

(No Model.)

2 Sheets—Sheet 1.

G. COLLINS.
PIPE COUPLING.

No. 463,119.

Patented Nov. 10, 1891.

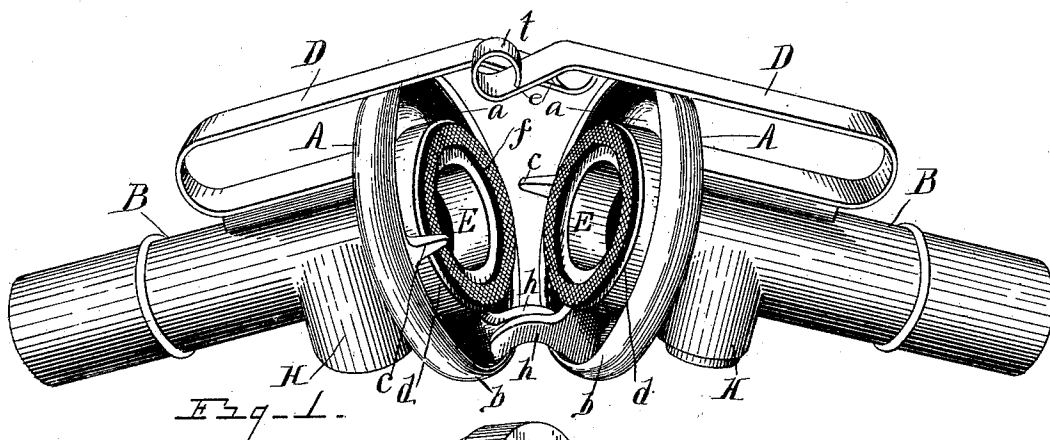
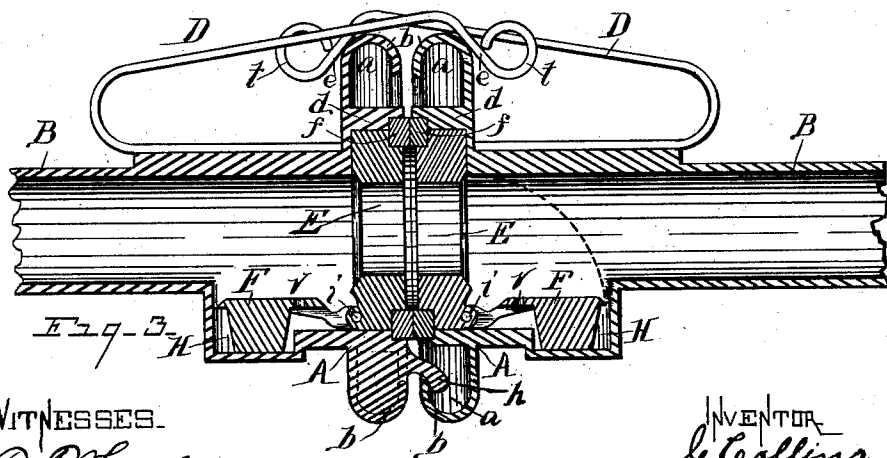
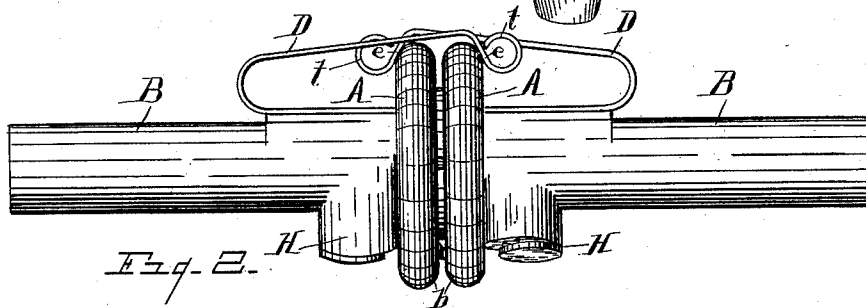
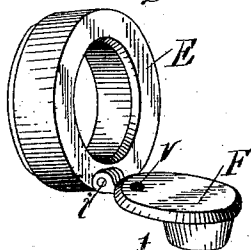


Fig. 4.



WITNESSES.

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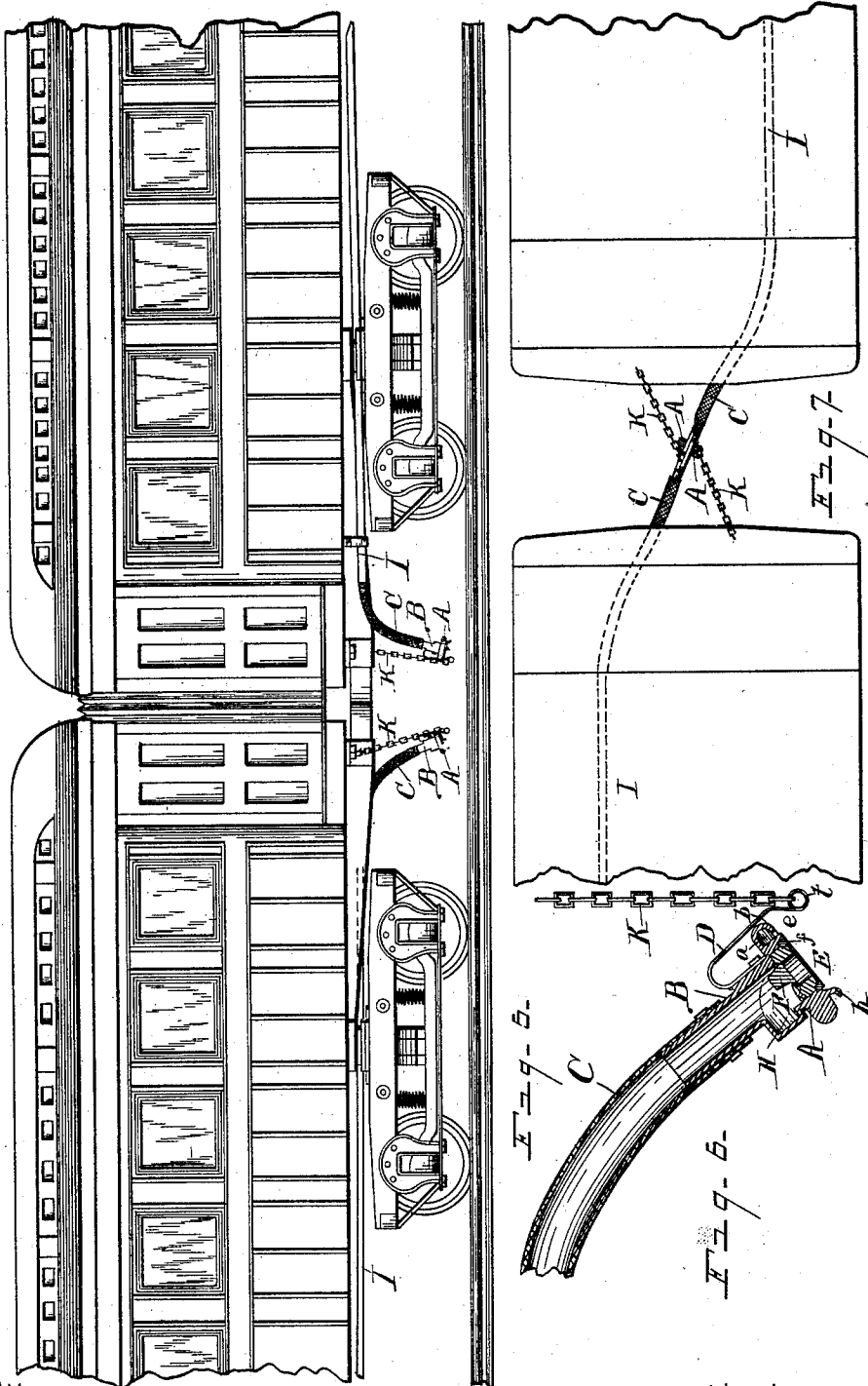
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WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE COLLINS, OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-HALF TO
ROSCOE B. WHEELER, OF SAME PLACE.

PIPE-COUPLER.

SPECIFICATION forming part of Letters Patent No. 463,119, dated November 10, 1891.

Application filed June 24, 1891. Serial No. 397,312. (No model.)

To all whom it may concern:

Be it known that I, GEORGE COLLINS, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Pipe-Couplers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in pipe-couplers especially designed for coupling the train-pipe between the ends of railway-coaches that supplies steam to said coaches for heating purposes; and it consists in a certain construction and arrangement of parts, as fully hereinafter set forth, the essential features of which are pointed out particularly in the claims.

The object of the invention is to provide means whereby the train-pipe may be readily and securely coupled between the coaches of the train and in such manner as to be automatically uncoupled by the draw-chains attached to the coupler-heads when said coaches are parted, also enabling said pipe to be uncoupled by hand when desired, and means whereby the perfect drainage of the pipe is effected. This object is attained by the device illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the coupler-heads detached or uncoupled. Fig. 2 is a side elevation of said heads coupled. Fig. 3 is an enlarged longitudinal section through Fig. 2. Fig. 4 is a perspective view of the gravitating valve adapted to close the opening through the coupler-heads and the ring or seat to which it is hinged. Fig. 5 is a side elevation of the coupled ends of two railway-coaches, showing the train-pipe uncoupled and the coupler-heads depending from the draw-chains. Fig. 6 is an enlarged longitudinal section through the coupler-head in the position shown in Fig. 5. Fig. 7 is a plan view of the meeting ends of two cars, showing the position of parts in the act of uncoupling the train-pipe as said cars are drawn apart.

ling the train-pipe as said cars are drawn apart.

Referring to the letters of reference, A designates the coupler-heads, which are provided with the outer annular rolled flange *b*, forming an annular shell, within which is the open annular space *a*, said heads also having the inner annular flange *d*, surrounding the central opening through said heads. Seated in the inner flange *d* is a ring of rubber or other suitable resilient agent *f*, which projects some distance beyond the outer face of said flange and forms the packing between said heads when coupled.

h designates the curved interlocking fingers of the heads A, adapted to engage the rolled edge of the flange *b*, and *c* designates the guide-pins, the acuminated points of which enter between the flanges *b* *d* and guide the parts to their place when said heads are coupled, which construction is clearly shown in Fig. 1.

B designates the shank of the coupler-heads, to which the hose C of the train-pipe is coupled. Secured to said shank is the flat U-shaped spring D. The free end of said spring extends beyond the face of the head, to which it is attached, and is provided with the inclined portion *e*, that is adapted to engage over the rolled flange *b* of the opposite head and lock said heads together, as shown in Figs. 2 and 3.

E designates a metal ring brazed or otherwise secured within the annular opening through the coupler-heads, and which forms a seat for the gravitating valve F, that is pivoted at *i* thereto, as clearly shown in Figs. 3 and 4, and that controls the opening through said heads. Formed in the under wall of the shank B of the heads A is a chamber or pocket H, into which the valve F drops when the heads are in a horizontal position or when coupled, as shown in Fig. 3, thus opening the port through said heads and effecting a continuity of the train-pipe opening there-through.

I designates the train-pipe, which extends longitudinally under the bottom of the car, and which is provided at each end with a section of flexible hose C, to which the coupler-head is attached.

K designates the draw-chains, one end of which is attached to the end of the platform of the car and the opposite end to the ring or loop *t*, formed in the end of the spring D of the coupler-head. Said chains serve to uncouple the heads A as the cars are drawn apart and to support said heads when uncoupled, as shown in Figs. 5 and 6.

To couple a train-pipe provided with this improved coupler, the curved fingers *h* of the heads A are engaged in the rolled flanges *b* of the opposing heads, said fingers lying side by side, as shown in Fig. 1. The heads are then forced downward and together, which is accomplished by the operator grasping the shanks B of said heads. As said heads are coupled the pins *c* enter between the flanges *b d* and guide the parts so as to cause the packing-rings *f* to come squarely together, and the free ends of the springs D ride over and engage the flange *b* of the opposite head, whereby they are securely locked and a tight joint formed between said heads. The inclined end portions *e* of the springs D, bearing upon the outer rounded surface of the flanges *b*, tend by the pressure of said springs to draw the heads A tightly together, thereby taking up all lost motion and wear of the packing-rings *f* between said heads and maintaining a tight and perfect joint. The draw-chains K are shorter than the hose C of the train-pipe, so that when the cars are uncoupled and drawn apart, as shown in Fig. 7, said chains will part the coupler-heads A automatically, and said heads will depend, as shown in Fig. 5. As the heads are uncoupled and swing down, the valve F will drop onto the ring or seat E, closing the opening through said heads, as clearly shown in Fig. 6, and the rear end of that section of the train-pipe leading from the steam-supply of the locomotive-boiler will be closed, thus keeping live steam within the pipe the entire length of the train in transit, the valve F by the pressure of the steam being held firmly to its seat, by which means the train-pipe may be uncoupled between any of the cars without shutting off the steam prior to such uncoupling, as is commonly practiced. The valve F is provided with an opening *v* there-through (see Figs. 3 and 4) that affords a vent through which the condensation-water may escape from the train-pipe when the valve is closed and the coupler-head depending, as shown in Figs. 5 and 6, by which construction the entire length of the train-pipe is kept filled with live steam and the perfect

drainage of said pipe effected, obviating the freezing and bursting thereof.

This improved coupler may be uncoupled by hand by unclasping the springs and drawing the heads A apart.

Having thus fully set forth my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A pipe-coupler comprising a hollow shank provided with a head at one end having an opening therethrough, a packing around said opening, a gravity check-valve hinged within the coupler, said valve having a condensation discharge-duct therein, and means for locking said coupler to a companion part, substantially as set forth.

2. A pipe-coupler consisting of a hollow shank having a head with an annular opening therethrough, a packing around said opening, a metal ring secured within the opening in said head, forming a valve-seat, a gravity-valve hinged to said ring, the socket to receive said valve when off its seat, an interlocking arm projecting from the periphery of said head, and the oppositely-posed spring, as set forth.

3. A pipe-coupler comprising two companion parts, each part having a hollow shank, a check-valve therein, an annular head at one end thereof, said head having an annular packing-ring, an outer annular flange concavo-convex in cross-section, an interlocking arm projecting from said flange, an overhanging oppositely-posed locking-spring, and interposed guide-pins.

4. In a coupling device comprising two parts, each the counterpart of the other, the combination of the valves hinged within each section, said valve having a condensation discharge-opening, the locking-arms, the oppositely-posed springs, and the interposed pins, substantially as set forth.

5. A pipe-coupler comprising two companion parts, each part having a hollow shank, an annular head at one end thereof, said head having an annular packing-ring and a flange recessed in its inner face, an interlocking arm projecting from said flange, an overhanging oppositely-posed locking-spring, and interposed guide-pins, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE COLLINS.

Witnesses:

E. S. WHEELER,
R. B. WHEELER.