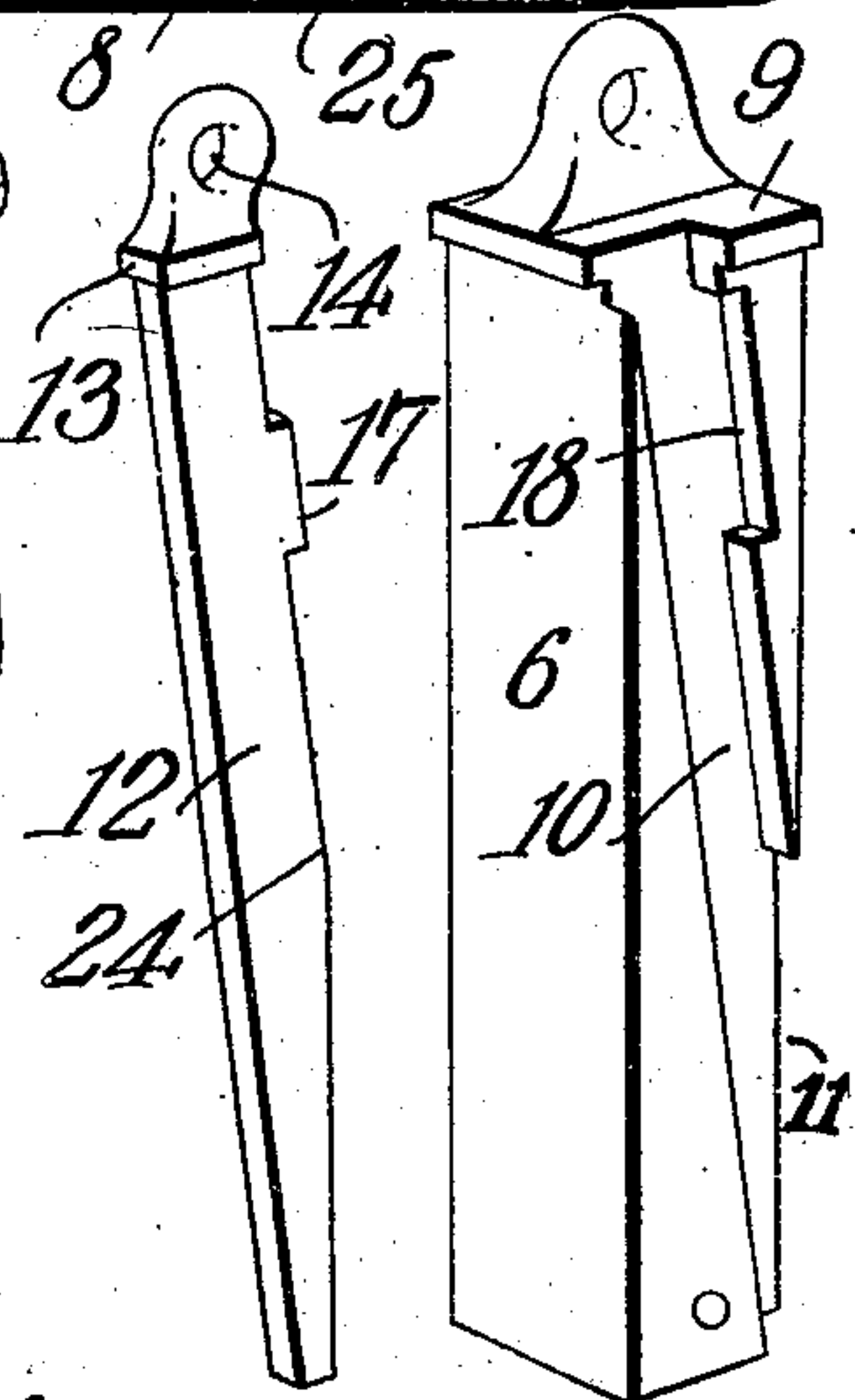
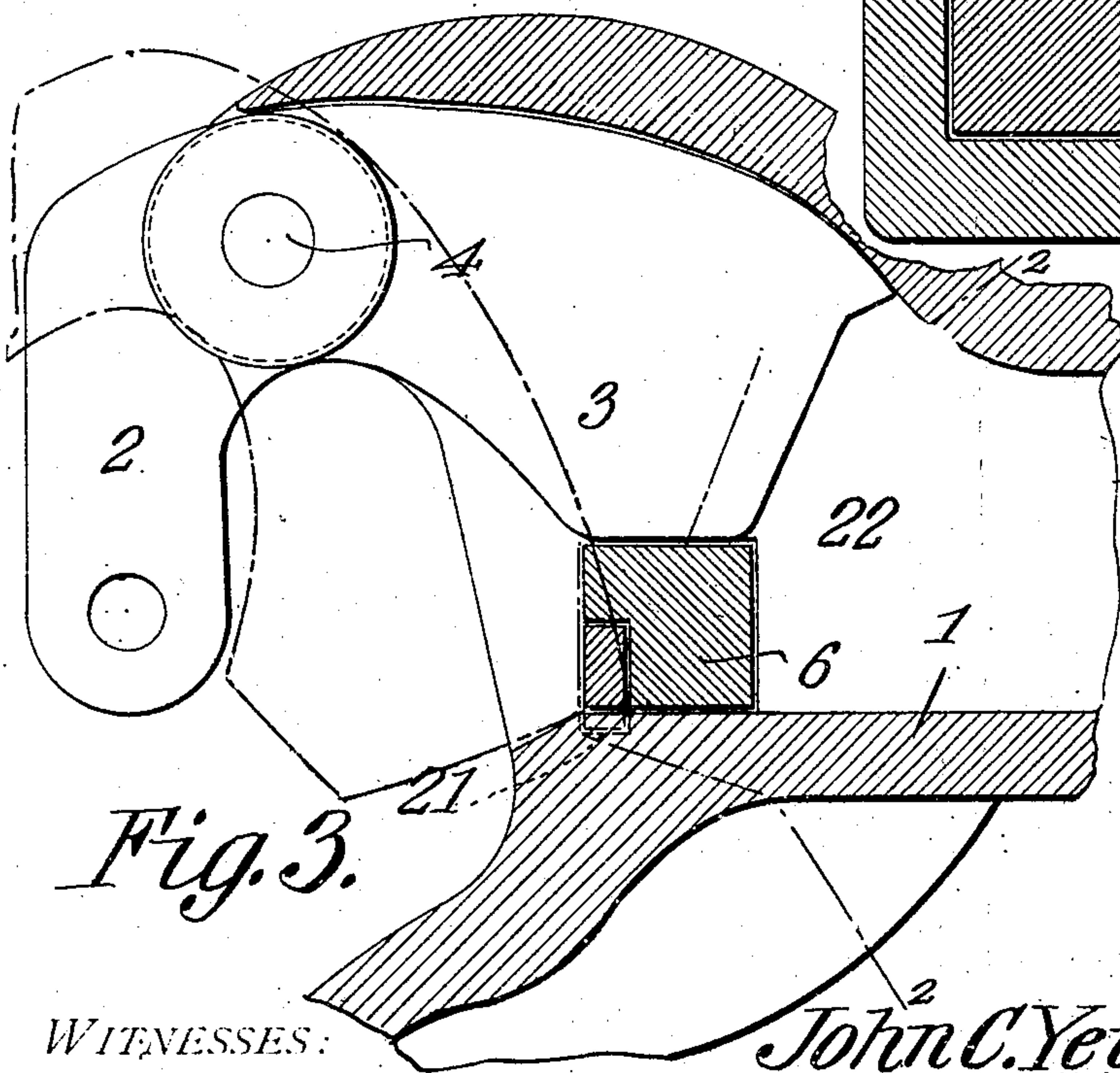
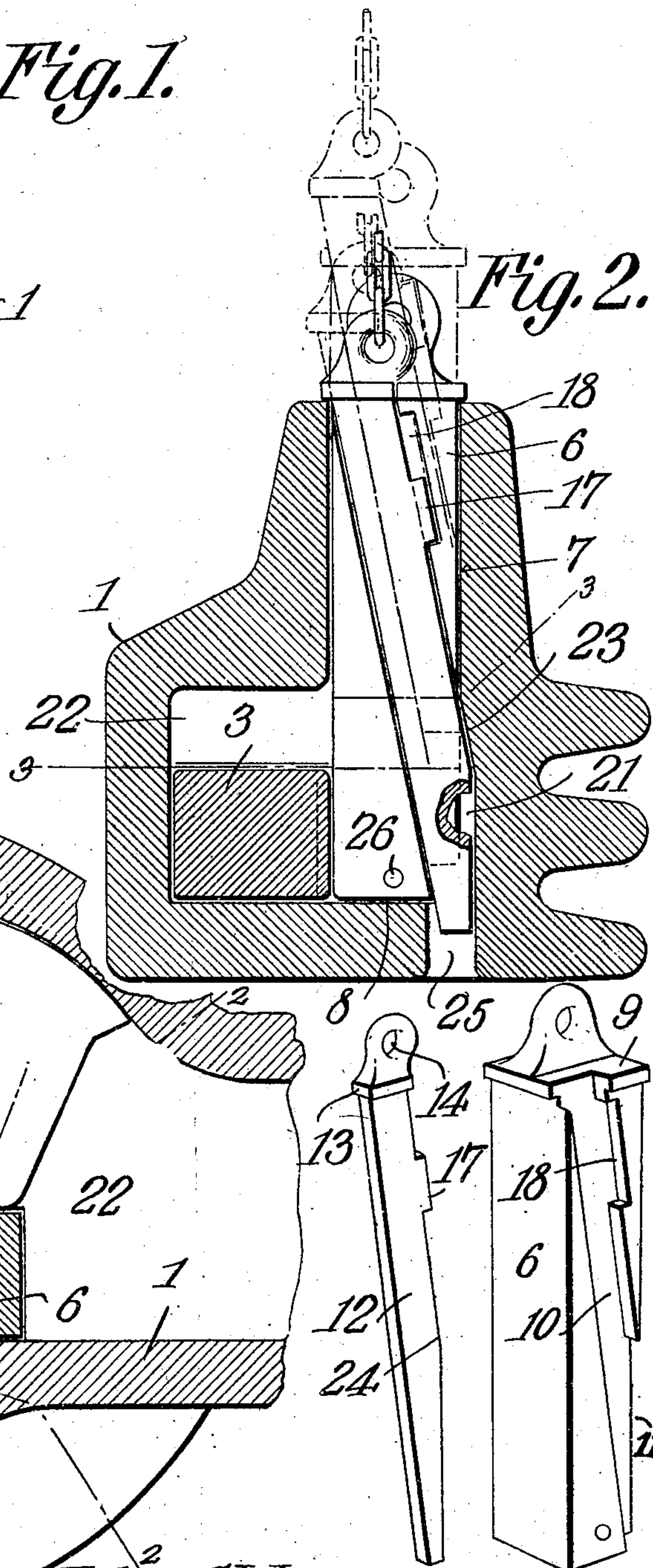
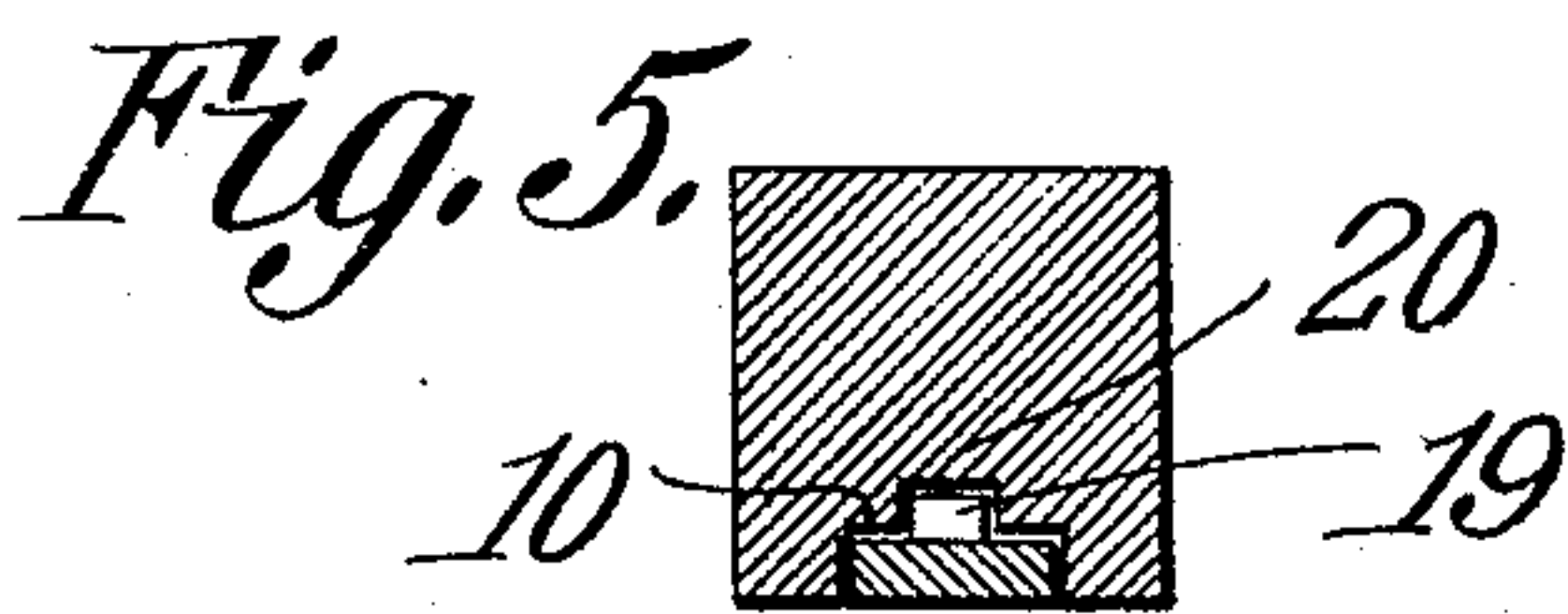
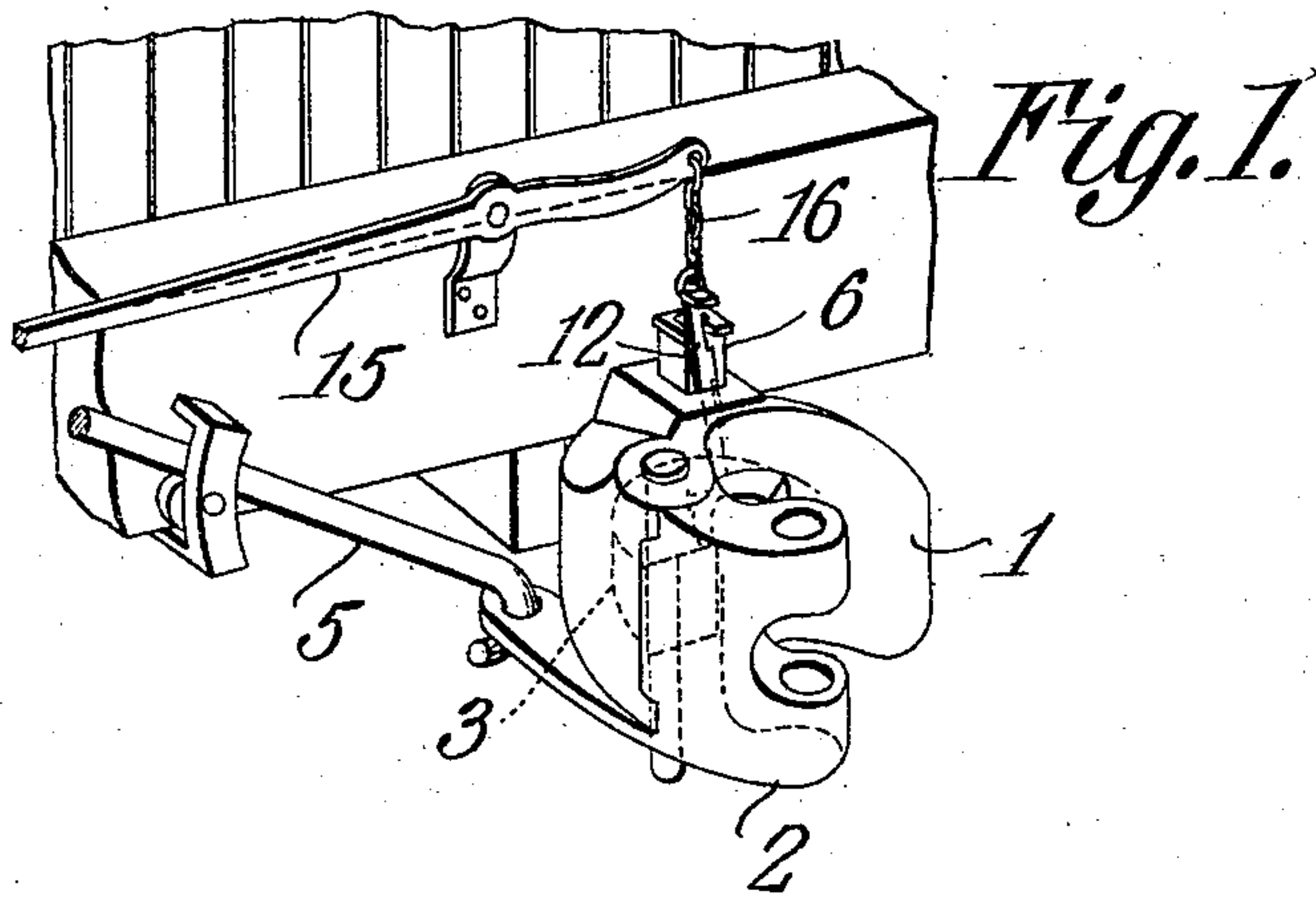


No. 860,780.

PATENTED JULY 23, 1907.

J. C. YEISER.
COUPLING PIN.

APPLICATION FILED OCT. 15, 1906.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN CLARKE YEISER, OF AUSTIN, TEXAS.

COUPLING-PIN.

No. 860,780.

Specification of Letters Patent.

Patented July 23, 1907.

Application filed October 15, 1906. Serial No. 339,103.

To all whom it may concern:

Be it known that I, JOHN CLARKE YEISER, a citizen of the United States, residing at Austin, in the county of Travis and State of Texas, have invented a new and useful Coupling-Pin, of which the following is a specification.

This invention relates to car couplings, and more particularly to a coupling pin having means for preventing cars from accidentally disconnecting by reason of the creeping of the coupling pin from its normal or locking position.

The invention has for one of its objects to improve and simplify the construction and operation of self locking coupling pins, so as to be comparatively simple and inexpensive to manufacture, and reliable and efficient in use.

Another object of the invention is to provide a coupling pin which is furnished with a key for positively locking the pin in place, said key being arranged in such a manner as to enable the pin to be unlocked, when desired, with great facility.

A further object of the invention is to equip the coupling pin with a key that is united thereto by a lost motion connection, whereby the operating mechanism on the car can first withdraw the key and then raise the coupling pin so as to free the tail of the coupler knuckle.

With these objects in view, and others, as will appear as the nature of the invention is better understood, the invention comprises the various novel features of construction and arrangement of parts, which will be more fully described hereinafter, and set forth with particularity in the claims appended hereto.

In the accompanying drawing, which illustrates one of the embodiments of the invention, Figure 1 is a perspective view of one-half of a car coupler equipped with a self locking coupling pin, the knuckle of the coupling being shown open and the pin resting on the tail thereof. Fig. 2 is a vertical section through the draw-head on line 2—2 of Fig. 3. Fig. 3 is a sectional view on line 3—3 of Fig. 2. Fig. 4 is a perspective view of the coupling pin and key therefor shown in disassociated position. Fig. 5 is a transverse section of the locking pin showing a modified form of means for connecting the key thereof with the pin.

Corresponding parts in the several figures are indicated throughout by similar characters of reference.

In the present instance, I have elected to illustrate the invention in connection with a car coupler of that type constituting the subject matter of my application for Letters Patent, Serial No. 292,326, filed Dec. 18, 1905, but I do not desire to be understood as limiting the present invention to the particular form of coupler shown, since, obviously, it may be employed with advantage in various other styles of couplers.

Referring to the drawing, 1 designates the draw

head of the coupler, 2 the knuckle having the tail 3, and 4 the pivot pin for the knuckle.

5 designates a member connected with the knuckle 2 and so mounted on the car that its weight tends to yieldingly hold the knuckle in open position while the coupling pin is withdrawn, as disclosed more fully in my application above referred to. The member 5 is not essential, however, to the working of the present invention.

The coupling pin 6 has a shank of square cross section and of suitable length, and is made of substantial dimensions so as to have the requisite strength and sufficient weight that the resting of the pin on the tail of the knuckle, when the latter is open, will contribute largely to maintain the knuckle in open position and prevent it from oscillating under the vibration of the car. The draw-head 1 is provided with a vertically extending socket or opening 7 for receiving the coupling pin and, when the coupling pin is in position to lock the knuckle, it rests at its bottom end on the bottom 8 of the draw-head, as shown in Fig. 2. The upper end of the coupling pin is provided with a head 9 which, when the pin is down, closes the upper end of the socket 7, so as to assist in excluding rain. One face of the coupling pin 6 is provided with a diagonally extending groove 10 which is open at its upper end in the top or head of the pin, and which is open at its lower end at one of the sides of the pin, as shown at 11, Fig. 4. The groove 10 forms a way for the key 12. The key 12 is of a slightly greater length than the way 10 and is adapted to work freely in the way with comparatively little friction. The upper end of the key is provided with a head 13 which closes the upper end of the groove 10, and on the head is formed an eye 14 for connection with the pin operating lever 15 mounted on the car. The key is connected with the lever 15 by a chain 16, or other flexible element. The key is assembled in the way 10 before the coupling pin is placed in the socket 7 of the draw-head, and, as long as the pin is retained in the draw-head, the key 12 will be held in place by the wall of the socket 7. The key is connected with the coupling pin by a lost motion connection. This connection may comprise a laterally extending stud 17 on the key, which projects into a recess 18 in one wall of the groove 10, as shown in Fig. 4, or the said connection may be a projection 19 on the rear side of the key that fits in a slot 20 on the rear wall of the groove 10, as shown in Fig. 5. The recess 18 and slot 20 are of sufficient length to permit the key to move independently of the coupling pin a distance necessary for permitting the key to unlock.

The key 12 locks the coupling pin in position by its lower end engaging in a suitably shaped recess 21 in the right hand wall of the knuckle containing chamber 22, as shown in Fig. 2. The lower end of the key is adapt-

ed to extend through the open side 11 of the groove 10 in the coupling pin and project into the recess 21. The wall 23 of the recess is inclined to the vertical and the side of the key, at 24, is adapted to interlock with the inclined wall. Since the key is prevented from lateral movement by the walls of the groove 10, the inclined surface or abutment 23 will engage the key and thus prevent the coupling pin from creeping upwardly in a vertical direction. The bottom 8 of the draw-head is provided with an opening 25, Fig. 2, through which an instrument can be inserted for engaging the lower end of the key, so as to drive the same loose, in case it should ever stick. Any suitable means may be provided for preventing the coupling pin from being entirely withdrawn from the draw-head, as, for instance, a pin 26, Fig. 2, arranged on the lower end of the coupling pin, so as to abut the top of the knuckle containing chamber 22 when the pin is raised to its full extent. The pin can be assembled in the socket 6 and the stop pin 26 applied thereto through the open end of the chamber 22 of the draw-head.

In operation, the coupling pin and key are normally in the position shown in Figs. 2 and 3, the pin engaging the tail 3 of the knuckle and the key engaging at the point 24 the abutment 23 on the draw-head. The coupling pin is thus prevented from creeping upwardly, since the key is unable to move vertically with the pin by reason of the abutment 23. When it is desired to uncouple the cars, the brakeman depresses the outer end of the lever 15. During the first part of the movement of the lever 15, the key is moved sufficiently to unlock the pin and, when the key is moved through the lost motion provided between it and the pin, the latter is withdrawn during the last part of the movement of the lever 15. That is to say, when the lever 15 is actuated, the key 12 is moved longitudinally until the lug 17 abuts the upper end of the recess 18. This independent movement of the key is sufficient to disengage the lower end thereof from the abutment 23, so that the coupling pin can be moved vertically without the key interfering. When the lug 17 is in engagement with the upper end of the recess 18, the continued movement of the lever 15 will cause the key to lift the coupling pin. The dotted line position in Fig. 2 shows the key at the end of its unlocking movement and in the position to raise the coupling pin. The broken line position of the key and coupling pin shows the latter fully withdrawn so that the tail of the knuckle 2 can be released. The lower end of the coupling pin will now rest on the tail 3 of the knuckle, it being understood that the tail swings under the pin during the opening of the knuckle, and the

weight of the pin is such as to assist materially in preventing the knuckle from swinging freely, so that the knuckle will be in the proper position to enable the car to be coupled to another without having first to open the knuckle. While the coupling pin is resting on the tail, the lower end of the key bears against the wall of the socket 7 so that the key is held in an elevated position. When the knuckle 2 is coupled again to the coupler of another car, the tail 3 is moved from under the coupling pin, and the latter falls automatically in place, as does also the key, so that the coupling pin will be prevented from accidentally creeping.

I have described the principle of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof, but I desire to have it understood that the apparatus shown is merely illustrative, and that various changes may be made, when desired, as are within the scope of the invention.

What is claimed is:—

1. The combination with a draw-head having an abutment, and a knuckle, of a locking pin for the knuckle having a diagonal groove extending in a general lengthwise direction, an eye on the upper end of the pin a key longitudinally movable in the groove and adapted to project out of the groove to interlock with said abutment, an eye on the upper end of the key, means for permitting the key to have a limited lost motion with respect to the pin, a lever, and a member on the lever capable of being attached directly to the pin or key.
2. The combination with a draw-head having an abutment, and a knuckle, of a locking pin vertically movable in the draw-head and provided with a diagonal groove open at the top of the pin and at the side thereof near its bottom, an eye on the upper end of the pin, a key movable in the slot and adapted to project out of the lower end thereof for engaging the abutment of the draw-head, an eye on the upper end of the key, and means for actuating the key preparatory to the lifting of the locking pin, said means including a member normally connected with the eye of the key and adapted to be connected with the eye of the pin when the latter is used without the key.
3. The combination with a draw-head having an abutment, and a knuckle, of a locking pin mounted for vertical movement in the draw-head which rests on the tail of the knuckle when the latter is open and rests on the bottom of the draw-head when the knuckle is closed, a key on the pin mounted to move in a direction diagonally thereof, and means on the draw-head for permitting access to the lower end of the key to drive the latter loose in the event of sticking.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOHN CLARKE YEISER.

Witnesses:

H. M. LITTLE,
P. S. SPILLER.