(No Model.) 2 Sheets—Sheet 1.

J. I. COLLINS.

STEAM COUPLING FOR RAILROAD CARS.

No. 383,628. Patented May 29, 1888.

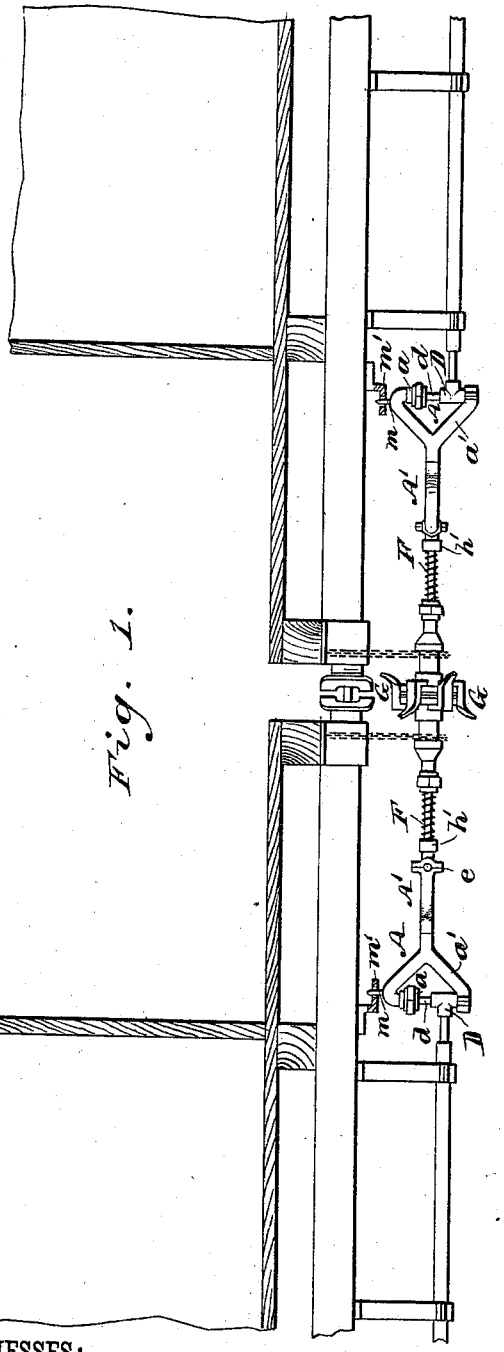

Fig. 1.

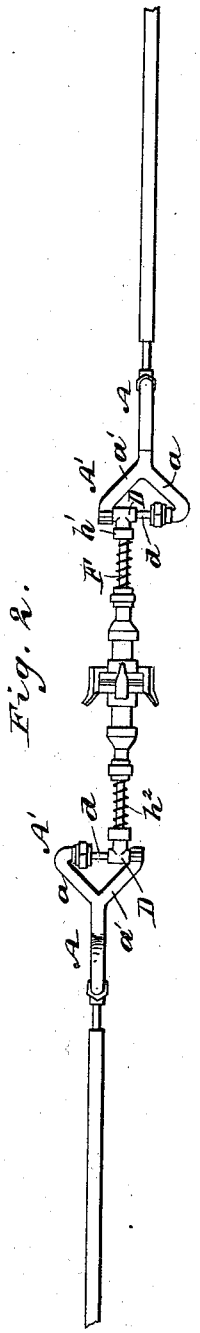

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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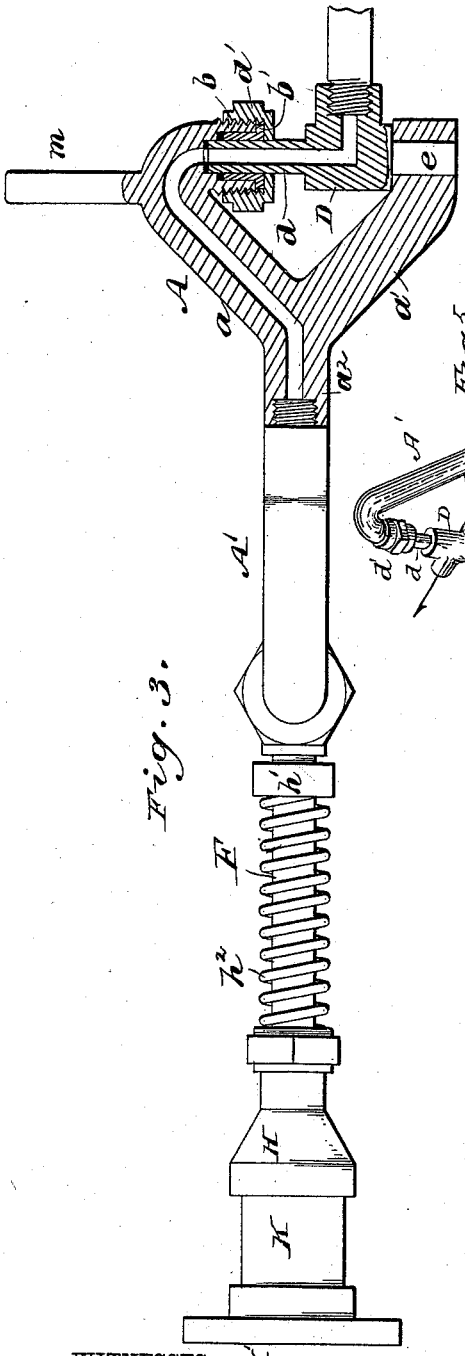

Fig. 3.

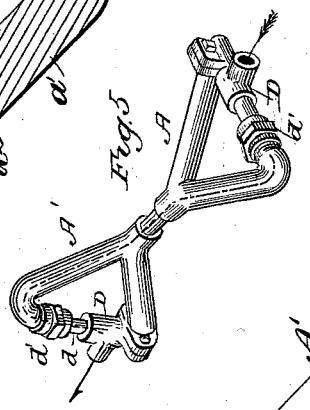

Fig. 5.

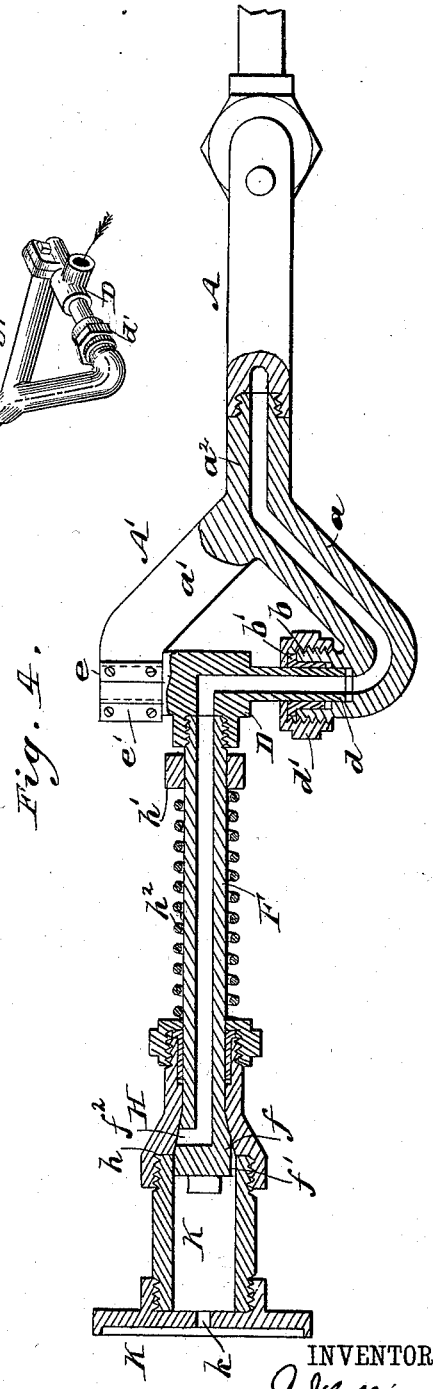

Fig. 4.

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UNITED STATES PATENT OFFICE.

JAMES I. COLLINS, OF AMSTERDAM, NEW YORK.

STEAM-COUPLING FOR RAILROAD-CARS.

SPECIFICATION forming part of Letters Patent No. 383,628, dated May 29, 1888.

Application filed September 7, 1887. Serial No. 249,021. (No model.)

To all whom it may concern:

Be it known that I, JAMES I. COLLINS, of Amsterdam, in the county of Montgomery and State of New York, have invented a new and Improved Steam-Coupling for Railroad-Cars, of which the following is a full, clear, and exact description.

My invention relates to an improvement in steam-couplings for railroad-cars, and has for its object to provide means for automatically establishing or breaking tubular connection between the cars or engine and cars of a train for warming, ventilating, or analogous purposes, the tubular communication between the cars, when established, serving to convey steam, air, or water, as circumstances may direct and according to the purpose required.

The invention consists in the construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the coupling applied, and Fig. 2 is a plan view of the coupling detached. Fig. 3 is a partial elevation and section of one of the couplings. Fig. 4 is a central horizontal section through the same, and Fig. 5 is a perspective view of one of the couplings.

In carrying out the invention both sections of the couplings are made alike, there being no right or left, male or female, whereby one set of patterns only are needed, and all possibility of mistakes is avoided in attaching the sections to the car or engine.

Two substantially Y-shaped conductors, A and A′, are provided, one member, *a*, of which is tubular, likewise the shank a^2, the other member, *a′*, being made solid to serve as a bearing for connections, hereinafter described. The tubular member *a* is carried inward to align the outer end of the solid member *a′*, and provided with an exterior thread, *b*, and an interior flanged packing, *b′*, as shown in Figs. 3 and 4, the said end being adapted to receive the reduced end *d* of an L, D, which is held to turn freely by the ordinary form of packing-gland, *d′*. Thus between the L and the tubular member *a* a hinged steam-tight connection is obtained. In alignment with the reduced end *d* of the L an annular projection, *e*, is produced integral with the outer side, which projection is journaled in the outer end of the solid member *a′*. This is accomplished by dividing the end of the member and producing an aperture centrally the dividing-line to receive the projection *e*, the two parts being thereupon secured to one another by bolts or otherwise. A journal-box, *e′*, is thus obtained, and the L is permitted to have a free rotary movement between the members *a* and *a′*.

The shanks of the Y-conductors A and A′ are connected by a nipple or directly in such manner as that one will occupy a horizontal position and the other a vertical position, as illustrated in Figs. 1, 2, and 3.

A tubular rod, F, is screwed into the outer end of the L, D, which rod at its unattached extremity is provided with a conical enlargement, *f*, closed at the end, having longitudinal peripheral grooves *f′* and an aperture, f^2, at one side connecting with the interior of the tube. The conical enlargement *f* is purposed to act as a valve, and to that end a sleeve, H, is packed to slide upon the rod F, provided with a flaring mouth, *h*, interiorly tapered to correspond with the taper of the valve *f*, the port f^2 being normally covered by the reduced tapering portion of the walls. A collar, *h′*, is secured upon the inner end of the rod F, and a spiral or coil spring, h^2, is made to intervene the sleeve and collar and bear against the same, as illustrated in Figs. 3 and 4.

A section of tubing, K, of equal interior diameter with the greatest interior diameter of the sleeve H, is screwed into said sleeve, and to said tubing a disk, K′, is secured, by thread or otherwise.

The disk K′ is provided with a small central aperture, *k*, and upon the outer face with a rubber or other flexible packing-ring to make a close joint when two disks or half-couplings are brought together, and the said disk is furnished upon its periphery with any number of wedge or tooth shaped guides G, arranged to project beyond the faces or ends of said disks, and so that on bringing the two half-couplings or disks together they will be automatically guided by the projections or guides to their

required relative positions, and the faces of the disks, when brought together by means of the guides, are kept in contact against disturbance by vibratory motion of the cars, without restricting, however, the independent motion of each car.

In attaching the coupling to a car it is supported at the outer end by a chain attached to the sill and passing around the coupling to the rear of the disk, the inner ends being sustained in position by the engagement of a staple, *m*, integral with the upper member of the Y-shaped conductors A, with a bracket, *m'*, secured beneath the car, as shown in Fig. 1.

As illustrated in the plan view, Fig. 2, the opposing couplings, while alike in construction, are arranged out of line, so that when the disks come together they will counteract the effect of each other, and in hanging the couplings are allowed to drop at their outer ends at a slight angle downward, to be forced up by the contact, sufficient play being allowed to effect a proper result. It will be observed that the coupling is, as it were, double-jointed—that is, the sections have, respectively, a vertical and horizontal play, so that when not in use the couplings may be out of the way beneath the car without disconnecting them from the pipes.

In operation, the inner ends of the couplings being connected to the pipes beneath the car, when the disks of opposing cars are brought in contact and locked, they are each forced backward, which causes the sleeve to slide back upon the rod F, compress the spring h^2, and cause the tube K to slide over the valve *f*, the tube being of greater diameter than the diameter of the valve at the outlet f^2. The steam, hot air, or other product passing through the coupling is allowed to escape and pass out through the medium of the peripheral groove *f'* into the tube K, and from thence through the disk into the next coupling.

It will be observed that when the cars are coupled the valve is automatically opened and the steam or hot air is allowed to circulate freely from the engine through the length of the train; also, that when a car is disconnected the valve at the uncoupled end will be automatically closed.

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

1. A coupling for heating or ventilating pipes of cars, consisting of two essentially Y-shaped conductors secured to one another at right angles and one of them pivotally connected to the pipes, a tubular rod pivotally connected to the other conductor, a tube provided with an apertured disk and connected to the tubular rod, and a valve in the extremity of the said tubular rod, substantially as described.

2. A coupling for heating or ventilating pipes of a car, consisting of two essentially Y-shaped conductors secured to each other at right angles and one of them pivotally connected to the pipes, a tubular rod pivoted to the other conductor and provided with a conical end having peripheral grooves, a spring-actuated sleeve having a flaring mouth, a tube connected to the sleeve, and an apertured disk on the end of the said tube, substantially as herein shown and described.

3. The combination, with a railway-car and the heating or ventilating pipes, of a coupling consisting of the essentially Y-shaped conductors A A', having one solid and one tubular member and connected at right angles to each other, an L pivoted between the members of each conductor, the inner L being adapted for connection with the said pipes, a tubular rod, F, secured to the outer L, provided with a conical valve at one end and an encircling spring, a sleeve, H, having a flaring mouth, adapted to reciprocate upon said rod over the valve and bear against said spring, a tube, K, secured to said sleeve, and an apertured disk attached to the tube, having attached peripheral fingers, substantially as and for the purpose herein set forth.

JAMES I. COLLINS.

Witnesses:
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JOHN F. COLLINS.