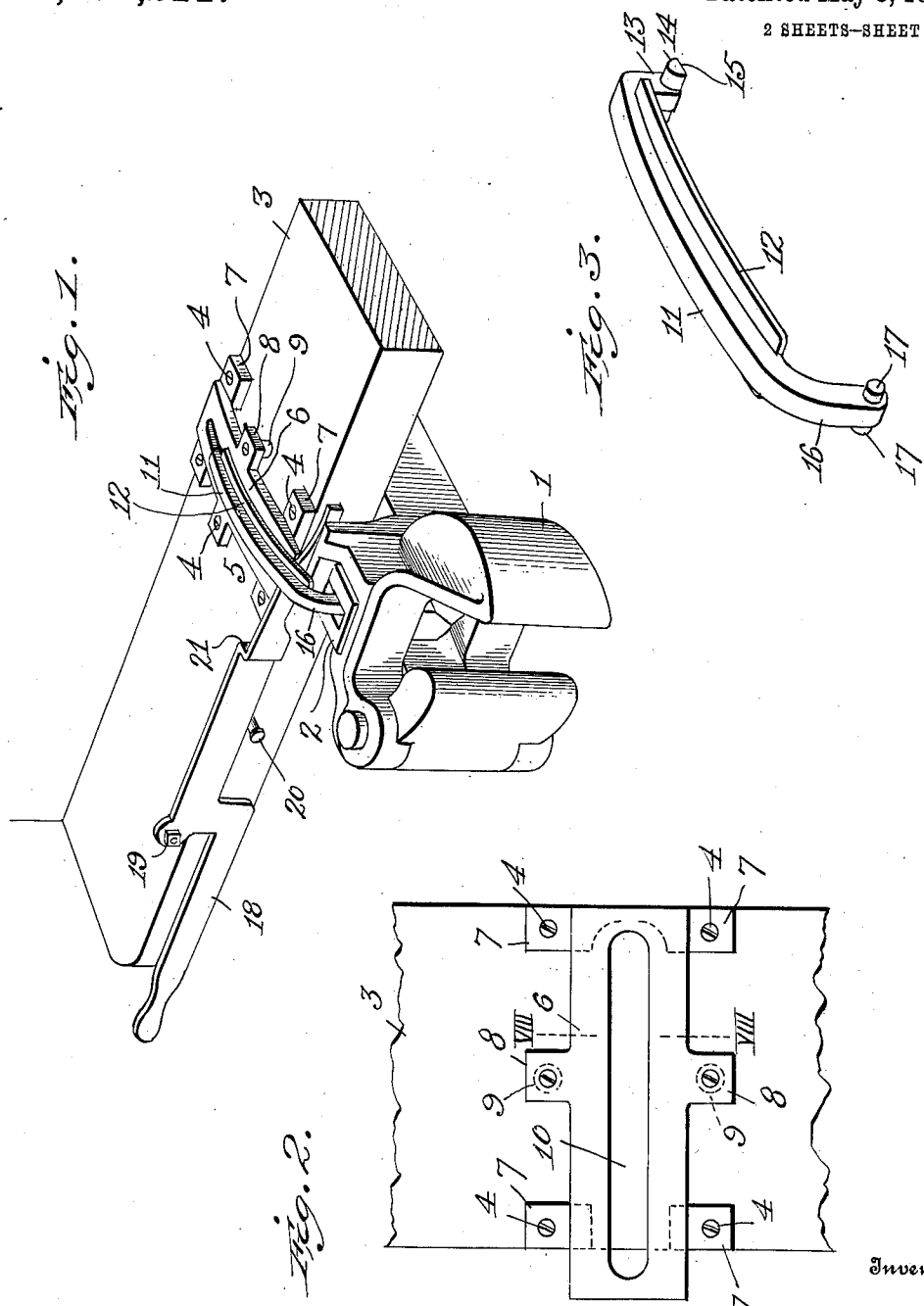


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 R. E. L. JANNEY & G. L. BOOTHE, EXHIBITORS.  
 LOCKING PIN LIFTING MECHANISM FOR CAR COUPLINGS.  
 APPLICATION FILED AUG. 26, 1908. RENEWED DEC. 12, 1912.

1,095,211.

Patented May 5, 1914.

2 SHEETS-SHEET 1.



Witnesses  
 Edmund Jewell  
 Edwin F. Fry

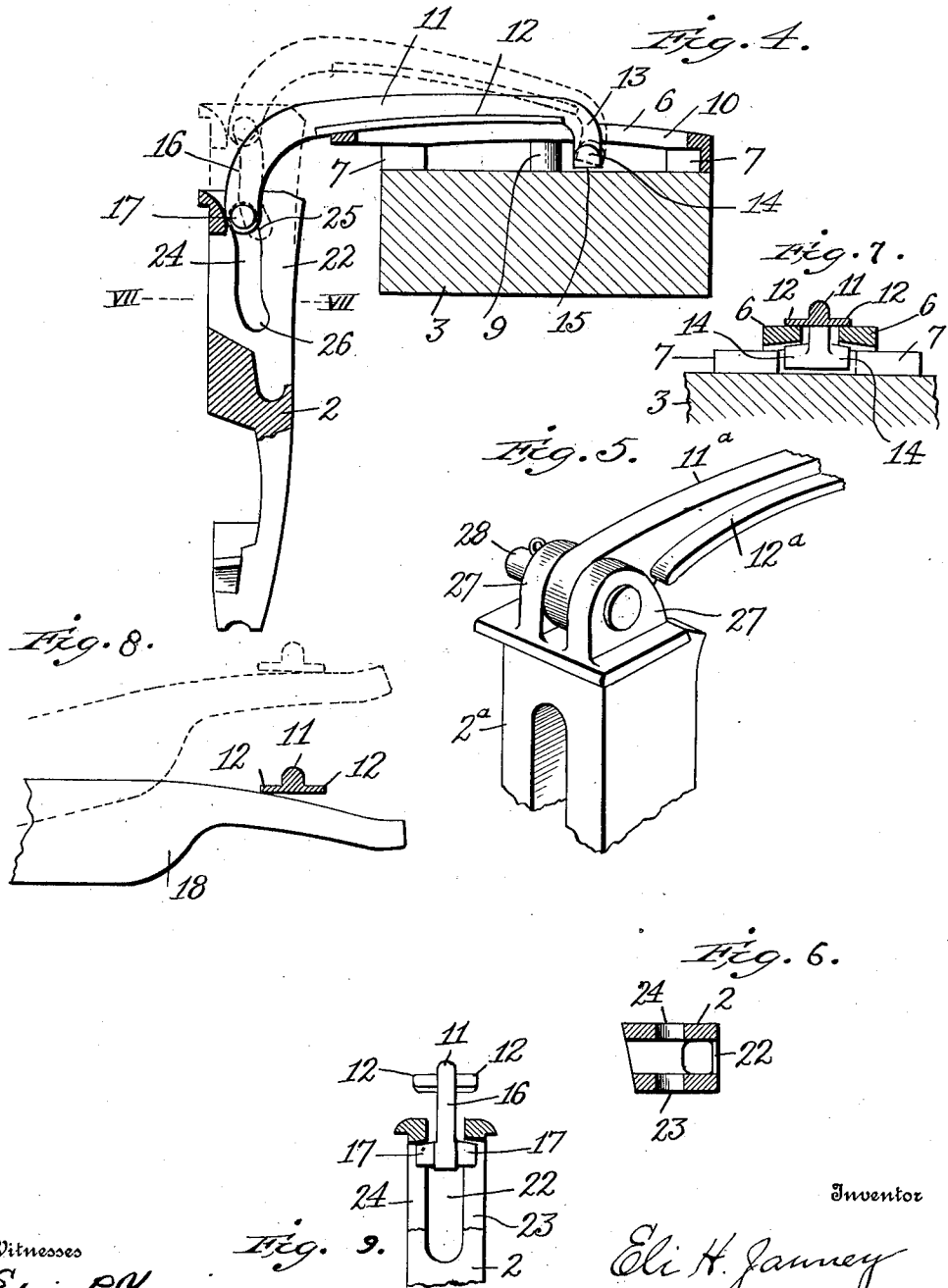
Inventor  
 Eli H. Janney  
 by Percy B. Hills  
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Witnesses  
 Edwin L. Jewell  
 Edwin F. Frey

Fig. 9.

Inventor

Eli H. Janney  
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# UNITED STATES PATENT OFFICE.

ELI H. JANNEY, OF ALEXANDRIA, VIRGINIA; ROBERT E. L. JANNEY AND GARDNER L. BOOTHE, EXECUTORS OF SAID ELI H. JANNEY, DECEASED, ASSIGNORS TO AMERICAN STEEL FOUNDRIES, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

## LOCKING-PIN-LIFTING MECHANISM FOR CAR-COUPPLINGS.

1,095,211.

Specification of Letters Patent.

Patented May 5, 1914.

Application filed August 25, 1908, Serial No. 450,169. Renewed December 12, 1912. Serial No. 736,401.

*To all whom it may concern:*

Be it known that I, ELI H. JANNEY, a citizen of the United States, residing at Alexandria, in the State of Virginia, have invented new and useful Improvements in Locking-Pin-Lifting Mechanisms for Car-Couplings, of which the following is a specification.

My invention relates to devices for lifting the locking pins of car couplings, and has for its object to provide certain improvements in the construction of the same as will be hereinafter more definitely pointed out and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a portion of the end sill of a car showing my improved lifting mechanism in connection with a coupling of the Janney type. Fig. 2 is an enlarged top plan view of the car sill with the pivot guide for the lifting arm in position thereon. Fig. 3 is an enlarged detail perspective view of my improved lifting arm. Fig. 4 is an enlarged vertical transverse sectional view of the car sill taken centrally of the pivot guide, the lifting arm being shown therein in side elevation, and the locking pin of the coupling being shown partly in section. Fig. 5 is an enlarged detail perspective view of a slightly modified construction. Fig. 6 is a sectional view on the line VII—VII, Fig. 4. Fig. 7 is a detail sectional view on the line VIII—VIII, Fig. 2, the lifting bar being also shown thereon in section. Fig. 8 is a detail transverse sectional view through the lifting bar, the inner end of the lifting lever being shown in full lines in the act of contacting therewith to lift the same, and the parts being shown in dotted lines in the lifted position. Fig. 9 is a transverse sectional view of the upper end of the locking pin, the lifting bar being shown in full lines thereon in the act of lifting said pin.

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

In the said drawings, referring more particularly to Figs. 1 to 4, the reference numeral 1 denotes a draw-head of the Janney type, in which is located a vertically movable locking pin 2. Fixed to the sill 3 of the car by means of bolts 4 is my improved pivot guide 5, the same consisting of a substantially flat plate 6 supported at its ends upon

cross pieces 7 formed integral therewith and projecting to each side to receive the bolts 4. Said plate is slightly higher at its transverse center than at its ends, as seen in Fig. 4, and is provided on each side of said central portion with ears or lugs 8 having formed integral therewith downwardly projecting feet 9 through which pass the retaining bolts 4, said feet 9 and cross pieces 7 thus supporting the plate 6 raised from the sill 3. Said plate 6 is preferably projected slightly beyond the front edge of the sill, as seen in Fig. 4, and is slotted centrally and longitudinally at 10, said slot extending at its front slightly beyond the front edge of the sill 3, as shown.

Removably located, as hereinafter described, in the slot 10 of plate 6 is a flat lifting bar 11 having side webs 12 adapted to rest on the upper surface of plate 6 on either side of the slot 10, said bar 11 being curved slightly to conform to the upper surface of plate 6. The rear downwardly turned end 13 of said bar 11 is provided with laterally extending pintles 14 having flat under surfaces 15, and slightly inclined upper surfaces adapted to engage the under side of plate 6 on each side of the slot 10 therein. The front downwardly turned end 16 of said bar 11 is also provided with rounded pintles 17 slightly inclined on their upper surfaces and adapted to detachably engage the locking pin 2, as hereinafter described. A lever 18 for operating said lifting bar 11 is pivoted at 19 to the sill 3, said bar preferably dropping on the inner side of said pivot to provide additional weight on that side of said pivot to insure a normal downward position to the inner end of said lever, which is limited by a stop pin 20. The inner end of said lever, which extends beneath the lifting bar 11, is provided with an angle bend at 21 so that said inner end will clear the front projecting end of the plate 6.

The lifting pin 2 to be operated is slotted at 22 in its upper rear face, said slot extending to the top of said pin. Corresponding slots 23 and 24 are also provided in the side faces of said pin opening into the rear slot 22, said slots 23 and 24 being curved forward at their upper ends at 25 and curved backward at their lower ends at 26, and said slot 23 being slightly higher than slot 24, as

seen in Fig. 9, for purposes hereinafter to be described.

By referring to Fig. 7 it will be seen that the under side of plate 6 on opposite sides of the slot 10 is inclined slightly downwardly and outwardly in opposite directions, to conform to the slight taper of the pintles 14, for a purpose hereinafter to be described.

To assemble the parts the lifting bar 11 is first turned to a right angle horizontally to its normal position, in which position the pintles 14 thereof may be inserted into the slot 10 of plate 6. Upon then turning the front end of said bar to its normal position said pintles will be retained in the position shown in Figs. 1 and 4. To connect the lifting bar and the locking pin 2 said bar is lifted at its front end, and said locking pin turned to a horizontal position so that the pintles 17 on said bar may enter slot 22 in said pin. The pin may then be turned again to its vertical position and said pintles 17 will enter and engage in the slots 23 and 24, thus locking the parts against separation. The pin 2 being now inserted in the draw-head 1, the parts are in position for operation.

With the pin in its locking position, as shown in Fig. 1, the depression of the outer end of lever 18 will cause its inner end to contact with the under side of lifting bar 11, and because of the inclined upper surface of said inner end of said lifting bar, this initial contact will be with the edge of the left hand web 12 of said bar, the result being that said bar 11 will be initially tilted slightly to the left and as the slot 24 in pin 2 is slightly lower than slot 23, as seen in Fig. 9, the left hand pintle 17 so tilted with bar 11 will first contact with the upper end of slot 24, and in lifting the pin 2 will tilt the lower end of the latter to the left, thereby causing said locking pin to clear the anti-creeping device (not shown) located in that side of the draw-head 1 opposite to its coupling hook. Now, as the inner end of lever 18 is lifted further its upper edge will gradually contact with the whole under surface of bar 11, and upon a still further lift, to raise the pin 2 to the coupling hook opening position, will contact with the right hand rib 12 alone, thereby tilting bar 11 in the opposite direction, and causing a contact between both of the pintles 17 and the upper edges of both slots 23 and 24 in pin 2, whereby said locking pin 2 will be tilted to the right at its lower end and will thus tend to follow the coupling hook tail in its opening movement. By inclining the under side of the plate 6, as shown in Fig. 7, to conform to the incline of the pintles 14 I provide what may be termed a universal bearing for said pintles under this slight

tilting in either direction hereinbefore described.

By providing the elongated slot 10 in the plate 6 in which the rear end 13 and pintles 14 of the lifting bar 11 move, I provide for any longitudinal movement of the draw-head 1 within the limits permitted by the draft rigging, and also provide for the limited longitudinal movement of the lifting bar 11 under the pin lifting movement. Furthermore, the construction readily accommodates itself to the free lateral movement of the draw-head and draw-bar in rounding curves.

By reason of the slotted connection between the lifting bar 11 and locking pin 2, said lifting bar will be raised from its lowermost position only when lifted by lever 18, and, when released thereby, will at once assume its lowermost position, even though the locking pin 2 be raised to the lock-set position. Thus there will be at no time any permanent lifting of pin lifting mechanism, nor will said mechanism be affected by any movement of the locking pin 2, as when the latter is lifted by the coupling hook tail in either its opening or its closing movement its vertical movement will not affect said lifting bar 11. Furthermore, when used on flat cars the load may project over and rest on said lifting bar, and the locking pin 2 can still be operated from beneath the draw-head.

It will also be observed that in the preferred construction both the connection between the lifting bar 11 and the plate 6, and the connection between said bar and the locking pin 2 are detachable connections of integral parts, whereby the use of separate connecting devices, such as pins, is dispensed with.

The function of the upper forward curve of slots 23 and 24 in the locking pin 2 is to cause the pintles 17 of lifting bar 11 to contact with said locking pin, while lifting the same, forward of the center of gravity of the latter, so that the lower end of said locking pin will be tilted forward, in order, when released, to engage the lock-set seat in the draw-head 1, which in my type of couplings is located in the front of the draw-head. The function of the lower rearward curve 26 in said slots 23 and 24 is to provide for a limited backward and forward movement to the locking pin 2 when raised to the lock-set position and being operated by the coupling hook tail in either its opening or closing movement.

A particular advantage gained by curving the upper and under sides of the plate 6 and similarly curving the lifting bar 11 is to reduce the friction between lifting bar 11 and plate 6 to a minimum. Thus, as seen in Fig. 4, the pintles 14 of bar 11 lie against an up curve of the under side of plate 6,

and its slight forward movement under a lift of said bar and the locking pin 2 is thereby facilitated and any binding tendency prevented. Further, when said bar 11 is released and drops to its initial position, said pintles are aided in their rearward movement by the curve of the under side of plate 6.

By means of the pivotal connection between the lifting bar 11 and plate 6, said bar will at all times lie in a substantially longitudinal line with the center of the draw-head under any lateral movement of the latter, so that said bar is always in a position to lift the locking pin 2 vertically.

The object in inclining the under side of plate 6 downwardly in front and rear of its longitudinal center is to cause the pintles 14 of lifting bar 10 to more readily reassume their normal central position with respect to said plate, and without any binding, under the jerking backward and forward movement of the draw-head 1 when coupled in a moving train.

By providing the pintles 14 with flat under surfaces 15 any longitudinal movement of the lifting bar 11 in the pivot guide 5 will tend to scrape out any accumulation of dirt or ice on the car sill 3 beneath the plate 6, while the sharp front and rear edges of the ribs 12 of lifting bar 11 will perform the same function on top of said plate 6.

In Fig. 5 I have shown a somewhat modified construction, wherein the connection between lifting bar 11<sup>a</sup> and locking pin 2<sup>a</sup> is formed by ears 27 on said locking pin receiving therebetween the outer end of lifting bar 11<sup>a</sup>, the parts being pivotally connected by bolt 28. In this construction, however, said lifting bar must always move with the locking pin 2<sup>a</sup>.

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

1. In a locking pin lifting mechanism for car couplings, the combination with a slotted locking pin, said slot lying normally within the draw-head, of a lifting bar directly and pivotally connected to said locking pin through said slot in such manner as to permit an operative vertical movement to said locking pin without movement of said lifting bar.

2. In a locking pin lifting mechanism for car couplings, the combination with a car sill, and a locking pin, of a raised slotted plate mounted on said car sill, and a lifting bar pivoted to said locking pin, and having laterally disposed pintles on the rear downturned end thereof adapted to be inserted into the slot in said plate and to be retained therein beneath said plate and in slidable relation thereto when said bar is connected to said locking pin and the latter is in operative position in the coupling draw-head.

3. In a locking pin lifting mechanism for car couplings, the combination with a car sill, and a locking pin, of a raised slotted plate mounted on said car sill, and a lifting bar pivoted to said locking pin, and having laterally disposed pintles on the rear downturned end thereof adapted to be inserted into the slot in said plate and to be retained therein beneath said plate and in slidable relation thereto when said bar is connected to said locking pin and the latter is in operative position in the coupling draw-head, said plate on its under side inclining downwardly and outwardly both longitudinally and transversely, and said pintles being tapered on their faces engaging said plate.

4. In a locking pin lifting mechanism for car couplings, the combination with a slotted locking pin, of a lifting bar having laterally disposed pintles on the forward downturned end thereof adapted to be removably inserted in the slotted locking pin and to be retained therein when said locking pin is in operative position in the coupling draw-head.

5. In a locking pin lifting mechanism for car couplings, the combination with a lifting bar having laterally disposed pintles on the forward downturned end thereof, of a locking pin having a rear slot therein and oppositely disposed side slots opening into said rear slot, said rear slot adapted, when said locking pin is turned to a horizontal position, to receive the pintles of said lifting bar, and said side slots adapted to receive and retain said pintles when said pin is turned to its normal vertical position.

6. In a locking pin lifting mechanism for car couplings, the combination with a locking pin having elongated oppositely disposed side slots therein, one of said slots being slightly higher than the other, of a lifting bar having oppositely disposed pintles engaged in said slots, and means for lifting said bar and initially tilting it in the direction of the shorter locking pin slot, whereby said pin will be lifted from that side and its lower end tilted in that direction, and for tilting said bar in the opposite direction upon the further lift thereof, whereby each of said pintles will then contact with the upper end of its slot and the lower end of said pin will be tilted in the opposite direction.

7. In a locking pin lifting mechanism for car couplings, the combination with a lifting pin pivoted to the car sill and the coupling locking pin, and having a flat under surface, of a pivoted lifting lever adapted to engage one edge of the under side of said bar in its initial lifting contact therewith to tilt said bar in one direction, and in its further lifting contact to engage the other side of said bar to tilt it in the other direction.

8. A locking pin lifting bar for car couplings, embodying a body portion, down-

wardly turned front and rear extremities thereto, and laterally disposed pintles on said extremities formed integral therewith.

9. A locking pin lifting bar for car couplings, embodying a body portion, side webs on said body portion, downwardly turned front and rear extremities to said body portion, and laterally disposed pintles on said extremities formed integral therewith.
10. In a locking pin lifting mechanism for car couplings, the combination with a car sill, a lifting bar slidably pivoted thereto and having oppositely disposed pintles at its front end, and means for operating said bar, of a locking pin having oppositely disposed vertical slots with which said pintles engage, said slots being curved forward at their upper ends to cause said pintles, when lifting said locking pin, to engage with said pin forward of its center of gravity so that said locking pin will be tilted forward at its lower end when being lifted.
11. A locking pin for car couplings, having a rear slot therein, and oppositely disposed side slots opening into said rear slot and adapted to receive and retain a locking pin lifting bar.

12. A locking pin for car couplings, having a rear slot therein, and oppositely disposed elongated side slots opening into said rear slot and adapted to receive and retain a locking pin lifting bar, and permitting a vertical movement of said pin independent of said bar.

13. In a locking pin lifting mechanism for car couplings, the combination of a draw-head provided with a coupling hook and a locking pin, a member supporting the draw-bar of said draw-head and having a plurality of slotted bearings, a lever provided with trunnions adapted to rest in said bearings, connections between said lever and the locking pin, and means for actuating said lever.

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

ELI H. JANNEY.

Witnesses:

PERCY B. HILLS,  
EDWIN F. FREY.