

No. 661,835.

Patented Nov. 13, 1900.

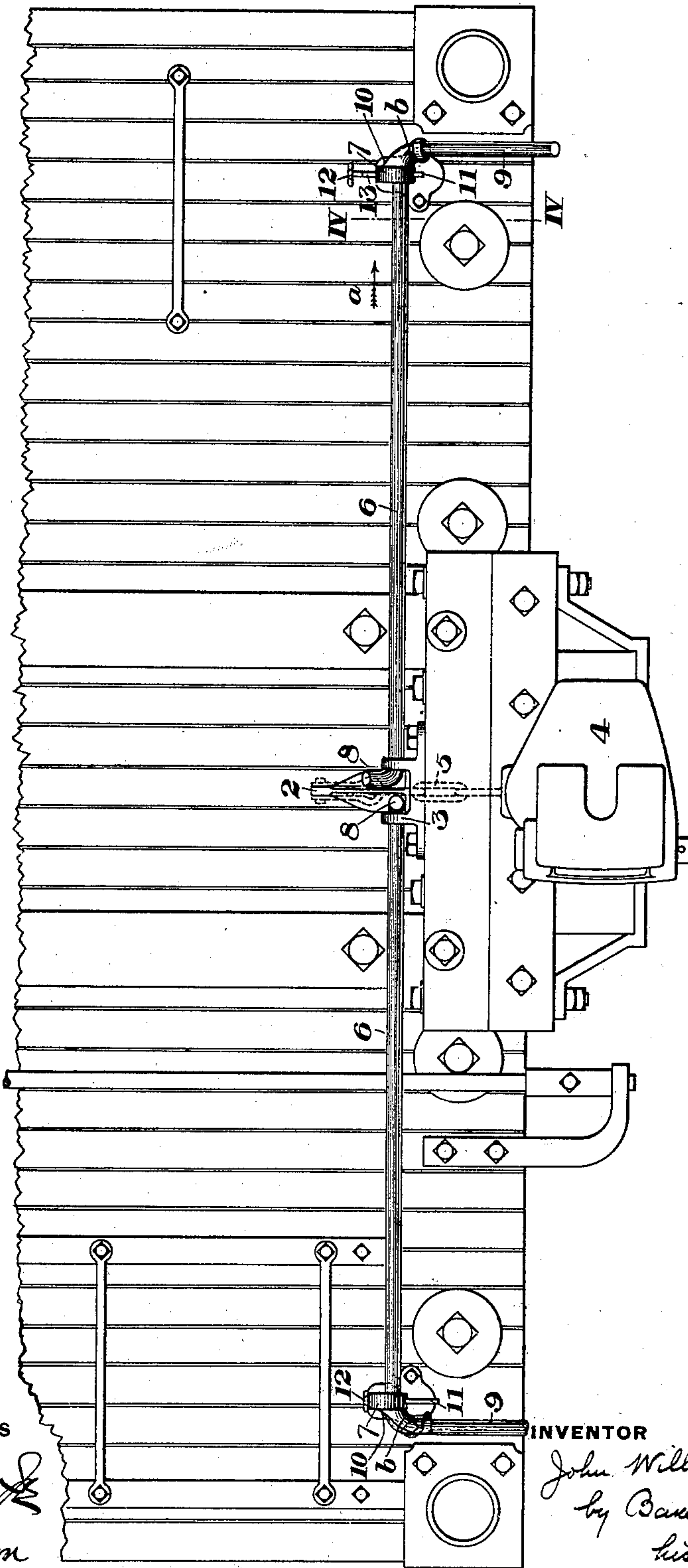
J. WILLISON.
COUPLING UNLOCKING DEVICE.

(Application filed Feb. 23, 1898.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.



WITNESSES

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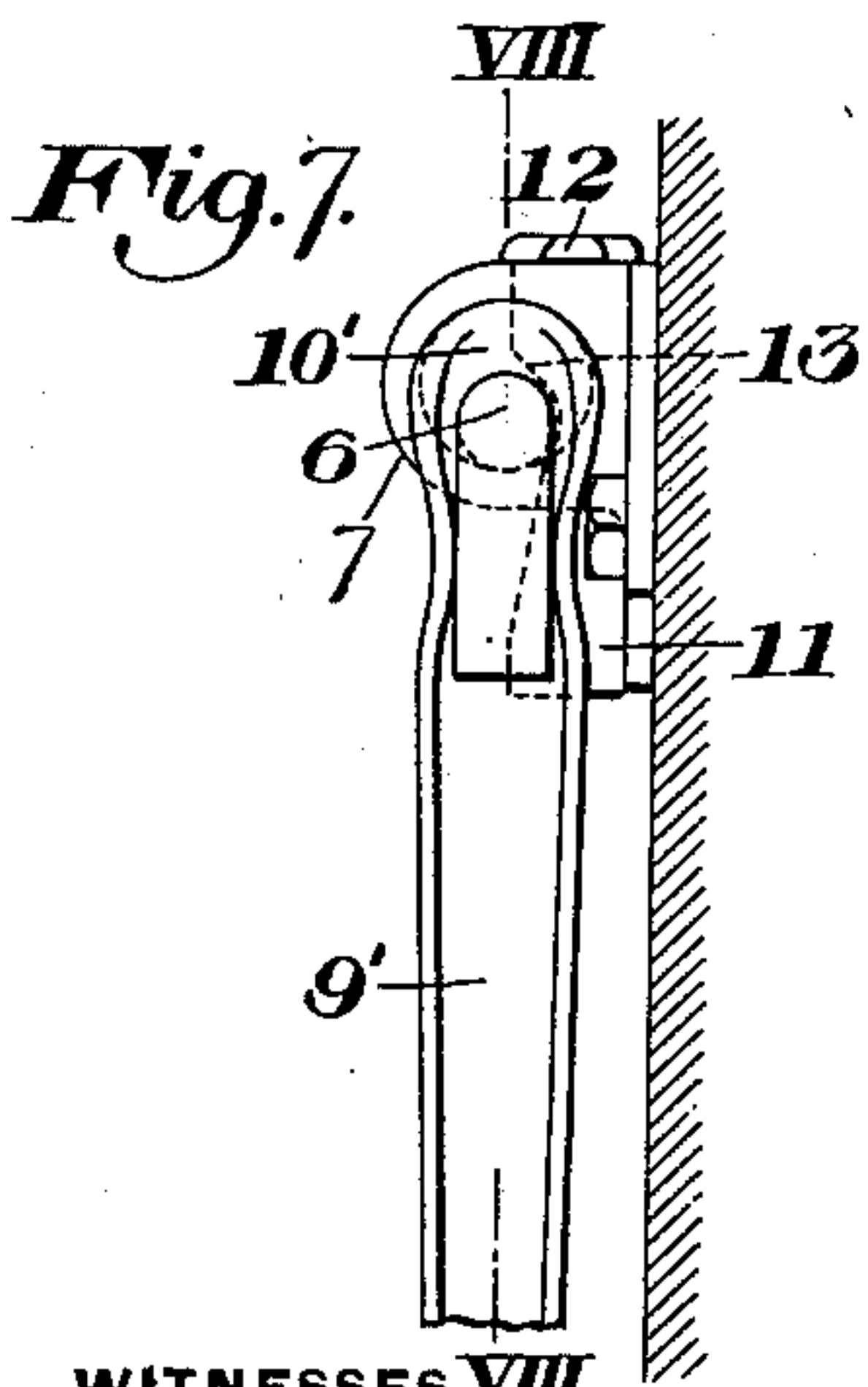
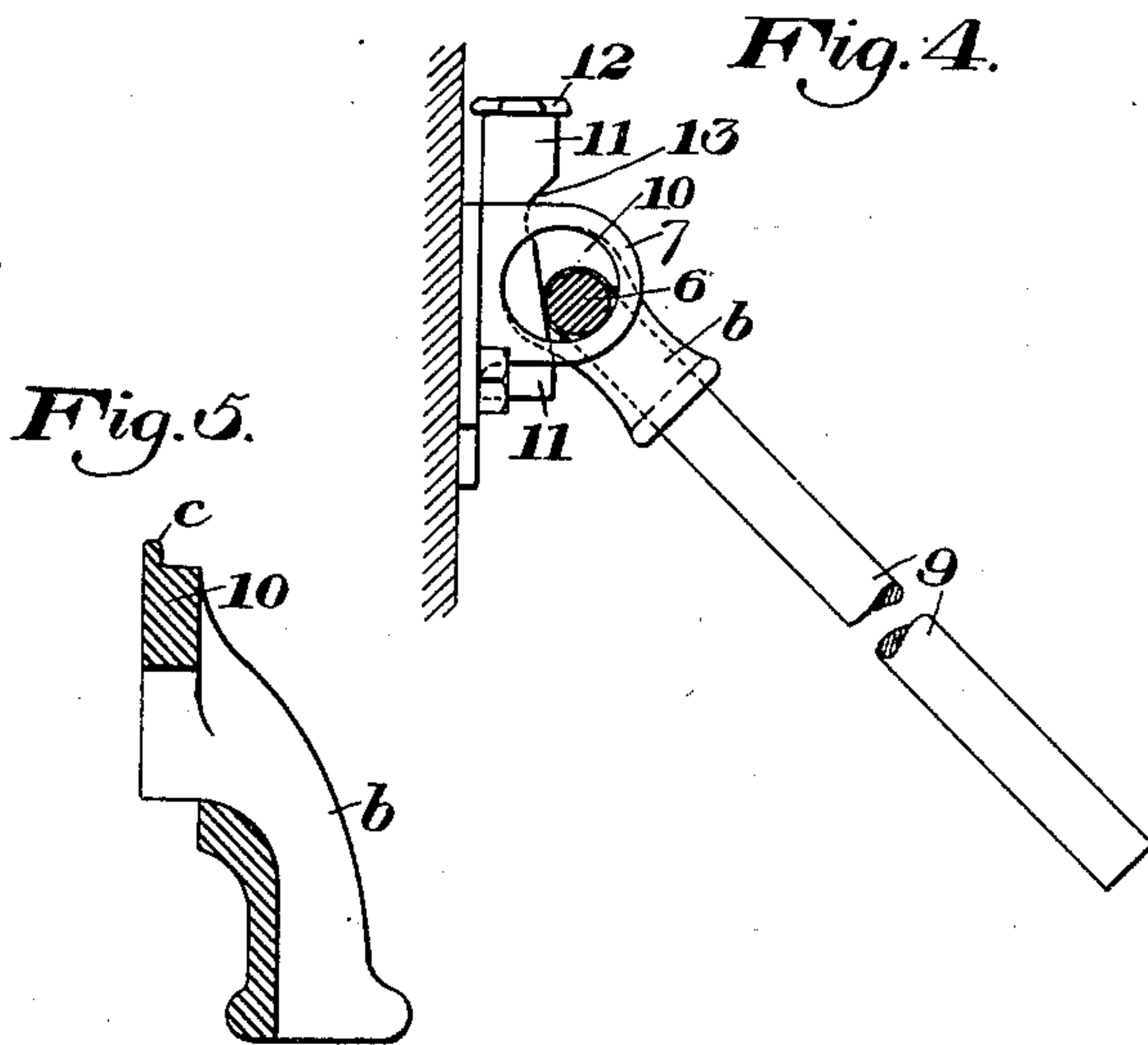
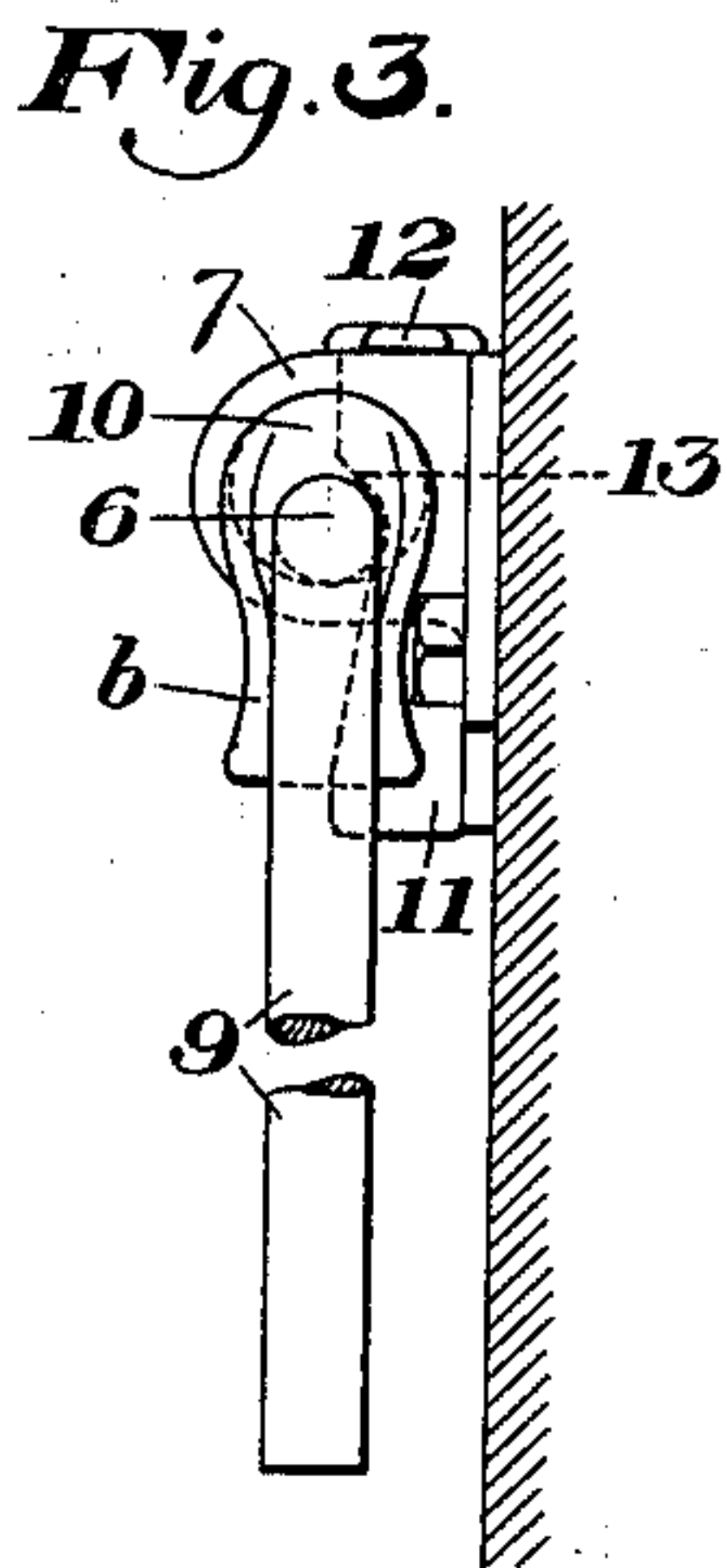
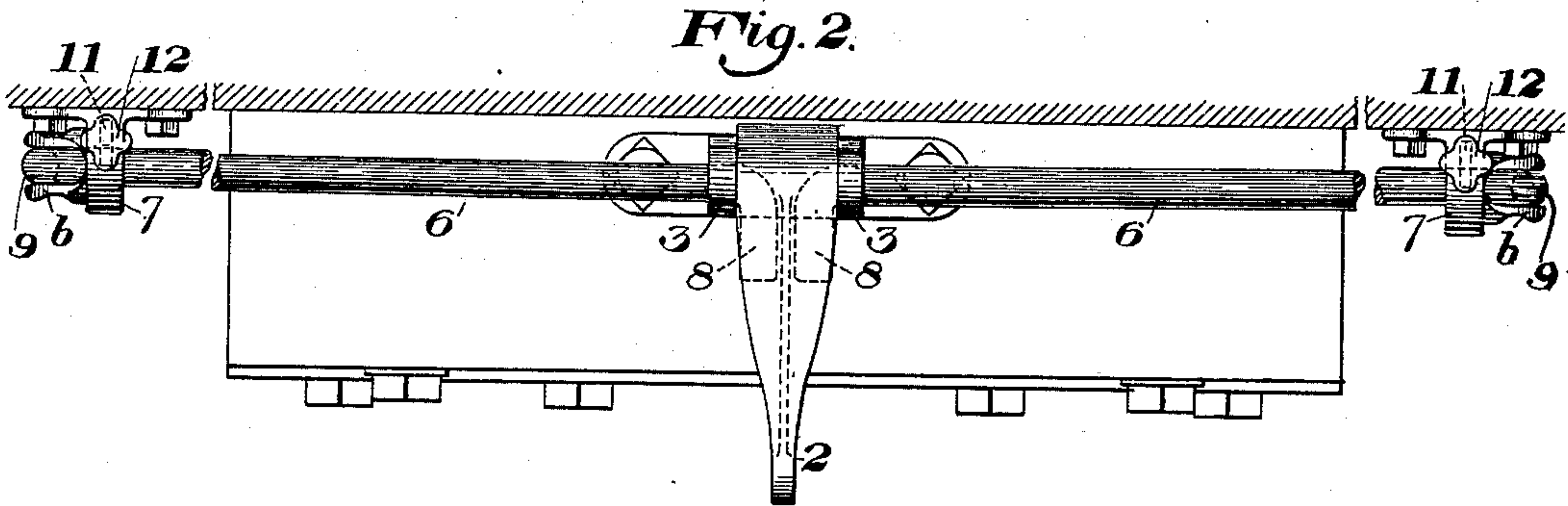
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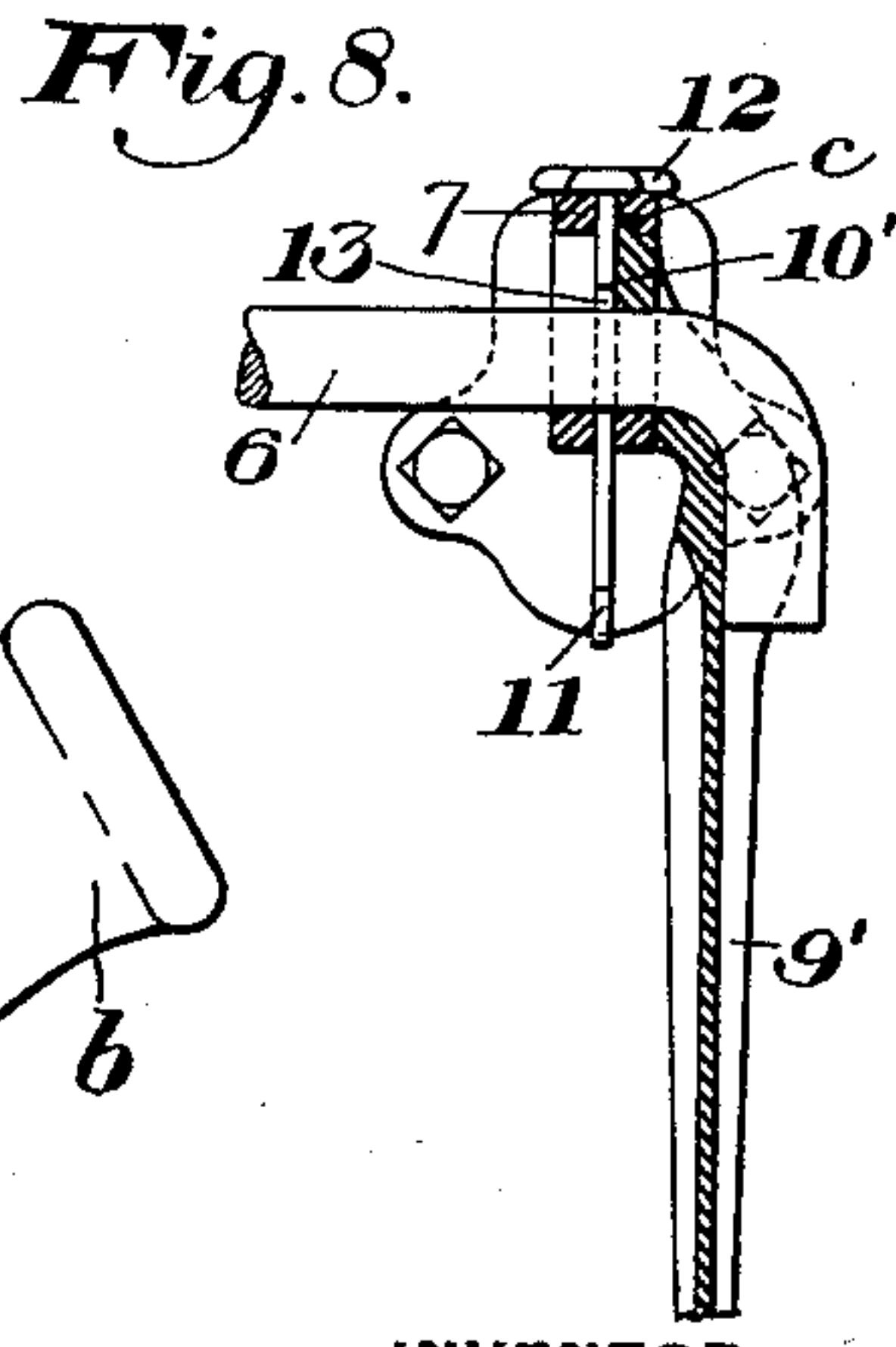
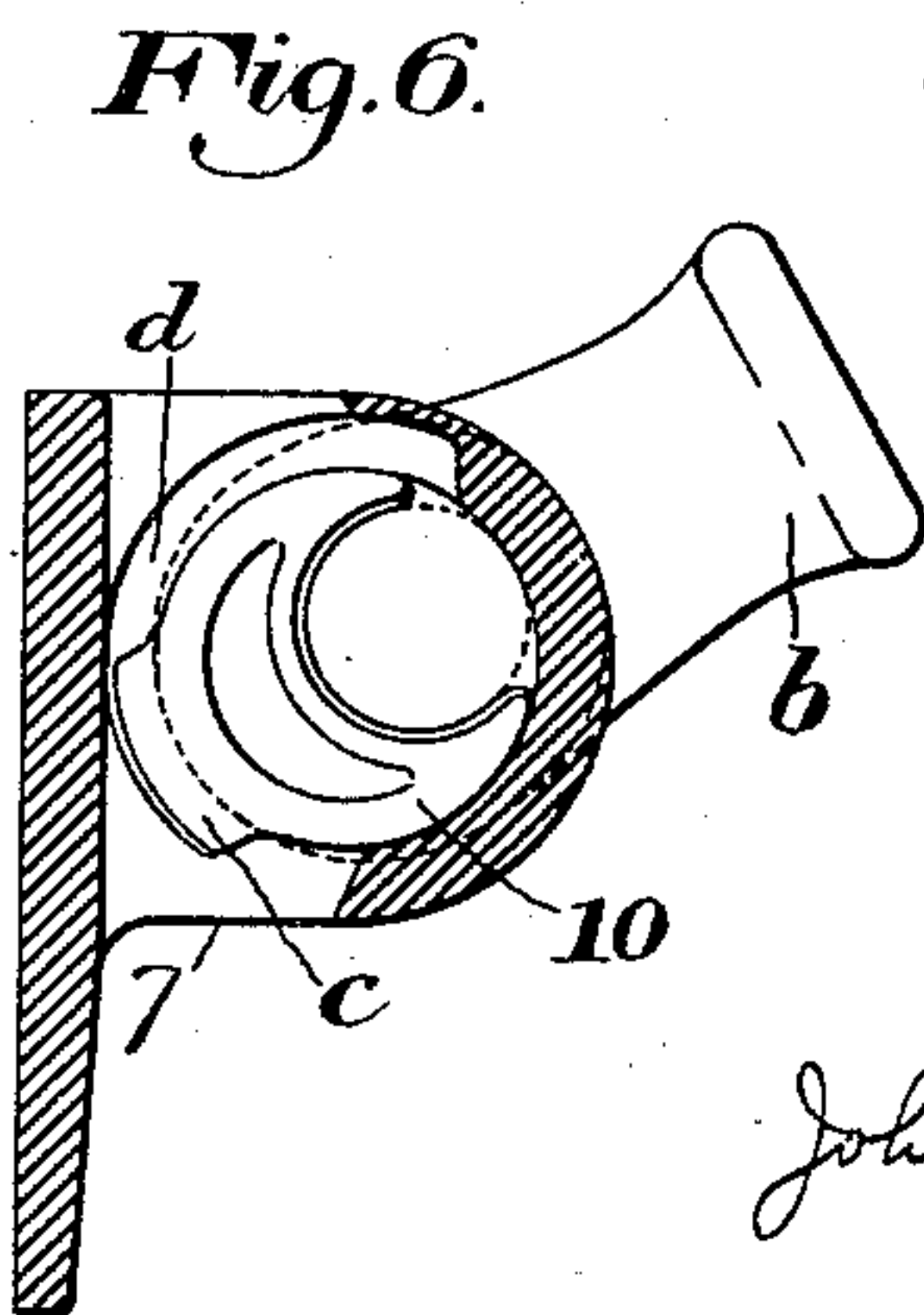
(No Model.)

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WITNESSES VIII

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(Application filed Feb. 23, 1898.)

(No Model.)

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Fig. 9.

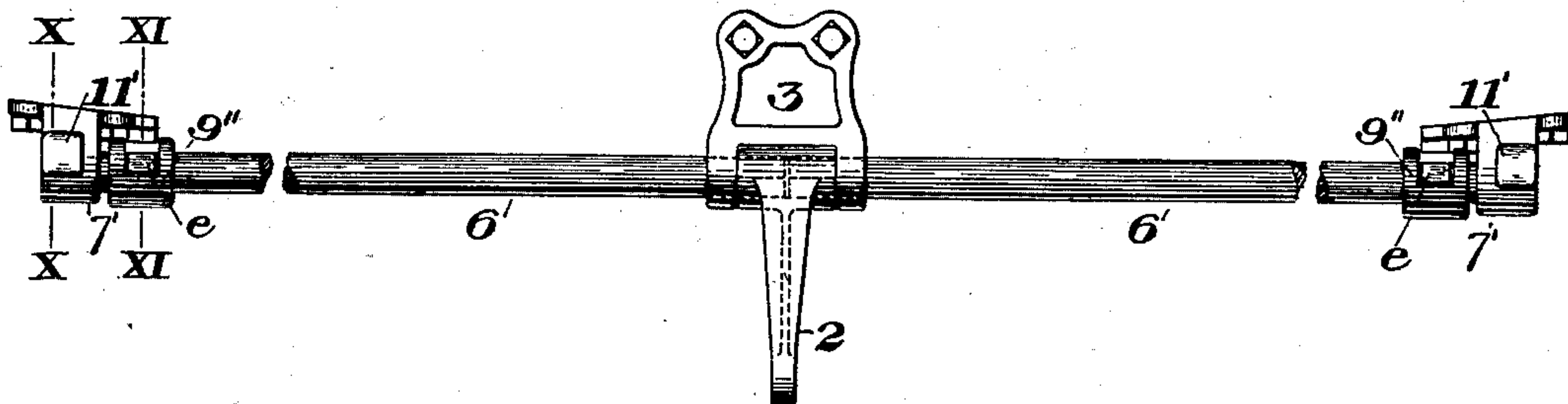


Fig. 10.

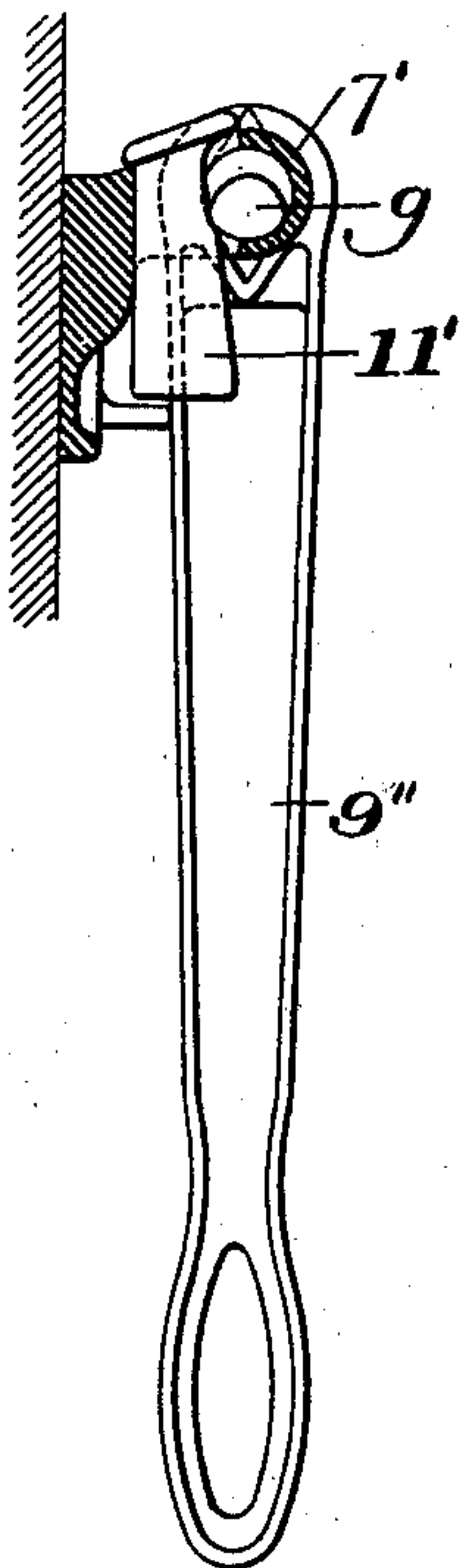
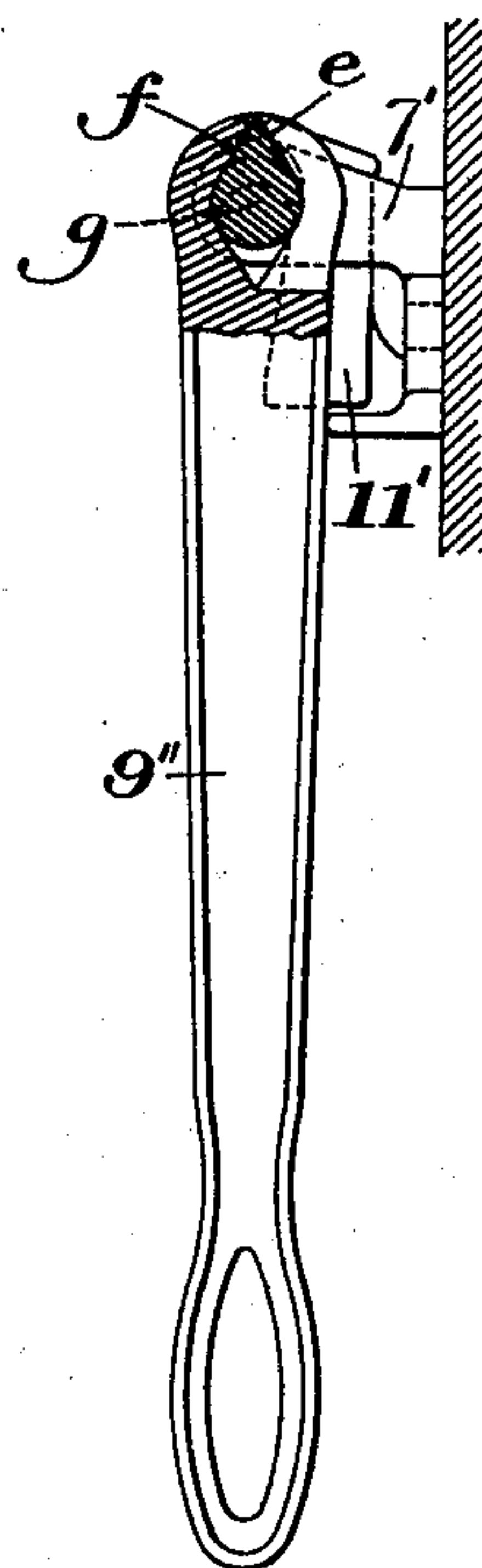


Fig. 11.



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN WILLISON, OF CLEVELAND, OHIO, ASSIGNOR TO THE NATIONAL MALLEABLE CASTINGS COMPANY, OF SAME PLACE.

COUPLING-UNLOCKING DEVICE.

SPECIFICATION forming part of Letters Patent No. 661,835, dated November 13, 1900.

Application filed February 23, 1898. Serial No. 671,227. (No model.)

To all whom it may concern:

Be it known that I, JOHN WILLISON, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful
5 Improvement in Coupler-Unlocking Devices, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

10 Figure 1 is a front elevation showing a railway-car provided with my improved coupler-unlocking mechanism. Fig. 2 is a top plan view of the unlocking device, the middle crank-arm and the hand-levers being
15 in their lowest positions and not as in Fig. 1, in which the crank-arm and the hand-lever at the right of the figure are shown elevated. Fig. 3 is an end view of the hand-lever at the right-hand side of Figs. 1 and 2, showing the
20 hand-lever in its depending position. Fig. 4 is a vertical section on the line IV IV of Fig. 1 viewed in the direction of the arrow *a* and showing the hand-lever in a partially-elevated position. Fig. 5 is a vertical section
25 on a larger scale, showing in detail the collar 10 which is applied to the angle of the crank-shaft. Fig. 6 is an enlarged detail of the bracket and collars. Fig. 7 is an end elevation of the hand-lever, showing a modified
30 construction. Fig. 8 is a vertical section on the line VIII VIII of Fig. 7. Fig. 9 is a view similar to Fig. 1, showing another modified form; and Figs. 10 and 11 are cross-sections on the lines X X and XI XI, respectively, of
35 Fig. 9.

In the drawings, 2 represents a crank-arm suitably journaled in a bracket 3 on the dead-block of the car above the coupler 4. This
40 crank-arm is connected with the lock of the coupler by a chain or other connection 5, and by lifting the crank-arm the lock is raised and the coupler-knuckle unlocked. To operate the crank-arm, I employ crank-shafts
45 6 6, which are journaled in the bracket 3 and in end brackets 7 and have arms 8 taking under the crank-arm and adapted to raise the same when either of the shafts is turned. The mode of connection of the crank-arms and the use of two crank-arms do not, however,
50 form limitations of my present invention, since it is within the scope of my claims to

connect the shafts otherwise than with the crank-arm, or to make them of a single piece, or, indeed, to use only one crank-arm extending to one side of the car only. I have
55 shown in the drawings the construction which I consider to be preferable.

As shown in Figs. 1 to 6, the end of each crank-shaft is bent at right angles to constitute a handle 9, and at the angle of the bend
60 is a collar 10, Fig. 5, having an angled channel-shaped extension *b*, which fits the handle 9, extending along the same a suitable portion of its length. The collar and its extension *b* are preferably cast of a single piece
65 of metal, and the collar itself is journaled in the end bracket 7 and constitutes the journal on which the crank-shaft turns. To hold the collar in place, I provide it with a segmental marginal lip or flange *c*, which extends within a slot in the bracket and has a
70 bearing at *d* against the bracket. This lip or flange extends only part way around the collar, so that it does not prevent the collar from being slipped into place in the bracket. 75
The hole in the collar in which the crank-shaft 6 fits is eccentric relatively to the center and axis of the collar, as illustrated clearly in Fig. 4.

For the purpose of holding the crank-shaft 80 and supporting its connected parts in any desired position to which the crank-shaft may be turned I employ a wedge or key 11, which passes through a vertical slot in the bracket 7, back of the crank-shaft 6. The edge of
85 the wedge is inclined and the thicker end is at the bottom, as illustrated in Fig. 4.

When it is desired to lift the lock of the coupler and to support it in unlocked position, the hand-lever 9 at the end of the shaft
90 is lifted to the required elevation, as shown in Figs. 1 and 4, and the wedge 11 is then raised in its slot until its inclined edge comes into contact with the crank-shaft. As the crank-shaft is eccentric to the center of its sleeve or
95 journal, the wedge will then uphold the shaft and the lever in the same position to which they have been raised. This will be the case no matter to what extent the lever has been
100 lifted, for the crank-shaft will be held in the position in which it is when the wedge is lifted into contact with it. I am thus enabled

to hold the lock of the coupler in unlocked position at any desired point of elevation.

When the brakeman desires to release the lock, he has only to lift slightly the hand-lever 9, whereupon the crank-shaft will be disengaged from the wedge and the wedge will drop, so that when the hand-lever is released it will immediately drop into dependent position. To limit the extent of drop of the wedge 11, I form on its top a head or enlargement 12, and I make in the edge of the wedge a notch 13, which permits the crank-shaft to be turned freely when the wedge is in its lowest position.

With the arrangement shown in Fig. 1, where there are two independent crank-shafts, the coupler-lock may be raised by a brakeman standing at either side of the car and may be held in raised position by lifting the wedge or key pertaining to the uplifted hand-lever.

In Figs. 7 and 8 I show a modified construction in which the collar 10' is extended so that it may of itself constitute the hand-lever. The collar is extended out in the form of a hand 9', and while the end of the crank-shaft has a bend fitting against the side of the handle said bend is short, being preferably only long enough to afford a good operative connection or engagement between the handle and shaft. The construction of the wedge or key and the other parts of the apparatus may be the same as shown in the other figures of the drawings.

In Figs. 9, 10, and 11 I show a modified construction of my improved device in which I dispense with the collar 10 and use a hand-lever 9'', connected with the shaft in such manner that when released after having been raised to unlock the coupler it will automatically drop into dependent position independently of the shaft which may have been locked and supported by the wedge. This construction is in some respects desirable, because the hand-lever does not project outwardly when the shaft is engaged by the wedge, but when free always remains in a dependent position. The lever may be connected to the shaft for this purpose in a variety of ways. In the construction which I prefer and which I show in the drawings the shaft has a projecting boss *e* and the lever fits around the shaft over the boss and has a shoulder adapted to engage the same when the lever is raised, but to oppose no obstacle to the backward motion of the lever. The end of the shaft is formed eccentrically at *g*, and a wedge 11', within the end bearing 7', is adapted when raised to engage the eccentric portion of the shaft and to lock the shaft in any position to which

it may be turned by the hand-lever, substantially as above described with reference to the other figures of the drawings. The lever may be raised to unlock the coupler, the shaft locked by raising the wedge, and the lever then released, whereupon the lever will drop freely into vertical position. To release the wedge, all that is necessary is to raise the lever until it turns the shaft slightly, whereupon the wedge will drop.

The advantages of my invention will be appreciated by those skilled in the art.

My improvement is simple and forms a very efficient device for setting the lock of a coupler in unlocked position.

Within the scope of my invention as defined in the claims, many changes in the construction and arrangement of the parts may be made by the skilled mechanic. The supporting key or wedge may be used independently of the sleeve and its extension and other changes may be made.

Within the scope of my broader claims it is not necessary that the wedge should be adapted to move upwardly to engage the shaft, since its direction of motion may be reversed, or it may be adapted to move horizontally. I prefer, however, the construction shown, and I make specific claim to it.

I claim—

1. The combination with a car-coupler lock, of a crank-shaft having a lifting-arm connected with the lock, a drop-lever and a cam or latch adapted to engage and uphold the shaft, leaving the lever free to drop; substantially as described.

2. The combination of a lifting crank-shaft, and a wedge or key movable upwardly to uphold the same, and a collar or journal applied eccentrically to said shaft; substantially as described.

3. The combination of a lifting crank-shaft and a wedge or key movable upwardly to uphold the same, and a collar or journal applied eccentrically to said shaft, said shaft having an angled portion and the collar having an angled extension fitting the same; substantially as described.

4. The combination with a car-coupler lock, of a crank-shaft having a lifting-arm connected with the lock, a drop-lever and a gravity cam or latch adapted to engage and uphold the shaft, leaving the lever free to drop; substantially as described.

In testimony whereof I have hereunto set my hand.

JOHN WILLISON.

Witnesses:

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O. K. BROOKS.