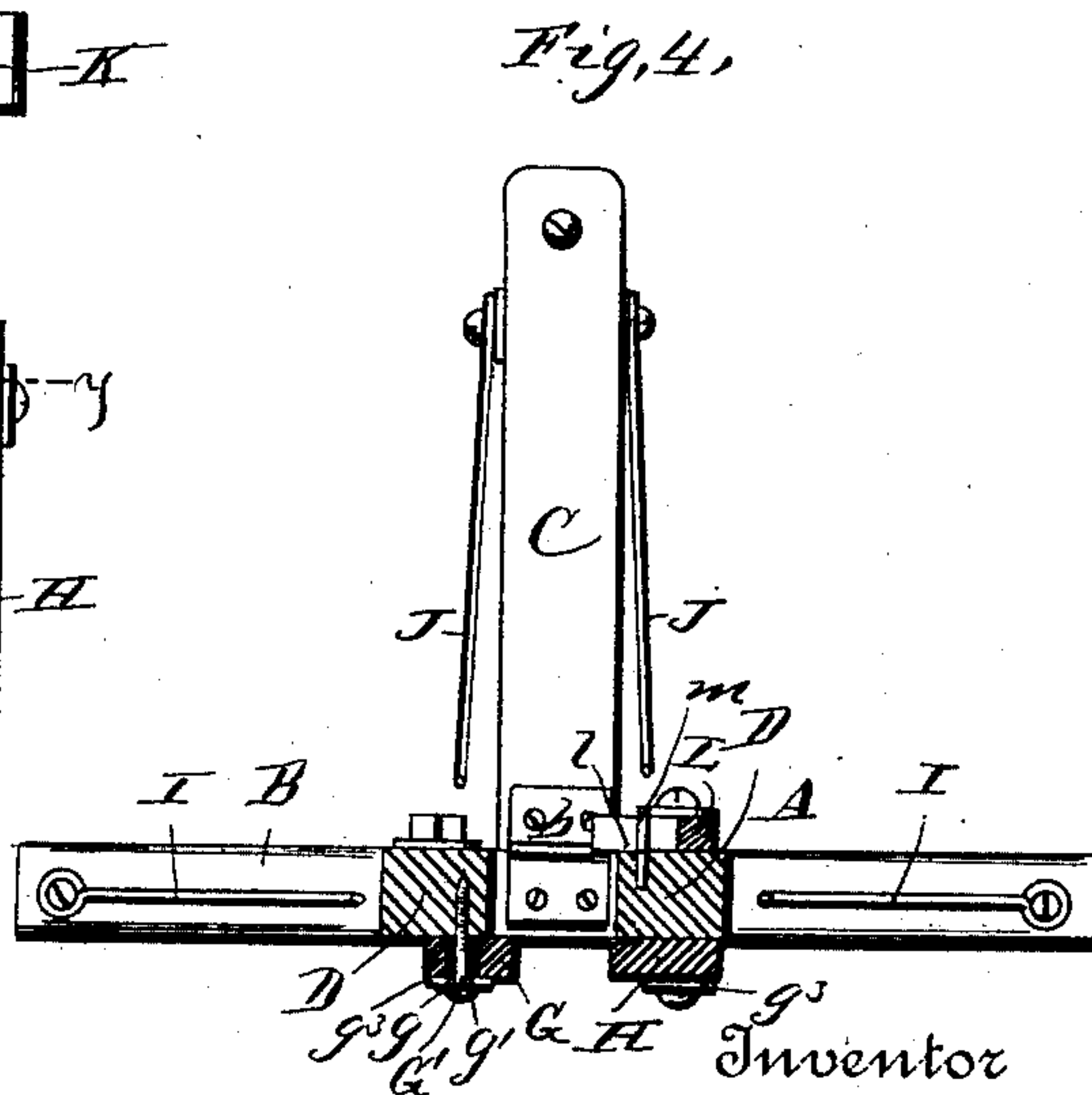
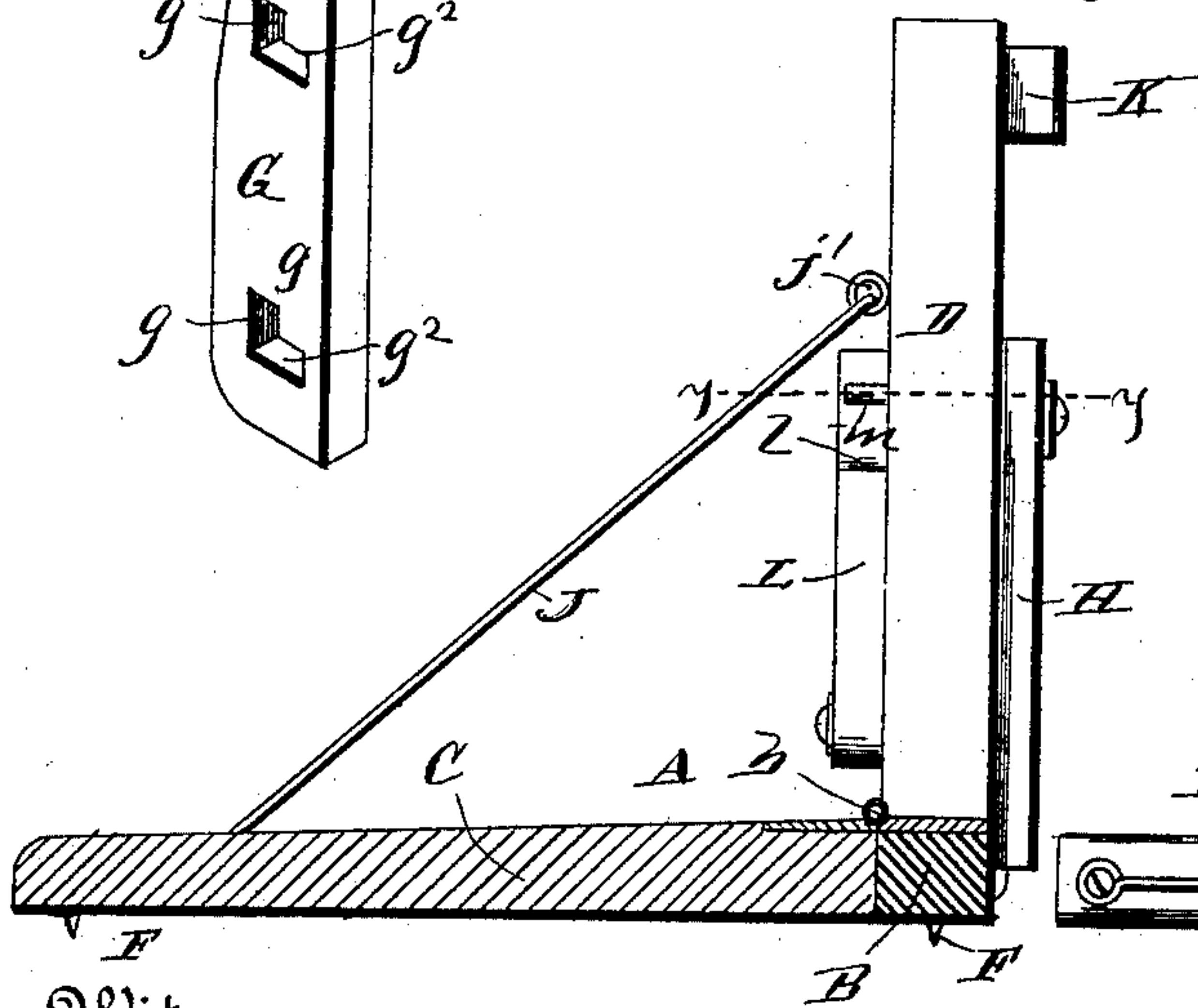
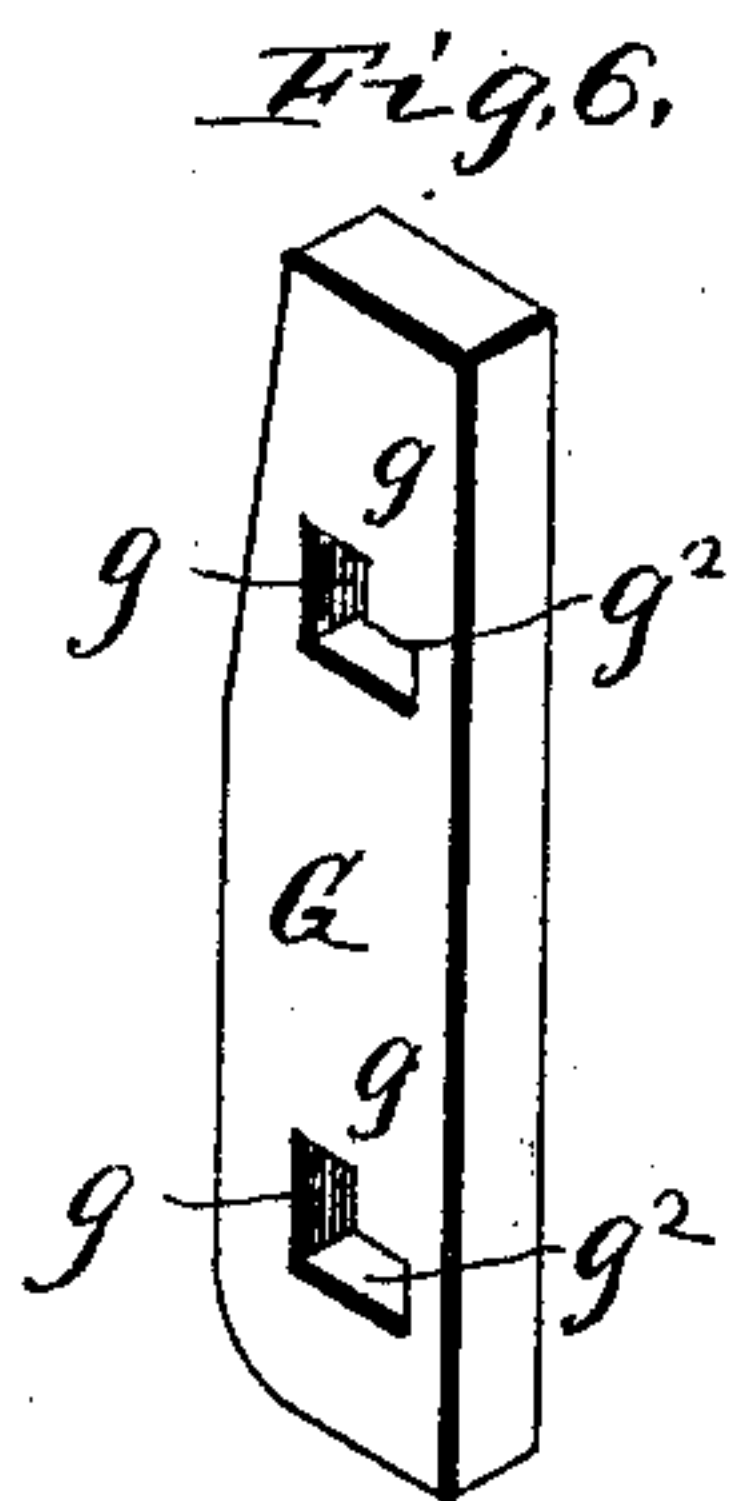
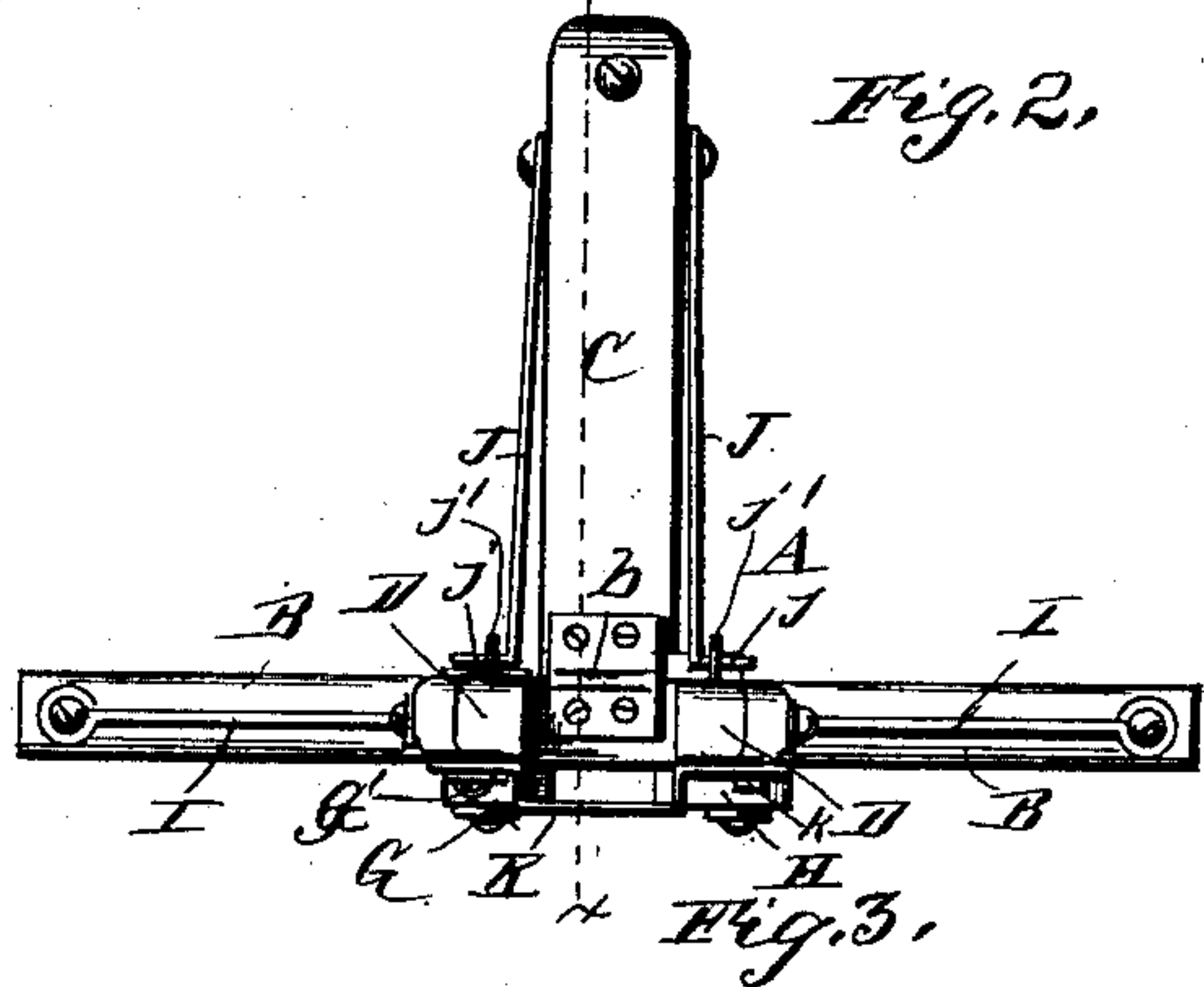
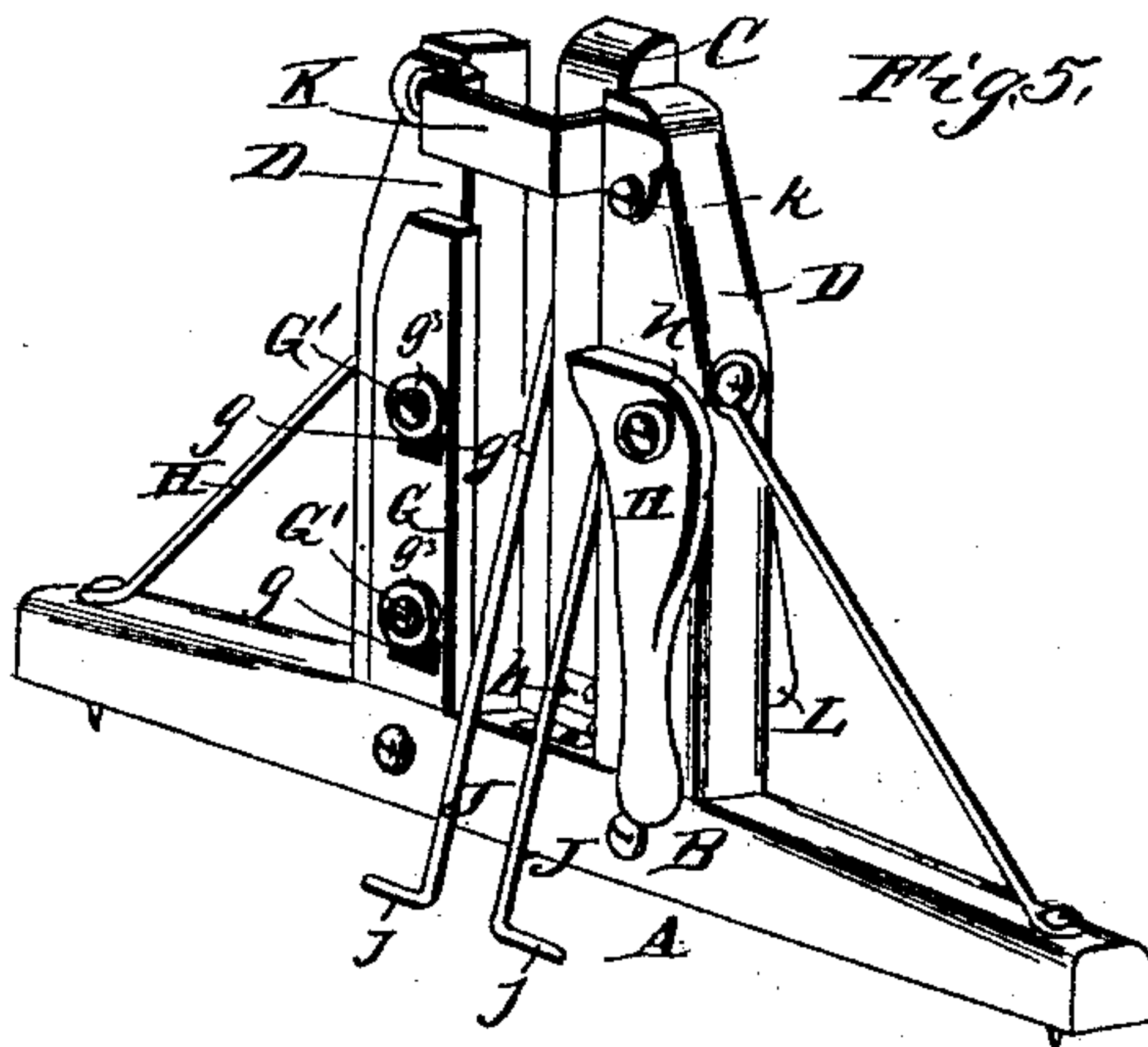
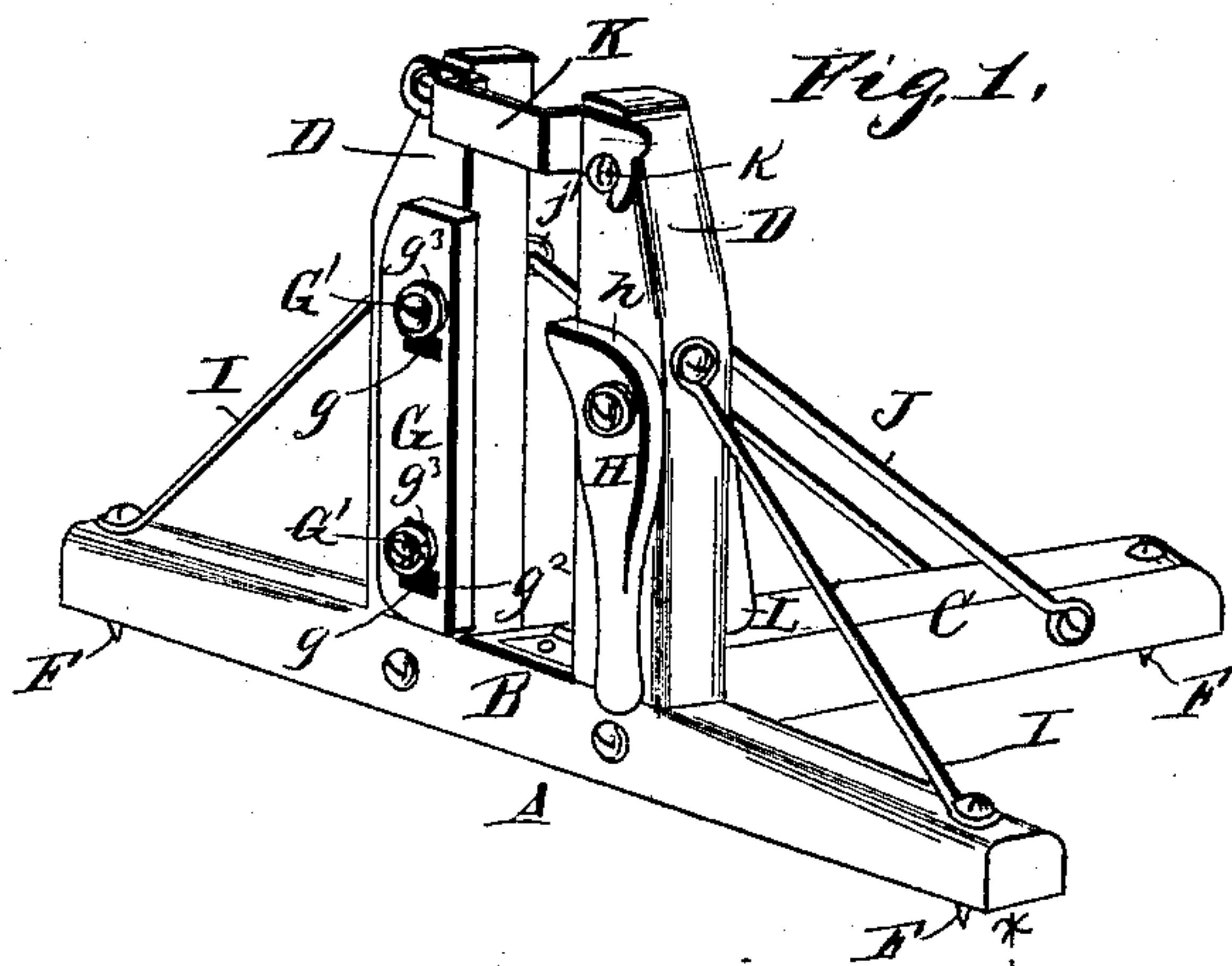


(No Model.)

G. W. IMMEL.  
DOOR CLAMP.

No. 360,698.

Patented Apr. 5, 1887.



Witnesses

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# UNITED STATES PATENT OFFICE.

GEORGE WASHINGTON IMMEL, OF LOGANSFORT, INDIANA.

## DOOR-CLAMP.

SPECIFICATION forming part of Letters Patent No. 360,698, dated April 5, 1887.

Application filed November 13, 1886. Serial No. 218,806. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE WASHINGTON IMMEL, a citizen of the United States, residing at Logansport, in the county of Cass and State of Indiana, have invented a new and useful Improvement in Door-Clamps, of which the following is a specification.

My invention relates to improvements in door-clamps; and it consists of the peculiar combination of devices and novel construction and arrangement of the various parts for service, substantially as hereinafter fully described, and particularly pointed out in the claims.

The object of my invention is to provide a door-clamp with devices for holding a door very firmly and rigidly in place, and against movement or displacement while dressing up the sides or ends thereof, which devices can be very readily and easily operated to quickly engage and be disconnected from the work.

A further object of my invention is to provide a door-clamp which shall be held against movement upon a floor or scaffold or other place by the weight of the door or sash in hanging the same, and which shall be simple and strong in construction, light, and portable, in addition to being effective in operation and cheap.

In the accompanying drawings, which illustrates a door-clamp embodying my improvements, Figure 1 is a perspective view showing it unfolded in condition for use. Fig. 2 is a top plan view of the same. Fig. 3 is a vertical central longitudinal sectional view on the line *xx* of Fig. 2. Fig. 4 is a transverse horizontal sectional view on the line *yy* of Fig. 3. Fig. 5 is a perspective view of the device in its folded portable condition. Fig. 6 is a detail perspective view of one of the clamping-jaws.

Referring to the drawings, in which like letters of reference denote corresponding parts in all the figures, A designates the base of my improved door-clamp or vise, which comprises the horizontal main piece B and the longitudinal piece C, which is arranged at right angles to the transverse piece B. The longitudinal piece C of the horizontal piece may be rigidly and firmly united or connected in any suitable manner to the transverse piece B of

the base; but for the sake of readily and compactly folding the device for storage or transportation I prefer to pivotally connect the longitudinal and transverse pieces of the base together, so that the longitudinal piece of the base can be folded upon the transverse piece or sill thereof, as will be very readily understood. The longitudinal piece of the base is hinged to the transverse piece at the middle or center thereof, as at *b*, and it is braced and strengthened by intermediate rods, which I will presently describe.

D D designate the vertical jaws of the clamp, which are arranged in a vertical position at right angles to transverse sill of the horizontal base. These jaws are rigidly affixed or secured at their lower ends to the base in any suitable manner, and they are arranged parallel with each other and a short distance apart, so that an intermediate space is provided between their opposing sides, between which a door or sash is to be fitted. The longitudinal sill C of the base is arranged in line with and beneath the plane of the space between the vertical parallel jaws, so that one edge of the door or other work can rest thereon and be thereby supported in place.

The transverse and longitudinal sills or pieces of the horizontal base of my improved door and sash clamp are provided with depending teeth or spurs F, which are rigidly affixed or secured in the under sides thereof at suitable points, and these teeth or spurs are adapted to enter the floor, scaffold, or other place under the weight of the door, &c., so that the base and the entire clamp are effectually prevented from displacement without the aid of supplemental clamping devices.

G designates a vertically disposed clamping-bar, which is arranged on the front side of one of the vertical jaws D of the clamp, and this clamping-bar is adapted to impinge upon one side of the door, while the door or other work is forced against the clamping-bar and held from displacement while dressing the same by a pivoted hand-lever, H, which has an enlarged cam-shaped head which bears upon the work.

The vertical clamping-bar is provided near its ends with slots *g*, which each comprises the longitudinal section *g'* and the transverse



section  $g^2$ , which opens into the longitudinal section at its lower terminal end, and through these slots are passed fixed guide-pins  $G'$ , which are rigidly secured in the one of the vertical jaws of the clamp, and have washers  $g^3$  fitted between the heads thereof and the outer exposed face of the vertical adjustable clamping-bar. When it is desired to use the clamp, the work is fitted between the jaws thereof and the clamping-bar is lowered on the jaw to which it is connected, so that the guide-pins will work or ride in the vertical sections of the slots thereof, thereby extending the inner edge of the clamping-bar beyond the corresponding edge of the vertical jaw to which it is connected, the retrograde movement of the bar being prevented by the guide-pins impinging upon the sides of the vertical sections of the slots  $g$  therein. When the work is to be released, the lever is first thrown out of operation, and the clamping-bar then elevated until the guide-pins enter the transverse horizontal sections of the slots  $g$ , after which the clamping-bar can be moved laterally on the vertical jaw, and so that its inner edge will lie flush with the corresponding edge of the jaw to which it is connected. The hand-lever  $H$  is also arranged on the outer side of one of the jaws, and it is pivoted at its inner end upon the opposite jaw of the clamp to which the clamping-bar is connected. The inner pivoted end of the lever is enlarged eccentrically with the longitudinal axis thereof to form a cam-shaped head,  $h$ , to the lever, and this head of the lever is adapted to impinge upon the work when it is fitted between the fixed vertical jaws of the clamp, and thereby hold the work against the clamping-bar and from movement while dressing the same.

The vertical jaws of the clamp are braced by means of diverging rods or braces  $I$ , which are rigidly affixed at their upper ends to the jaws and at their lower ends to the transverse sill of the horizontal base, and the longitudinal sill of the base is likewise braced by means of inclined rods, which are connected at their opposite extremities to the vertical jaws and the longitudinal sill of the base, these braces  $J$  being arranged on the outer sides of the longitudinal sill of the base, so that they will not interfere with the adjustment of the work between the parallel jaws of the clamp. When the longitudinal sill is hinged to the transverse sill of the horizontal base, the lower ends of the inclined braces  $J$  are pivotally connected to the longitudinal sill of the base and the upper ends of the braces are provided with short right-angled arms  $j$ , which form hooks and take into suitable sockets or eyes,  $j'$ , on the rear sides of the fixed vertical jaws, so that the upper ends of the said braces can be detachably connected to the fixed vertical jaws and folded down against the base when it is desired to fold the parts for storage or transportation.

$K$  designates a connecting bar or plate, which

is provided with or bent to form a socket, and is pivoted at one end to one of the vertical fixed jaws at the upper end thereof, and the opposite end of the said bar is detachably connected to the other vertical jaw of the clamp. The bar is arranged at the upper end of the fixed vertical jaws of the clamp, and it is adapted to assume a horizontal position and be connected at its free end with the jaw having the keeper when it is desired to dress the door or sash on end. The free end of the plate or bar is provided with an open slot in its lower edge, and when the plate is in a horizontal position a fixed pin,  $k$ , enters the slot to prevent accidental displacement of the bar or plate.

$L$  designates a knee which is arranged on the rear side of one of the vertical fixed jaws of the clamp. The lower end of this knee is pivotally connected to the one of the fixed vertical jaws, and the opposite free end of the knee has an integral shoulder,  $l$ , on its inner side edge, which projects against the inner side of the jaw to which it is affixed, and is adapted to support the door or sash in an inclined position when desired. The extreme upper end of the knee is reduced above the shoulder  $l$  thereof, and this reduced end of the knee comes in contact with the fixed stop-pin  $m$ , which is arranged in the path of the free end of the knee, and is adapted to thereby limit the inward movement of the knee. The knee can be very readily turned to a vertical position, so that the supporting shoulder thereof will project beyond the inner side of the jaw to which the knee is connected, and it can be very easily thrown or adjusted to one side, to be out of the way of the work when adjusting it in the jaws of the clamp.

The operation of my invention will be very readily understood by those skilled in the art to which it relates from the foregoing description, taken in connection with the drawings.

I do not desire to limit myself to the exact details of construction herein shown and described as an embodiment of my invention.

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

1. In a door-clamp, the combination of a base, the vertical parallel jaws affixed to the base and arranged out of contact to leave an intermediate space between their opposing faces for the insertion of the door, a clamping-bar independent of and connected to one of the jaws and capable of a limited adjustment toward the other jaw, and a lever pivoted to one of the jaws to clamp the door between the bar and lever, substantially as described.

2. In a door-clamp, the combination of a base, the vertical parallel jaws arranged a short distance apart and affixed to the base, an independent clamping-bar having the connected vertical and horizontal slots, the fixed guide-pins passing through the slots to connect the bar to one of the jaws and permit it



to have a limited movement to cause the inner edge to extend beyond the corresponding edge of the jaw to which it is affixed, and a lever pivoted to the other jaw and having a cam-shaped head, substantially as described.

3. In a door-clamp, the base comprising the transverse sill and the longitudinal sill hinged at one end to the transverse sill, in combination with the fixed vertical jaws secured to the transverse sill and arranged on opposite sides of the longitudinal sill, and the clamping means on the vertical jaws, substantially as described, for the purpose set forth.

4. In a door-clamp, the combination of a base, the parallel fixed jaws carried thereby, and arranged a short distance apart to leave an intermediate space between their opposing faces, the clamping mechanism arranged on one side of the jaws, and a connecting-bar having a socket arranged on the same side of the jaws as the clamping mechanism and in substantially the same vertical plane, the said bar having one end pivoted to one of the jaws and its opposite end detachably connected to the other jaw, whereby one edge of the door is adapted to be fitted in the socket of the connecting-bar and held by the clamping mechanism, as and for the purpose set forth.

5. In a door-clamp, the combination of a base, the vertical fixed jaws thereon, the clamping-bar and lever connected to the jaws, and a knee pivoted at one end to one of the jaws and having a laterally-extended shoulder adapted to be extended beyond one edge of the jaw to which the knee is connected, the said jaw being provided with means for limiting the movement of the knee in one direction, substantially as described.

6. In a door-clamp, a base having the transverse sill and the longitudinal sill arranged at right angles to the transverse sill and hinged at one end thereto, in combination with the fixed vertical jaws on the transverse sill of the base, the clamping-bar and lever fitted on the jaws, and the brace-rods pivotally connected with the longitudinal sill of the base and detachably connected to the vertical jaws, substantially as described, for the purpose set forth.

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

GEORGE WASHINGTON IMMEL.

Witnesses:

RICHARD BARCUS,  
JOHN C. EISERT.