

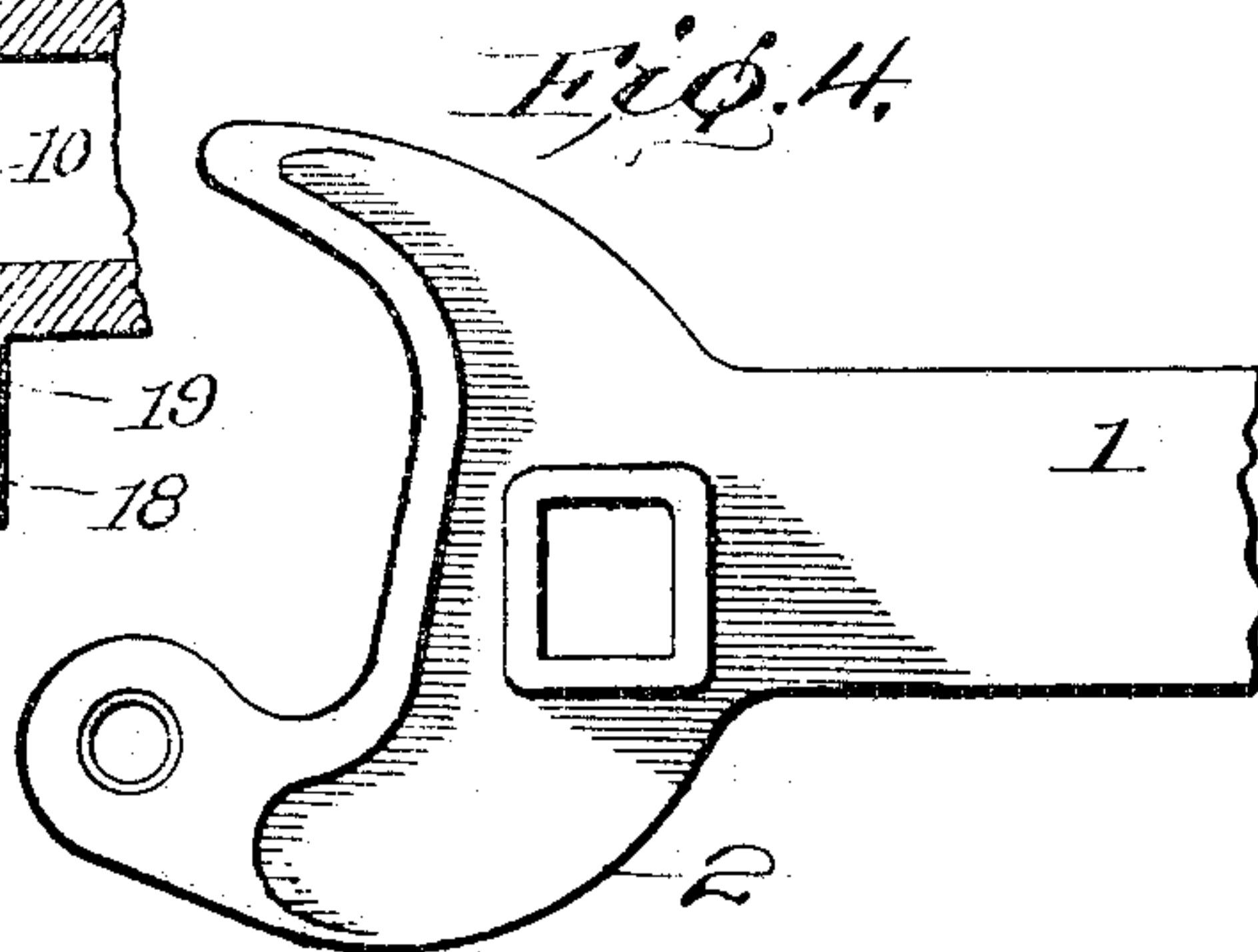
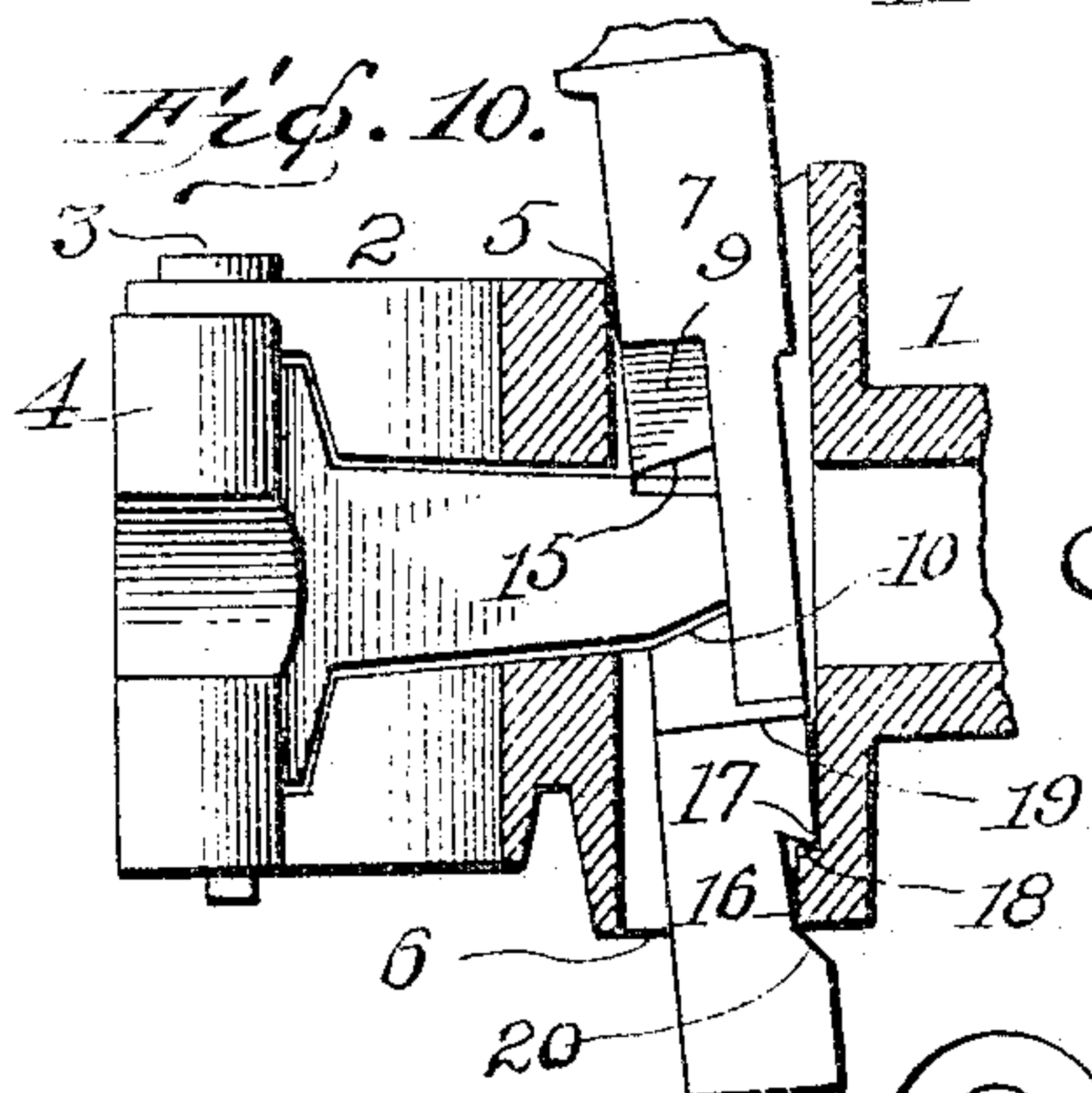
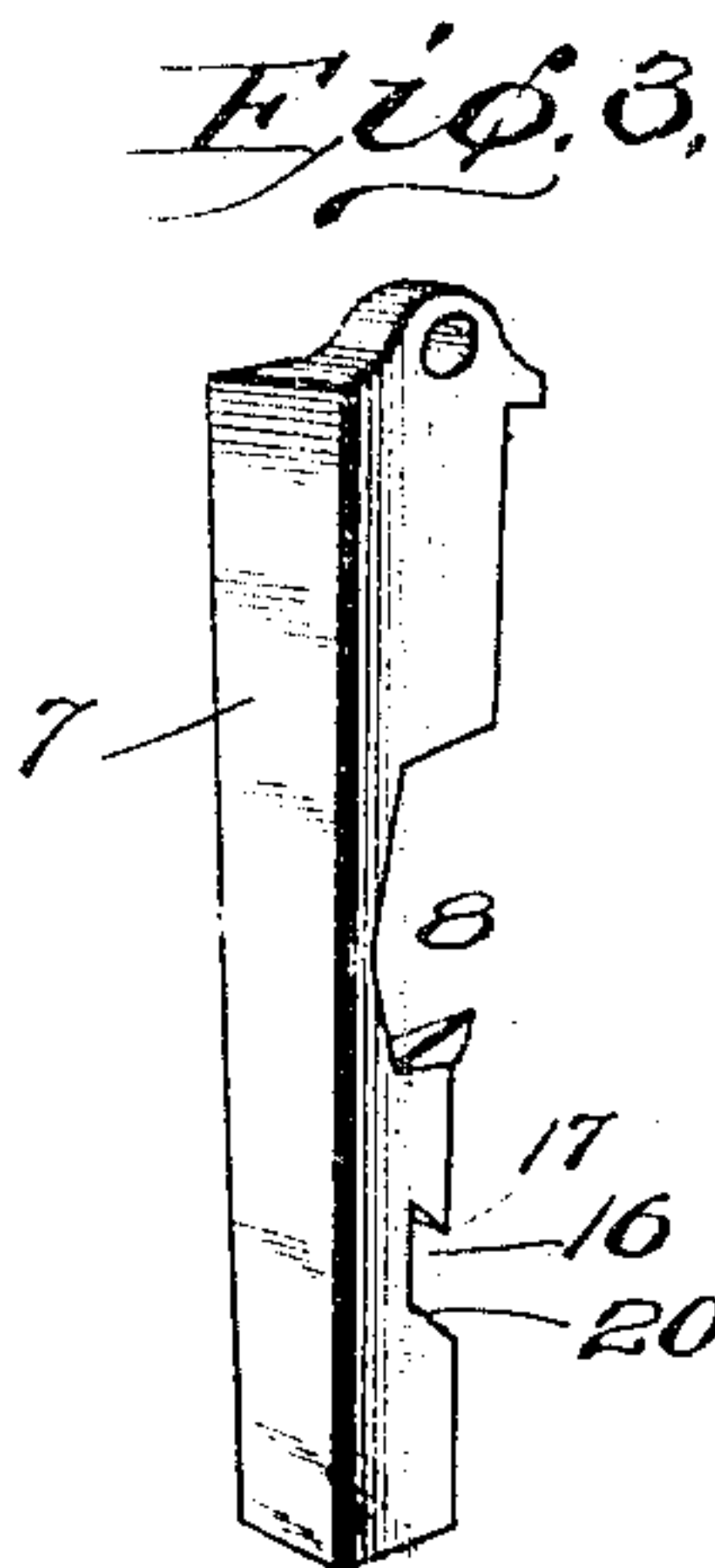
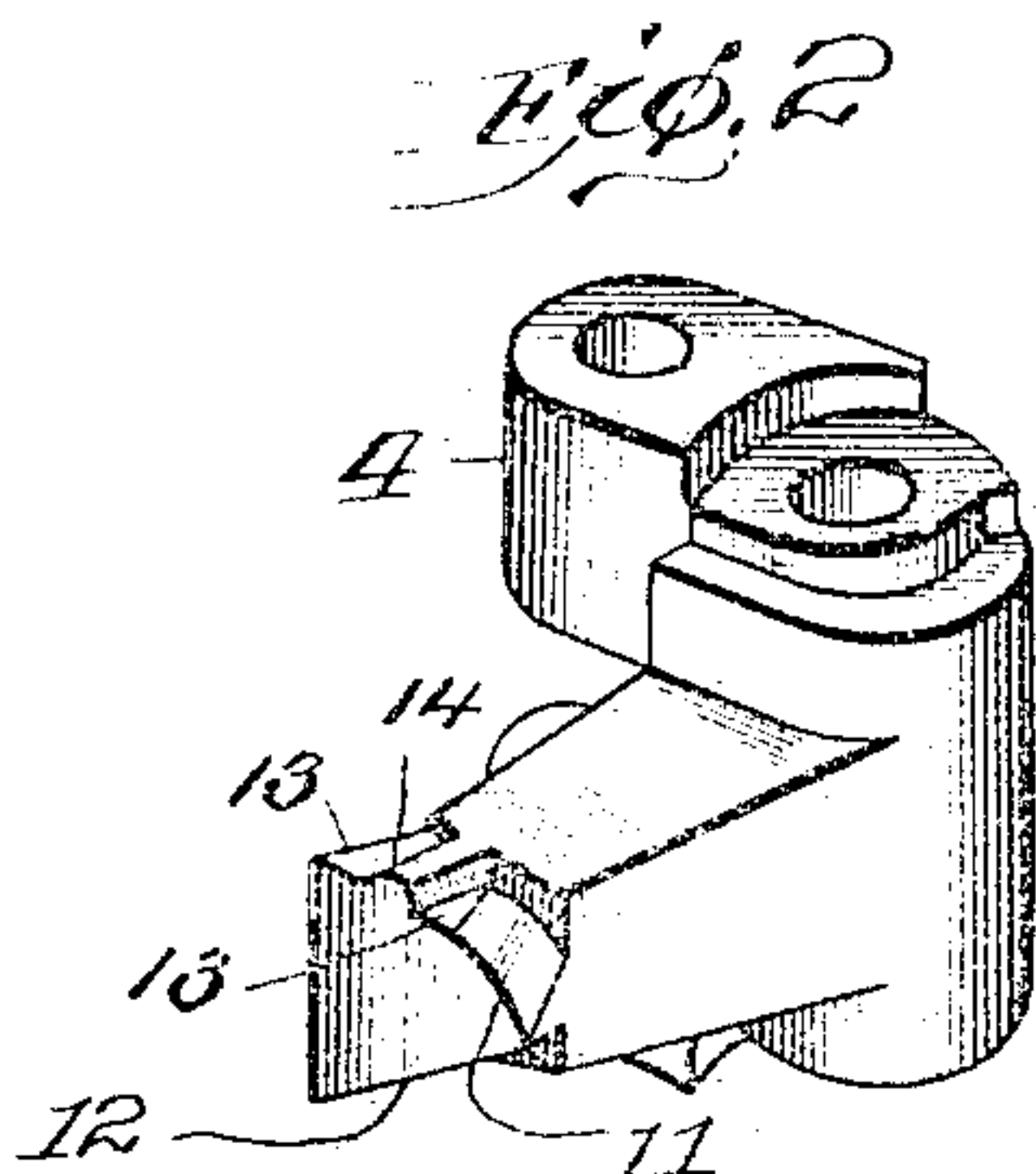
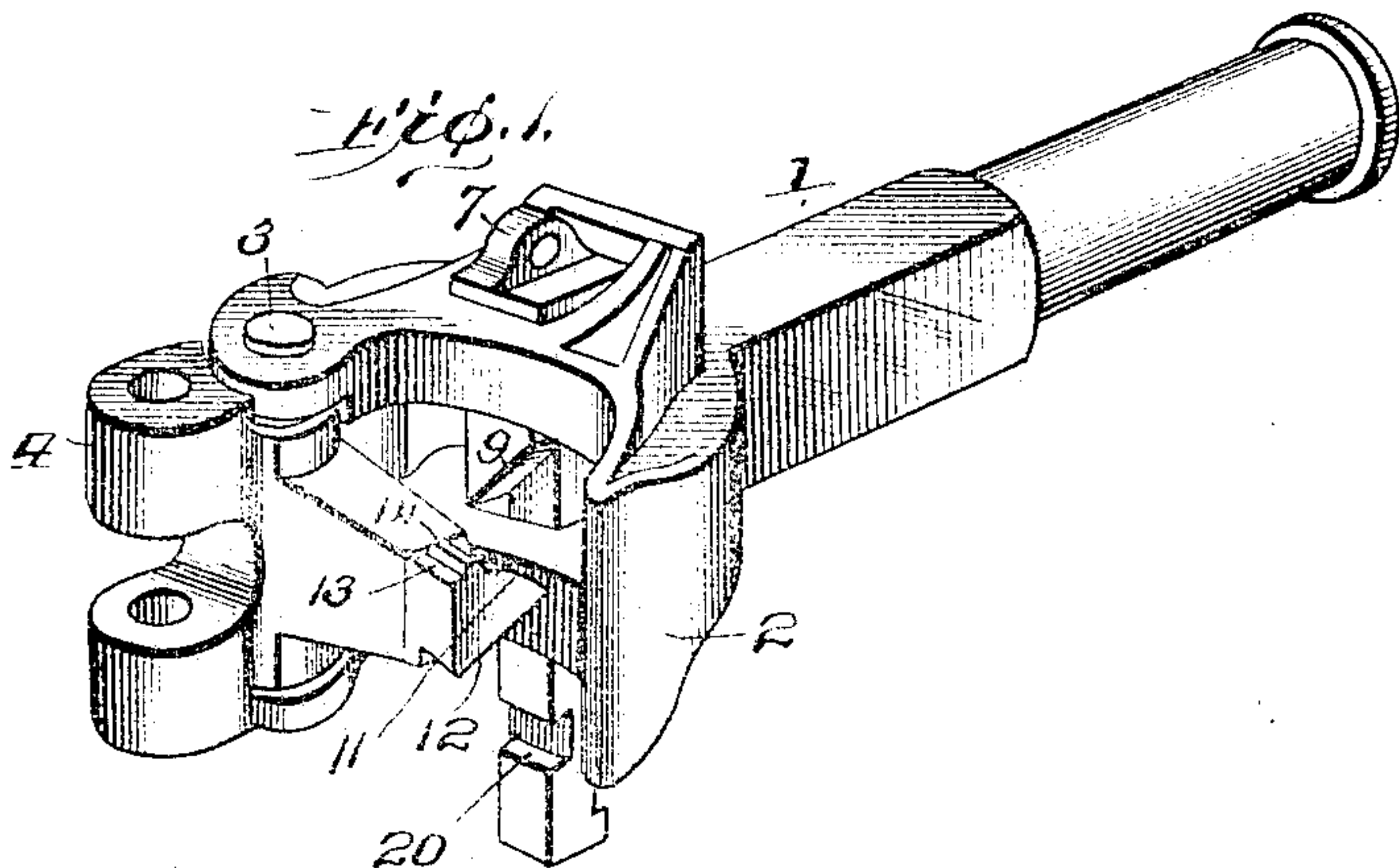
No. 781,949.

PATENTED FEB. 7, 1905.

E. H. JANNEY.
CAR COUPLING.

APPLICATION FILED MAY 5, 1903.

2 SHEETS—SHEET 1.



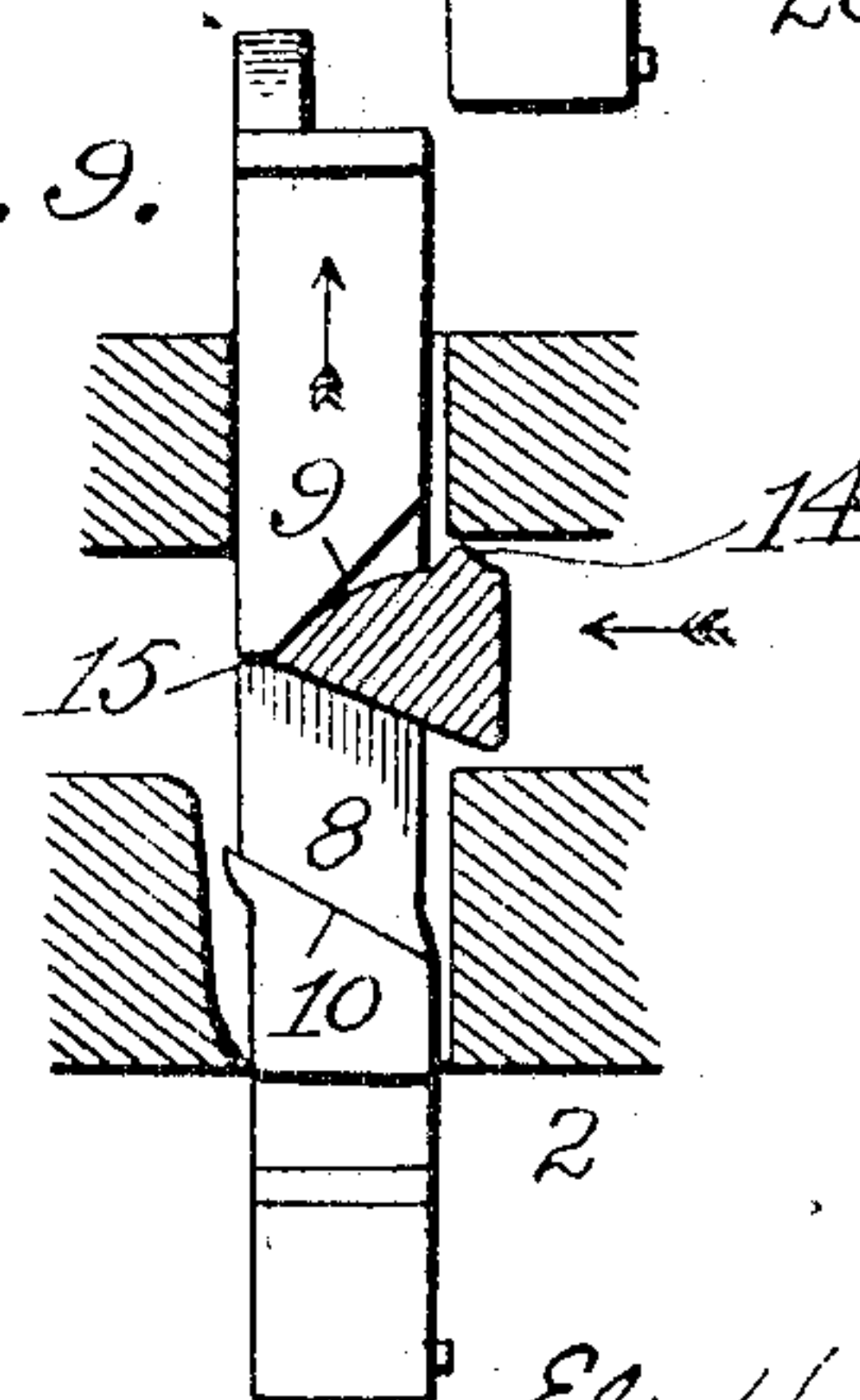
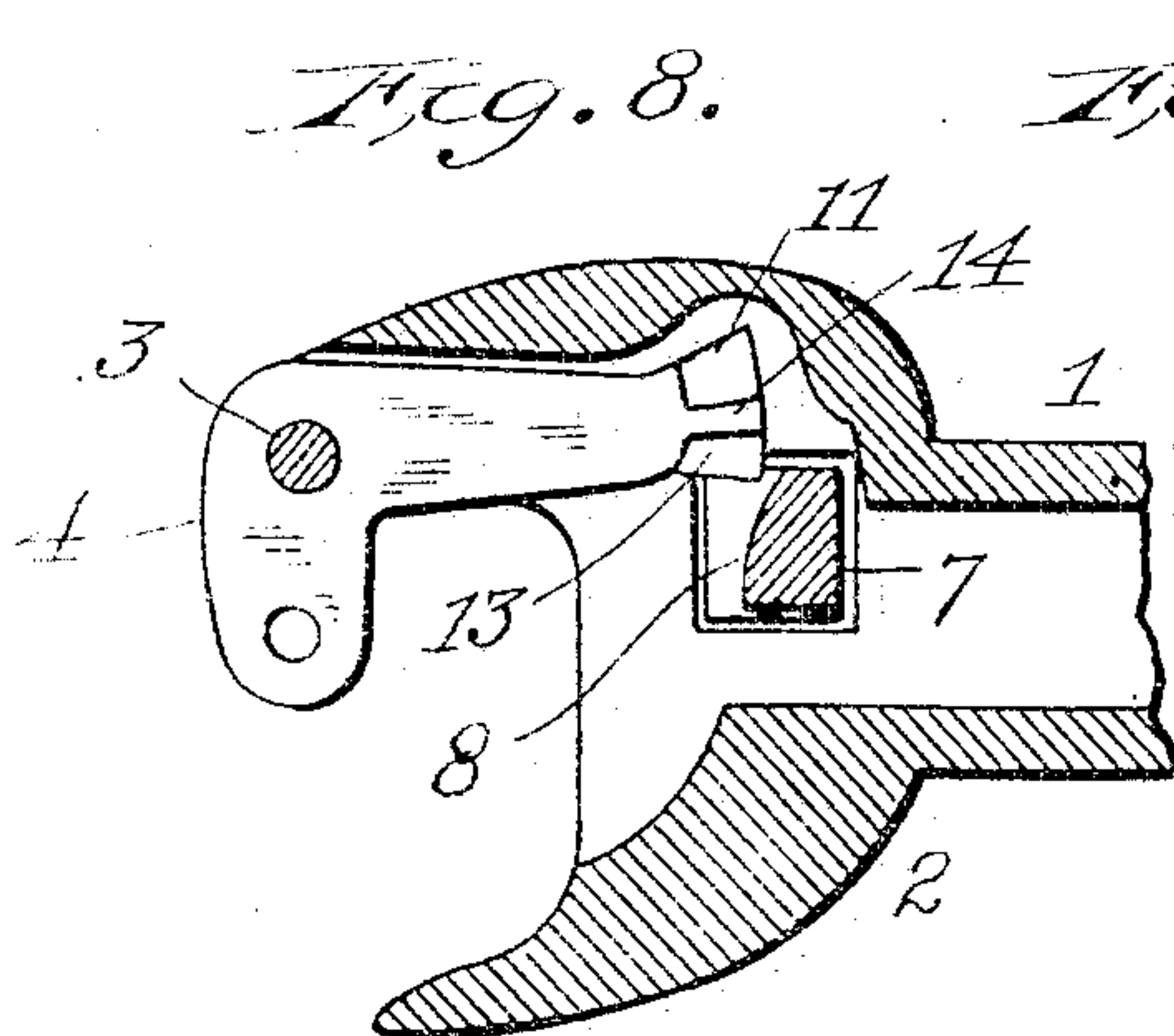
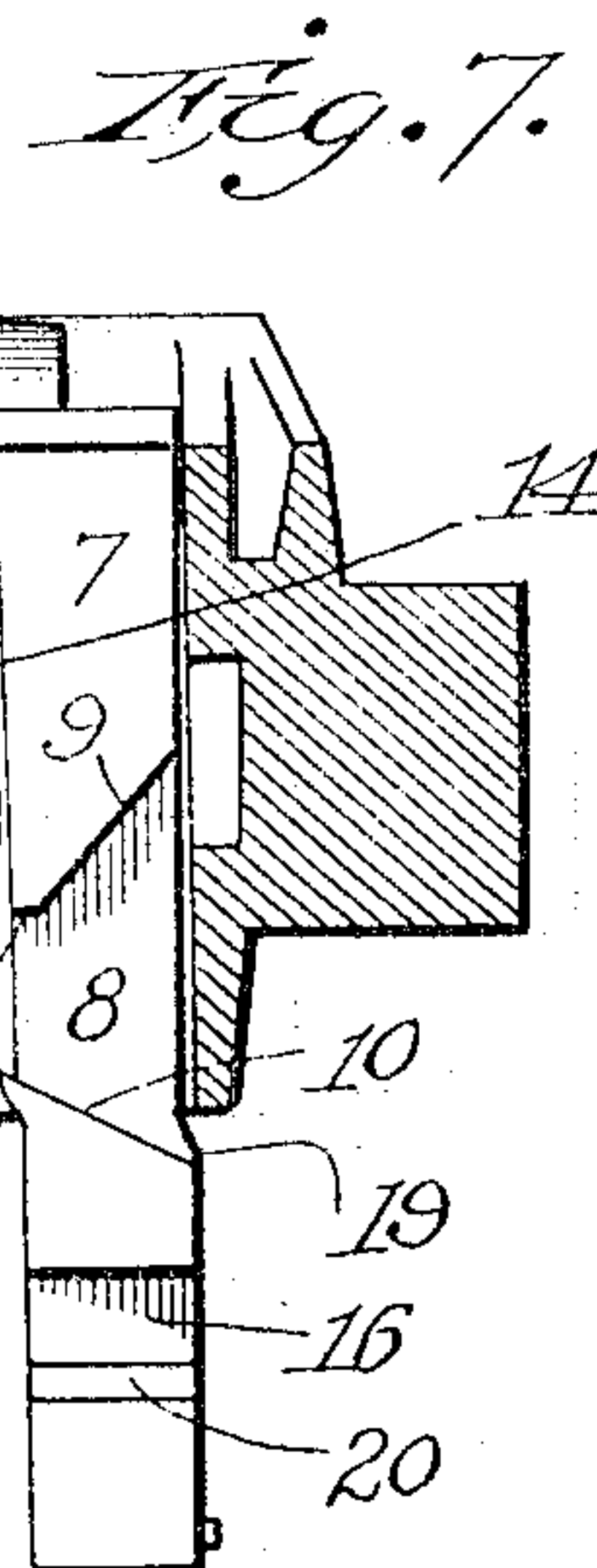
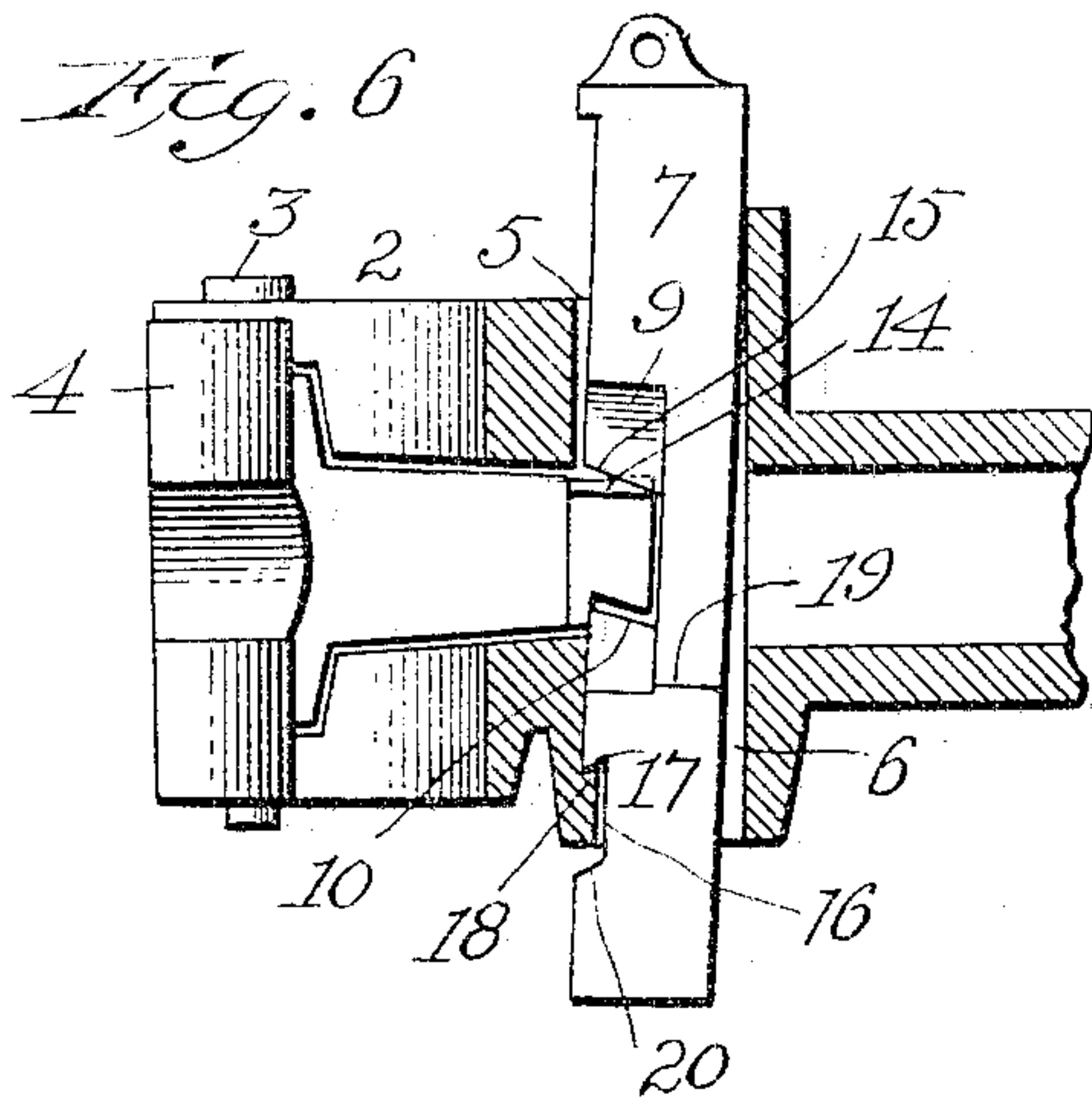
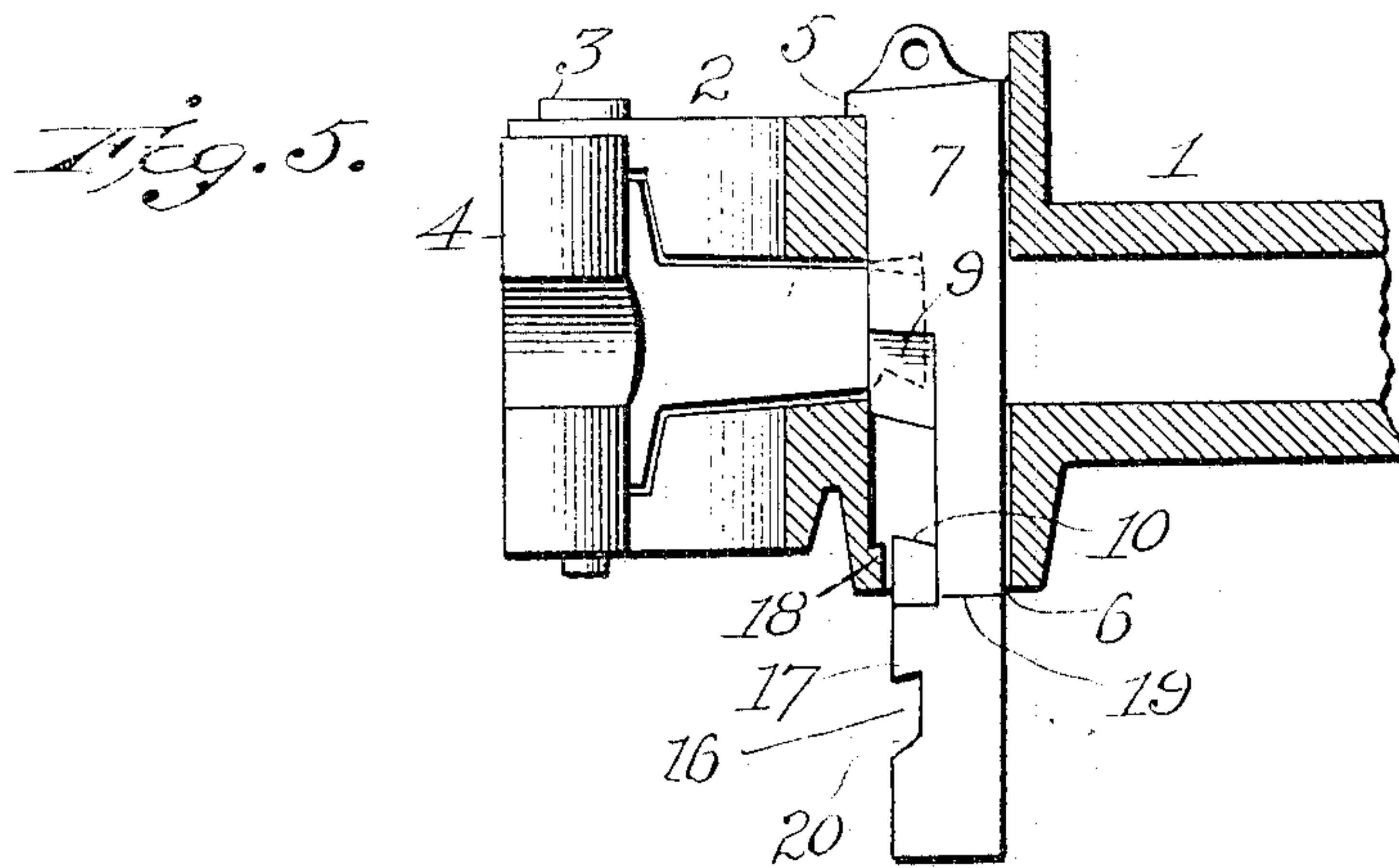
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CAR COUPLING.

APPLICATION FILED MAY 5, 1903.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

ELI H. JANNEY, OF FAIRFAX COUNTY, VIRGINIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 781,949, dated February 7, 1905.

Application filed May 5, 1903. Serial No. 155,765.

To all whom it may concern:

Be it known that I, ELI H. JANNEY, a citizen of the United States, residing in Fairfax county, State of Virginia, have invented new and useful Improvements in Car-Couplings, of which the following is a specification.

My invention relates to car-couplings, and more particularly to that class known as the "Janney" type, and has for its objects, first, to provide improved means for automatically rotating the coupling-hook to its open position by means of a vertically-movable locking-pin, and, secondly, to provide improved means for setting the locking-pin in the unlocking position and for automatically disengaging it from said set position by the movement of the tail of the coupling-hook. These objects I accomplish in the manner and by the means hereinafter described and claimed, reference being had to the accompanying drawings, in which:—

Figure 1 is a perspective view of my improved coupling, showing the same in its open position. Fig. 2 is a detail perspective view of the coupling-hook detached. Fig. 3 is a detail perspective view of the locking-pin. Fig. 4 is a bottom plan view of the coupling. Fig. 5 is a vertical longitudinal sectional view, the coupling-hook and locking-pin being shown in full lines. Fig. 6 is a similar view, the locking-pin being shown raised and retained in the unlocked position. Fig. 7 is a vertical transverse sectional view taken immediately in front of the locking-pin. Fig. 8 is a horizontal sectional view showing the coupling in the lock-set position. Fig. 9 is a detail sectional view similar to Fig. 7, showing the tail of the coupling in the act of moving to the locked position, the locking-pin being shown partly raised thereby. Fig. 10 is a view similar to Fig. 6, illustrating a slightly-modified construction.

Similar numerals of reference denote corresponding parts in the several views.

In the said drawings the reference-numeral 1 denotes the draw-bar of the coupling, carrying the draw-head 2 of the well-known Janney type, in which is pivoted, by means of pin 3, the usual coupling-hook 4. Passing vertically through the upper and lower apertures

5 and 6 in the draw-head 2 is the locking-pin 7, the same being recessed on its front side at 8 and having the upper face of said recess formed with an inclined or cam surface 9 and its lower face formed with a cam-surface 10 inclining in a direction the reverse of cam-surface 9 and having its upper end projecting slightly beyond the side face of the pin, as shown in Figs. 3 and 7. The tail of the coupling-hook 4 is reversely inclined on its upper and lower surfaces at 11 and 12 to correspond with the inclines 9 and 10, said upper incline 11 merging into a flat surface 13, having a rounded projection 14 centrally located thereon, said projection having a flat top surface 15 at the lower end of incline 9 in a manner hereinafter to be described.

Below the recess 8 in the pin 7 is another recess 16, having its upper edge 17 inclined upwardly and inwardly to engage a shoulder 18, formed on the inner front face of the lower aperture 6 in the draw-head when said pin is raised to the unlocked position, the latter having its upper edge beveled to correspond with that of the upper edge 17 of recess 16, as shown in Fig. 6. It will also be observed that the lower edge 20 of recess 16 is inclined downwardly and that the front side of the locking-pin 7 below said recess projects somewhat beyond the vertical surface of said pin above said recess also for a purpose hereinafter to be described.

Formed in the side of pin 7 and just below the lower edge of the draw-head when said pin is in its lowermost position is an incline 19, adapted to perform the following double function: When the pin 7 is in its lowermost position and the coupling-hook 4 locked thereby, the traction on said coupling-hook will force the locking-pin 7 to the right, as shown in Fig. 7, thus causing incline 19 to underlie the lower edge of the draw-head 2 and effectually preventing any upward creeping of the locking-pin 7, due to the jolting of the cars while in motion, whereby the locking-pin 7 might otherwise ultimately be lifted sufficiently to release the coupling-hook 4. The other function of said incline 19 is performed when the locking-pin 7 is lifted to automatic-

ally throw the coupling-hook 4 to its open position, the contact of incline 19 with the lower edge of the draw-head 2 forcing said pin to the left toward the tail of the coupling-hook, so that the projecting end of lower cam-surface 10 will be thrown more surely beneath corresponding cam-surface 12 on said coupling-hook tail. By referring to Fig. 6 it will be observed that the lower incline 12 on the tail of the coupling-hook 4 is also inclined upwardly and forwardly and that the coacting lower incline 10 on the locking-pin 7 is correspondingly inclined for a purpose hereinafter to be described.

From the above description the operation of my improved construction will be understood to be as follows: With the pin 7 in its lowermost position and the coupling-hook 4 open, as shown in Fig. 1, the device is ready for automatic coupling, the rotation of said hook causing cam-surface 11 on the tail thereof to contact with cam 9 on the pin 7, and thus raise the latter until the coupling-hook tail passes the same, when it will drop automatically, and thus lock the hook in its closed position. Now when it is desired to uncouple the pin 7 is lifted, by means of its cord or chain, until the incline 10 on the pin engages incline 12 on the hook, when by reason of the forward and upward incline of the same, as shown in Fig. 6, the lower end of the pin will be positively tilted forward, thus bringing the recess 16 in said pin in engagement with shoulder 18 in the draw-head when said pin reaches the unlocking position, and thus retaining said pin in this position, so that the coupling-hook 4 may be turned to its open position, thus permitting the cars to separate. By referring to Fig. 8 it will be observed that the locking-pin 7 has its edge or corner nearest the tail of the coupling-hook 4 beveled at 21, and this forward movement of the lower end of said locking-pin brings it into the path of movement of the tail of the coupling-hook 4, so that the latter in its movement to the open or closed position will contact with the beveled edge 21 thereof and automatically force said locking-pin backward again to disengage recess 16 from shoulder 18, thus permitting said locking-pin to drop to its locking position when said coupling-hook has rotated away from engagement therewith. It may happen sometimes, however, that owing to a variation in the castings the tail of the coupling-hook 4 will not be long enough to thus contact with the locking-pin 7, and as it is essential that the latter shall be disengaged from the shoulder 18 and drop to its locking position when the coupling-hook 4 is swung to the closed position I have provided the following means for insuring this result: The locking-pin 7 when in engagement with the shoulder 18 has the lower edge of its incline 9 slightly below the upper edge of the rounded projection 14 on the tail of coupling-hook 4, and the

latter in its movement to the open position will contact with its projection 14 with the flat surface 15 on the locking-pin 7, thus slightly lifting the latter to disengage it from the shoulder 18. By referring to Fig. 6 it will be seen that the flat surface 15 on the locking-pin is also inclined upwardly and outwardly, so that this contact will take place only at a point near the inner end of said flat surface or at the center of gravity of said locking-pin; thus causing said locking-pin to resume its vertical position when lifted from engagement with the shoulder 18, and permitting it to drop free from said projection 18 when released by the coupling-hook tail. It will be further observed that as the flat surface 15 on the locking-pin passes out of contact with the projection 14 on the coupling-hook tail during the movement of the latter to either the locking or the unlocking position it will first drop onto the flat surface 13 on the coupling-hook tail, and said pin will thus be maintained momentarily in the vertical position and will at the same time have dropped sufficiently to bring the upper edge 17 of its recess 16 below the shoulder 18 on the draw-head, so that engagement of the two will be impossible. It follows, therefore, that with the pin 7 in the lock-set position a movement in either direction of the tail of the coupling-hook beneath the surface 15 on the pin 7 will result in the latter being lifted and disengaged from the shoulder 18, so that it will drop to the locking position. It will readily be seen that, if desired, the projection 18 may be located in the rear face of the lower aperture 6 of the draw-head and the recess 16 correspondingly located in the rear face of the locking-pin 7, for by reversing the forward and upward incline of incline 12 and similarly reversing that of incline 10 the result will be that when said inclines contact as the locking-pin 7 is lifted the lower end of the latter will be positively forced backward instead of forward, thus insuring the engagement of recess 16 with projection 18, as shown in Fig. 10. With this construction the flat surface 15 of the locking-pin will be inclined upwardly and inwardly instead of upwardly and outwardly, the result being that as the coupling-hook tail passes beneath said flat surface 15 the consequent slight lifting of the locking-pin 7 will result in the lower end of the latter being tilted forward away from engagement with the projection 18, and thus causing the locking-pin to fall to its lowermost position.

It will be observed that the inclining or beveling of the engaging face 17 of recess 16 and the shoulder 18 will insure their engagement better than if said faces were flat, and will effectually prevent their accidental disengagement.

In order to positively rotate the coupling-hook 4 to its open position by means of the

locking-pin 7, I have provided the inclines 10 and 12, operating as follows: When the coupling-hook is locked, but not engaged with another coupling-hook, the lifting of locking-pin 7 will cause the projecting upper end of incline 10 thereon to engage the incline 12 on the tail of said coupling-hook, and the further lifting of said locking-pin necessarily rotates said coupling-hook to its open position in a manner readily understood: In order that this engagement of said inclines may be insured, I have provided the incline 19 on the opposite side of the locking-pin 7, which by its contact with the lower edge of the draw-head as the locking-pin is raised forces said locking-pin toward the tail of the coupling-hook, as seen in Fig. 7. So, also, in order that while the pin 7 is being lifted to throw the coupling-hook open the vertical face of the recess 8 therein may be out of the path of travel of the coupling-hook tail during its rotation to the open position, so that any binding of the parts may be prevented, I have provided the inclined lower face 20 for the recess 16 and have projected the front face of the locking-pin 7 below said recess, the result being that as said pin is lifted said face 20, contacting with the draw-head, will force the lower end of pin 7 backward, and thus carry said pin out of the path of travel of the tail of the coupling-hook. Furthermore, this positive backward movement of the lower end of the pin 7 will permit said pin when released to drop freely to its lowermost position without danger of its engaging projection 18.

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

1. In a car-coupling, the combination with the draw-head, of a coupling-hook pivoted therein and having inclines in reverse directions on the upper and under sides of its tail, and a vertically-movable locking-pin for said coupling-hook having inclines similar to those on the tail of the coupling-hook, for the purposes set forth.

2. In a car-coupling, the combination with the draw-head, of a coupling-hook pivoted therein and having an incline on the under side of its tail, and a vertically-movable locking-pin for said coupling-hook having a similar incline, said inclines being also separately shaped to cooperate to force the locking-pin when in a raised position into engagement with the draw-head.

3. In a car-coupling, the combination with the draw-head, of a coupling-hook pivoted therein and having an incline on the under side of its tail, and a vertically-movable locking-pin for said coupling-hook having a similar incline, said inclines being also inclined at an angle to their main line of inclination to force the locking-pin into engagement with the draw-head.

4. In a car-coupling, the combination with the draw-head, of a coupling-hook pivoted therein and having an incline on the under side of its tail, and a vertically-movable locking-pin for said coupling-hook having a similar incline adapted, when said locking-pin is lifted, to engage the incline on the coupling-hook to rotate the latter to its open position, said locking-pin also having an incline adapted, when said locking-pin is lifted, to engage the draw-head to force said locking-pin sideways toward the tail of the coupling-hook.

5. In a car-coupling, the combination with the draw-head, and a coupling-hook pivoted therein, of a vertically-movable locking-pin for said coupling-hook, adapted in its movement to the unlocking position to engage the aperture in the draw-head in the longitudinal line of said draw-head and be retained in its unlocking position, and means whereby said locking-pin is lifted and disengaged from its engagement with the draw-head by the movement of the coupling-hook on its pivot past said locking-pin and dropped to its initial lowermost position.

6. In a car-coupling, the combination with the draw-head, a coupling-hook pivoted therein, and a vertically-movable locking-pin, of means in the aperture in the draw-head in longitudinal line of said draw-head for engaging and retaining said locking-pin when raised to the unlocking position, and coacting means on said locking-pin and coupling-hook for positively forcing said locking-pin when lifted into engagement with the draw-head.

7. In a car-coupling, the combination with the draw-head, and a coupling-hook pivoted therein, of a vertically-movable locking-pin for said coupling-hook, adapted in its movement to the unlocking position to be tilted to engage the aperture in the draw-head in the longitudinal line of said draw-head and be retained in its unlocking position, and engaging surfaces on the tail of the coupling-hook and the locking-pin adapted during the movement of the coupling-hook on its pivot past said locking-pin to contact and lift said locking-pin from engagement with the draw-head, said surfaces also acting to permit said locking-pin to resume its vertical position so as to drop free from the draw-head when released by the tail of the coupling-hook during its movement in either direction.

8. In a car-coupling, the combination with the draw-head, of a coupling-hook pivoted therein and having an incline on the under side of its tail, and a vertically-movable locking-pin for said coupling-hook having a similar incline adapted, when said locking-pin is lifted, to engage the incline on the coupling-hook to rotate the latter to its open position, said locking-pin also having an incline adapted, when said locking-pin has engaged said coupling-hook, to engage the draw-head to force said locking-pin rearward away from

the path of travel of the vertical face of the coupling-hook tail.

9. In a car-coupling, the combination with the draw-head, and a coupling-hook pivoted therein, of a vertically-movable locking-pin for said coupling-hook, adapted in its movement to the unlocking position to be tilted to engage the aperture in the draw-head in the longitudinal line of said draw-head and be retained in its unlocking position, and inclines on the tail of the coupling-hook and the locking-pin adapted during the movement of the coupling-hook to its locked or unlocked position to contact and lift said locking-pin from engagement with the draw-head, the incline

on the coupling-hook tail merging into a flat surface having a central rounded projection with a flat top surface operating to lift said locking-pin and to permit it to resume its vertical position and to retain it in said position until it has dropped below the point of engagement with the draw-head.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ELI H. JANNEY.

Witnesses:

J. H. JANNEY,
W. H. JANNEY.