

O. HECATHORN.

CAR COUPLING.

APPLICATION FILED JUNE 25, 1908.

910,537.

Patented Jan. 26, 1909.

2 SHEETS—SHEET 1.

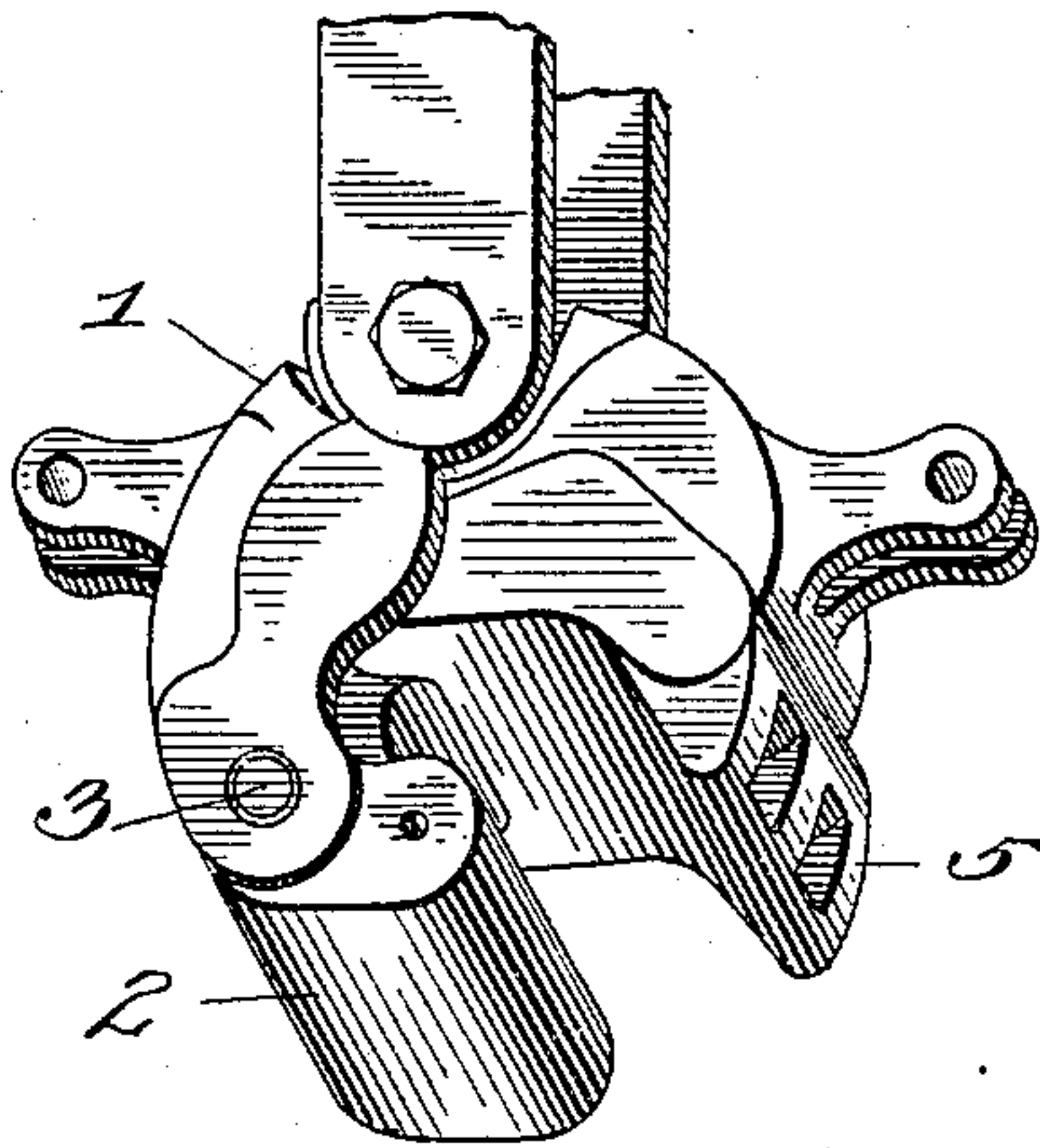


Fig. 2.

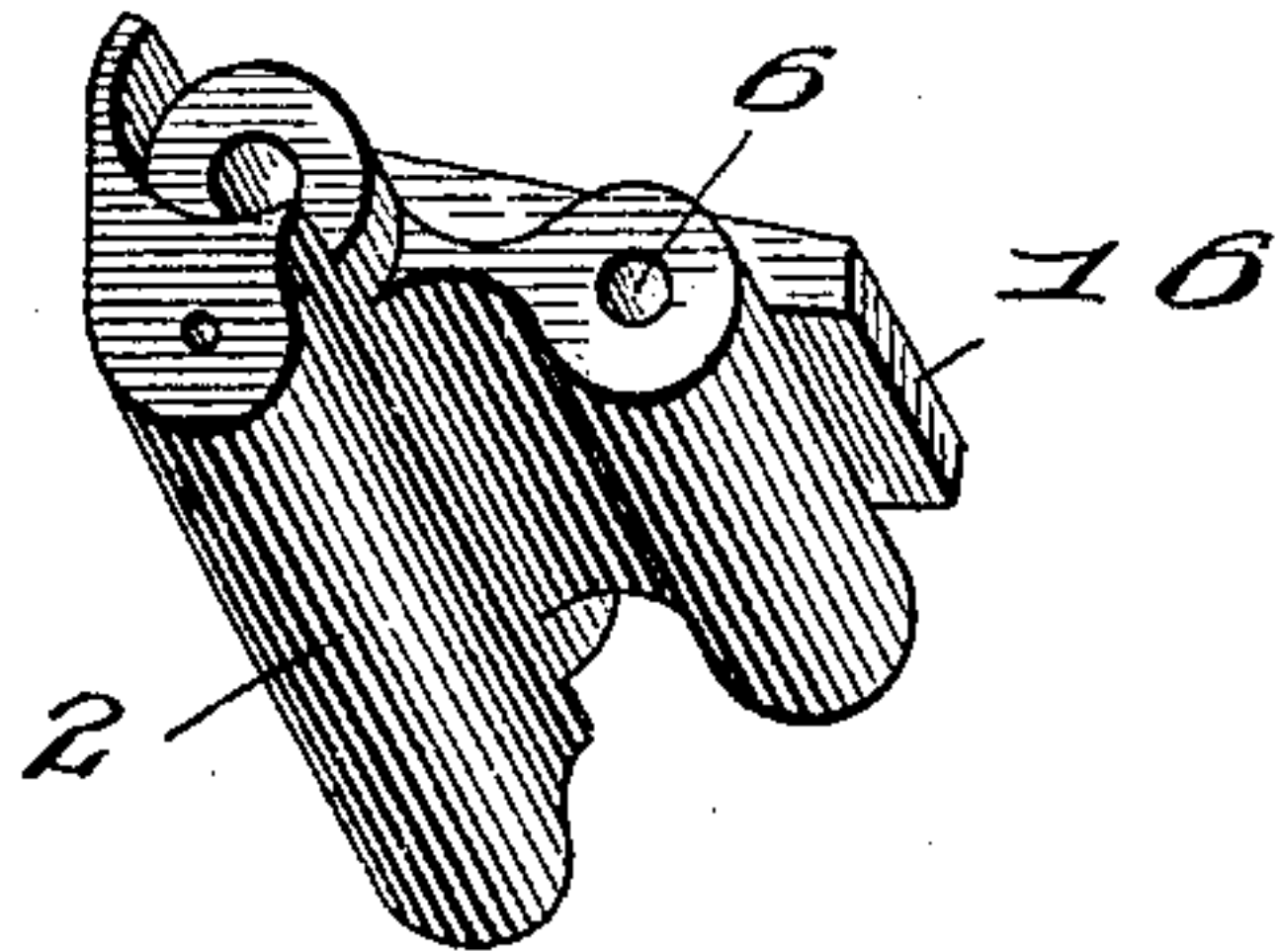


Fig. 1.

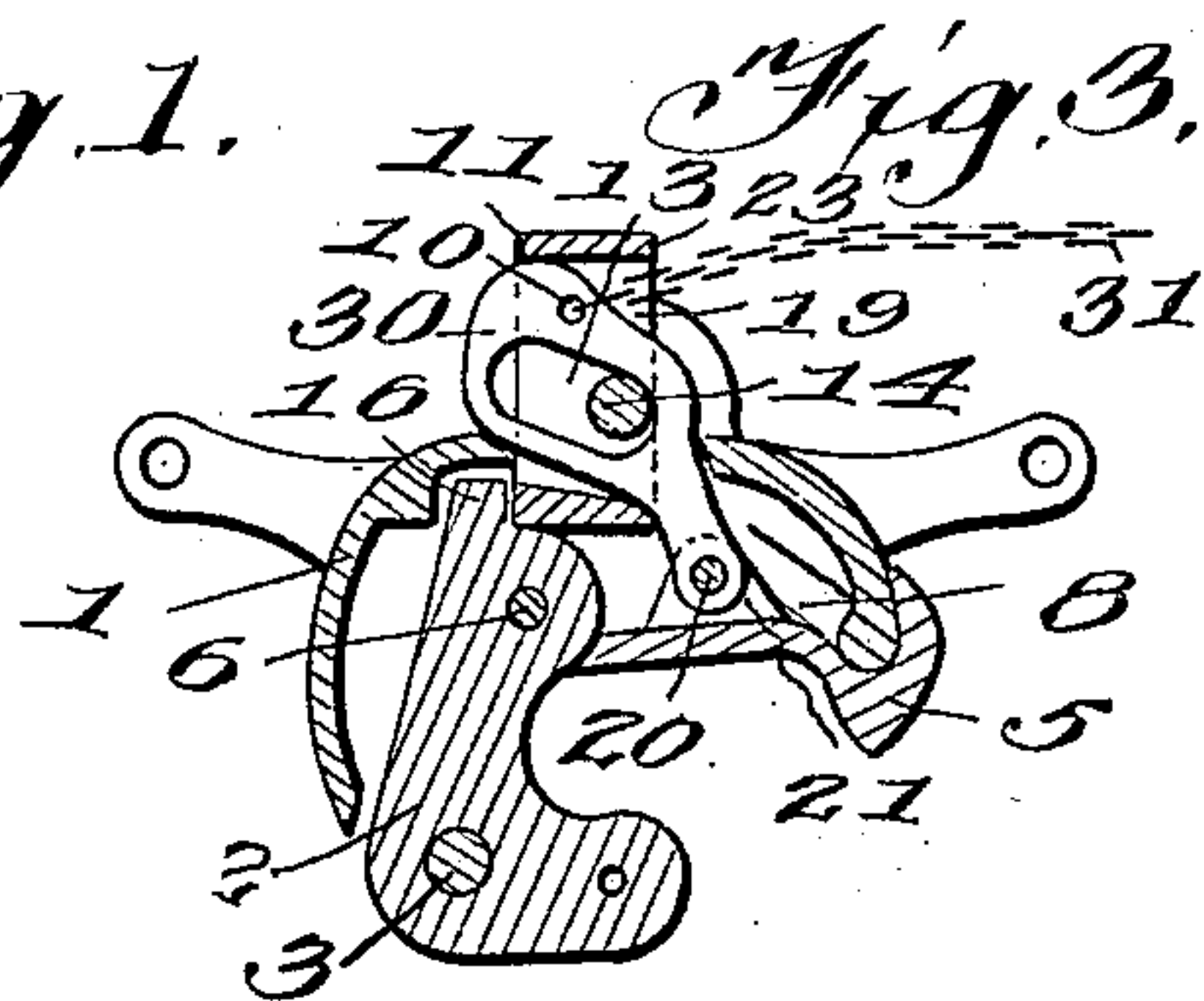
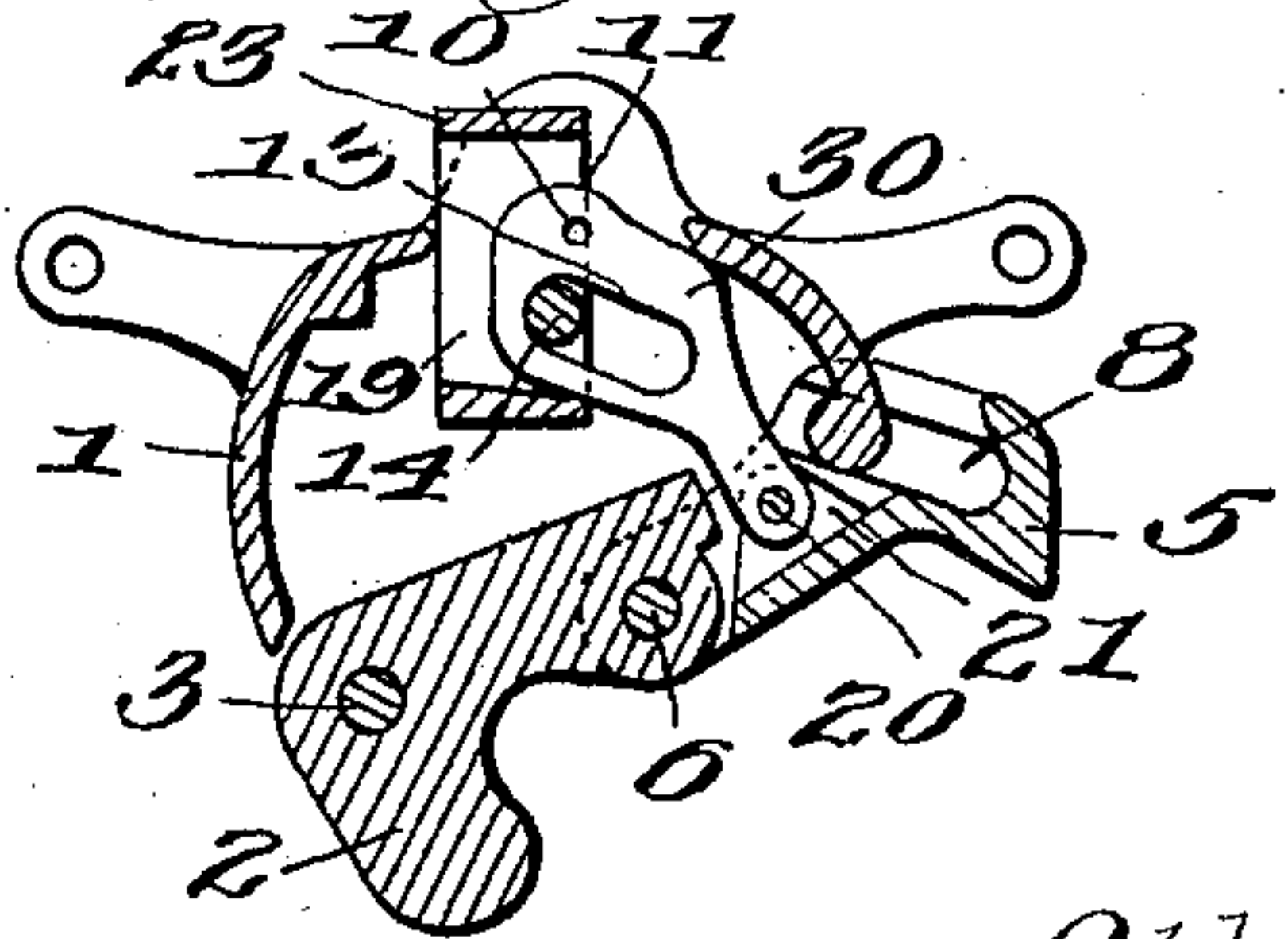


Fig. 3.

Fig. 4.



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Witnesses

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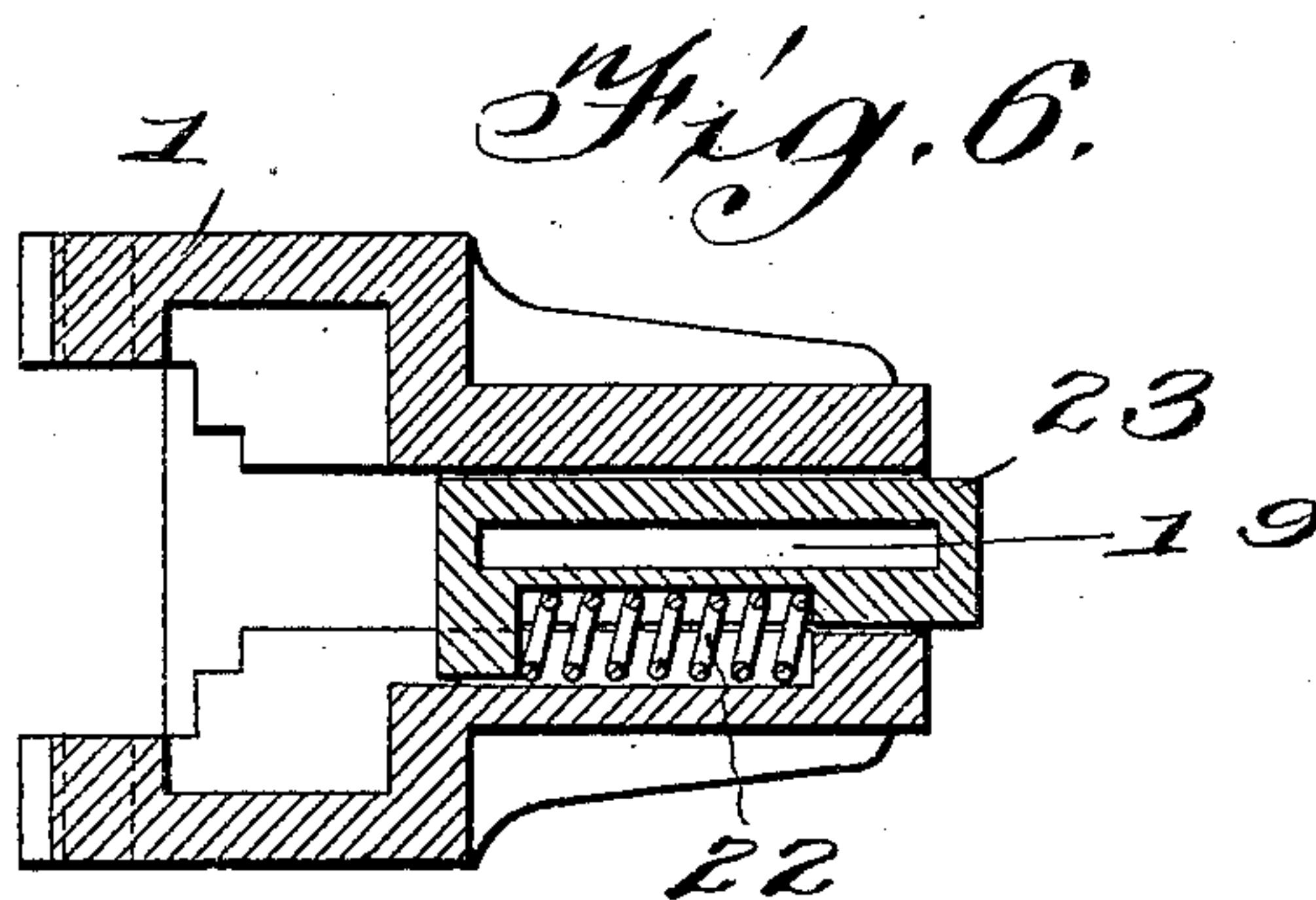
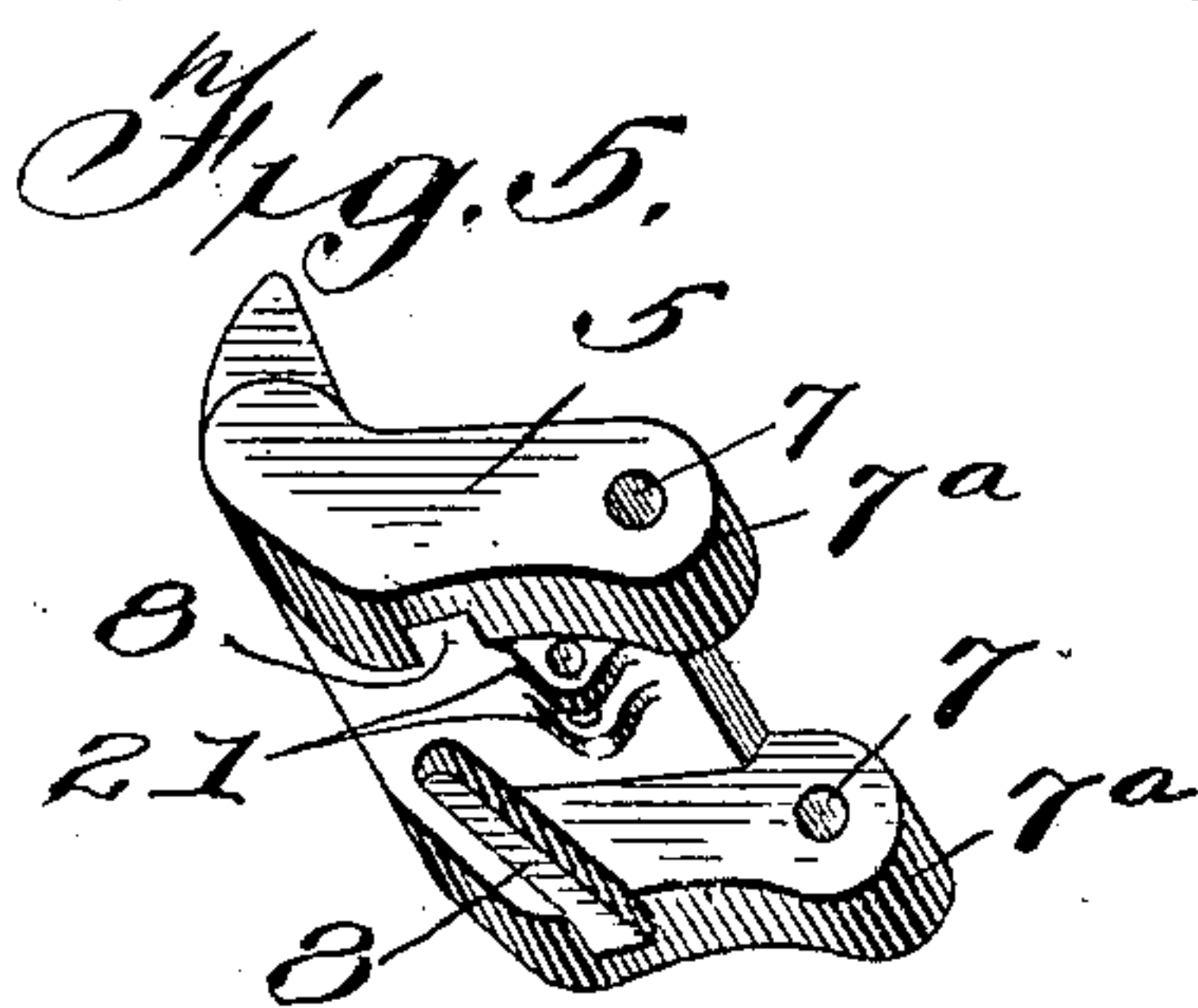
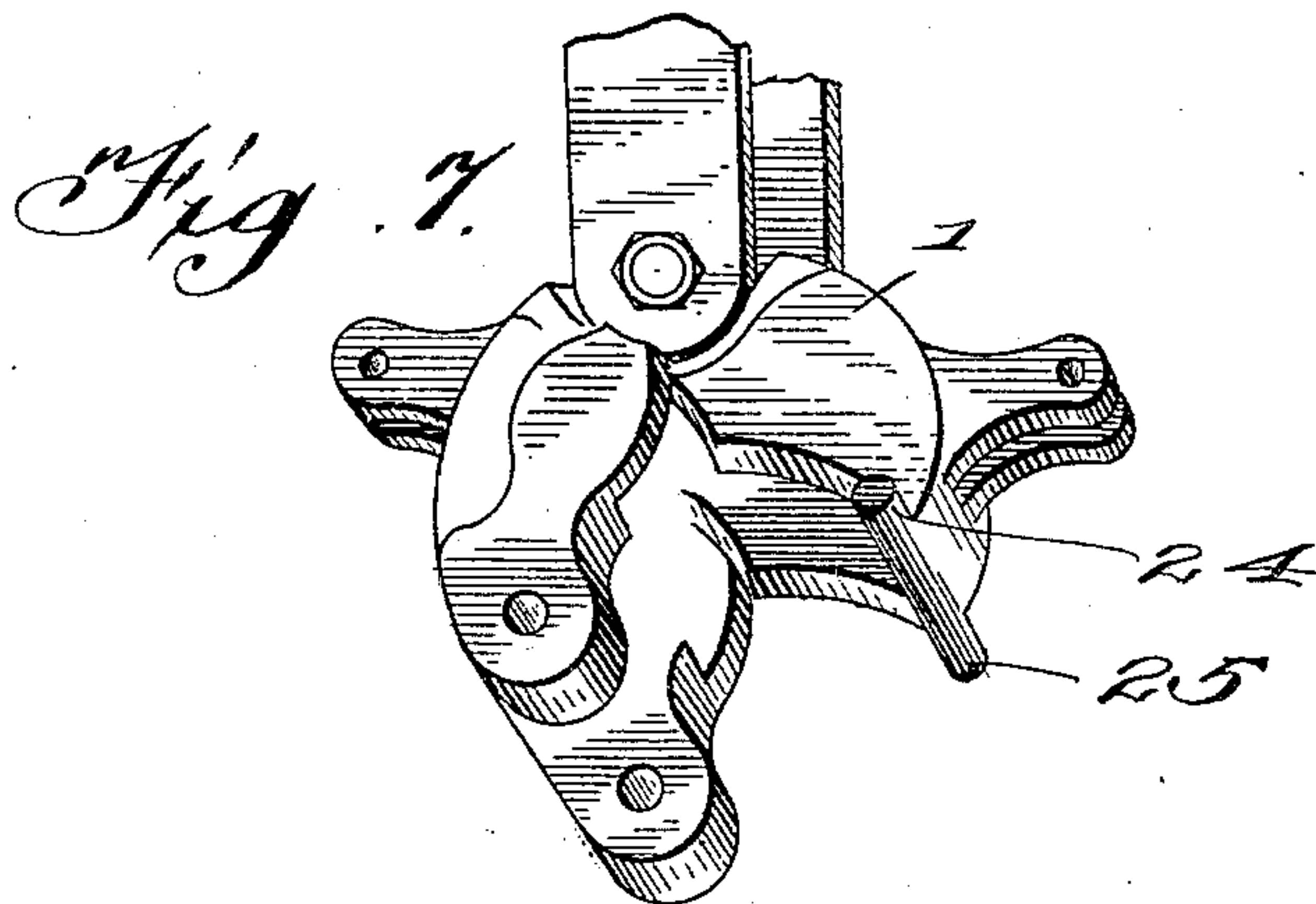
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2 SHEETS—SHEET 2.



Witnesses

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UNITED STATES PATENT OFFICE.

OTHA HECATHORN, OF COLUMBUS, OHIO, ASSIGNOR OF ONE-HALF TO ROBERT B. STUCKEY, OF COLUMBUS, OHIO, AND ONE-FOURTH TO ELMER HECATHORN, OF WEST SONORA, OHIO.

CAR-COUPLING.

No. 910,537.

Specification of Letters Patent.

Patented Jan. 26, 1909.

Application filed June 25, 1908. Serial No. 440,293.

To all whom it may concern:

Be it known that I, OTHA HECATHORN, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification.

This invention relates to car couplers of that type having a knuckle on one coupling head which engages a similar knuckle on the other head, the knuckles being held coupled or closed by means of locking pins.

The object of the invention is to form an improved coupler which by means of an automatically opening jaw opposite the knuckle will allow the couplers to engage or act perfectly on sharp curves.

A further object of the invention is to provide a coupler with an improved unlocking device which serves to automatically open the coupler when it is desired to effect a coupling.

With these and other objects in view, the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the coupler with the parts in closed position. Fig. 2 is a perspective view of the knuckle removed from the head. Fig. 3 is a horizontal section showing the parts in locked position. Fig. 4 is a similar section with the parts in unlocked position. Fig. 5 is a perspective rear view of the outwardly opening jaw. Fig. 6 is a vertical longitudinal section through the coupling head and the locking pin. Fig. 7 is a perspective view of the coupling head with the knuckle and jaw removed. Fig. 8 is a detail in perspective of the device for unlocking the locking pin and opening the jaw.

Referring specifically to the drawings, 1 indicates the draw head in which the knuckle 2 is pivoted by means of a pin 3. The knuckle has a shoulder 16 at the rear end which is engaged by the locking pin. The jaw 5 is upwardly connected at its inner end to the inner end of the knuckle by means of a pin extending through a hole 6 at the rear end of the knuckle and through holes 7 formed in ears 7^a on the inner end of the jaw 5, the part of the knuckle containing the hole 6 being enlarged and fitting between the ears 7^a, the latter forming a hinge or pivotal joint between the knuckle and the jaw, so that when the knuckle is swung open the jaw also is swung out or open, as shown in Fig. 4.

The jaw 5 is held in position also by means of lugs 24 and 25 formed integral with the draw head and working in opposite grooves 8 in the inner sides of the ears or projections 7^a on the back of the jaw 5. This construction allows the jaw 5 to open or slide out laterally when the knuckle is turned to open position, thereby giving room or space to receive the knuckle of the opposite coupler at any angle. This enables cars to be coupled on sharp curves. When the curves are coupled and the knuckle is closed, the jaw 5 is forced or slides back into place to engage the outer side of the opposite knuckle, as usual.

For locking the knuckle, and also the jaw, I provide a block 23 which slides longitudinally, that is, in the direction of the line of draft, in a recess or opening formed in the rear part of the coupling head. The front end of said locking block is adapted to engage in front of the shoulder 16 on the knuckle, and when so engaged will prevent the knuckle from turning, in other words, will lock the coupler. This block is normally pressed forward by a spring 22 coiled in a recess on the under side of the block. The block has also a transverse horizontal recess 19 which receives the rear end of an unlocking device or piece shown particularly in Fig. 8. This device consists of a metal plate or link 30 having a slot 13 in one end, adapted to receive a pin 14 by which it is loosely connected to the block. The unlocking device will slide on the pin to the extent permitted by the slot. At the front end the locking device is connected to the back of the jaw by means of a pin 20 extending through the end of the piece and through ears 21 on the rear surface of the jaw. The unlocking device also has a hole 10 by means of which a chain 31 may be connected, and when in operation, the unlocking device swings on the pin 20 as a pivot. The rear end of the locking device or piece has a cam surface at 11 which is adapted to bear against the end wall of the slot 19 in the locking piece. The head is made hollow to receive the knuckle and also to accommodate the locking pin and the unlocking device above described.

In operation, assuming that the coupler is closed, as shown in Figs. 1 and 3, it may be opened by pulling on the chain 31 by means of the lever or through devices usually connected to such chains. The first effect of this is to cause the cam surface 11 to bear against the rear wall of the slot 19, thereby pressing

the lock block rearwardly and releasing the shoulder 16. Continued movement then causes the pin 14 to travel along the inclined front edge of the slot 13, giving a forward pressure the immediate effect of which is to force out the jaw 5 and swing the knuckle, as shown in Fig. 4. This opens the coupler wide enough to receive a similar coupler at any angle possible with ordinary railroad cars. When two of the couplers are forced together the immediate effect is to swing the inner ends of the knuckle and the jaw forwardly, thereby causing the knuckle to swing on its pivot 3 and causing the jaw to swing and slide on its pins 24 and 25. The rear side of the shoulder 16 then wipes against the front end of the locking block and forces the same backwardly against the tension of the spring 22, and when the shoulder passes the block the latter snaps out and locks the knuckle by engaging in the path of the shoulder.

It will be seen that the invention provides an ordinary knuckle with an outwardly opening jaw which makes a very wide angle or space to receive the knuckle of the opposite coupler. The knuckle is unlocked and the jaw 5 is opened by a single movement or pull on the chain 31, and when uncoupled the coupler is put in proper position to be coupled again, without further manipulation.

I claim:

1. A car coupling having a hollow head and pivoted knuckle, a locking block engageable with the knuckle, a jaw opposite the knuckle and pivotally connected thereto, and slidable laterally on the head to open when the knuckle is opened, and a releasing device connected to the locking block and to the jaw and arranged to release the former and open the latter when operated.

2. A car coupling having a pivoted knuckle

and an outwardly opening jaw pivotally connected thereto, a yielding locking block engageable with the tail of the knuckle, and an unlocking member hinged to the back of the jaw and having a cam bearing on the block, arranged to release the block and open the jaw when said member is operated.

3. A car coupling having a hollow head, a pivoted knuckle, an outwardly opening jaw hinged to the knuckle, a locking block engageable with the knuckle and slidable in the head behind the jaw, and a releasing member hinged to the back of the jaw and having a slot and pin connection to the block and also a cam bearing on the block and adapted to release the block and open the jaw and knuckle when operated.

4. A car coupling comprising a head having upper and lower projecting studs, a knuckle pivoted in the head, an outwardly opening jaw having grooves in which the studs fit, and pivoted to the inner end of the knuckle, and means to open the knuckle and jaw.

5. A car coupling comprising a hollow head having a longitudinal recess in the back part thereof, a knuckle pivoted in the head, an outwardly opening jaw slidably mounted in the head and pivotally connected to the knuckle, a yielding locking block slidable lengthwise in the recess and adapted to engage the tail of the knuckle, and a cam link bearing against the block and pivoted to the rear side of the jaw and adapted when operated to unlock the block and open the jaw.

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

OTHA HECATHORN.

Witnesses:

H. WARD CLUTCH,
ROBERT B. STUCKEY.