Aug. 30, 1927. 1,640,413

B. F. KURTZ

COUPLING PIN RETAINER

Filed April 1, 1926 2 Sheets-Sheet 1

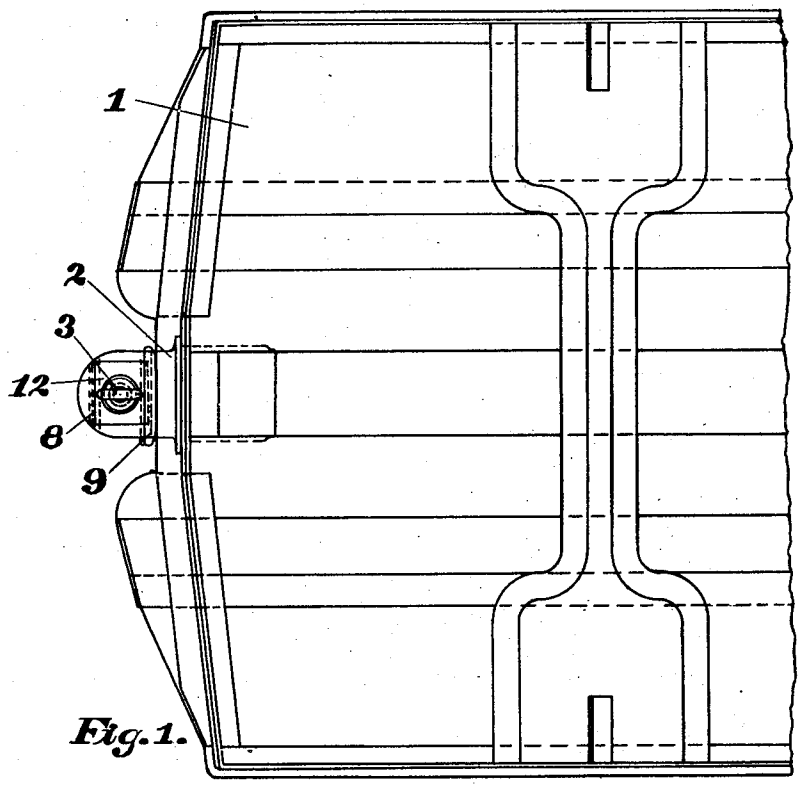


Fig. 1.

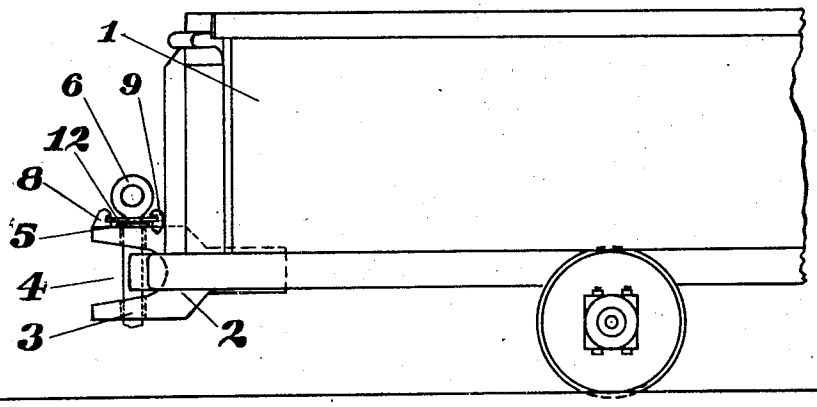


Fig. 2.

WITNESS

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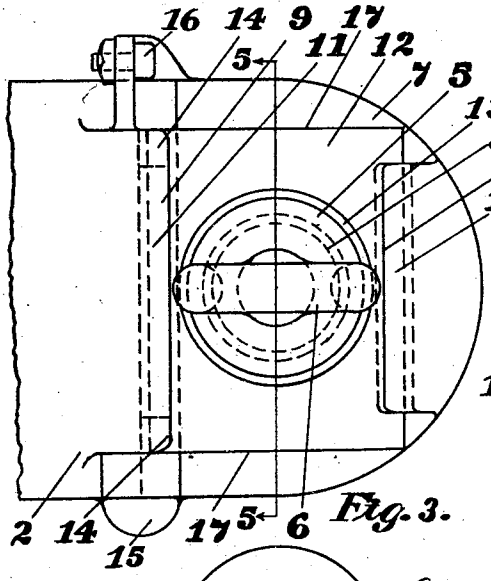


Fig. 3.

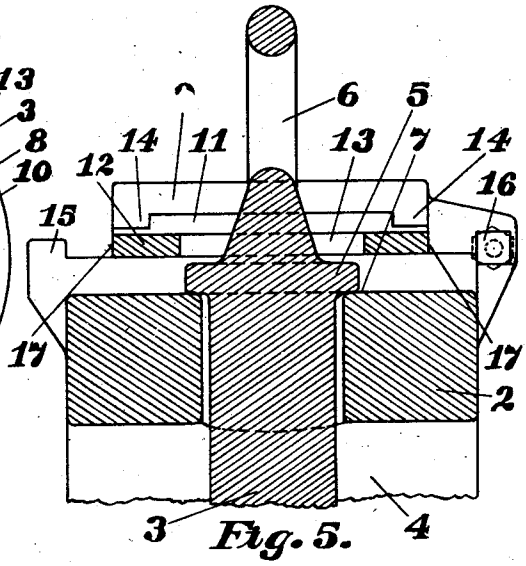


Fig. 5.

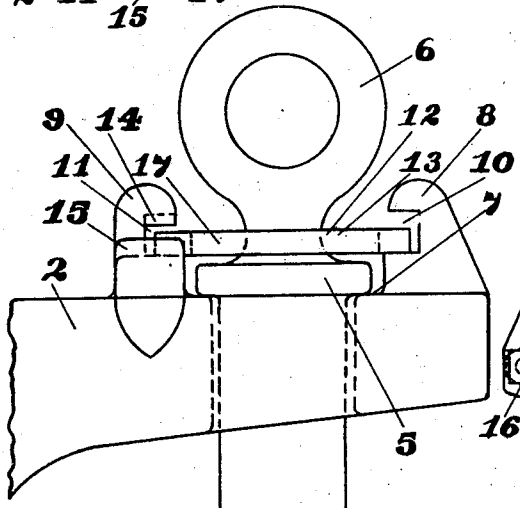


Fig. 4.

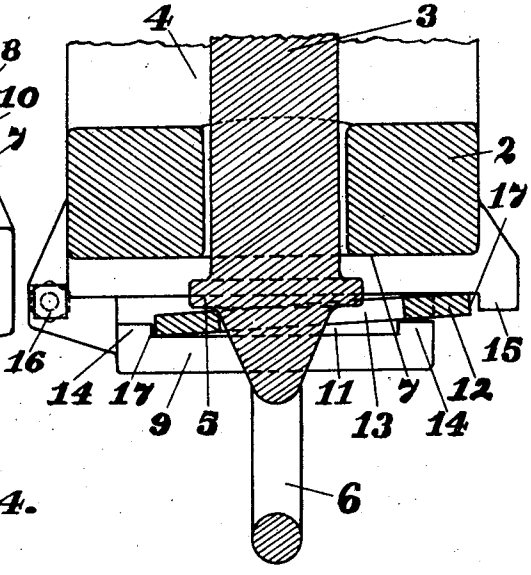


Fig. 6.

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UNITED STATES PATENT OFFICE.

BENJAMIN F. KURTZ, OF BELLEVUE, PENNSYLVANIA, ASSIGNOR TO PRESSED STEEL CAR COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

COUPLING-PIN RETAINER.

Application filed April 1, 1926. Serial No. 99,083.

This invention relates to mine cars or the like and has for an object the provision of means for preventing the accidental loss of the coupling pin from the coupler when the car to which it is applied is turned over.

Another object of the invention is to provide a coupling pin lock for mine cars which will permit the removal or replacement of the coupling pin when the car is in its normal righted position and which will automatically move into locking engagement with the pin when the car is being turned over, thus preventing the accidental loss of the coupling pin.

These and other objects will be apparent from the following description.

Referring to the drawings in which like reference characters refer to like parts, Fig. 1 is a plan view of a portion of a mine car having a coupler mounted thereon which embodies the invention; Fig. 2 is a side elevational view of the same; Fig. 3 is an enlarged detail plan view of a portion of the coupler embodying the invention; Fig. 4 is a side elevational view of the same; Fig. 5 is a sectional view taken on the line 5—5 of Fig. 3 and Fig. 6 is a sectional view taken on the line 5—5 of Fig. 3 showing the positions of the coupler, pin and pin lock when the car to which it is attached is turned over.

Referring now in detail to the drawings, the reference character 1 indicates a mine car body to which is attached a coupler 2 having recesses formed therein for the reception of a coupling pin 3. Intermediate its ends this pin extends across a recess 4 formed in the coupler and adapted to extend through the coupling link (not shown) of an adjacent car when such link is within the recess 4 thus coupling adjacent cars together. The upper end portion of this pin is provided with a shoulder 5 and above this shoulder is provided with an eye portion 6 by the use of which the pin may be operated.

When the pin 3 is in its coupling position the underside of the shoulder 5 rests on the top surface of the top portion 7 of the coupler. Adjacent the pin, and on opposite sides thereof the portion of the coupler is provided with upwardly extending front and rear lugs 8 and 9 respectively, which extend in a direction transversely of the coupler. These lugs 8 and 9 are provided with grooves or ways 10 and 11 respectively within which the front and rear edges of a member 12 preferably in the form of a flat plate is slidably mounted, such member spanning the space between the lugs. Between the lugs 8 and 9 the member 12 is provided with an opening 13 which is larger than any part of the coupling pin 3 so that when desired the pin can be easily withdrawn from the coupler or replaced through this opening. The groove 10 in the lug 8 is of substantially the same width and depth throughout its length while the groove 11 in the lug 9 is contracted, adjacent each side of the coupler, by means of downwardly extending lugs 14. The member 12 is loosely mounted in the grooves 10 and 11 and is slidable toward one side or the other of the coupler and when so moved, the edge portion of the member, which defines the opening 13, is adapted to engage the portion 6 of the coupling pin within the periphery of the shoulder 5 thereof. It will be noted that when the coupling pin is in the coupler the movement of the member 12 is limited by its engagement with the coupling pin. When the coupling pin is removed from the coupler the movement of the member 12 is limited by its engagement with spaced stops 15 and 16 on the coupler, the stop 15 being preferably integral with the coupler and the stop 16 being preferably in the form of a bolt which is removably mounted on the coupler.

When a mine or like car, embodying the invention, is in its righted position as shown in Figs. 1 and 2 of the drawings, the coupling pin 3 can be easily manipulated in coupling or uncoupling cars by lifting or lowering the pin through the openings 13 in the member 12. Should this member be in such a position that the edge defining the opening 13 is over the upper surface of the shoulder 5 of the pin, the operator moves the member a sufficient distance that this edge is out of the path of travel of the pin. Assuming a car, embodying the invention, to be in the position as shown in Fig. 2 and the member 12 to be in the position as shown in Figs. 1, 2, 3, 4 and 5 and the car being rotated in a rotary dumper or otherwise to discharge the lading carried thereby, the operation of the several parts forming the invention is as follows: When the car is

being rotated the member 12 will move by gravity in a direction across the coupler until such time as the edge of the member which defines the opening 13 passes over a portion of the shoulder 5 of the coupling pin 3 and comes to rest by this edge portion engaging with the portion 6 of the pin. As the car is further rotated, the member 12 will move outwardly to such a position that one of the side edge portions 17 of the member will be back of one of the lugs 14 and the pin 3 will also move outwardly until the shoulder 5 engages the member 12, all of which is clearly shown in Fig. 6. When the member 12 is in the position shown in this figure the pin cannot drop away from the coupler and should the vibration of the car have any tendency to move the member 12 to a position out of the path of travel of the pin, such tendency will be stopped by the edge portion 17 of the member 12 engaging one of the lugs 14. It will be understood that the member 12 is adapted to move outwardly by its own weight and is not dependent upon the pin to move it to its proper pin locking position. When for any reason it is desired to remove the member 12 from the coupler, the bolt 6 and coupling pin 3 are removed from the coupler after which the member can be moved free of the coupler.

It will be apparent to those skilled in the art to which this invention appertains that changes may be made in the details and arrangement of the several parts forming the invention without departing from the spirit and scope of the appended claims.

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

1. In a car, a coupler mounted thereon, a coupling pin movably mounted in said coupler, and movable means for maintaining said pin in said coupler, said means being caused to operate transversely of the axis of said pin by certain movements of said car.

2. In a car, a coupler mounted thereon, a coupling pin loosely mounted in said coupler, and pin retaining means on said coupler movable transversely of the axis of said pin into its retaining position when said car is being tilted sidewise.

3. In a car, a coupler mounted thereon, a coupling pin loosely mounted in said coupler, a member loosely mounted on said coupler and adapted to move by gravity into engagement with said pin to lock said pin against excessive movement when said car is tilted.

4. In a car, a coupler mounted thereon, a member loosely mounted on said coupler, a coupling pin loosely mounted in said coupler and having a portion projecting into the plane of said member, said member being movable by gravity, when said car is rotated, into locking engagement with said pin, and means on said coupler adapted to be engaged by said member for holding said member in its pin locking position when the car is rotated.

5. In a car, a coupler mounted thereon, spaced lugs on said coupler having grooves formed therein, a member slidably mounted on said lugs within said grooves, a coupling pin loosely mounted in said coupler and having a portion extending into an opening formed in said member, said member being movable by gravity into position to lock said pin in said coupler, as said car is being turned over toward its dumping position and means for holding said member in its locking position when said car is turned over.

6. In a car, a coupler mounted thereon, lugs extending upwardly from the top of said coupler, a coupling pin in said coupler and movable relative thereto, a member mounted in said lugs and movable by gravity into or out of the path of travel of said pin, and means for retaining said member in the path of travel of said pin when said car is turned over to its dumping position.

7. In a car coupler, a pin loosely mounted in said coupler, lugs on said coupler having grooves formed therein, lugs in one of said grooves, a member loosely mounted in said grooves movable by gravity into the path of travel of said pin and into locking engagement with one of the lugs in one of said grooves.

8. In a car coupler, a pin loosely mounted in said coupler, a member loosely mounted on said coupler having an opening formed therein, said pin being adapted to be passed through said opening to remove said pin from said coupler, said member being movable by gravity into the path of travel of said pin to prevent the accidental removal of said pin from said coupler.

9. In a car coupler, a coupler head, a coupling pin retaining member movable by gravity transversely of said head, and means for limiting the movement of said member.

10. In a car coupler, a coupler head, a coupling pin retaining member mounted on said coupler head and movable transversely thereof by gravity, and stops for limiting the movement of said member.

In testimony whereof I affix my signature.

BENJAMIN F. KURTZ.