Sept. 5, 1933. I. C. HICKS 1,925,923

DRAFT KEY RETAINER

Filed Feb. 24, 1930

Fig. 1.

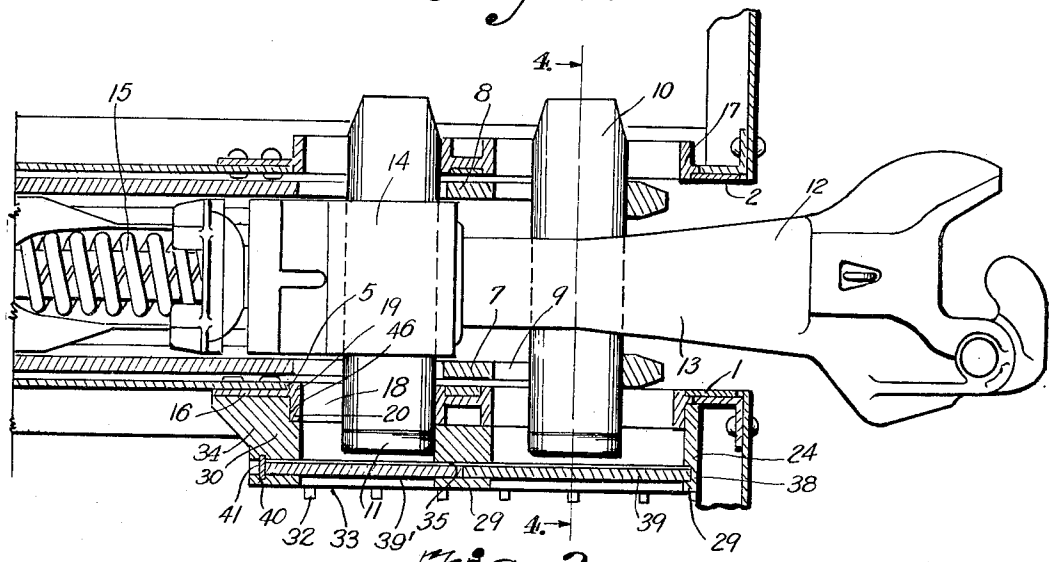


Fig. 2.

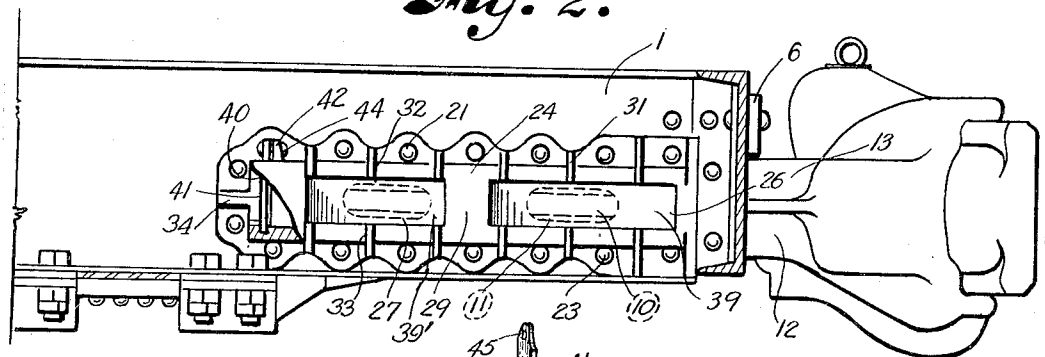


Fig. 3.

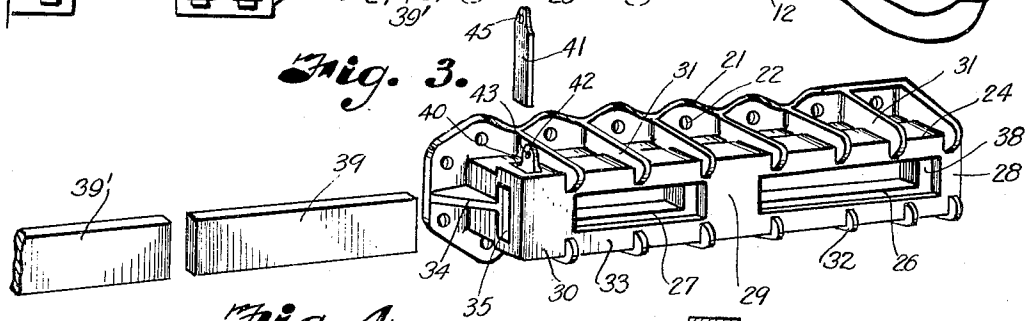


Fig. 4.

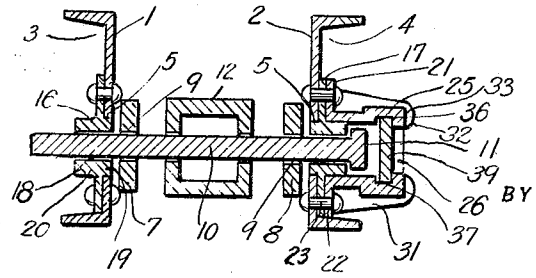
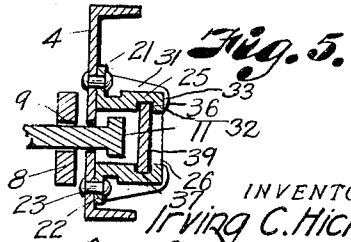


Fig. 5.



INVENTOR
Irving C. Hicks
BY
ATTORNEY

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1,925,923

DRAFT KEY RETAINER

Irving C. Hicks, Topeka, Kans.

Application February 24, 1930. Serial No. 430,599

2 Claims. (Cl. 213—61)

My invention relates to draft rigging for railroad cars in which draft sills and draft gears are provided with slots to receive keys for connecting couplers or drawbars with the car sills. Draft keys are usually provided with holes to receive pins for retaining the keys to prevent dislodgment thereof and consequent accidental uncoupling of the rigging while in service. The coupler-engaged keys are movable in the slots of the sills and yokes of the gears to permit operation of shock-absorbing means such as springs mounted in the yokes, and a multiplicity of movements of the couplers and shocks and stresses received by the rigging, due to operation of a train tend to loosen and displace the retaining pins and permit the keys to be jarred from the rigging.

The principal objects of my invention therefore are to assure retention of a draft key in draft rigging, to provide efficient key-retaining means that will strengthen draft rigging, and to lock a key-retainer to draft rigging, whereby accidental uncoupling of the rigging will be avoided and safety of train operation will be promoted.

In accomplishing these and other objects of the invention, I have provided improved details of structure, the preferred forms of which are illustrated in the accompanying drawing, wherein:

Fig. 1 is a fragmentary plan view partly in section of one type of draft rigging equipped with my invention.

Fig. 2 is an elevation of the same partly in section and partly broken away.

Fig. 3 is a perspective view of my device partly disassembled, a key-retaining plate being shown fragmentarily.

Fig. 4 is a section on the line 4—4, Fig. 1.

Fig. 5 is a sectional view through my shaft key retainer as applied to a draft sill which does not employ a cheek plate.

Referring in detail to the drawing:

1 and 2 designate draft sills of a type provided in ordinary railroad car construction, comprising spaced parallel channels having outwardly directed edge flanges forming recesses 3 and 4 and provided with elongated key slots 5. The front ends of the channels are braced and reenforced by a tie plate 6.

Mounted between the channels is a yoke or strap pocket including side arms 7 and 8 provided with slots 9 registering with the slots of the channels to receive keys 10 having heads 11 and insertable through the sills 1 and 2 for retaining a coupler 12 in engagement with the draft gear and sills.

The type of draft rigging illustrated is that in which two draft keys are employed, one extending through a slot in the shank 13 of the coupler and one through the enlarged coupler butt 14, and in which a spring 15 is contained by the yoke for receiving and dissipating shocks received by the coupler to prevent damage to train equipment.

The rigging may further include cheek plates 16 and 17 mounted in the recesses of the channels having openings 18 registering with the slots 9, inner right angular flanges 19 at said openings engaging the edges of said slots, and outer flanges 20 projecting laterally from the webs of the channels as clearly shown in Figs. 1 and 4, the inner and outer flanges cooperating to define the openings in the plates and form passages for the keys. The flanges 20 form stop walls to engage the heads of the keys to limit inward movement thereof.

The slots and openings are elongated longitudinally of the sills to permit limited movement of the keys and coupler forwardly under draft stress and rearwardly under impact of shocks against the resistance of the spring.

My invention pertains to a key-retaining device including a slotted cheek plate or attaching flange member 21 having apertures 22 to receive rivets 23 for securing the device to the web of the sill 1, and a body portion or housing 24 comprising preferably a solid block of metal cast integrally with the flange and having a thickened outer portion 25 and rectangular slots 26 and 27 for admitting keys to the sill and yoke slots. The slot 26 extends to a point adjacent the front end face of the body to provide an end wall 28, the slots are spaced by a partition or web 29, and the rear end of the slot 27 is spaced sufficiently from the rear end face of the body to provide a relatively thick rear end wall 30 for a purpose presently disclosed.

Ribs 31 formed integrally with the attaching flange and the sides of the body have hook-like portions 32 extending over the outer face 33 thereof for reenforcing the structure, and rib 34 formed at the rear end of the attaching flange reenforces the rear end face of the body, the attaching flange, body and ribs preferably comprising a single integral casting projecting laterally from the channel or draft sill 1.

Formed in the body portion 24 adjacent the outer face thereof and parallel to said face, is a rectangular channel 35 intersecting the slots

26 and 27 and forming upper and lower guide grooves or keeper tracks 36 and 37 in the walls of the slots, the channel passing through the end wall 30 and partition 29, and terminating in a socket 38 in the front wall 28, to receive keeper plates 39 and 39' adapted to retain the keys in coupler and gear connecting position.

A slot 40 is formed in the wall 30 at right angles to the channel 35 and intersecting the same adjacent the rear end face of the body, to snugly receive a detaining or latching plate or bar 41 for locking the keeper plate in the channel, the slot terminating slightly below the bottom of the adjacent slot 27 to form a socket for receiving and supporting the bar 41 with the upper end thereof projecting beyond the upper face of the body.

An ear 42 is formed on the upper face of the wall 30 at the front edge of the slot 40 and provided with an opening 43 to receive a rivet 44 adapted to be mounted in a corresponding opening 45 in the projecting upper end of the detaining bar 41 for securing said bar in plate-retaining position.

When the draft rigging is provided with the cheek plate 16 above described, the attaching flange may be mounted in the angle formed by the plate and outer flanges thereof and the cheek plate and attaching flange may be secured to the web of the sill 1 by common fastening means such as the rivets 23 as particularly illustrated in Fig. 4, the outer flanges of the cheek plate forming stops for the heads of the keys and locating the heads inwardly of the housing sufficiently to permit insertion of the keeper plate.

A notch such as 46 may be formed in the end wall of the body portion and the partition 29 may be reduced to fit the body to the portions of the flanges at the ends of the slots in the cheek plate 16.

When the draft rigging provides for employment of two keys as in the illustrated usage and two slots are provided in the body, (Figs. 1 and 3) two keeper plates 39 and 39' are provided in the body channel, the first keeper plate being moved inwardly to cover the forward slot and the second plate inserted to follow and abut the first plate, the abutting ends thereof lying in the partition 29 and being held therein to assure relatively rigid retention of the plates in the body channel.

In using the device the attaching flange is secured to the draft sill or channel 1 through which a draft key is to be inserted to a draft gear and coupler, the device being adapted to the specific type of draft rigging so that the movement of the key through the slot may be limited by engagement of the key head with the stop wall, for example, by mounting the attaching flange on a cheek plate such as described, to effect registry between the slot of the body and the slots of the rigging.

The keys for use with rigging provided with my device do not require pin-receiving openings and when a key is inserted through the rigging and coupler, the keeper plate may be inserted in the channel of the body to retain the key. The locking bar is then inserted in the transverse slot at the rear end of the body and secured to the projecting ear by suitable fastening means such as a rivet.

Jolts, jars, shocks or stresses due to movement of the car on which the rigging is mounted and equipment to which the rigging may be connected which will tend to dislodge a key retaining pin, may cause the key to shift and jar the keeper plate without disturbing the same, since the keeper plate will be securly retained in the body channel by locking bar.

Dislodgment of the locking bar is prevented due both to its relatively secure engagement in the slot of the housing and to the fact that it is fastened to the projecting ear.

When the draft key is to be removed for uncoupling the rigging, the rivet may be fractured, the locking bar removed and the keeper plate displaced.

While the device has been illustrated as applied to a draft rigging having two sets of horizontally aligned slots for horizontal insertion and position of draft keys, the device may be applied to rigging having differently arranged parts and one or more sets of slots without departing from the spirit of the invention.

In Fig. 5 I illustrate a type of draft rigging which does not employ the cheek plates and the retainer member as shown is applied directly to the face of the draft sill. However, the construction of the retainer is substantially identical to that illustrated in Fig. 4.

What I claim and desire to secure by Letters Patent is:

1. In combination with the draft key and cheek plate of a draft rigging, a draft key retainer including a block having a slot extending transversely therethrough to admit the draft key and having a channel extending across the slot to provide upper and lower internal grooves about the slot, a flange on the block substantially the same width and length as the cheek plate for overlying and reinforcing said cheek plate, ribs integral with the flange and block and having hook-like portions extending over the outer face of the block, fastening devices extending through said flange and cheek plate, a keeper plate slidable through said channel and having its edges engaged in said grooves whereby the sides and ends of the keeper plate are supported against lateral movement in the block, said block having an upwardly opening slot at right angles to and of greater width than the channel and terminating below said lower groove, and a bar seated in said last named slot for closing said slot to retain said keeper plate.

2. A draft key retainer including a block having a pair of rectangular slots extending therethrough to admit the heads of a pair of draft keys and having a longitudinal channel extending from one end of the block and intersecting the periphery of each slot to form peripherally extending guide grooves around the slots, a web spacing said slots, a pair of keeper plates in said channel having edges engaged in the guide grooves and having adjacent ends covered by said web, said block having an upwardly opening slot intersecting the channel and of greater width than the channel, a bar seated in said last named slot for closing the open end of the channel to hold the keeper plates in position for each retaining a draft key, and means for securing said bar to the block.

IRVING C. HICKS.