

(No Model.)

3 Sheets—Sheet 1.

E. P. & H. C. WALTER.
METAL PLANING MACHINE.

No. 308,715.

Patented Dec. 2, 1884.

Fig. 1.

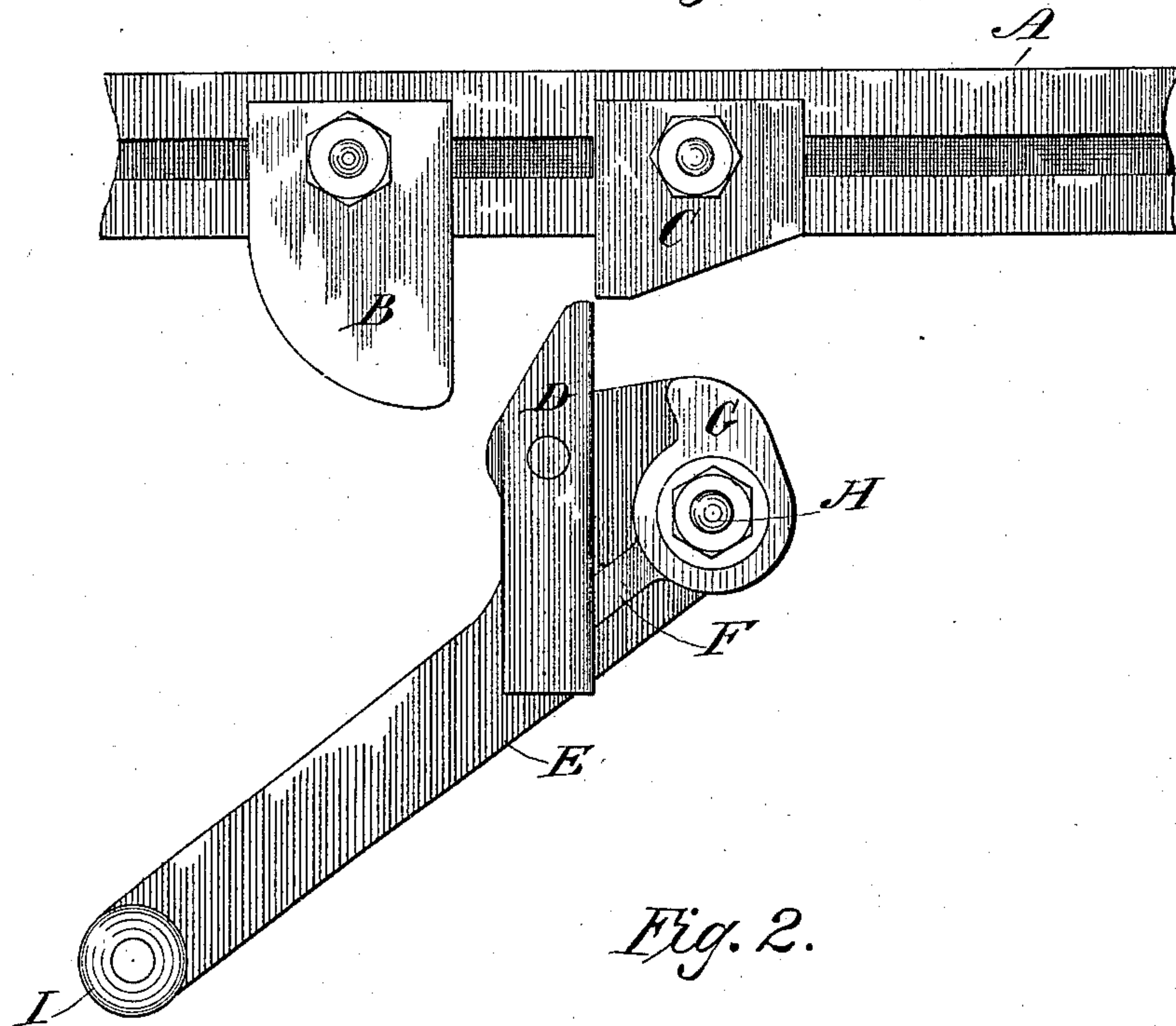
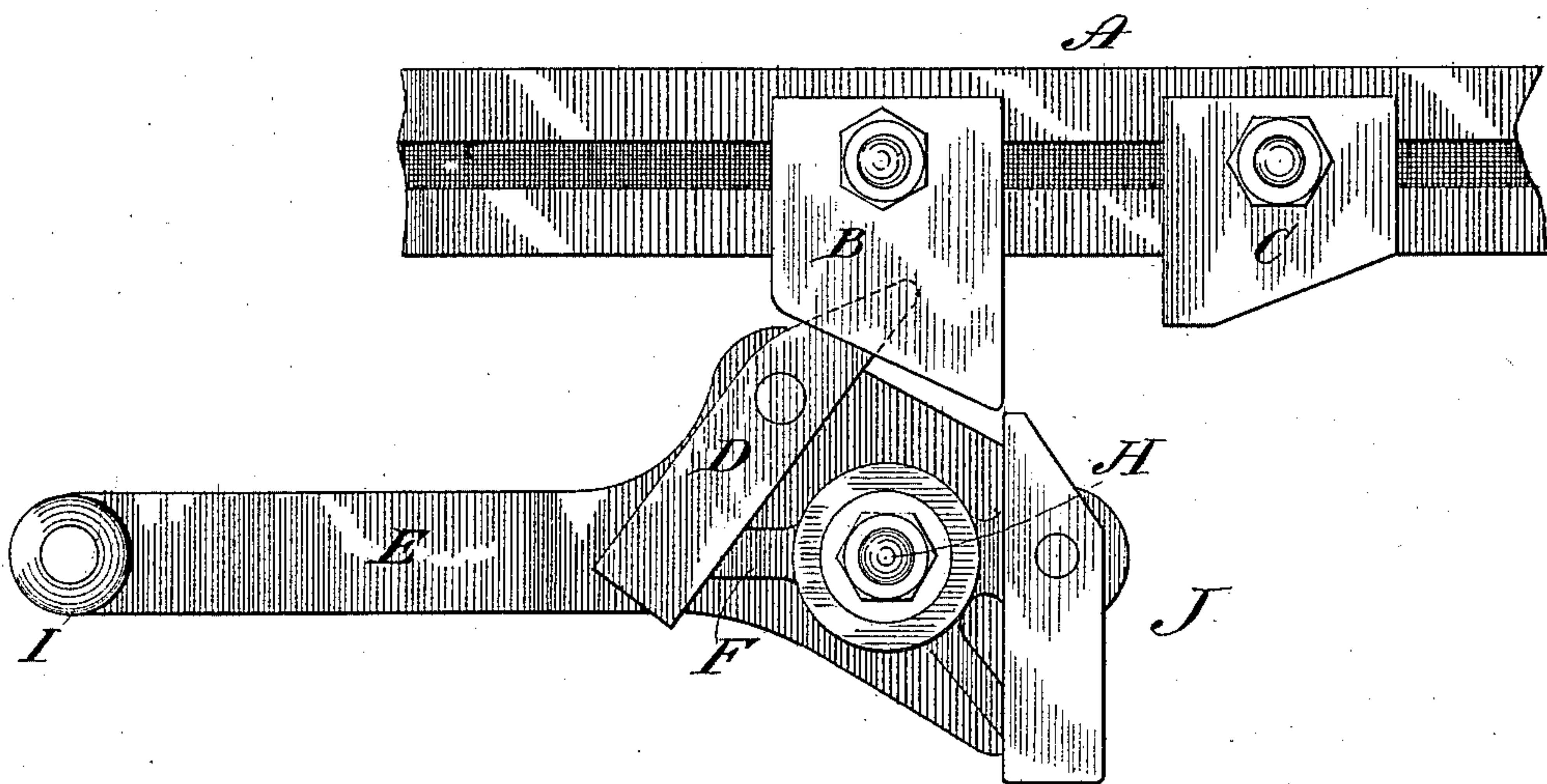


Fig. 2.



Witnesses

S. S. Williamson

W. W. Mortimer

Inventors;

Edward P. Walter

Henry C. Walter,

by

Atty's.

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Fig. 3.

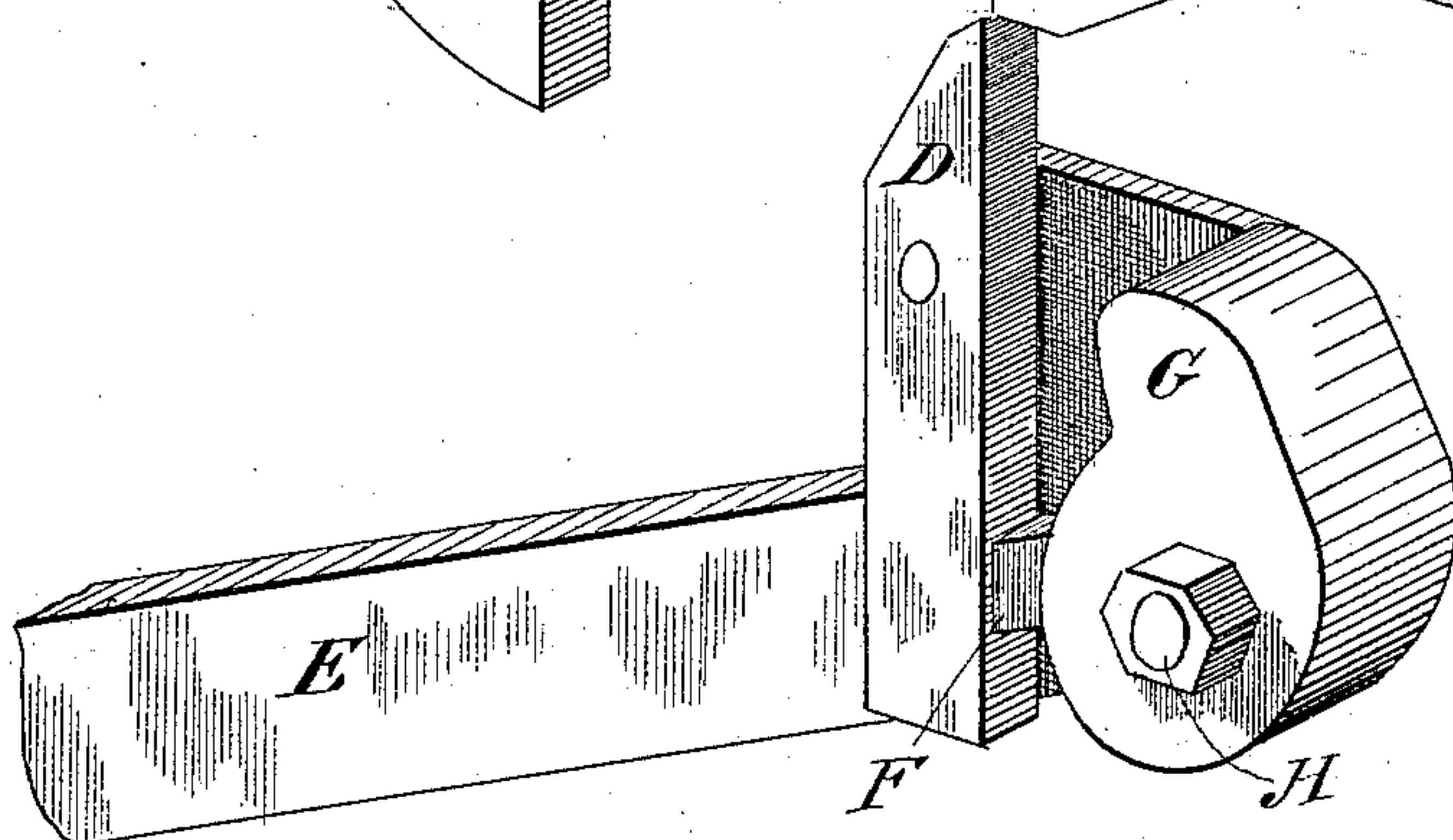
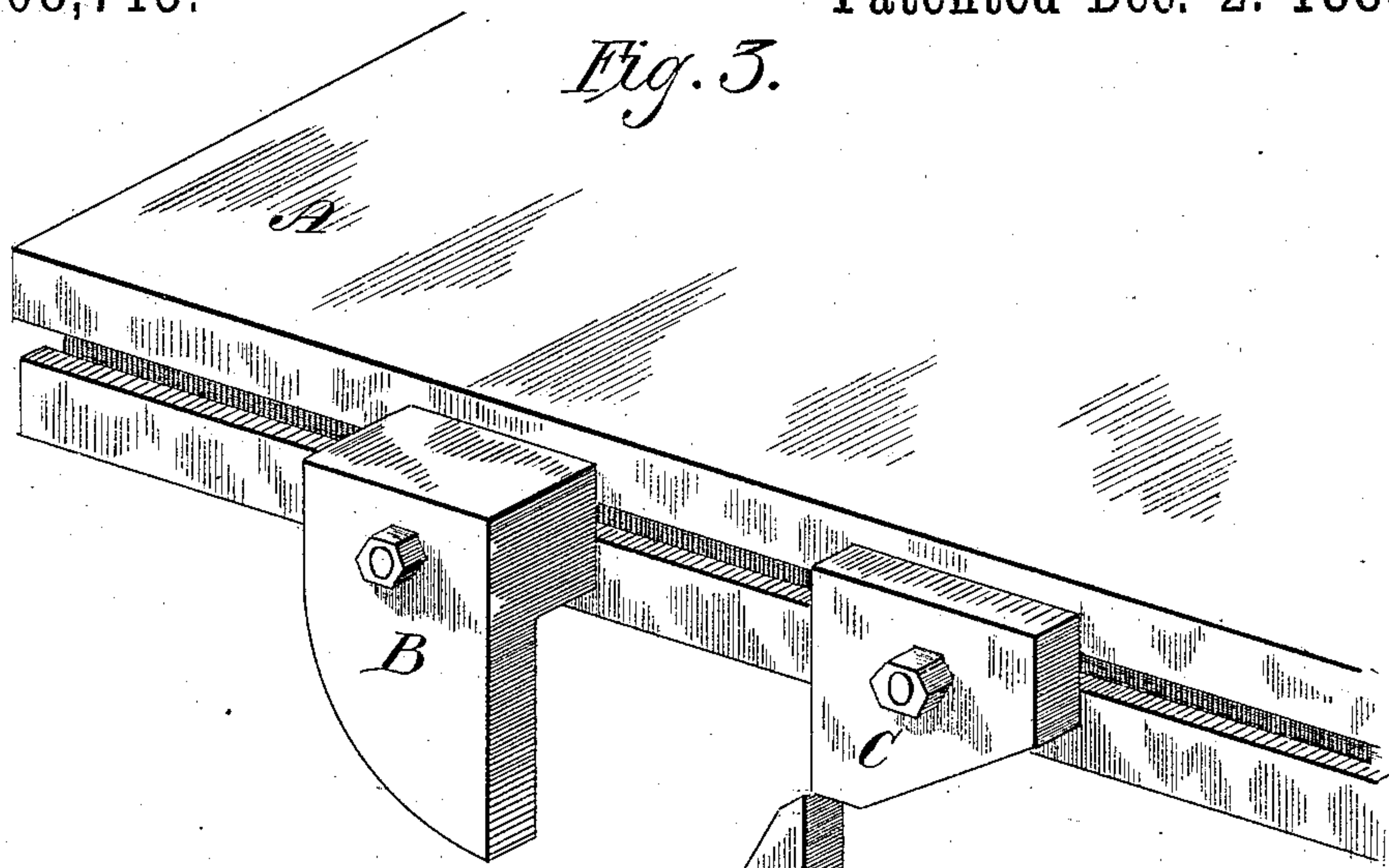
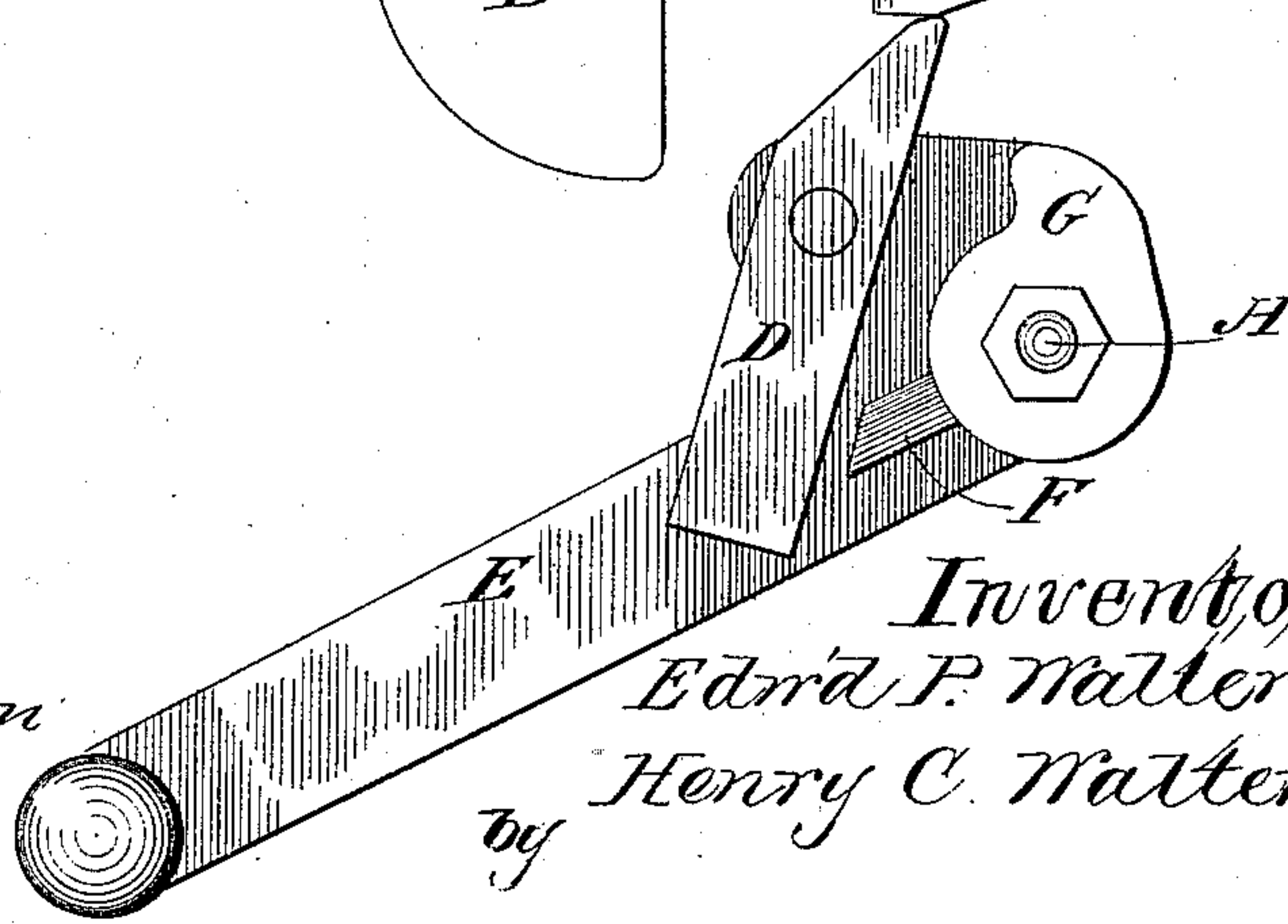
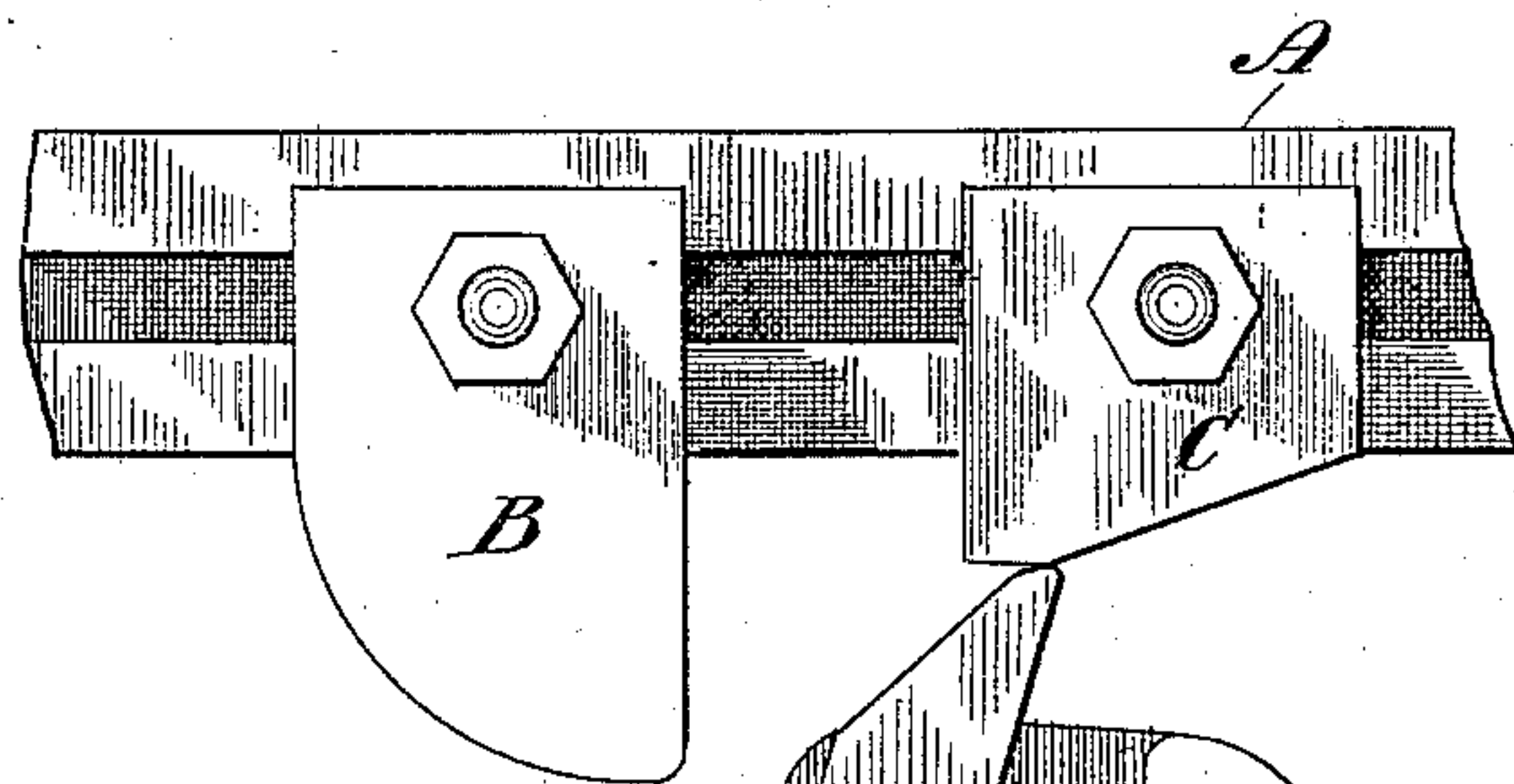


Fig. 4.



Witnesses
S. S. Williamson
H. H. Mortimer,

Inventors:
Edw'd P. Walter
Henry C. Walter
by

attys.

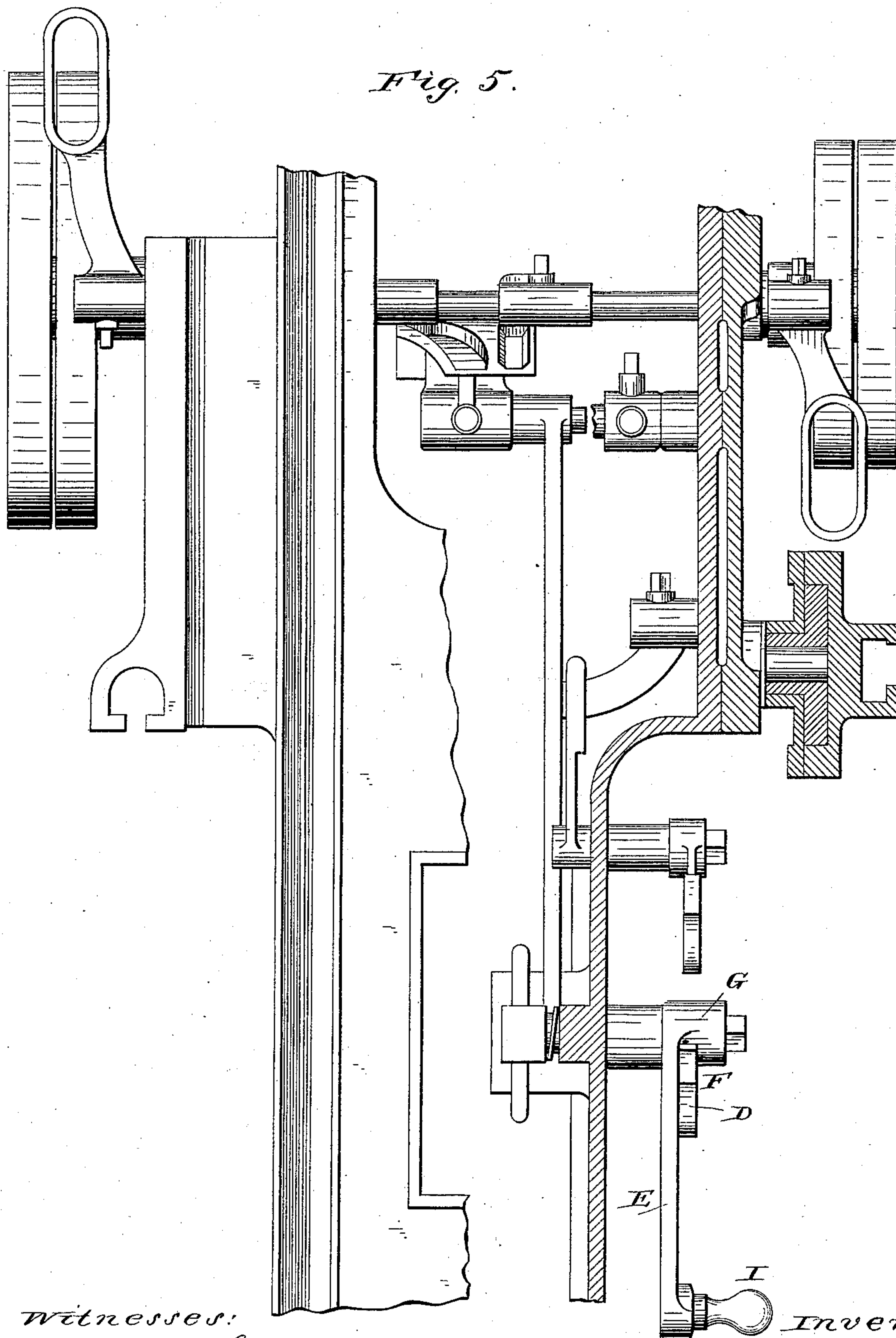
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3 Sheets—Sheet 3.

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METAL PLANING MACHINE.

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Witnesses:

H. N. Low
J. L. Waters

Inventors:

Edward P. Walter & Henry C. Walter
by Smith & Hubbard

attys.

UNITED STATES PATENT OFFICE.

EDWARD P. WALTER AND HENRY C. WALTER, OF BRIDGEPORT, CONN.

METAL-PLANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 308,715, dated December 2, 1884.

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

To all whom it may concern:

Be it known that we, EDWARD P. WALTER and HENRY C. WALTER, citizens of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have
5 invented certain new and useful Improvements in Metal-Planing Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will
10 enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to certain novel and useful improvements in machines for planing metal, but more especially to that particular
15 mechanism of said machines which controls and regulates the slide of the table; and has for its object to provide means for controlling the movement of said table, whereby the
20 latter may slide beyond the working limit for the purpose of examining or changing the work without shifting the shipping-blocks or lifting the table, and thereby throwing it out
25 of gear, while at the same time it is not necessary for the workman to remove the stop from between the shipping-blocks; and with these ends in view our invention consists in the details of construction and combination
30 of elements hereinafter fully and in detail explained, and then specifically designated by the claims.

In order that those skilled in the art to which our invention relates may more fully understand its construction and operation, we will
35 proceed to describe the same in detail, referring by letter to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation showing the construction and relative positions of the shipping-blocks, stop, and crank immediately after the
40 table has ceased its backward movement and before it has commenced to return; Fig. 2, a modification showing two stops, each operated independent of the other by the shipping-blocks at different intervals, and also illustrating
45 the position of the table relative to the stops immediately after it has ceased to move forward; Fig. 3, a perspective view illustrating the respective vertical planes of the shipping-blocks and the stops, and Fig. 4 a side elevation
50 showing the position of the pivoted stop when the table has commenced to run backward beyond the working limit; and Fig. 5 is

a plan view with the bed-plate partly sectioned and the table removed, and illustrating more particularly the connection of the crank-arm
55 with mechanism for reversing the direction of the movement of the table.

Similar letters denote like parts in the several figures of the drawings.

As our improvement is adapted for use on
60 any planer, and has no relation to the mechanism of the same, we have shown only that part of the machine which is in direct combination with our improvement.

A is the table, and B C are the shipping-
65 blocks secured at the side of said table. These blocks are in different vertical planes, the block B being recessed, as seen at Fig. 3, so that its plane of action is without the pivoted
70 stop D, while the block C is in the same vertical plane with said stop, so that it will engage with the latter, as will be presently explained. This stop D is pivoted to a crank-
75 arm, E, and abuts at its lower extremity against a shoulder, F, on said arm. The crank-arm is attached to the shaft H, which is se-
cured by any suitable connecting-rod to any ordinary crank-pin on the shaft of the switch-
80 cam which reverses the movement of the table, and it is thought necessary to mention only the fact that when said arm is in the position shown at Fig. 2 the table will move
85 forward, and when in the position shown at Fig. 1 the table will slide in the opposite direction.

G is a shoulder which projects outward be-
85 yond the stop D and in the same vertical plane with the shipping-block B, so that the latter will, as it is carried forward by the table, strike said shoulder for the purposes pre-
90 sently explained.

The operation of our improvement is as follows: When the table slides backward—that is, from right to left—the block C will strike
95 against the pivoted stop D, and by reason of the abutment of the latter against the shoulder F on the crank-arm E, will force said arm downward to the position illustrated at Fig. 1, when the backward movement will cease
100 and the table commence to travel forward—that is, from left to right. The block B will now be carried against the shoulder G, and thereby force the crank-arm upward to the position shown at Fig. 2. Should it become

necessary to run the table backward beyond the working limit, the stop D is merely swung away from contact with the shoulder F, which permits the block C to pass by. We are also
 5 enabled to accomplish this same result by raising the crank-arm immediately after the block C has operated upon the stop and before the reverse movement of the table has commenced. As the arm is raised at this time
 10 the stop and said block will come in contact at their extreme ends, and the stop will thereby be thrown away from contact with the shoulder F, and when the arm has been elevated to the required position the table will
 15 slide backward without any opposition.

It is characteristic of all planing-machines, generally, that the backward or return movement of the table is faster than the forward movement, and on this account the shifting of
 20 the belt on the wheel that actuates the former motion is quicker than the shifting of the belt on the wheel which actuates the latter. This fact renders it necessary to renew the former belt very often, owing to the consequent greater
 25 wear on the same. It will be observed that the stop D extends farther above the horizontal plane of the crank-shaft H than the shoulder G, and accordingly, when said stop is operated upon by the block C, its upper extremity will describe a greater arc than that described by the extreme upper portion of the
 30 shoulder G when the latter is operated upon by the block B, while at the same time the arc described by the handle I of the crank-arm is the same in either case.

In order that the stop D and shoulder G may describe their respective arcs in the same time, said stop and shoulder are extended to
 35 such a distance above the horizontal plane of the crank-shaft H that the arc described by the stop D is to the arc described by the shoulder G as the speed of the block C is to the speed of the block B, and it will be readily understood that the proportion between the
 40 heights of the stop and shoulder above the horizontal plane of the crank-shaft may be determined therefrom. By increasing the heights of said stop and shoulder and observing the proportions above specified the respective arcs will be longer, thereby causing
 45 the shifting of the belt to be accomplished more slowly.

Instead of the shoulder G, we can use a pivoted stop, as seen at J, Fig. 2, similar in construction and operation to the stop D, and
 55 having the same relation to the crank-arm as the latter. By the use of a stop in this connection the block B may pass beyond said stop during the forward movement of the table by
 60 manipulating the stop or crank-arm in precisely the same manner as in the case of the block C and stop D.

Prior to our invention planing-machines have been used in which the stop is arranged
 65 to swing in a plane at right angles to the plane of the table to a position between the shipping-blocks; but in order to allow the blocks

to pass beyond the stop the workman is obliged to take hold of the latter and swing it out of position, and in doing this his fingers are necessarily placed between the blocks, which, when the planer is doing short work, is dangerous. Again, when the table has moved in one direction beyond one block, and it is desired to run it back again into the proper operative position, the workman must swing the stop back into its position between the block, or else the table will run to its full extent in the opposite direction; also, if anything accidentally gets between either block and the stop, the reciprocating movement of the table is shortened, and this is a matter of great annoyance and loss of time. Our improvement does away with the possibility of all these disadvantages, and when one of the blocks has passed beyond the stop, and the planer is then run back into the proper operative position, neither the stop or any part of the machine is moved, since in this respect the stop is perfectly automatic.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a planing-machine, the mechanism which reverses the movement of the table, in combination with the shaft having secured thereon the crank-arm, the shoulders cast integral with and the stop pivoted to said crank-arm, and the shipping-blocks arranged on the table, substantially as set forth.

2. In a planing-machine, the shipping-blocks B C, operating in different vertical planes, in combination with mechanism which operates to reverse the movement of the table, said mechanism having pivoted thereto in a vertical plane the stop D, abutting against the shoulder F, and the shoulder G, formed integral therewith, said shoulder and stop being in vertical planes coincident with those of the blocks B and C, respectively, substantially as hereinbefore set forth and described.

3. The stop D and shoulder G, arranged, as described, on the mechanism which operates to reverse the movement of the table, and with their upper extremities at different heights above the horizontal plane of the crank-shaft, in combination with the shipping-blocks C B, whereby the operation of shifting the two belts which actuate opposite movements of the table is accomplished in the same time, substantially as described.

4. The crank-arm attached to the shaft H, and having shoulders F G, and pivoted stop D, in combination with the shipping-blocks B C and means for reversing the movement of the table, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

EDWARD P. WALTER.
 HENRY C. WALTER.

Witnesses:

W. W. MORTIMER,
 S. S. WILLIAMSON.