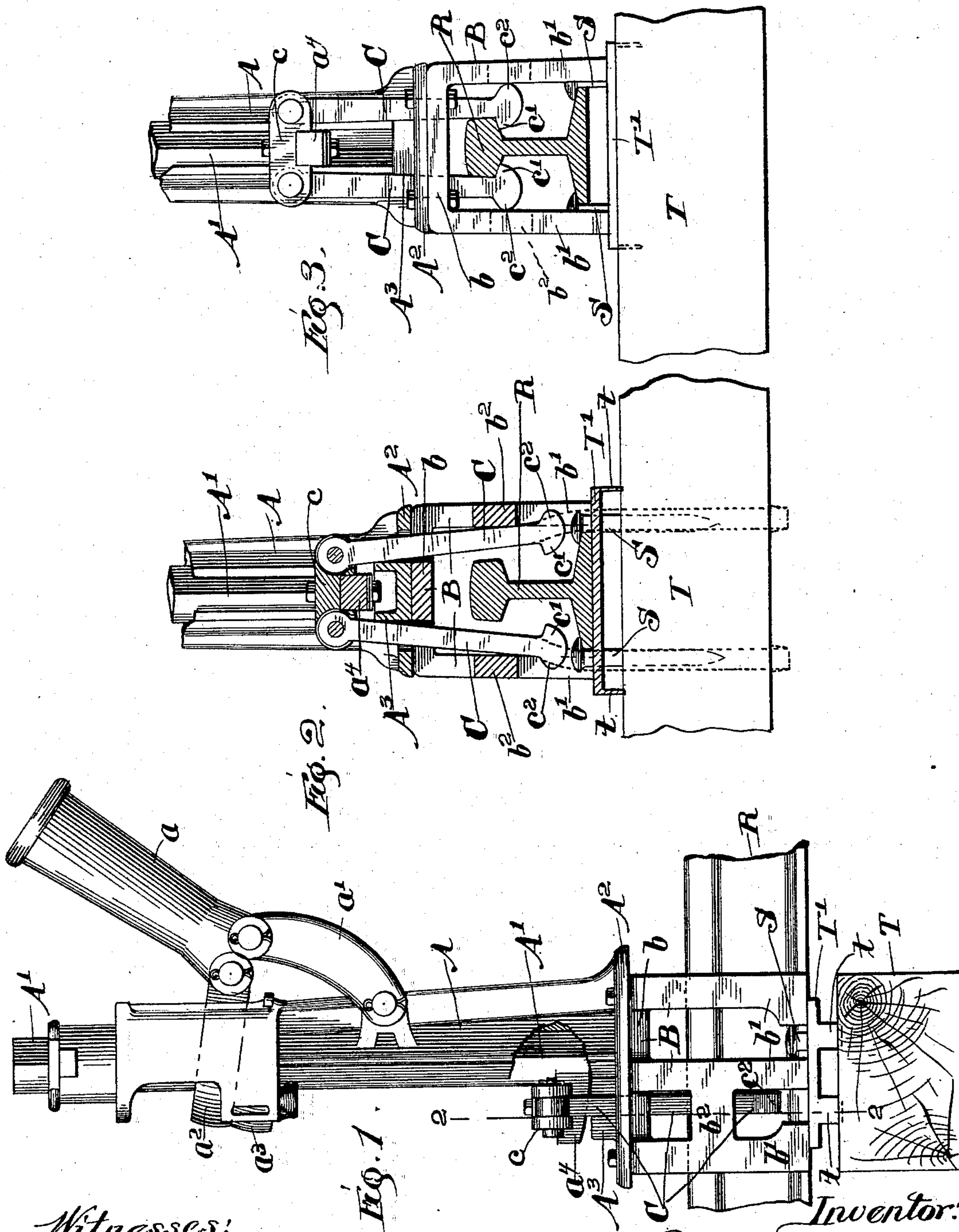


P. HALEY.
JACK FOR SEATING TIE PLATES.

No. 578,869.

Patented Mar. 16, 1897.



Witnesses:
Chas O Sherry,
M. L. Sheahan.

Inventor:
Patrick Haley
by Niles Gurne & Pitman

(No Model.)

2 Sheets—Sheet 2.

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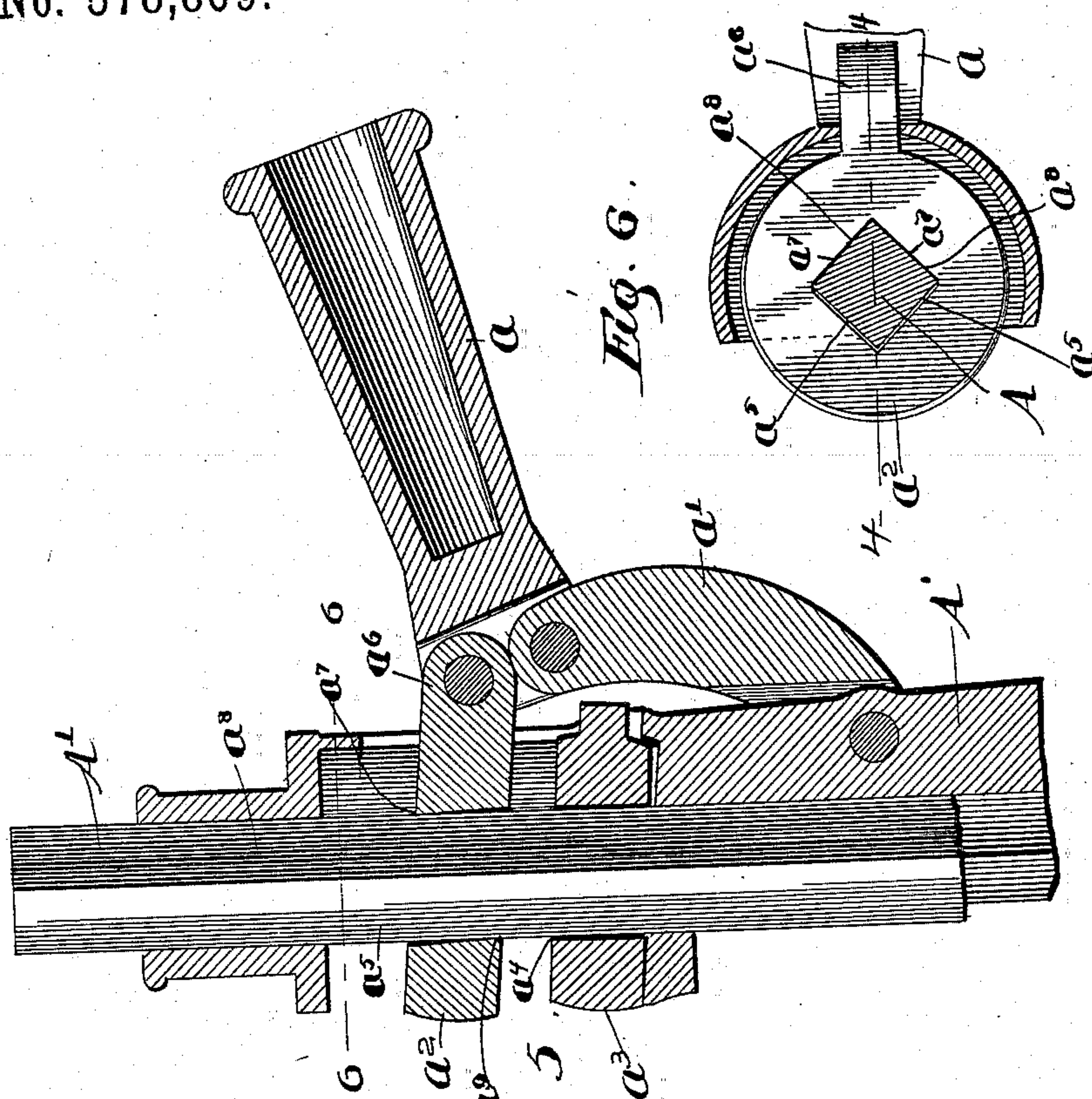


Fig. 5.

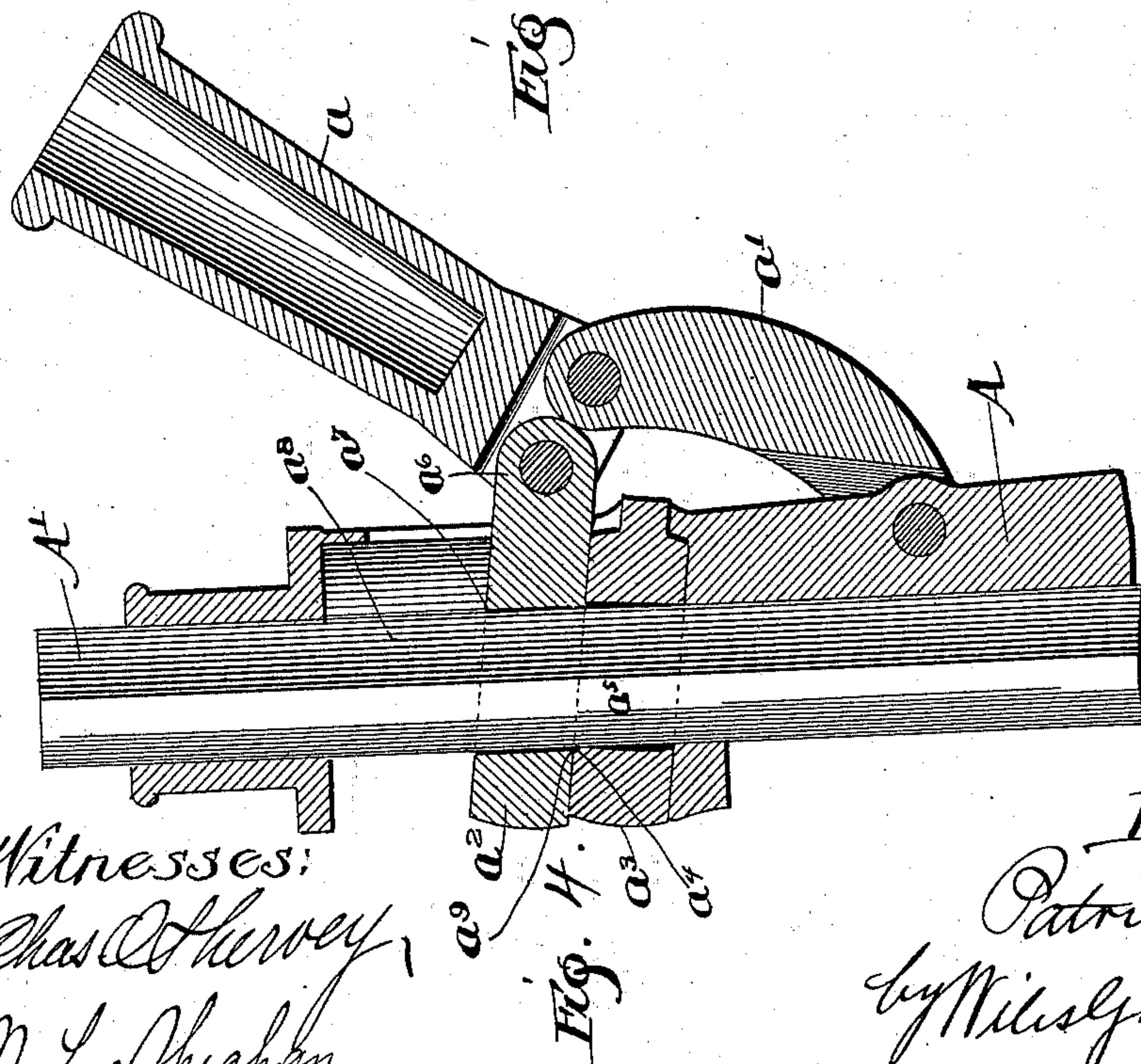


Fig. 6.

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UNITED STATES PATENT OFFICE.

PATRICK HALEY, OF CHICAGO, ILLINOIS.

JACK FOR SEATING TIE-PLATES.

SPECIFICATION forming part of Letters Patent No. 578,869, dated March 16, 1897.

Application filed August 17, 1896. Serial No. 602,995. (No model.)

To all whom it may concern:

Be it known that I, PATRICK HALEY, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Jacks for Seating Tie-Plates, of which the following is a specification.

My invention relates to certain new and useful improvements in a jack for seating tie-plates, the object being to provide a device which shall accurately and quickly perform the operation required of it with a small amount of bodily exertion and in less time than is usually required.

To such end it consists in certain novel features of construction, which will be fully described in this specification and clearly pointed out in the claims.

The invention is clearly illustrated in the drawings presented herewith, in which—

Figure 1 is a side elevation of my complete device in operative relation to a tie-plate, rail, and tie. Fig. 2 is a transverse section through the line 2 2, Fig. 1. Fig. 3 is a front view, but showing the tie-plate seated in place by my improved device. Fig. 4 is a detail central vertical section of a portion of the jack and showing the means for operating the same, the section being taken through the line 4 4, Fig. 6. Fig. 5 is a similar view, but showing the operating-handle in a different position and the mast slightly raised through such operation; and Fig. 6 is a horizontal section through the line 6 6, Fig. 5.

Referring to the drawings, A represents the standard of an ordinary lift-jack, and A' the mast sliding in said standard and adapted to be raised or lowered for the purpose herein-after specified. The upward or lifting motion of the mast is performed with a hand-lever a , fulcrumed upon a link a' , which is pivoted upon the standard, as clearly shown in Fig. 1. A friction-yoke a^2 embraces the mast, which is preferably square, and the yoke is pivoted to the lever at the proper point, so that when the lever is depressed the friction-yoke will grasp the mast and raise the same until the motion of the lever a is reversed, when a second friction-yoke a^3 will grasp the mast and retain the same until the

lever a is again depressed. Both jacks are formed with openings corresponding to the mast, and when in their normal position the yokes are upon a slight incline, the yoke a^3 resting upon the inclined surface of the standard and the yoke a^2 resting upon the yoke a^3 . As seen in Fig. 4, the edges a^4 of the yoke a^3 impinge upon the faces a^5 of the mast, and any downward pressure upon the same must evidently cause the edges a^4 to bite upon the mast and prevent any such downward movement. When the lever a is swung downward on its pivot upon the link a' , the end a^6 of the yoke a^2 is raised until the edges a^7 thereof engage the faces a^8 of the mast, the edges a^9 at the same time also grasping the faces a^5 of the mast. As soon as the mast is firmly grasped between the edges a^7 a^9 of the yoke a^2 any further downward movement of the lever a must evidently carry the mast bodily upward. The mast is released from the yoke a^3 immediately upon the commencement of its upward movement; but as soon as the downward movement is commenced it is again grasped therein and held thereby until the lever a is again depressed. Upon the lower end of the standard is formed a suitable base, which, together with the jack thus far described, I do not believe to be new, but is useful to merely illustrate my improved device.

A foot-piece B is provided below the base A^2 of the standard, and, as shown, this foot-piece consists of a plate b , bolted or otherwise secured to the base and legs b' , extending longitudinally with the standard and adapted to rest upon tie-plates when the device is in operation, said tie-plates being provided with prongs adapted to be forced into the tie. Upon the lower end of the mast A' is formed a laterally-extending foot or lug a^4 , to which is bolted or otherwise secured a transversely-extending block c , formed with ears upon its ends, to which are pivoted arms C C, as clearly shown in Fig. 2. The arms extend downward through openings in the base A^2 and terminate in hooked ends $c' c'$, adapted to engage with the head of a rail. The lower ends of the arms C are also formed with cam-like shoulders c^2 , which are adapted when the arms are raised to engage with cross-pieces

b^2 , preferably formed integral with the foot-piece, (see Fig. 2,) and thereby force the lower ends of the arms C toward each other, thereby bringing the hooked ends of the arms into engagement with the under side of the head of the rail, as clearly shown in Fig. 3. The upper faces of the cams are somewhat inclined in order that when the arms are raised they will be readily forced toward the rail.

I have found it necessary to provide means for keeping the arms apart when in their lowest position, in order that when the device is placed in operative position upon a tie-plate the arms shall not strike the head of the rail.

A spreader A^3 is secured upon the base A^2 and engages the arms C, thereby causing them to be spread apart as they are moved downward from their raised position. The spreader may be simply a block secured between the arms and of such width that when the arms are in a raised position they may come quite close together, but when in their lowest position will be forced apart enough to allow them to pass over the head of the rail.

A tie is shown at T and a tie-plate at T', the tie-plate being provided with a number of prongs t , adapted to be forced into the tie and thereby prevent the tie-plate from being forced out of place by the heavy loads passing over it, especially where the track is curved. The rail R rests upon the tie-plate, and holes are provided in the latter, through which the spikes S are inserted when driven into the tie.

The operation of the device is as follows: The tie-plate is placed upon the tie at the proper point, the rail laid thereon, and the spikes driven through the holes in the tie-plate and into the tie until the heads of the spikes strike the lower flange of the rail, the prongs t of the tie-plate evidently resting upon the upper face of the tie. The jack is then placed over the rail, the arms being in their lowest position and spread apart, the foot-piece being allowed to rest upon the tie-plate, as clearly shown in Fig. 1. The operating-lever a is then manipulated, thereby raising the mast and evidently lifting the arms C until the beveled faces of the cams c^2 engage the cross-pieces b^2 , the further upward movement of the mast evidently causing the arms to be brought toward each other through the engagement of the cams with the cross-pieces b^2 , and thereby forcing the hooks into engagement with the head of the rail. Inasmuch as the spikes have been solidly embedded in the ties, it is obvious that any further manipulation of the operating-lever instead of withdrawing the spikes from their places causes the entire jack, with the exception of the mast and arms C, to be forced downward upon the tie-plates, forcing the prongs of the latter into the tie until the tie-plate is properly seated, as seen in Fig. 3. The mast may now be released and allowed to fall to its lowest position, when the arms C

will evidently descend and at the same time be spread apart and thereby disengaged from the rail. The entire jack may now be lifted from the rail and applied to another tie-plate.

Although only one form of power has been shown and described, it is obvious that various devices for lifting the mast may be used, the one shown being the most simple and practical for my purpose, and although the arms C have been described as engaging the rail they may evidently be extended down, as seen in dotted lines in Fig. 2, and engage with the tie or other portion of the construction itself.

I am aware that other alterations and modifications of the device are possible, and I do not desire to limit myself except as pointed out in the following claims.

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

1. In a device of the class described, the combination with a suitable standard adapted to rest upon a railway tie-plate, of a vertically-movable member supported by the standard, means for connecting said vertically-movable member with a rail, and means for forcing said movable member upward with reference to the standard and thereby forcing the standard downward upon the tie-plate.

2. In a device of the class described, the combination with a suitable mast provided with lifting devices, of arms adapted to engage the head of a rail, and a standard adapted to rest upon a tie-plate, whereby said tie-plate will be seated in place by the downward movement of the standard and the upward movement of the mast.

3. The combination with a suitable jack having a standard and a mast adapted to be forced upward in said standard, of arms pivoted to said mast and adapted to engage with the head of a rail, a foot-piece secured to said standard and adapted to rest upon a tie-plate, the upward movement of the mast being adapted to force said tie-plate into its seat upon the tie.

4. The combination with a suitable jack having a standard and a mast adapted to be raised or lowered in said standard, of arms pivoted to said mast and formed with hooked ends c' , and cams c^2 , a foot-piece secured to said standard and having portions lying in the path of said cams and adapted to force said arms toward each other during the upward movement of the mast.

5. The combination with a lifting device comprising a standard, mast, and a suitable device for raising or lowering the mast in the standard, of arms pivoted to said standard and formed with hooked ends c' , and cams c^2 , a foot-piece B, and suitable means for spreading said arms apart during the downward movement thereof.

6. The combination with a suitable lifting device comprising a standard and suitably-

guided mast adapted to be raised or lowered in said standard, of arms pivoted to said mast and adapted to engage with the head of a rail and the spreader A^3 , adapted to force said arms apart during their downward movement.

7. In a device of the class described, the combination with a suitable lifting device comprising a standard and a mast adapted to be raised or lowered in said standard, of arms pivoted to said mast and formed with hooked ends adapted to engage with the head of a rail, and with cams c^2 , and a foot-piece adapted to rest upon the tie-plate and having a portion lying in the path of the cams and adapted to force said arms into engagement with the head during the upward movement of the arms, said arms being adapted to be separated during the downward movement thereof; substantially as described.

8. The combination with a standard and

mast formed with a foot a^4 , of a block c , secured to said foot, arms pivoted to said block and formed with hooks adapted to engage the head of a rail, and cam portions c^2 , a foot-piece secured to said standard adapted to rest upon a tie-plate and having a portion lying in the path of the cams c^2 , and adapted to force the arms into engagement with the rail during the upward movement of the arms, and a spreader A^3 , adapted to separate said arms during the downward movement thereof; substantially as described.

In witness whereof I have hereunto set my hand, at Chicago, Illinois, this 12th day of August, A. D. 1896.

PATRICK HALEY.

Witnesses:

CHAS. O. SHERVEY,
H. BITNER.