

(No Model.)

H. L. DUNLAP.
CAR COUPLING.

No. 523,626.

Patented July 24, 1894.

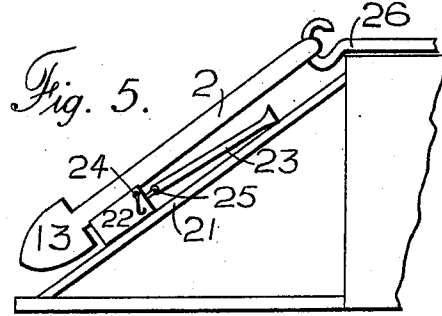
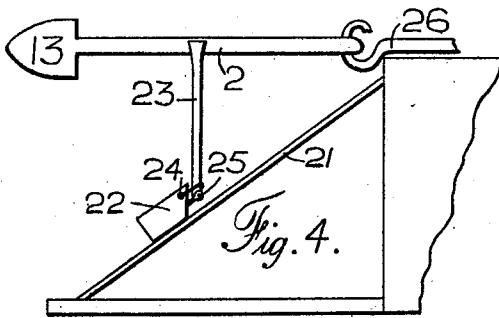


Fig. 1.

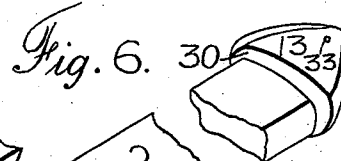
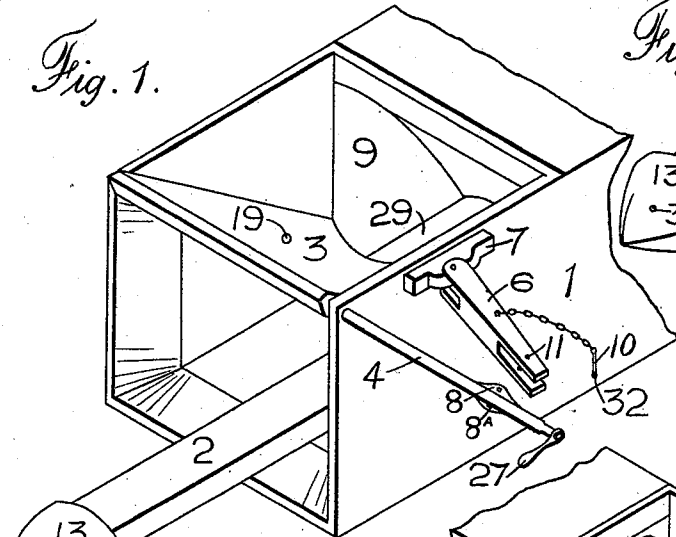


Fig. 7.

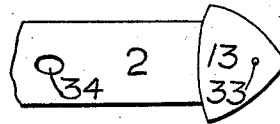


Fig. 3.

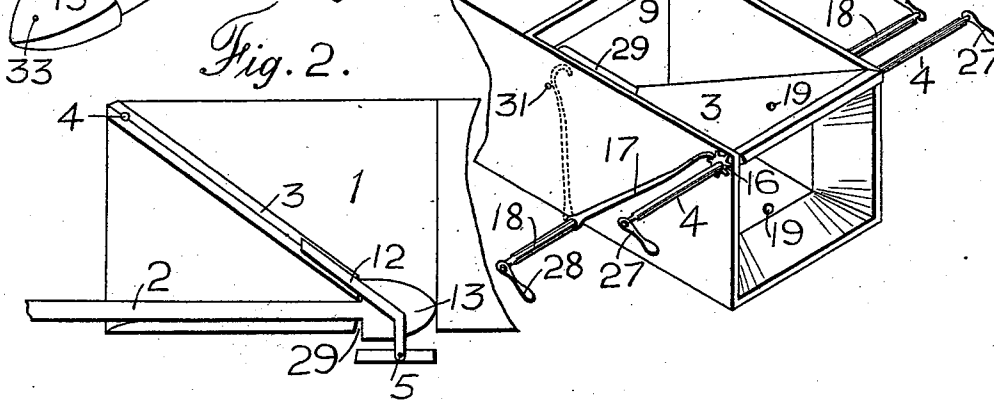
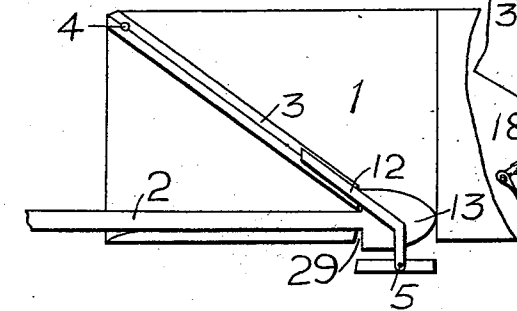


Fig. 2.



Witnesses,

C. A. Slayton,
Walter E. Allen.

Inventor.

H. L. Dunlap,
by *Knight Bros*
Attorneys.

UNITED STATES PATENT OFFICE.

HORACE L. DUNLAP, OF TOPEKA, KANSAS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 523,626, dated July 24, 1894.

Application filed August 25, 1893. Serial No. 484,068. (No model.)

To all whom it may concern:

Be it known that I, HORACE L. DUNLAP, a citizen of the United States, residing at Topeka, in the county of Shawnee, in the State of Kansas, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification.

My invention relates to improvements in car-couplings and the objects of my improvements are to produce a car-coupling simple in construction, safe and secure in its operation and automatic in its action; to provide a draw-head adapted to be used with my coupling or with the ordinary pin and link coupling as circumstances may require; to provide a coupling bar and coupling block adapted to short curves in the road; to provide a coupling bar between the tender and the first car adapted to my improved coupling; to provide a coupling bar and safety bar for its support over the pilot on road engines adapting them for use for switching; to provide coupling locks for passenger and freight car-couplings, and I attain these objects by means of the mechanism and devices shown in the accompanying drawings, in which—

Figure 1 shows my improved coupling and coupling lock as used on passenger cars. Fig. 3 shows my improved coupling and coupling lock as used on freight cars. Fig. 2 is a view of my improved coupling with one side of the draw-head removed showing the relation of the parts when the coupling is made. Fig. 4 shows pilot of road locomotive with my improved coupling bar and safety bar in position for coupling. Fig. 5 shows same at rest on the pilot. Fig. 6 shows my improved coupling bar. Fig. 7 shows my improved coupling bar for tender coupling.

Similar numerals refer to similar parts throughout the several views.

1 is the draw-head the upper front portion of which is open as shown at 9. In this opening is the coupling block 3 suspended near the front of the draw-head by the coupling-rod 4 which passes through the jaws of the draw-head and through the block, is secured to the block and provides the means for operating the block.

5 is the under block connected by the arm

12 with the coupling block and operating with it.

2 is my improved coupling bar consisting of the thick body flattened above and below and having the rounded sides, and the enlarged heads in shape of a flattened cone the base of the cone being convex provides the rounded shoulder 30, the working face of the coupling block and of the recess 29 being formed with a concavity corresponding to the convexity of the shoulder. The head 13 is also provided with the hole 33 adapting it for use with a pin and link coupling when it may become necessary to couple onto cars provided with that form of draw-head.

29 is a recess in the under part of the draw-head to receive the under part of the coupling bar head when the coupling is made.

6 is the lock arm of coupling lock designed to be used on passenger car couplings. It is pivoted on the block 7 secured to the side of the draw-head and its slotted outer end engages the perforated lug 8 on the coupling rod 4 when by passing the pin 10 through the hole 11 in the arm and the perforation in the lug the rod 4 is prevented from turning and the coupling securely locked.

For greater security a small padlock may be passed through the hole 32 near the point of the pin 10 and the coupling thus placed absolutely under control of the crew in charge of the train.

The coupling lock I use for freight cars is shown in Fig. 3 in which 16 is a cogged wheel set on the coupling rod 4 with which engages the curved terminal finger of the arm 17 set on the rock-shaft 18 suspended in brackets from the under side of the draw-head. When not in use the arm rests against the pin 31 set in the side of the draw-head as shown by the dotted lines.

The coupling rod and the rock shaft are provided with the handles 27 and 28 which are removable and may be carried in the tool box on the car or by the brakeman or other person in charge of the coupling.

For use on road engine adapting it to switching purposes I secure my coupling bar by the bar and hook 26 to the front of the engine in the usual manner, near the nose of the pilot

21 I place the block 22 in which the coupling bar rests when not in use, to the rear of this block on the short arm 25 I pivot the safety bar 23 which when not in use lies along the pilot as shown in Fig. 5.

When in use the coupling bar is raised up and supported in position by the safety bar, which is held in position by the hook 24 carried on the block. Thus is avoided the necessity of holding up the coupling bar and remaining between the car and the engine while the coupling is made.

19 is a pin hole in coupling block and draw head adapting it to use when necessary as it sometimes is to couple to a pin and link coupling.

34 is the opening in tender coupling bar by which it is attached to the tender. The opening in the draw-head for the admission of the coupling bar head is flaring as is usual with open draw-heads.

The operation of my improved car-coupling is exceedingly simple and entirely automatic. In making the coupling, as the cars come together the head of the coupling-bar enters the draw head and as it advances raises the coupling block and passes under it until the lower part of the head drops into the recess in the under part of the draw-head, and the coupling block drops behind the shoulder made by the extension of the head beyond the body of the bar, where the weight of the block will under all ordinary circumstances be sufficient to retain it in position; but for additional security I apply the coupling locks the operation of which has been already described.

To uncouple, the coupling rod is unlocked and by turning it the block is raised from the shoulder of the coupling bar head and by the same movement the under block is raised lifting the head out of the recess in the draw-head and it is released and as the cars are drawn apart it is withdrawn. The coupling rod and the rock-shaft may extend beyond the sides of the car so that it is not necessary to go between the cars to uncouple and as the coupling is automatic it provides a perfectly safe coupling.

When it is necessary to couple to a pin and link coupling the coupling block is raised to a horizontal position and there retained by means of the locks, the locks thus performing the twofold purpose of locking the coupling when made and locking the block adapting it for pin and link coupling.

The principal advantages I claim for my improved coupling are:

First. The great simplicity of its construction, the use of springs and levers with their necessary complications being avoided.

Second. It is entirely and absolutely automatic.

Third. Safety. It being automatic and the rods for uncoupling extending beyond the car there is no passing between the cars when in motion.

Fourth. Its adaptation to short curves. With my improved coupling bar having convex shoulders and the corresponding concavity of the coupling block and recess shorter curves can be made with it than with any other coupler thus adapting it specially to short curves and mountain roads.

Fifth. The distribution of the draft and strain equally throughout the draw-head. The under shoulder of the coupling bar head bearing against the draw head and the upper shoulder bearing against the coupling block through which the draft is transmitted to the two sides of the draw-head the strain is borne by all points of the drawhead equally.

Sixth. The handles on the coupling rod and the rock-shaft being removable places the coupling absolutely under control of the persons having charge of the coupling and free from molestation from outsiders.

I am aware that couplings have been made consisting of a solid bar or rod having an enlarged head the shoulder of which engaged a recess or angular elevation in the draw head and held in position by springs and weights, and therefore do not claim the same broadly, but confine my claims to my own specific construction and combinations.

What I do claim, and desire to secure by Letters Patent, is—

1. In a car-coupling a draw-head open above and recessed below provided with a coupling block suspended by and secured to a coupling rod passing through and extending beyond the draw head and having a removable handle, the coupling block and the recess having inward concave working faces, and an under-block coincident with the recess supported by arms secured to the coupling block substantially as shown and described and for the purposes specified.

2. In a car-coupling, the combination of the draw-head 1 open above and recessed in its under part, coupling block 3, coupling rod 4 upon which the coupling block is suspended and secured, removable handle 27 on the coupling rod, the under block 5 supported by the arms 12, and the coupling bar 2 having heads 13 at each end which are formed with convex shoulders extending at right angles to the body, substantially as shown and described and for the purposes specified.

3. In a car-coupling a coupling lock consisting of a perforated lug on the coupling rod supporting and secured to the coupling block passing through and beyond the draw head, a lock arm pivoted to the side of the draw-head adapted to embrace the lug and a pin passing through the arm and the lug and thus preventing the turning of the coupling rod and raising the coupling block substantially as shown and described and for the purposes specified.

4. In a car-coupling the combination of a draw head open above and recessed in its under part provided with a coupling block suspended by and secured to a coupling rod pass-

ing through and extending beyond the draw-head and provided with a removable handle and an under block co-incident with the recess supported by arms secured to the coupling block with a coupling bar having a thick body flattened as to its upper and under sides and rounded at its lateral edges, and enlarged flattened cone shaped heads the base of the cone convex forming rounded or convex shoulders with the body, the engaging faces of the coupling block and the recess being concave corresponding to the convexity of the shoulders of the coupling bar, and means for locking the coupling substantially as shown and described and for the purposes specified.

5. In a car-coupling for a road engine adapting it to be used for switching purposes a coupling bar as shown and described secured by a hook to the front of the engine in the usual manner a block set on the pilot to carry the bar when at rest a safety bar pivoted to

a short arm on the rear of the block to support the coupling bar when in use and means to retain the safety bar in upright position substantially as shown and described and for the purposes specified.

6. In a car-coupling a coupling bar adapted to coupling the engine tender to car consisting of the thick body flattened as to its upper and under sides and rounded at its lateral edges provided at one end with the pin hole to engage the tender draw-head and at the other end with a flattened cone shaped head the base of the cone convex forming rounded or convex shoulders with the body substantially as shown and described and for the purposes specified.

HORACE L. DUNLAP.

Witnesses:

B. S. BROWN,
THOMAS ARCHER.