of which fits within and is pivoted to the other, and is provided with an adjustable piece fitted to its lower end to form a gage, of the bending-block, hammering-frame, and means for operating the same, as set forth.

6. In a roofing-machine, the combination, with the clamping-frames, one of which works within the other, of a bending-block journaled to the inner frame, a bent handle for operating the same, and a hammering-frame pivoted to the inner clamping-frame and having its contact-piece arranged to bear against the lower end of one of the frames, and handles for the clamping and hammering frames, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

HENRY A. LEHER.

Witnesses:

THOMAS SAUERBRUNN,  
WILLIAM H. CORROW.