

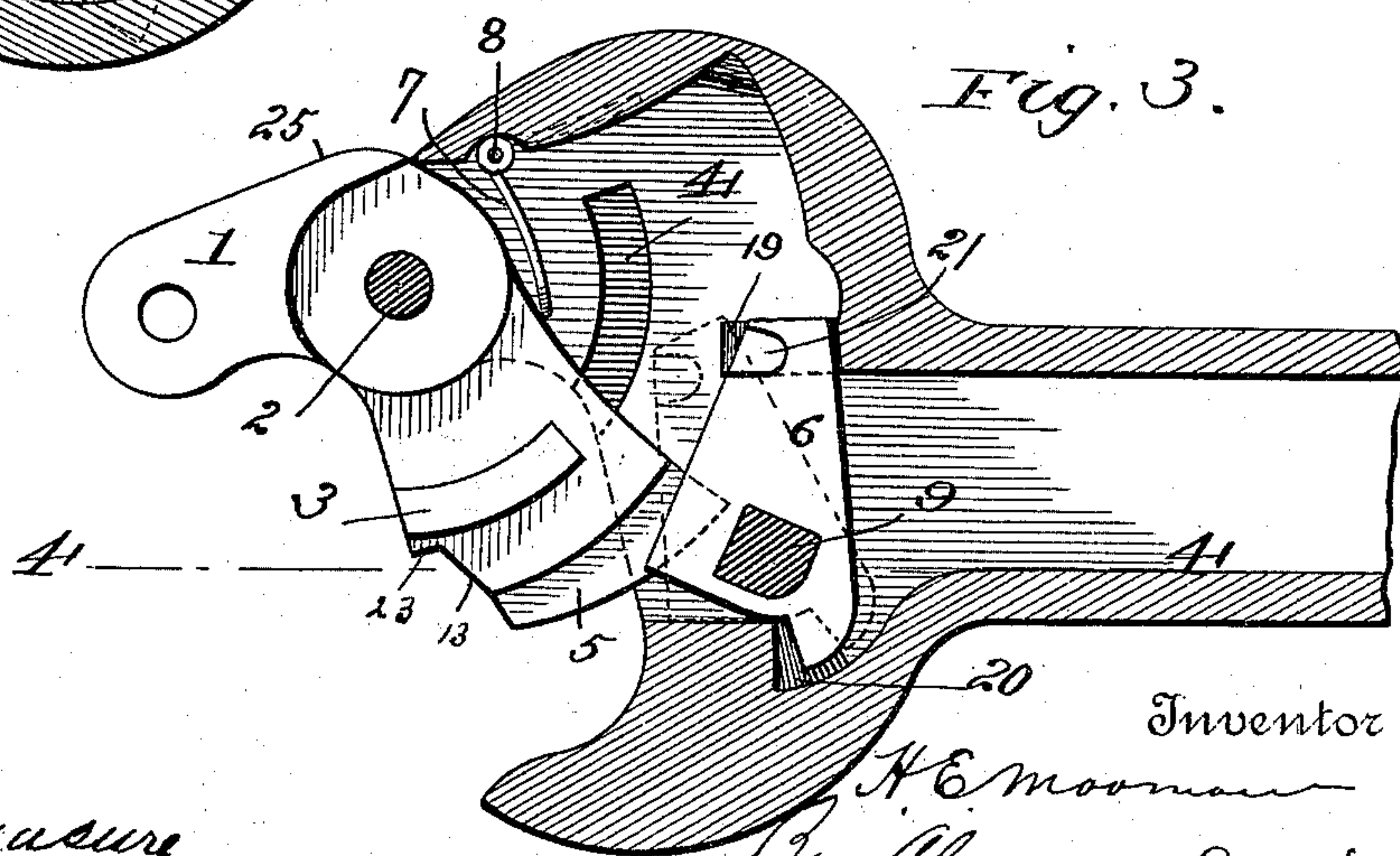
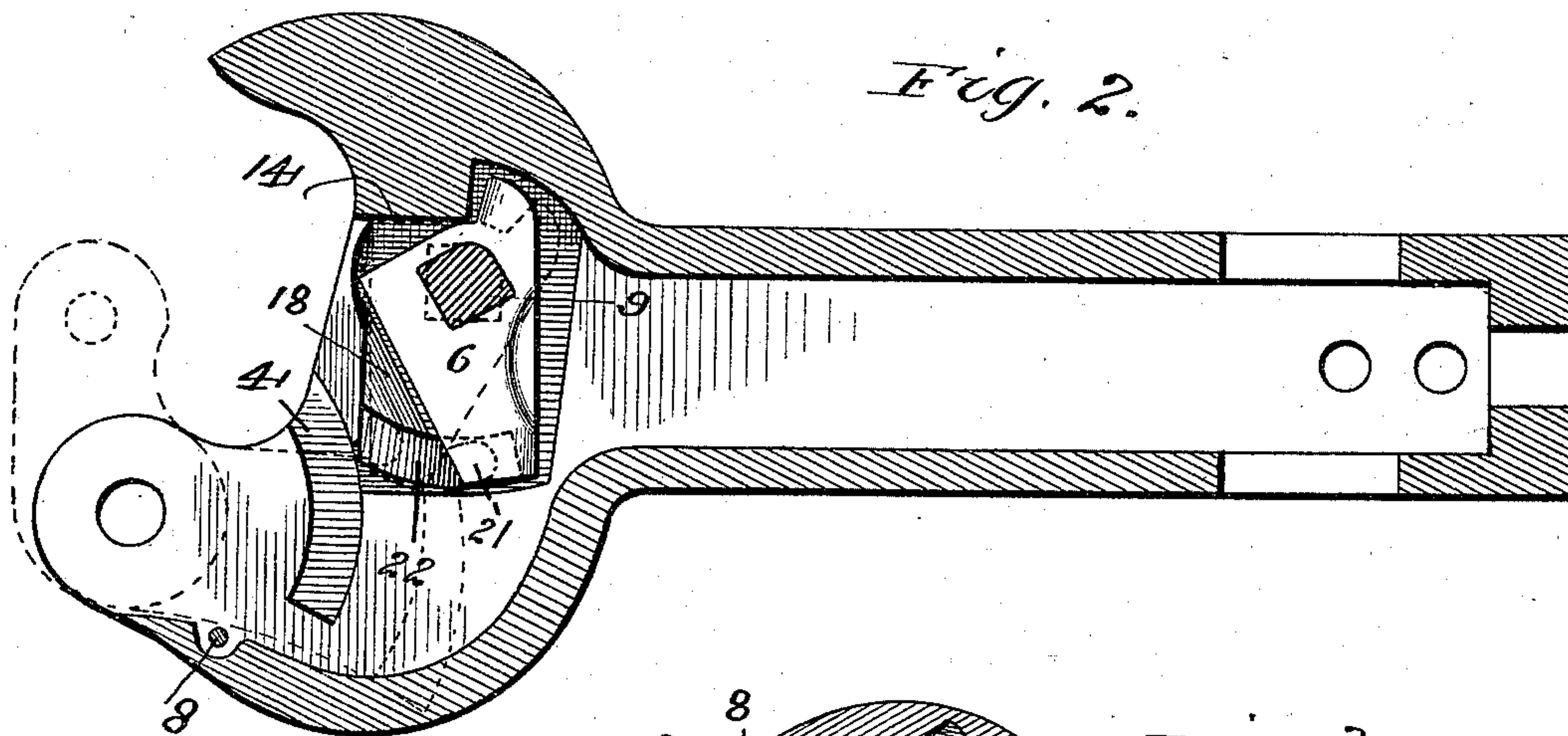
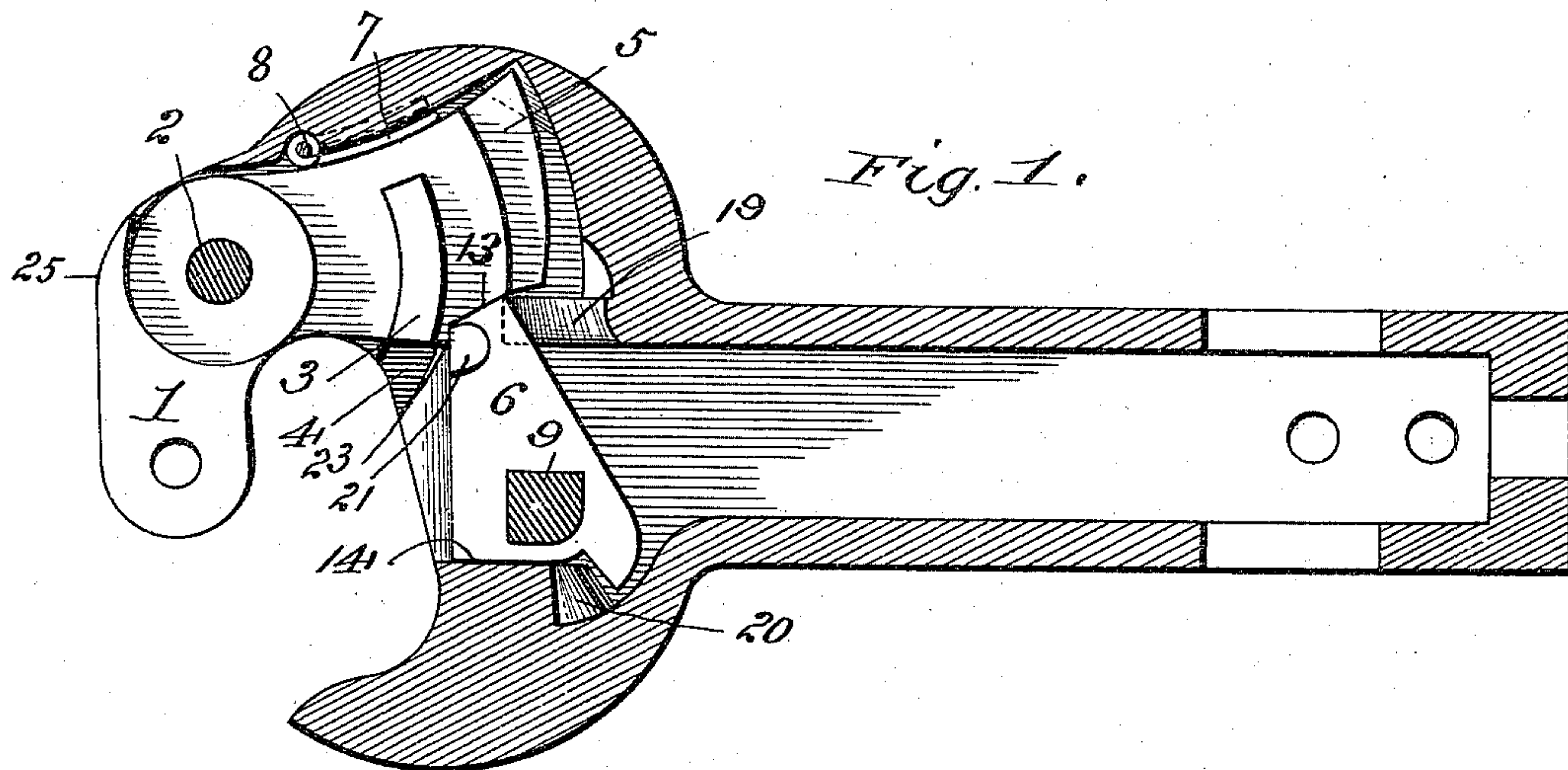
(No Model.)

2 Sheets—Sheet 1.

H. E. MOOMAW.  
CAR COUPLING.

No. 547,495.

Patented Oct. 8, 1895.



Witnesses  
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By *Alexander Davis*  
Attorneys



(No Model.)

2 Sheets—Sheet 2.

H. E. MOOMAW.  
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Fig. 4.

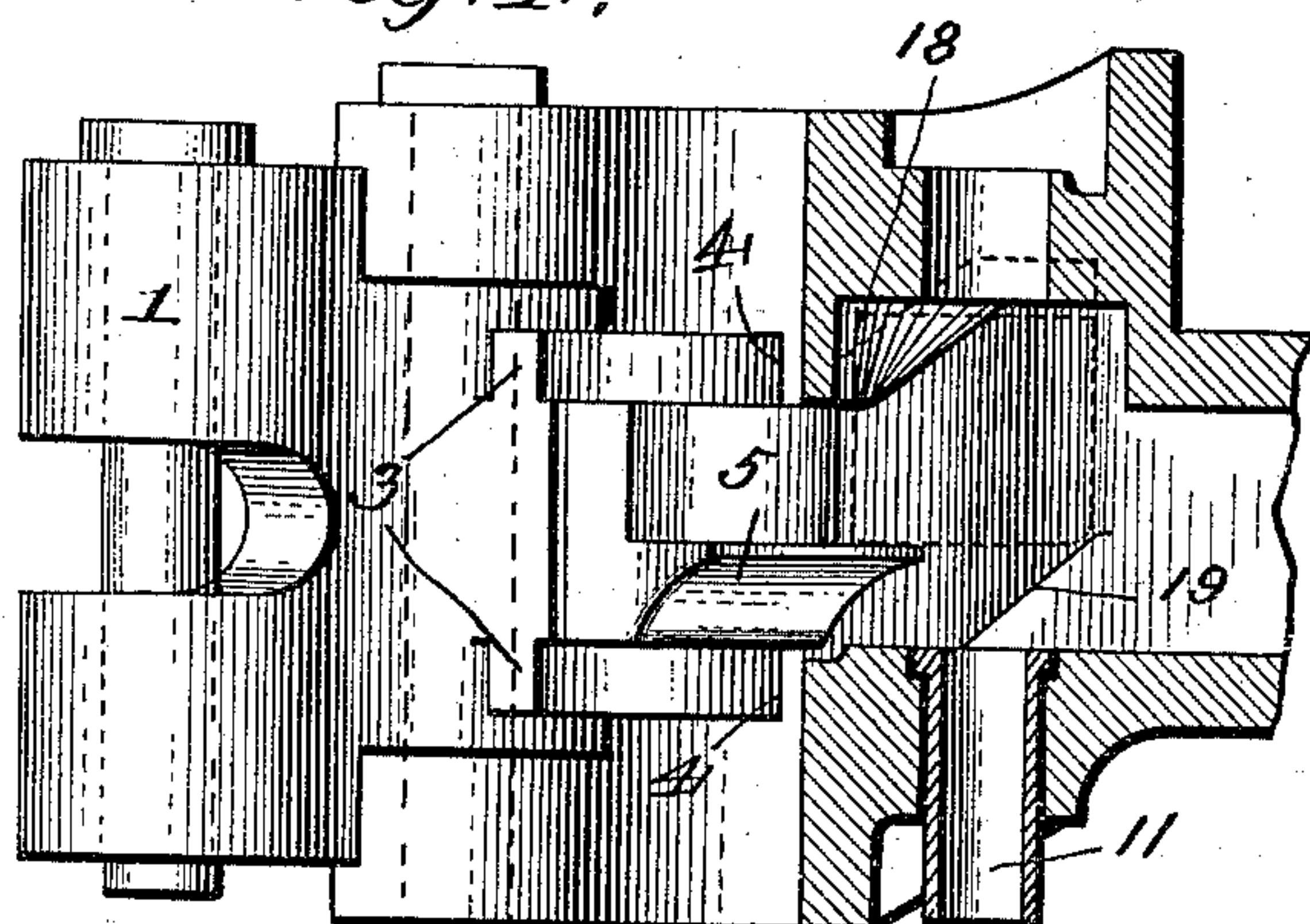


Fig. 6.

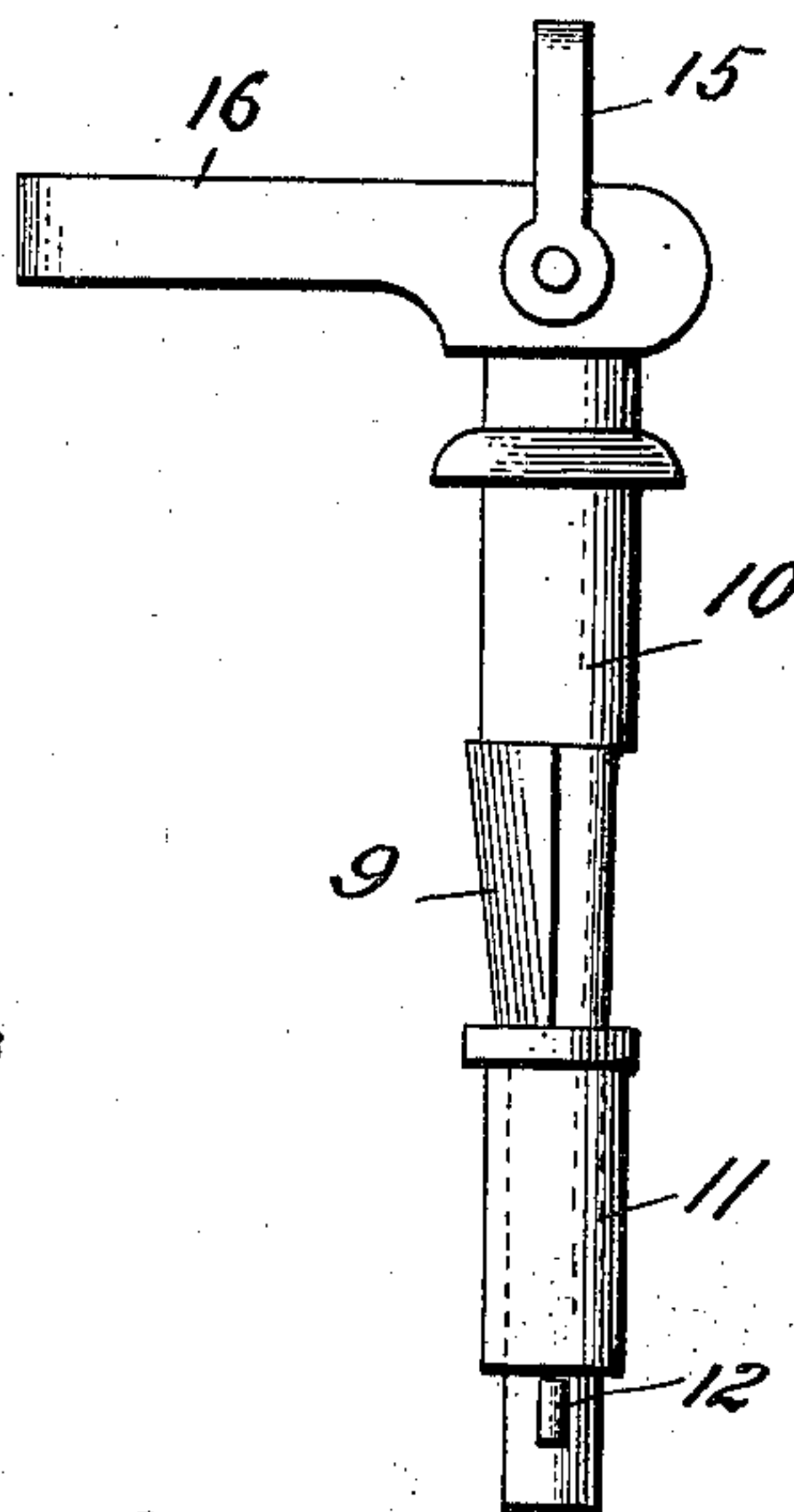


Fig. 5.

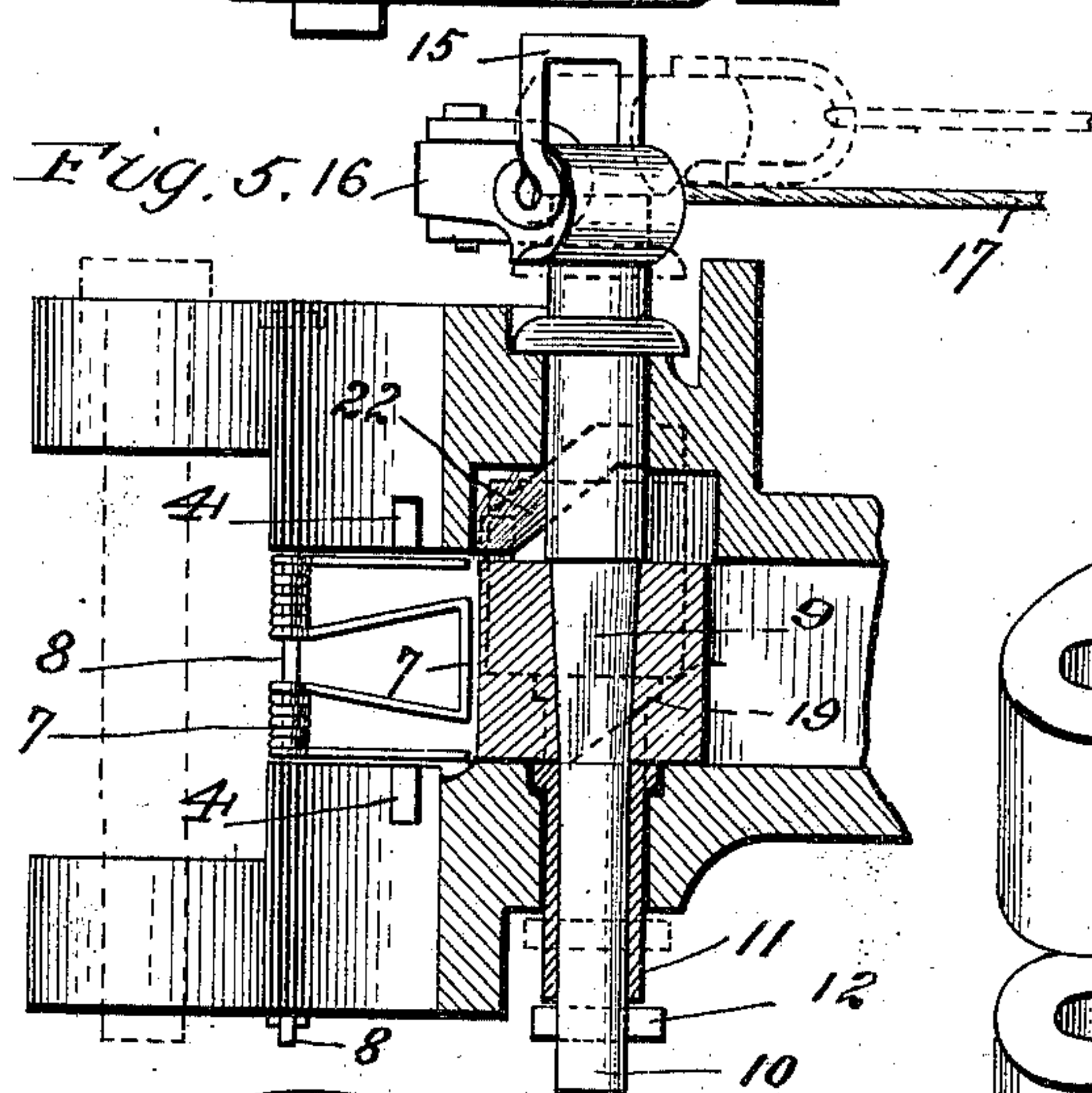


Fig. 7.

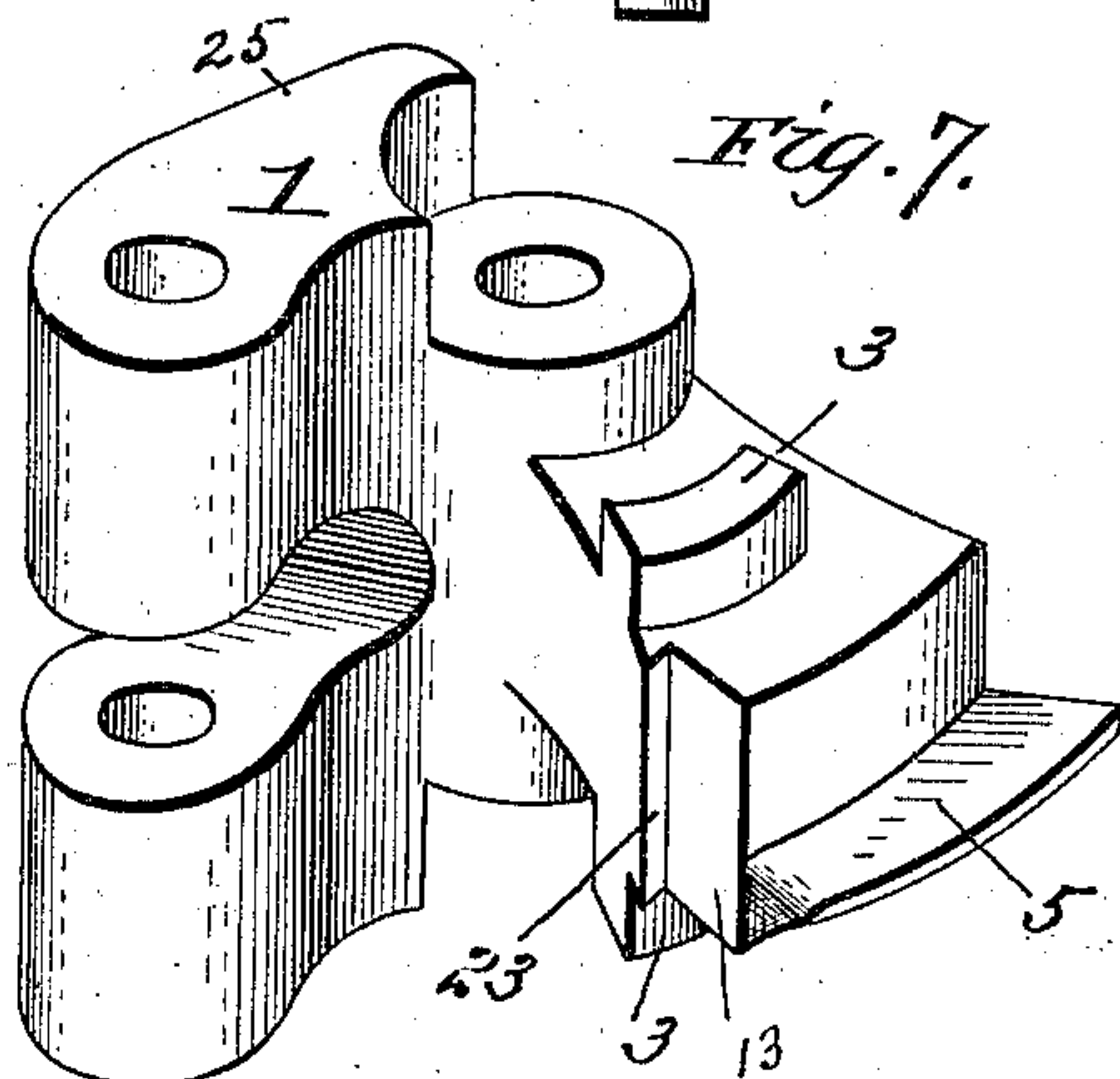
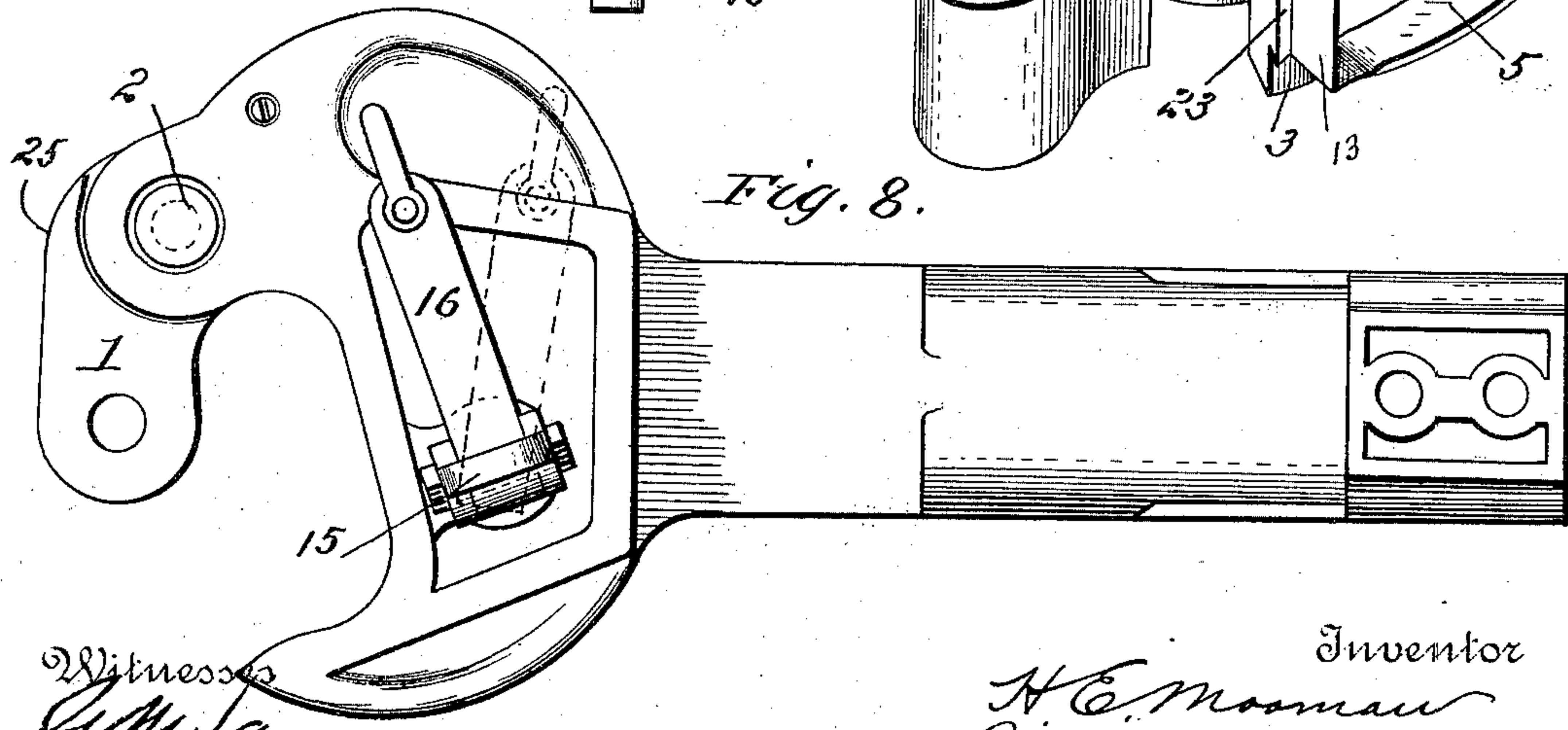


Fig. 8.



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# UNITED STATES PATENT OFFICE.

HENRY E. MOOMAW, OF SALEM, VIRGINIA.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 547,495, dated October 8, 1895.

Application filed July 13, 1895. Serial No. 555,899. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY E. MOOMAW, a citizen of the United States, residing at Salem, in the county of Roanoke and State of Virginia, have invented certain new and useful Improvements in Freight-Car Couplings, of which the following is a specification, reference being had therein to the accompanying drawings.

10 In the drawings, Figure 1 is a horizontal section showing the coupling-jaw locked; Fig. 2, a similar view looking upward and the locking-block turned to the position assumed when the coupling-jaw is released, the coupling-jaw being shown only in dotted lines and the locking-block being shown in its locked position by dotted lines; Fig. 3, a similar view looking downward, the parts being shown in their unlocked position in full lines and the locking-block being shown in its locked position by dotted lines; Fig. 4, a vertical section taken on the line 4-4 of Fig. 3, omitting the locking-block and its attachments; Fig. 5, a vertical section on the same line, but with the coupling-jaw removed and the locking-block and its pin in position, the locking-block and its pin being also shown by dotted lines in their raised positions; Fig. 6, a detail side elevation of the pin adapted to carry the locking-block; Fig. 7, a detail perspective of the coupling-jaw; and Fig. 8, a plan view of the coupling, the lateral arm on the locking-pin being shown drawn back in dotted lines.

This invention relates particularly to that class of vertical-plane car-couplings covered by my former patent, No. 539,389, dated May 14, 1895, and its special object is to adapt the same for use upon freight-cars, as more fully hereinafter set forth.

40 Referring to the drawings by numerals, 1 designates the coupling-jaw pivoted loosely on the vertical pin 2, supported at one side of the mouth of the draw-head, and 3 a pair of flanges formed, respectively, on the upper and lower faces of the inner arm of the jaw a suitable distance from its pivotal point and curved on a radius struck from said pivotal point, said flanges being adapted to enter and bear against the vertical walls of correspondingly-curved grooves 4, formed in the draw-head. In my former patent the parts corresponding to the curved wings 3 are shown as mere lugs;

but I prefer the present construction in view of the fact that it not only adds strength to the coupling-jaw, but also affords a firmer bearing, that will be amply sufficient to take up the pulling and pushing strain even should the pin become lost or broken, and will aid in guiding the coupling-jaw in its swinging movements. The inner end of the inner arm of the coupling-jaw is also curved on a radius with the pivotal pin, and formed integral with the jaw and projecting horizontally from said inner curved end is a horizontal flange or ledge 5, which is adapted to pass under the adjacent lower edge of the locking-block 6 when the same is raised and turned and support the same in its raised position while the coupling-jaw stands open. To automatically throw open the coupling-jaw when the same is released by the locking-block, I employ a suitable torsional spring 7 and mount the same on a vertical pin 8, passing vertically through the draw-head immediately back of the inner arm of the coupling-jaw. I do not claim the spring in this application, as it is claimed by me in another application for patent filed July 12, 1895. The locking-block 6 is, as formerly, secured rigidly but removably upon the tapered part 9 of the vertical pin 10, passing down through the draw-head, a loose spacing-sleeve 11 surrounding the pin between the locking-block and a suitable split key 12 passed through the pin below the draw-head, this loose sleeve being provided with an annular flange at its upper end which rests in a similar groove in the draw-head. It will be observed that this manner of securing the locking-block to the pin insures the same being lifted with the pin and at the same time permits the pin to be withdrawn from the locking-block when it is desired to insert a new pin, a new locking-block, or the tail-bolt, the tube 11 remaining in its socket when the pin is removed, as shown in Fig. 4. The squared ends of the locking-block abut respectively against the squared portions 13 and 14 of the coupling-jaw and draw-head, as formerly, whereby the pin 10 will be relieved of the strain.

The most essential feature of this invention lies in the simple devices (now to be described) whereby the locking-block shall be raised and also turned back to release the coupling-jaw by either lifting the locking-pin



by a direct upward pull or by rotating the same by a direct backward pull on a lateral arm carried by the same. To the upper end of the pin is secured a bail or eye 15, to which the usual lifting rod or chain is attached, this rod or chain not being shown in the drawings, as it is connected to the usual standard-levers or other operating devices carried by the car. Also connected to the pin at its upper end is a horizontal arm 16, which is adapted to be connected to a stationary part of the car by a slack cable or chain 17, whereby the pin may be rotated and the uncoupling device operated by a direct backward pull. The advantage of this safety-chain connection is that in case the draw-bar should break loose from the fastening devices on the car the uncoupling devices will be thereby automatically operated and prevent the draw-bar becoming detached altogether from the car and falling on the road-bed, thus avoiding a frequent source of wrecks to freight-trains. To cause the pin and locking-block to rotate sufficiently to release the coupling-jaw when the uncoupling is performed by the usual movement—that is, by a direct upward pull on the pin—a rearwardly and upwardly inclined face 18 is formed in the upper part of the draw-head, directly over and in the path of the front upper corner of the locking-block, whereby when the pin is lifted said front upper corner will impinge against said inclined part and the free end of the locking-jaw be turned rearwardly as it rises; and to cause the locking-block to automatically rise when it is operated by turning its pin through the medium of the emergency-arm 16, two oppositely-inclined ways 19 and 20 are formed in the bottom of the mouth of the draw-head, one being on either side of the pivotal point of the locking-block and adapted to impinge against the opposite ends of the same, whereby when the locking-block is rotated through the medium of its pin its opposite ends will impinge against said inclined ways, as shown particularly in Fig. 3, and ride up the same and be thereby automatically lifted, carrying with it all the attached parts, as is obvious. To assist in guiding the locking-block its upper side is provided with a lug 21, which works loosely in an inclined groove 22, formed in the upper part of the draw-head. This lug also assists in stopping the locking-block at the proper point when coupled, as in my former patent. It will be observed that when the locking-block is lifted and rotated the spring behind the coupling-jaw swings the same outward and causes the flange 5 to pass under the locking-block and support the same in its raised position during the entire time the coupling-jaw is opened. The object in thus holding up the locking-block is to insure the easy operation of the coupling devices when the cars come together, as it is obvious that should the locking-block be permitted to fall again after uncoupling it would automatically rotate to its

normal position, as shown in dotted lines in Fig. 3, and thereby require a very heavy blow from the coupling-jaw to raise it sufficiently to permit the coupling-jaw to pass into its recess. It will also be observed that the pair of oppositely-inclined ways 19 and 20 serve not only to automatically lift the dog when it is rotated, but also to keep it in a horizontal position when it is rotated through the medium of the upper inclined part 18. It will also be observed that when the locking-block swings forward to its locked position its free end abuts against a vertical shoulder 23, formed on the front end of the bearing-surface 13 of the coupling-jaw, said shoulder serving to assist the lug 21 and bearing-surfaces in stopping and locking the block in its normal position.

As shown particularly in Figs. 1 and 8, the forward arm of the coupling-jaw is enlarged on its front side, as at 25, and said enlargement projects in front of the draw-head, whereby when the cars come together the coupling-jaws will take up all the jar and thereby relieve the forwardly-projecting parts of the draw-head from the direct shock and wear. This construction increases the life of the draw-head, as a frequent source of trouble in using vertical-plane couplers on freight cars has been that the forwardly-projecting parts of the draw-head between which the locking-jaw is pivoted have become broken and worn by the heavy jars and friction.

It will be observed that in coupling, as soon as the arm of the jaw has passed beyond the free end of the locking-block, this block normally rotates and falls to its place by gravity, the weight of the attached parts being sufficient to make the movement quick.

Having thus fully described my invention, what I claim is—

1. In a car coupling, the combination of a drawhead, a locking-jaw pivoted therein and provided with a supporting flange at its inner end, a locking block extending across the mouth of the drawhead and abutting against the inner arm of the locking-jaw, and means for lifting and rotating the locking block sufficiently to permit it to rest upon said supporting flange when the locking-jaw is open, substantially as described.

2. In a car coupling, the combination of a drawhead, a coupling-jaw pivoted therein, a locking-block in the mouth of the drawhead, a vertically movable pivotal pin supported in the drawhead and rigidly carrying the locking-block, and an inclined way in the upper part of the drawhead, in front of said pivotal pin, and adapted to rotate the block when the same is raised, substantially as described.

3. In a car coupling, the combination of a drawhead, a coupling jaw, a locking-block engaging the same, a vertical pin carrying the locking-block, said pin extending down through the drawhead and the locking-block and tapered upward where it passes through the block, a flanged sleeve 11 supported in



the lower opening in the drawhead and surrounding the lower part of the pin, a device for attaching the sleeve to the pin, and means for lifting and rotating the locking-block and pin, substantially as described.

4. In a car coupling, the combination of a drawhead, a coupling jaw pivoted therein, a locking-block engaging the coupling-jaw, a vertical pivotal pin supported in the drawhead and carrying the locking-block, the pin and block being bodily movable vertically and rotatively, and an inclined way carried by the drawhead and adapted to rotate the block and pin when the same are lifted, substantially as described.

5. In a car coupling, the combination of a drawhead, a coupling-jaw pivoted therein, a locking-block in the mouth of the drawhead and abutting against the coupling-jaw, a vertical pin carrying the locking-block, means for rotating the pin from the car, and an inclined way adapted to engage the block and lift it when it is rotated through the medium of the pin, substantially as described.

6. In a car coupling, the combination of a drawhead, a coupling-jaw therein, a locking-block in the mouth of the drawhead, a vertical pin passing through the drawhead and

carrying the block, and an inclined way adapted to lift the block bodily when the pin is rotated, substantially as described.

7. In a car coupling, the combination of a drawhead, a coupling-jaw therein, a locking-block in the mouth of the drawhead, a vertical pin carrying the locking-block, means for rotating the pin, and a pair of oppositely inclined ways in the drawhead adapted to engage the locking block and lift the same when the pin is rotated, as and for the purposes described.

8. In a car coupling, the combination of a drawhead, a coupling-jaw therein, a vertically movable and rotatable locking-block in the mouth of the drawhead, a vertical pin carrying the locking-block and being vertically movable and rotatable therewith, and means in the mouth of the drawhead adapted to engage the locking-block and rotate and lift the same when the pin is lifted or rotated, as and for the purposes described.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY E. MOOMAW.

Witnesses:

JAMES WYLIE,

R. L. CAMPBELL.