

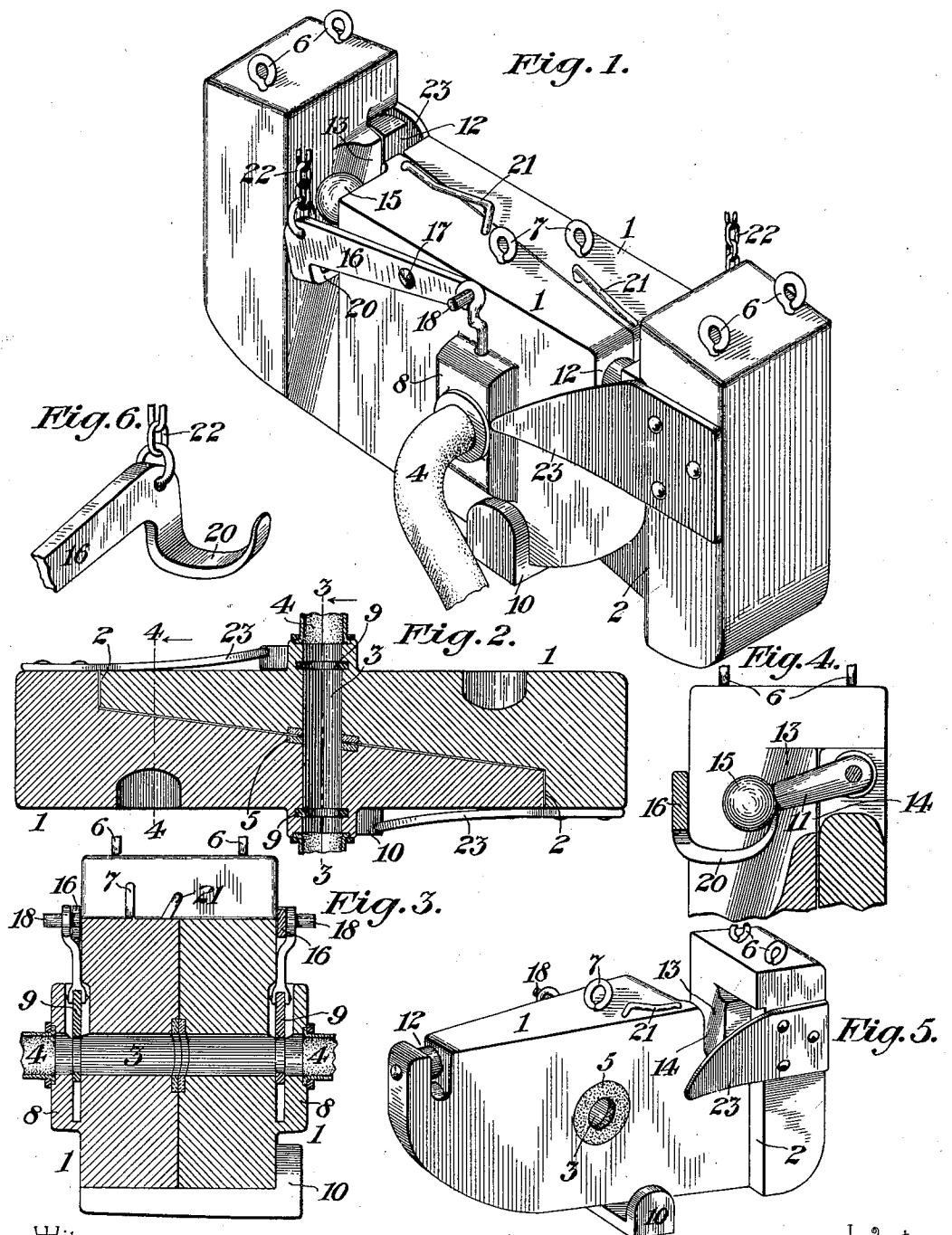
No. 629,657.

Patented July 25, 1899.

J. CADWELL.
AIR BRAKE HOSE COUPLING.

(Application filed Dec. 17, 1898.)

No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES CADWELL, OF WOODDALE, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO NORMAN W. HEMMINGER, OF SAME PLACE.

AIR-BRAKE HOSE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 629,657, dated July 25, 1899.

Application filed December 17, 1898. Serial No. 699,566. (No model.)

To all whom it may concern:

Be it known that I, JAMES CADWELL, a citizen of the United States, residing at Wooddale, in the county of Fayette and State of Pennsylvania, have invented a new and useful Air-Brake Hose-Coupling, of which the following is a specification.

The invention relates to improvements in air-brake hose-couplings.

The object of the present invention is to improve the construction of air-brake hose-couplings and to provide a simple, inexpensive, and efficient one capable of coupling automatically and simultaneously with a car-coupling and capable of similarly uncoupling and of automatically closing the pipe-sections to prevent the escape of air.

A further object of the invention is to arrange the coupler-heads so that cinders and other accumulation will be excluded, and thereby prevented from interfering with the operation of the device.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of an air-brake hose-coupling constructed in accordance with this invention and showing two coupler-heads in engagement with each other. Fig. 2 is a horizontal sectional view. Fig. 3 is a transverse sectional view on line 3 3 of Fig. 2. Fig. 4 is a similar view on line 4 4 of Fig. 2. Fig. 5 is a perspective view of one of the coupler-heads. Fig. 6 is a detail perspective view of the valve-operating lever.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a coupler-head tapering longitudinally and adapted to interlock with a corresponding coupler-head, as clearly illustrated in Figs. 1 and 2 of the accompanying drawings, and the back of the coupler-head is provided at its inner side with a shoulder 2, adapted to limit the longitudinal movement of the coupler-heads on each other to cause openings or passages 3 of the sections to register with each other when the heads

are coupled. These openings or passages, which communicate with the air-brake hose-sections 4, are provided at the inner angularly-disposed faces of the heads with elastic packing-rings 5, adapted to be compressed to provide an air-tight connection between the heads. Each coupler-head is designed to be suspended centrally beneath a car-coupling, and it is provided at its top with eyes, coiled springs being preferably employed for hanging it. The eyes 6 are arranged in pairs at the inner ends of the coupler-heads, and the latter are provided at points between their ends with eyes 7.

At the outer face of each coupler-head is arranged a valve-casing 8, in which operates a vertically-movable slide-valve 9, and the hose 4 is connected with the valve-casing, as clearly illustrated in Figs. 2 and 3 of the drawings. The coupler-heads are supported when in engagement by oppositely-disposed arms 10, extending from their inner faces and adapted to overlap the lower edges of the said heads and engage the outer faces of the same, and these arms, which are substantially L-shaped, have the heads wedged between them and adapted to enable the elastic packing-rings to be depressed.

The coupler-heads are locked into engagement with each other by transversely-disposed swinging links 11, each pivoted at one end to the outer end of one of the heads, in a slot 12 thereof, and adapted to engage a recess 13 of the other section. The recess 13 is located at the inner end of the coupler-head, and it tapers in depth from the top to the bottom, being provided at the back with a contracted portion or slot 14 for the reception of the shank of the link 11. The link is provided at its outer end with a head 15, engaging the recess 13 and operating as a weight to prevent the link from becoming accidentally disengaged from the recess 13. As the link is disposed transversely of the coupler-heads it securely holds them against longitudinal movement on each other.

The operation of uncoupling is effected by means of a valve-controlling lever fulcrumed between its ends at 17 and having its outer end provided with a pivot 18 and connected with the upper end of the adjacent valve-

stem. The inner end of the lever 16 is provided with an inwardly-extending curved arm 20, arranged within the recess 13 at a point below the head of the link 11, whereby when the inner end of the lever is swung upward the link will be lifted out of engagement with the recess 13. If the link is not thrown over to the outer side of the coupler-head by the upward movement of the lever, this result will be effected by means of an inclined guide 21, mounted upon the top of the adjacent-head and arranged to engage the link as the heads separate. The inner end of the lever 16 is attached to a chain 22, which is designed to be connected with the rock-shaft or other means for operating the car-coupling, so that the uncoupling of the same and the air-brake coupling will be simultaneous. When the heads are coupled, the valve-stems are elevated and the valves are open; but as soon as the inner ends of the lever 16 are swung upward the valves are simultaneously closed to prevent the escape of air from the air-brake pipes.

Each coupler-head is provided adjacent to its inner angularly-disposed face with a link-guide 23, mounted on the shoulder 2, and consisting of a plate or arm provided with an inclined upper edge adapted when a link is swung outward to engage the same and throw it inward into engagement with the recess 13 when the coupler-heads come together, whereby the operation of coupling will be automatic.

The invention has the following advantages: The air-brake coupling, which is positive and reliable in operation, is adapted to exclude cinders and other accumulation that might otherwise interfere with its operation. It is capable of operating simultaneously with a car-coupling, and its coupling operation is purely automatic. It is adapted to be readily uncoupled, and the valves operate automatically and simultaneously with such uncoupling to prevent the escape of air from the train-pipe.

Changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

What is claimed is—

1. An air-brake coupling comprising two interlocking coupler-heads capable of longitudinal movement on each other, and the transversely-swinging link mounted on one of the coupler-heads and adapted to be swung into and out of engagement with the other coupler-head, substantially as described.

2. An air-brake coupling comprising the tapering or wedge-shaped coupler-heads provided at the bottom with inwardly-extending L-shaped supporting-arms engaging the outer faces of the heads, and the transversely-swinging links adapted to be swung into and out of engagement with the coupler-heads, substantially as described.

3. An air-brake coupling comprising coupler-heads provided with transversely-disposed links adapted to swing inward and outward and capable of locking them in engagement with each other, and the outwardly-extending link-guides arranged to engage the links and adapted to swing the same inward when the coupler-heads come together, substantially as described.

4. An air-brake coupling comprising tapering coupler-heads having supporting-arms arranged to interlock with the coupler-heads, said coupler-heads being provided at their inner portions with shoulders forming stops, transversely-swinging links mounted on the coupler-heads and adapted to engage the same when swung inward and to release the same when swung outward, and the link-guide projecting from the said shoulders and having inclined edges adapted to swing the links inward, substantially as described.

5. An air-brake coupling comprising a coupler-head having an air passage or opening and provided with a valve for closing the same, said coupler-head being also provided with a recess adapted to be engaged by a link of a corresponding coupler-head, and an uncoupling-lever connected with the valve and arranged to extend into the said recess, whereby the link will be carried out of engagement with the same simultaneously with the closing of the valve, substantially as described.

6. An air-brake coupling comprising a coupler-head having a recess to be engaged by a link and provided with an air passage or opening, a valve for closing the same, and a lever connected with the valve and provided with an arm extending into the said recess and adapted to lift the link out of engagement with the same, substantially as described.

7. An air-brake coupling comprising two coupler-heads, a transversely-disposed link mounted on one of the coupler-heads and engaging the other, and an inclined guide arranged at the top of the same and adapted to be engaged by the link, whereby the same will be swung outward as the heads separate, substantially as described.

8. An air-brake coupling comprising a coupler-head provided at its outer side with a recess adapted to be engaged by a transverse link, said head having an air-passage, a valve for closing the latter, a lever fulcrumed between its ends and having one end connected with the valve, its other end being provided with an arm extending into the recess and adapted to lift a link out of engagement with the same, and means for operating the lever, substantially as described.

9. An air-brake coupling comprising a tapering or wedge-shaped coupler-head having a shoulder at its inner end and provided with an air-pipe, a supporting-arm extending inward from the bottom of the coupler-head, a link-guide extending outward from the said shoulder, a swinging link disposed transversely of the head, a valve for closing the air passage or opening, and a lever connected

with the valve and arranged to engage the link of a corresponding coupler-head to effect the operation of uncoupling, substantially as described.

5 10. A device of the class described comprising two coupler-heads provided with transversely-disposed links, the link of one coupler-head being arranged to engage the other coupler-head, and devices carried by the
10 coupler-heads and arranged to throw the links into their engaging position automatically when the coupler-heads come together, substantially as described.

15 11. A device of the class described comprising two coupler-heads, the transversely-dis-

posed links each hinged to one of the coupler-heads and arranged to engage the other, devices mounted on the coupler-heads and adapted to throw the links automatically into their engaging position when the coupler-heads come together, and uncoupling-levers arranged to engage the links to release the coupler-heads, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature
25 in the presence of two witnesses.

JAMES CADWELL.

Witnesses:

G. F. KELLY,
ELIZABETH PRICE.