

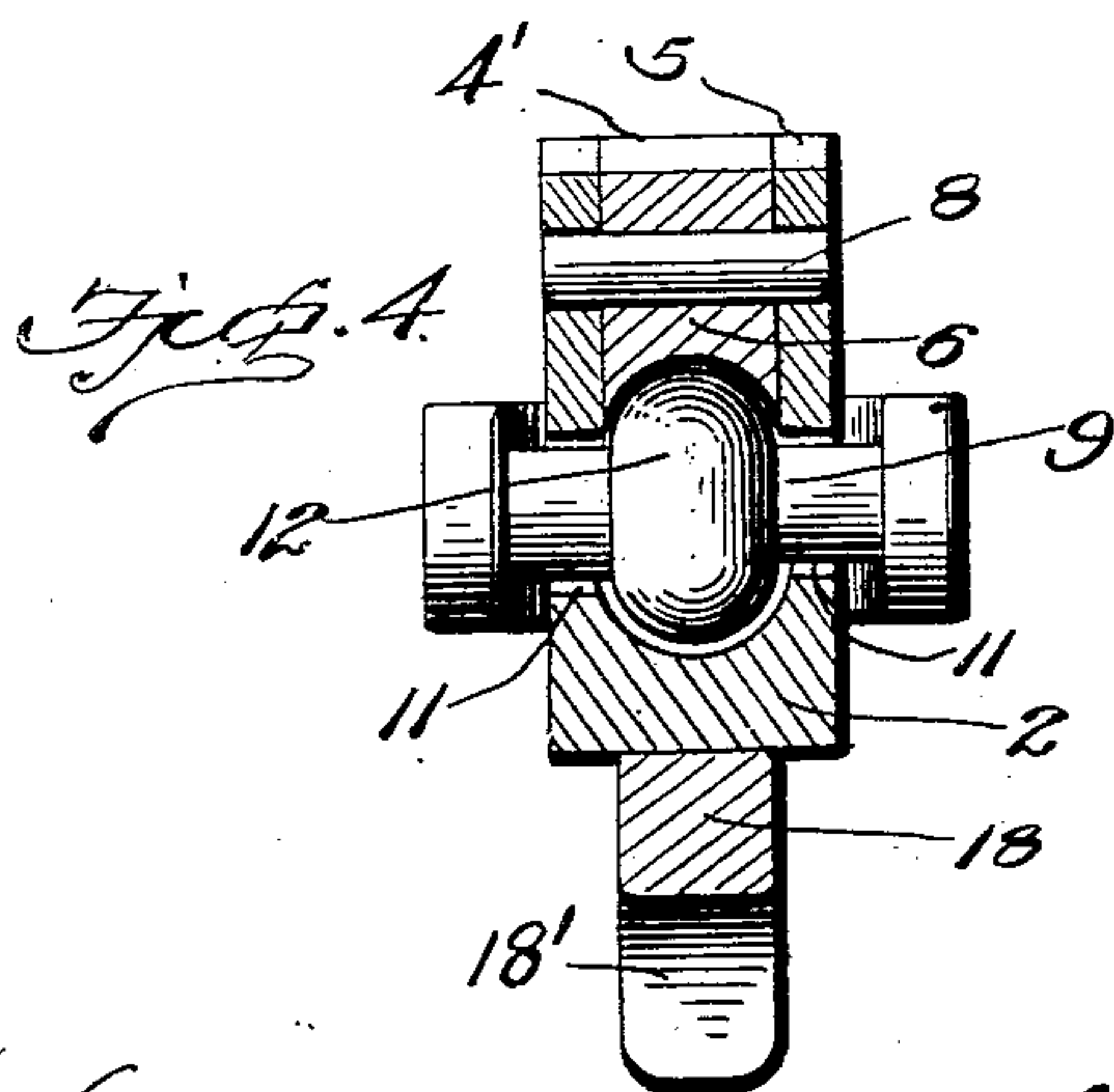
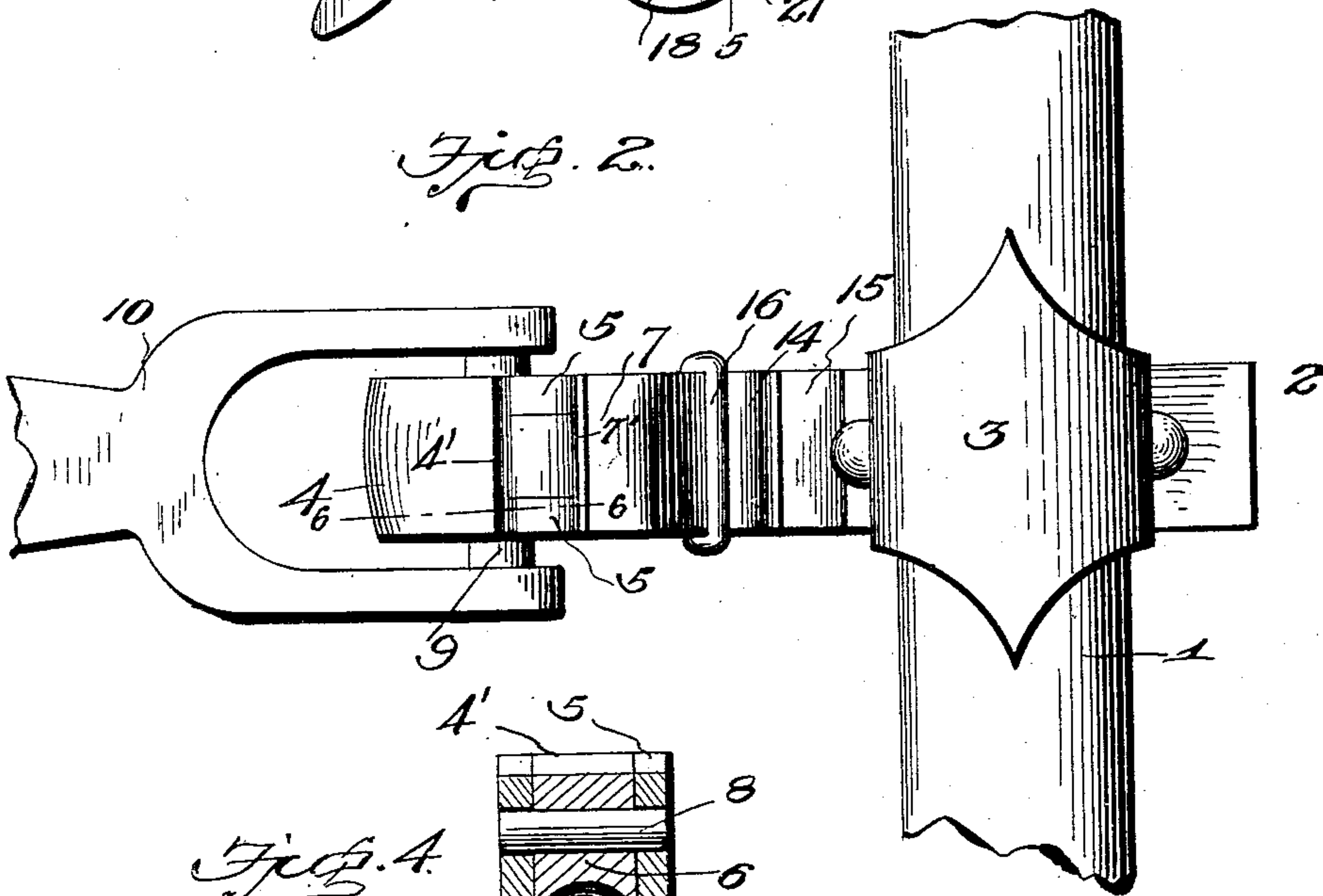
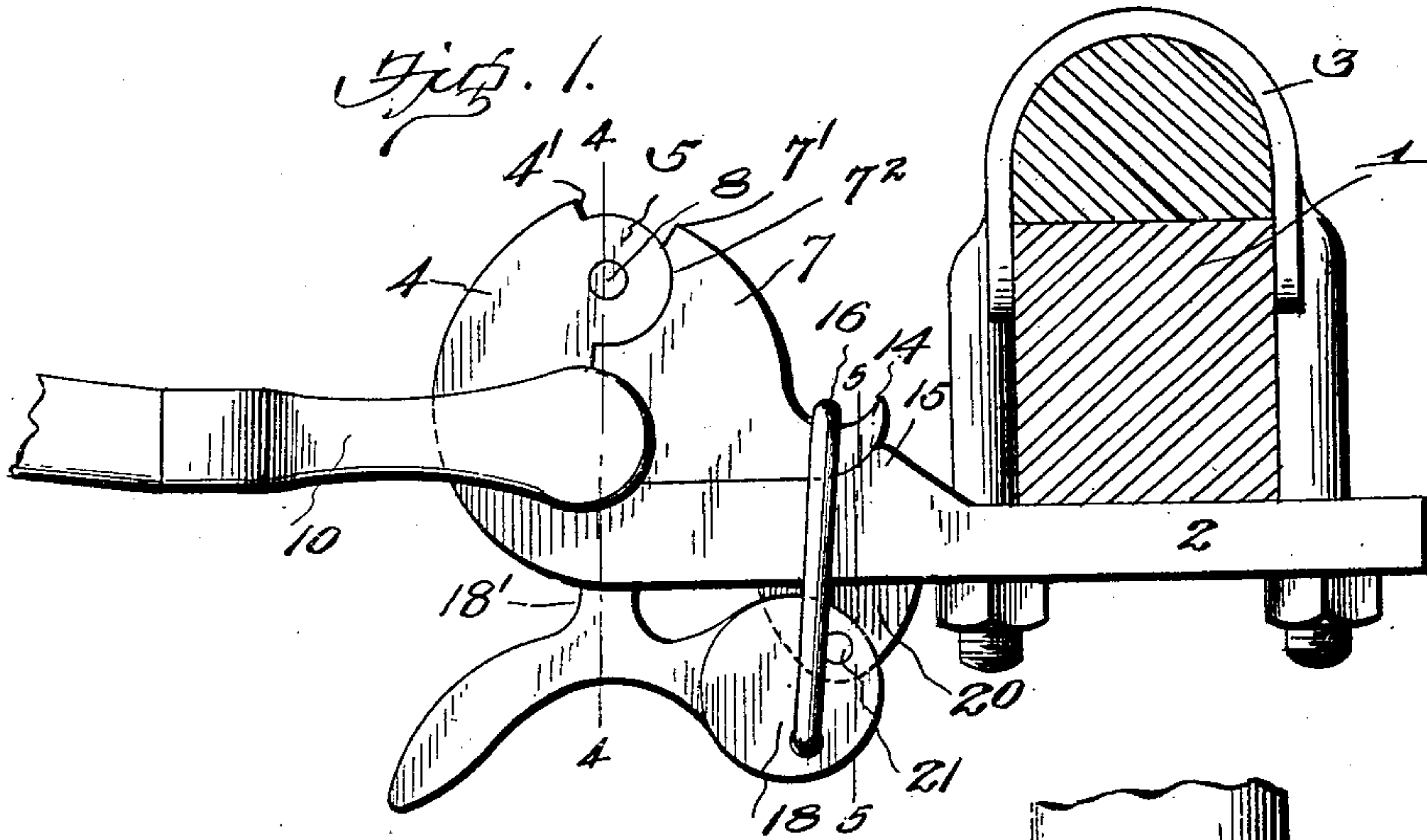
No. 734,998.

PATENTED JULY 28, 1903.

W. H. THOMPSON.
THILL OR POLE COUPLING.
APPLICATION FILED FEB. 26, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



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334

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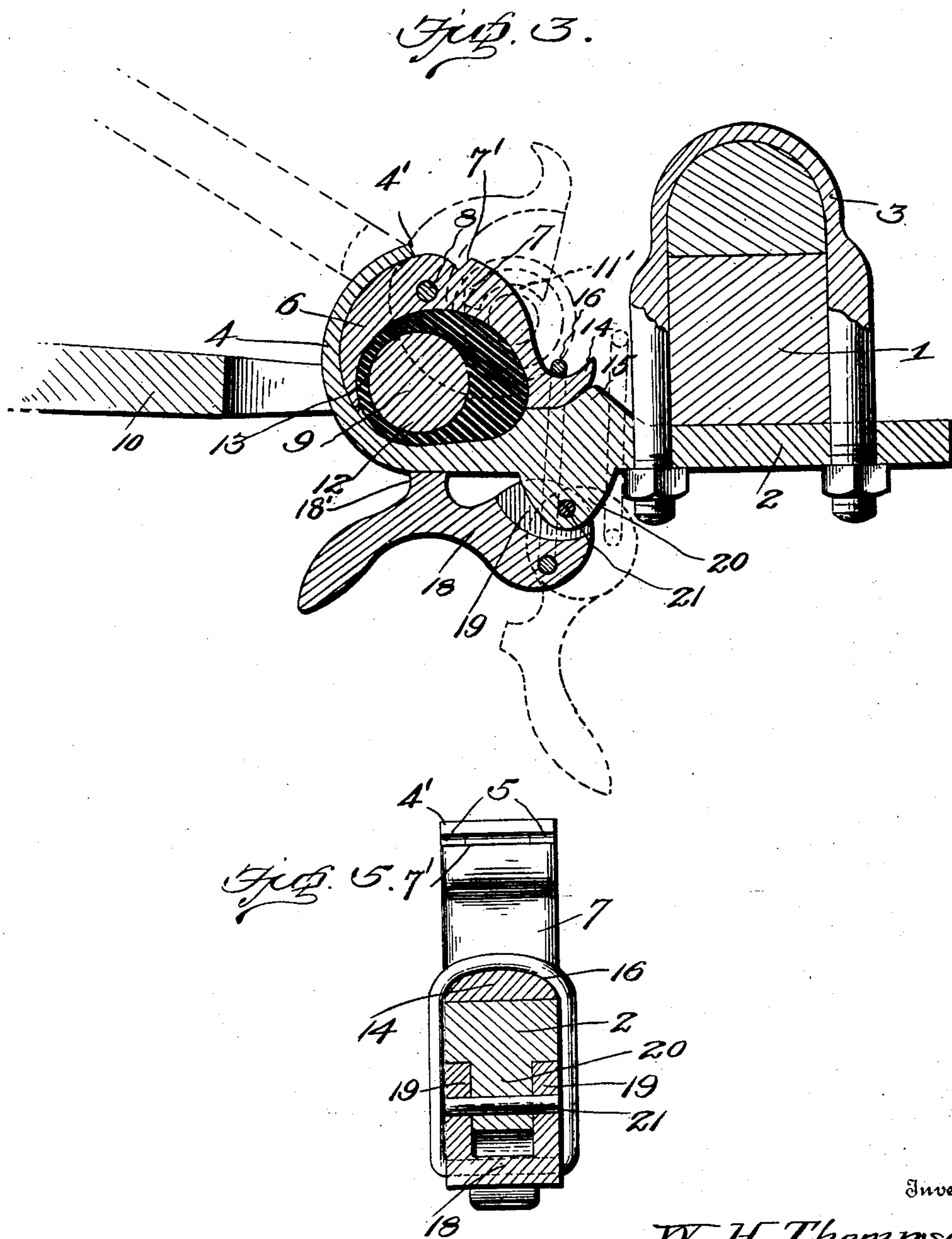
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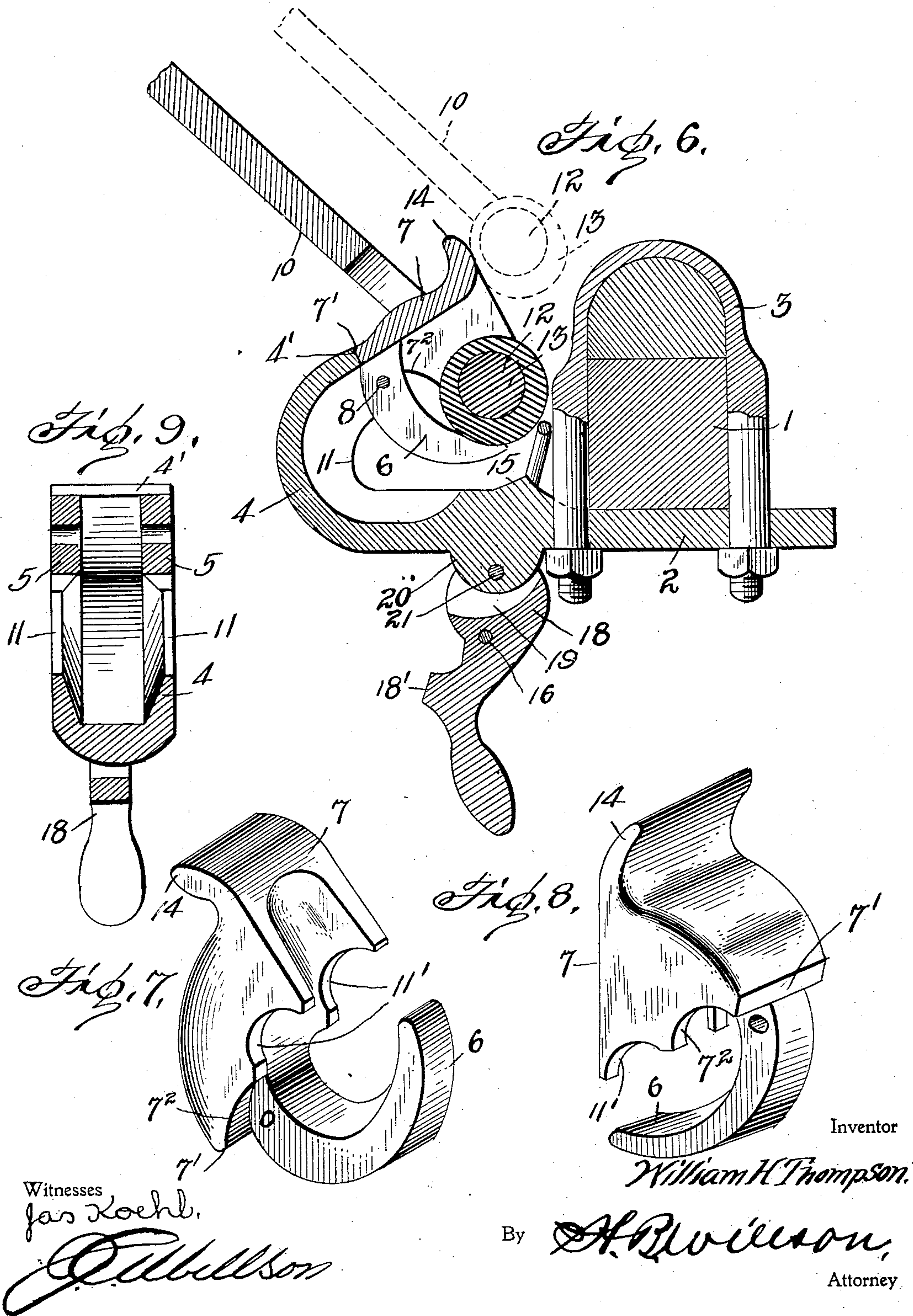
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3 SHEETS—SHEET 3.



UNITED STATES PATENT OFFICE.

WILLIAM H. THOMPSON, OF SALT LAKE CITY, UTAH.

THILL OR POLE COUPLING.

SPECIFICATION forming part of Letters Patent No. 734,998, dated July 28, 1903.

Application filed February 26, 1903. Serial No. 145,260. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. THOMPSON, a citizen of the United States, residing at Salt Lake City, in the county of Salt Lake and State of Utah, have invented certain new and useful Improvements in Thill or Pole Couplings; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a thill or pole coupling of that class employing a draft-eye having a fixed and a pivoted jaw to hold the knuckle of the thill-iron therein and a locking device for holding said pivoted jaw closed.

The object of the invention is to provide a coupling of this character so constructed as to prevent casual disconnection of the knuckle and strain on the pivoted jaw and which embodies locking mechanism adapted to hold the pivoted jaw securely locked without the use of springs.

With this and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a side elevation of a thill-coupling constructed in accordance with my invention, showing the pivoted jaw closed. Fig. 2 is a top plan view of the same. Fig. 3 is a central vertical longitudinal section showing in full and broken lines the pivoted jaw in closed and opened positions. Fig. 4 is a cross-section substantially on line 4 4 of Fig. 1. Fig. 5 is a cross-section on line 5 5 of Fig. 1. Fig. 6 is a vertical longitudinal section taken on a line at one side of the center line of the coupling, as on line 6 6 of Fig. 2, showing the movable jaw open and illustrating in full and broken lines the mode of applying and removing the thill-iron. Fig. 7 is an inner or rear perspective view of the movable jaw of the draft-eye. Fig. 8 is a front perspective view of the same. Fig. 9 is a cross-section through the fixed portion of the draft-eye, showing the fixed jaw in rear elevation.

Referring now more particularly to the drawings, 1 designates the front axle of a ve-

hicle, and 2 the fixed portion of the draft-eye of the coupling, the same consisting of a bar or shank secured to the under side of the axle by a clip 3 and provided at its front end with an upturned fixed jaw 4, formed with spaced rearwardly-projecting ears, knuckles 5, and a stop edge or shoulder 4'. This jaw is recessed to receive a downwardly-curved tongue 6 on the movable jaw 7, which tongue fits between and is hingedly united to said knuckles by a pintle 8, whereby said movable jaw is mounted to swing vertically on said pintle to release the wrist or knuckle 9 of the yoke-shaped thill-iron 10 or confine the same between it and the fixed portion or jaw 4. The sides of the jaw 4 are formed in their rear edges below the ear 5 with semicircular notches 11, and the sides of the jaw 7 are formed in their front edges with similar co-acting notches 11' to form circular openings to receive said knuckle, and the jaw 7 is made hollow or recessed to receive a spherical head or enlargement 12 on the knuckle, the said head or enlargement fitting between the jaw 7 and tongue 6 when said jaw is closed. A packing 13 of leather or other similar material is provided about the head or enlargement to prevent the latter from rattling and to insure a sufficiently tight fitting of the head between the jaws.

It will be observed that the jaw 4 extends far enough back to dispose the pivot 8 on a vertical line above and coincident with or in rear of the vertical line of the knuckle 9 when the latter is in operative position in the notches 11 and 11' and that such disposition of the pivot enables the provision upon the jaws 4 and 5 of vertical side walls, respectively, having rear and front vertical edges in which the said notches 11 and 11' are formed to receive the knuckle at a point below the said pivot. By such arrangement it will be clear that the entire draft strain falls upon the shank 2 and jaw 4 and none upon the jaw 7 or its pivot 5. Hence the jaw 7 serves solely as a guard or latch to retain the knuckle in position. Heretofore it has been customary to dispose the pivot of the movable jaw at a point forward of a central line through the axis of the knuckle, thereby causing the movable jaw to form a bearing or abutting portion for the knuckle and to sustain a por-

tion of the pulling strain. Under such conditions the pivot quickly becomes loose and is liable to be broken, and if the fastening of the movable jaw becomes accidentally released the jaw is liable to be forced open when the vehicle is backed, allowing the thill-iron to become disengaged from the coupling. My construction effectually obviates this objection. The jaw 7 is adapted to swing open only far enough to permit the knuckle 9 to be passed between the lip 14 of said jaw and the lip 15 on the part 1, as indicated in broken lines in Fig. 6. This is attained by providing said jaw with a stop-shoulder 7' to engage a corresponding shoulder 4' on the jaw 4, whereby the opening movement of the movable jaw is properly limited. Recesses 7² in the jaw 7 are provided to receive the ears 5 when the said jaw 7 is closed.

The movable jaw 7 is provided at its rear or free end with an upwardly-curved lip 14, which bears against a corresponding shoulder or lip 15 on the portion 1. This lip 14 is adapted to be engaged by the free end of a locking bail or link 16 to hold the jaw 7 closed, the said bail or link straddling the portion 1 and being connected at its opposite or lower end to a cam or eccentric lever 18, whereby the bail may be drawn tightly into engagement with the lip 14 to lock the jaw 7 in closed position. The lever 18 is preferably formed with spaced ears 19, which receive between them a lug or ear 20, to which said ears are eccentrically pivoted by a pin 21. It is also formed with a stop-lug 18', which abuts against the bar 1 and stays the lever when the same is in locking position. The lower end of the bail or link passes through these ears at a point coming below the pin when the lever is adjusted to hold the jaw 7 closed, as shown in full lines in Fig. 3. By this means when the lever is moved to a vertical position, as shown in Fig. 3, the pivoted end of the bail will be thrown upwardly and in rear of the pin 21, thus raising the link above the lip 14 so that it may be swung rearwardly of said lip to allow the jaw 7 to be swung open. After the link is passed through the ears 19 the ends thereof are soldered or otherwise joined to make the link solid and prevent the ends thereof from springing apart under strain.

By hinging the jaw 7 to open at its rear end and disposing the hinge or pivot to lie in a vertical line coincident with or to the rear of the wrist or knuckle 9 it will be apparent that the draft strain falls wholly upon the fixed jaw 4 and that said jaw 7 is thus relieved from strain and cannot be forced open under forward pull and that, on the contrary, the stronger the pull on the thill-iron the tighter the jaw 7 will be held closed, since the head 12 of the knuckle 9 will exert a forward pressure on the tongue 6, thus forcing the jaw 7 down against portion 1. At the same time by the provision of the tongue 6 the necessity of closing the jaw 7 when the draft-iron

is applied is avoided, as the pull of the knuckle when slipped into place will automatically swing said jaw closed, as will be readily understood by reference to the full-line position of the knuckle. (Shown in Fig. 6.) If, through design, fault, or accident the jaw 7 is left or becomes unlocked, the tongue will also allow backing of the vehicle without liability of the thill-iron becoming detached, as upon backward movement of the iron the yoke thereof will bear against the jaw 4 and the knuckle will be held from upward movement in the notches 11'. In order to release the thill-iron from the coupling, it is necessary to first force the knuckle out of said notches 11' and then to swing the pole or thill upward until the yoke swings rearwardly beyond the lip 14, which obviates any liability of the knuckle becoming casually disengaged under any ordinary conditions of service. This operation is very clearly illustrated by the dotted-line position of the knuckle in Fig. 6. Hence a positive manual disengagement of the knuckle is required before the thill or pole can be removed from the coupling. Should the jaw 7 become broken or detached by accident, the shaft or pole would still be in position for work as long as a forward pull is exerted. In locking the jaw 7 the link is swung forward to engage the lip 14 and the eccentric-lever then swung forward to draw the link down upon said lip. In unlocking, the lever is swung rearward to loosen the link and the link swung back clear of the lip 14, whereupon the jaw 7 will be left free to be opened. By the described construction and arrangement of the locking device I am enabled to dispense with the use of springs and other parts which are liable to yield and allow the movable jaw to swing open.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. In a thill-coupling, the combination with a thill-iron having a coupling-knuckle, of a draft-eye having a fixed and a movable jaw, said jaws having meeting vertical faces recessed to receive said knuckle, the movable jaw being hinged or pivoted at its forward end to the fixed jaw above and coincident with or in rear of the vertical plane of said recesses so as to open at its rear end, and whereby the pull of the knuckle is solely upon the fixed jaw, and means for holding said movable jaw closed.

2. In a thill-coupling, the combination with a thill-iron having a coupling-knuckle, of a

draft-eye comprising a fixed and a movable jaw, the latter being hinged to the fixed jaw to open vertically at its rear end, and provided with a tongue against which said knuckle is adapted to bear to swing and hold the jaw closed upon a forward pull on the knuckle, and means for locking said movable jaw in closed position, substantially as described.

3. In a thill-coupling, the combination with a thill-iron having a coupling-knuckle, of a draft-eye comprising a fixed and a movable jaw, the latter being provided with a tongue hinged or pivoted to the fixed jaw and adapted to fold therein, whereby the movable jaw is adapted to open at its rear end, the said tongue adapted to be engaged by the knuckle to swing and hold the jaw closed when a forward pull is exerted on the draft-iron.

4. In a thill-coupling, the combination with a thill-iron having a coupling-knuckle, of a draft-eye comprising a fixed and a movable jaw, the latter being provided with a tongue hinged or pivoted to the fixed jaw and adapted to fold therein, whereby the movable jaw is adapted to open at its rear end, the said tongue adapted to be engaged by the knuckle to swing and hold the jaw closed when a forward pull is exerted on the draft-iron, and means for locking the movable jaw in closed position, substantially as described.

5. In a thill-coupling, the combination with a thill-iron having a coupling-knuckle, of a draft-eye having a fixed jaw and a swinging jaw hinged to open at its rear end and provided at its rear end with a lip, a bail adapted

to engage said lip, and a cam or eccentric lever pivoted to a fixed portion of the eye for drawing the bail into engagement with the lip, substantially as described.

6. In a thill-coupling, the combination with a thill-iron having a coupling-knuckle, of a draft-eye having a fixed jaw and a swinging jaw hinged to open at its rear end and provided at its rear end with a lip, a locking-lever eccentrically pivoted to a fixed part of the eye to swing forwardly in locking and rearwardly in unlocking, and a link or bail eccentrically pivoted to said lever and adapted to engage said lip to hold the movable jaw closed.

7. In a thill-coupling, the combination with a thill-iron having a coupling-knuckle, of a draft-eye comprising a fixed and a movable jaw, the latter being hinged to the fixed jaw to open vertically at its rear end, and provided at its forward end with a tongue and at its rear end with a lip, said tongue adapted to be engaged by the knuckle to swing and hold the jaw closed upon a forward pull on the thill-iron, a bail adapted to engage said lip, and a non-resilient cam or eccentric lever pivoted to a fixed portion of the eye for drawing the bail into engagement with the lip, substantially as described.

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

WILLIAM H. THOMPSON.

Witnesses:

GRANT HAMPTON,
H. W. HANMAN.