Nov. 28, 1950 O. E. WILSON ET AL 2,531,758

PIN-RETAINER FOR DRAFT KEYS

Filed May 22, 1946

FIG. 1

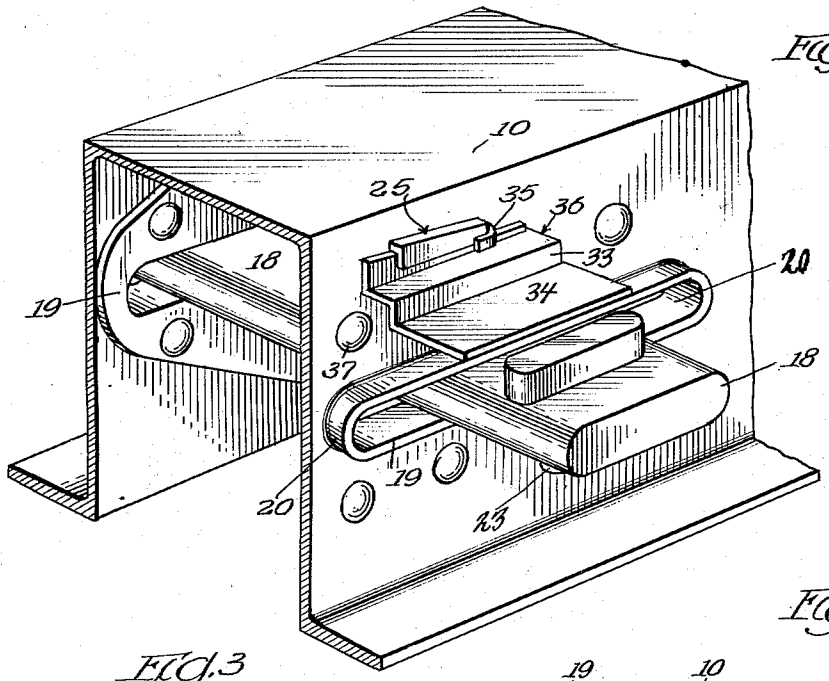


FIG. 2

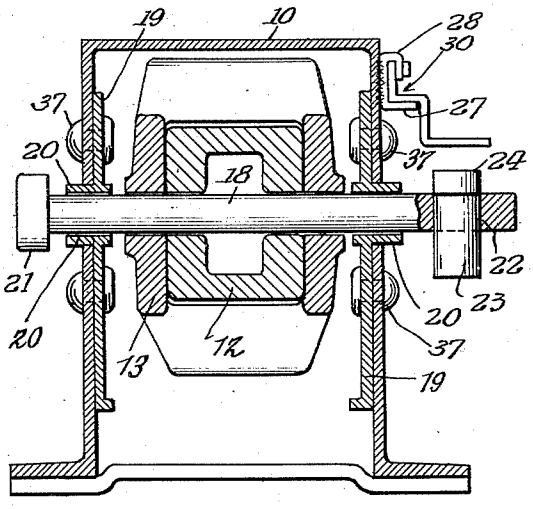


FIG. 3

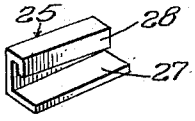


FIG. 4

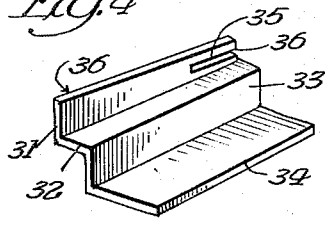


FIG. 6

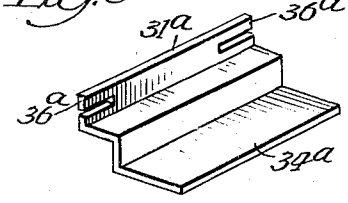
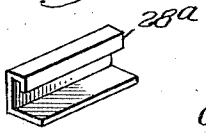


FIG. 5



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PIN RETAINER FOR DRAFT KEYS

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7 Claims. (Cl. 213—69)

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The invention relates to draft gear for railway cars, and more particularly to devices for preventing displacement from the key between the yoke and draw bar, of a retainer-pin which holds the key in the draft sill of the car underframe.

One object of the invention is to provide simple and reliable means for preventing displacement of the retainer-pin from the draft key.

Another object of the invention is to provide a simple device for preventing displacement of the retainer-pin from the key, which can be economically fabricated, and is efficient in use.

Another object of the invention is to provide a device for preventing displacement of the retainer-pin from the draft key, which includes a plate which is adapted to overlie the retainer-pin, and detachably locked to the draft sill, for permitting placement of the retainer-pin in the draft key, and its replacement and removal therefrom.

Other objects of the invention will appear from the detailed description.

The invention consists in the several novel features hereinafter set forth, and more particularly defined by claims at the conclusion hereof.

In the drawings:

Figure 1 is a perspective of a portion of a draft sill, the draft key, and the retaining device for the retainer-pin.

Figure 2 is a transverse section of the draft gear at the draft key.

Figure 3 is a detail perspective of the bracket attached to the draft sill, on which the slidable pin retainer-plate is mounted.

Figure 4 is a perspective of the plate, which is adapted to be secured in overlying relation to the retainer-pin, for preventing its displacement.

Figure 5 is a perspective of the mounting plate or bracket, and Figure 6 is a perspective of the pin-retainer plate, exemplifying a modified form of the invention.

The invention is exemplified in draft rigging which comprises a draft sill 10 which usually forms a part of the car under-frame; and a draw-bar 12 and a yoke 13 which are disposed and movable in sill 10, for cushioned movement, as well understood in the art.

A draft key 18, which is usually flat in cross-section, extends transversely through and connects draw-bar 12, yoke 13. Key 18 is longitudinally movable in the sill, for the cushioned movement of the draft gear, as well understood in the art. The sides of the sill are reinforced by

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plates 19, which are usually riveted to the sides of the sill and are provided with elongated, longitudinally extending slots 20, to permit the movement of the draft-key in the sill. Key 18 is of sufficient length to project from the sides of the sill, and provided at one end with an integral head 21, and adjacent its other end, with a cylindrical hole 22, for a retaining pin which includes a cylindrical shank 23, and an elongated head 24 which is adapted to rest on the top face of the key, by gravity, for supporting the pin in the key.

The pin retaining device of the invention, comprises a mounting plate or bracket, generally designated 25, which is suitably secured, usually by welding, to the outer face of one side of the draft sill 10. This mounting bracket is formed or stamped from sheet or plate metal, and comprises a vertical flange or member 26, the back face of which fits against the outer face of one side of the sill, and is welded thereto; a horizontally extending flange 27, extending from end to end of the mounting bracket, and a channel-forming flange 28. The upper face of flange 27, and the channel formed in flange 28, are convergent, for wedging engagement between flanges 28, 27, of bracket 25 and the key-retainer plate next described. The key-retainer plate, generally designated 30, is also stamped from sheet metal, and comprises an upstanding flange 31, which is adapted to fit in the channel 28, and is correspondingly convergent; a laterally and outwardly extending flange 32 adapted to seat on flange 27, a depending flange 33, and an outwardly extending, horizontal flange 34, which is extended to overlie the head 24 of the retainer-pin while the draft key is disposed in any portion of the slot 19, or during the longitudinal, cushioning movement of the draft pin. When the flanges 31 and 32 of plate 30, are driven longitudinally in the direction of the convergence of flanges 28 and 31, plate 30 will be arrested against movement in one direction, by the wedging fit between flanges 27, 28, of bracket 25, and the flange 32 of plate 30, to position the flange 34 in overlying relation to head 24 of retaining pin 23. For locking the plate 30 against withdrawal from bracket 25 by vibration, flange 31 has a longitudinal slot 35, to form a flexible tongue 36, which is adapted to be bent around the end of flange 28 of bracket 25, as illustrated in Figure 1. When tongue 36 has been thus bent, it and the wedging engagement between plate 30 and bracket 25, will positively lock retainer-plate 30 in position to overlie head 24 of the retainer-pin.

In this construction, the depending flange 33 is spaced from the outer face of the sill, to provide clearance for the heads of the rivets 37, which secure the reinforcing plates 19 in the sill, or other outward projections on the sill.

This construction exemplifies a pin-retaining device which comprises a bracket which is fixed to the outer face of the sill, and a plate which is adapted to be slidably inserted into the bracket, and means for locking the plate in its operative position over the retaining pin. Plate 30 can be inserted in bracket 25, after retaining pin 24 has been placed in the draft key 18. The tongue 36 is then bent around the adjacent end of flange 28, whereupon plate 30 will be efficiently locked in its operative position. In the event that the draft key becomes broken, tongue 36 can be straightened, to permit plate 30 to be driven out of bracket 25 and retaining pin 24 to be inserted in the draft key, which replaces the broken key. When plate 30 is replaced, tongue 36 can be again bent, to secure plate 30 in bracket 25.

In the modified form of the invention, illustrated in Figures 5 and 6, the wedging engagement between the back flange 30 and the bracket 25, is omitted. The bracket is provided with a straight channel-forming flange 28*a*. The plate has a back flange 31*a*, with a straight upper edge, and a pin retaining flange 34*a*. Each end of the back flange 31*a* is slotted, and provided with a tongue 36*a*, which can be bent, to engage the ends of flange 28*a*, to lock the retaining plate in its overlying relation to head 24 of the retainer-pin. This construction permits the plate to be secured in its operative position, by bending of the tongues 36*a*, to lock the plate against movement in either direction in the bracket, and permits removal of the plate for replacement of a key, by bending one of the tongues to permit the withdrawal of the plate from the bracket, in one direction.

The invention exemplifies a simple device which can be formed of plate metal, can be economically fabricated, and installed on railway cars. The device efficiently prevents loss of the retainer-pin, and permits replacement of the draft keys and retainer-pins.

The invention is not to be understood as limited to the details described, since these may be modified within the scope of the appended claims without departing from the spirit or scope of the invention.

Having thus described the invention, what we claim as new and desire to secure by Letters Patent is:

1. The combination with a draft sill, a key for connecting a draw bar and yoke movably in the sill, and having one of its ends projecting outwardly from the sill, and a key-retaining pin for the key, provided with a head for holding the pin in the key; of a pin-retaining device comprising, a bracket of plate metal, having a back flange fixedly secured to the outer side of the draft sill, a laterally and outwardly projecting flange, and a channel-forming flange, a plate having an upstanding flange, fitting between the upper and lower flanges on the bracket, and having an extension adapted to overlie the pin, said upstanding flange on the plate and the upper and lower flanges on the bracket, and tongues integral with the plate and bendable for engagement with the bracket, to hold the plate in its operative position.

2. The combination with a draft-sill, a key for connecting a drawbar and yoke movable in the sill and having one of its ends projecting outwardly from the sill, and a retaining pin in the key provided with a head for supporting the pin in the key, of a pin-retaining device comprising a bracket including a side member fixedly secured to the outer side of the draft-sill above the pin and flanges forming a longitudinal channel at the outer face of said side member and having an opening at its outer side, and a plate slidably insertable into and removable from the channel in the bracket and having an extension overlying the pin, the plate and the channel being cross-sectionally shaped for locking the plate against transverse movement in the bracket, and means for removably locking the plate against longitudinal movement in the channel.

3. The combination with a draft-sill, a key for connecting a drawbar and yoke movable in the sill and having one of its ends projecting outwardly from the sill, and a retaining pin in the key provided with a head for supporting the pin in the key, of a pin-retaining device comprising a bracket of plate metal including a side member fixedly secured to the outer side of the draft-sill above the pin and integral flanges forming a longitudinal channel at the outer face of said side member and having an opening at its outer side, and a plate slidably insertable into and removable from the channel in the bracket and having an extension overlying the pin, the plate and the channel being cross-sectionally shaped for locking the plate against transverse movement in the bracket, and means for removably locking the plate against longitudinal movement in the channel.

4. The combination with a draft-sill, a key for connecting a drawbar and yoke movable in the sill and having one of its ends projecting outwardly from the sill, and a retaining pin in the key provided with a head for supporting the pin in the key, of a pin-retaining device comprising a bracket of plate metal including a side member fixedly secured to the outer side of the draft-sill above the pin and flanges forming a longitudinally convergent channel at the outer face of said side member and having an opening at its outer side, and a plate having a convergent side slidably insertable into and removable from the channel in the bracket and having an extension overlying the pin, the plate and the channel being cross-sectionally shaped for locking the plate against transverse movement in the bracket, and means for removably locking the plate against longitudinal movement in the channel.

5. The combination with a draft-sill, a key for connecting a drawbar and yoke movable in the sill and having one of its ends projecting outwardly from the sill, and a retaining pin in the key provided with a head for supporting the pin in the key, of a pin-retaining device comprising a bracket including a side member fixedly secured to the outer side of the draft-sill above the pin, a lower flange above the draft key, a top member with a depending outer flange, said side member, lower flange and top member and depending flange forming a longitudinal channel through the bracket, and a plate slidably insertable into and removable longitudinally from the channel in the bracket, having a side member fitting in said channel and extending outwardly over the lower member of the bracket and a member extended to overlie the pin in the key, the plate and the channel in the bracket being cross-sectionally shaped for securing the plate against transverse

movement in the bracket and means for removably locking the plate against longitudinal movement in the channel.

6. The combination with a draft-sill, a key for connecting a drawbar and yoke movable in the sill and having one of its ends projecting outwardly from the sill, and a retaining pin in the key provided with a head for supporting the pin in the key, of a pin-retaining device comprising a bracket of plate metal integrally including a side member fixedly secured to the outer side of the draft-sill above the pin, a lower flange above the draft key, a top member with a depending outer flange, said side member, lower flange and top member and depending flange forming a longitudinal channel through the bracket, and a plate slidably insertable into and removable from the channel in the bracket, having a side member fitting in said channel and extending outwardly over the lower member of the bracket and an integral extension over the pin in the key, the plate and the channel in the bracket being cross-sectionally shaped for securing the plate against transverse movement in the bracket and means for removably locking the plate against longitudinal movement in the channel.

7. The combination with a draft-sill, a key for connecting a drawbar and yoke movable in the sill and having one of its ends projecting outwardly from the sill, and a retaining pin in the key provided with a head for supporting the pin in the key, of a pin-retaining device comprising a

bracket including a side member fixedly secured to the outer side of the draft-sill above the pin, a lower flange above the draft key, a top member with a depending outer flange, said side member, lower flange and top member and its depending flange forming a longitudinally convergent channel through the bracket, and a plate slidably insertable into and removable longitudinally from the channel in the bracket, having a side member with a wedge-fit in said channel and extending outwardly over the lower member of the bracket and extended to overlie the pin in the key, the plate and the channel in the bracket being cross-sectionally shaped for securing the plate against transverse movement in the bracket and a bendable tongue on the plate for removably locking the plate against longitudinal withdrawal from the channel.

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