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J. W. SPURLOCK.

AUTOMATIC AIR PIPE COUPLING FOR CARS.

(Application filed Oct. 17, 1899.)

(No Model.)

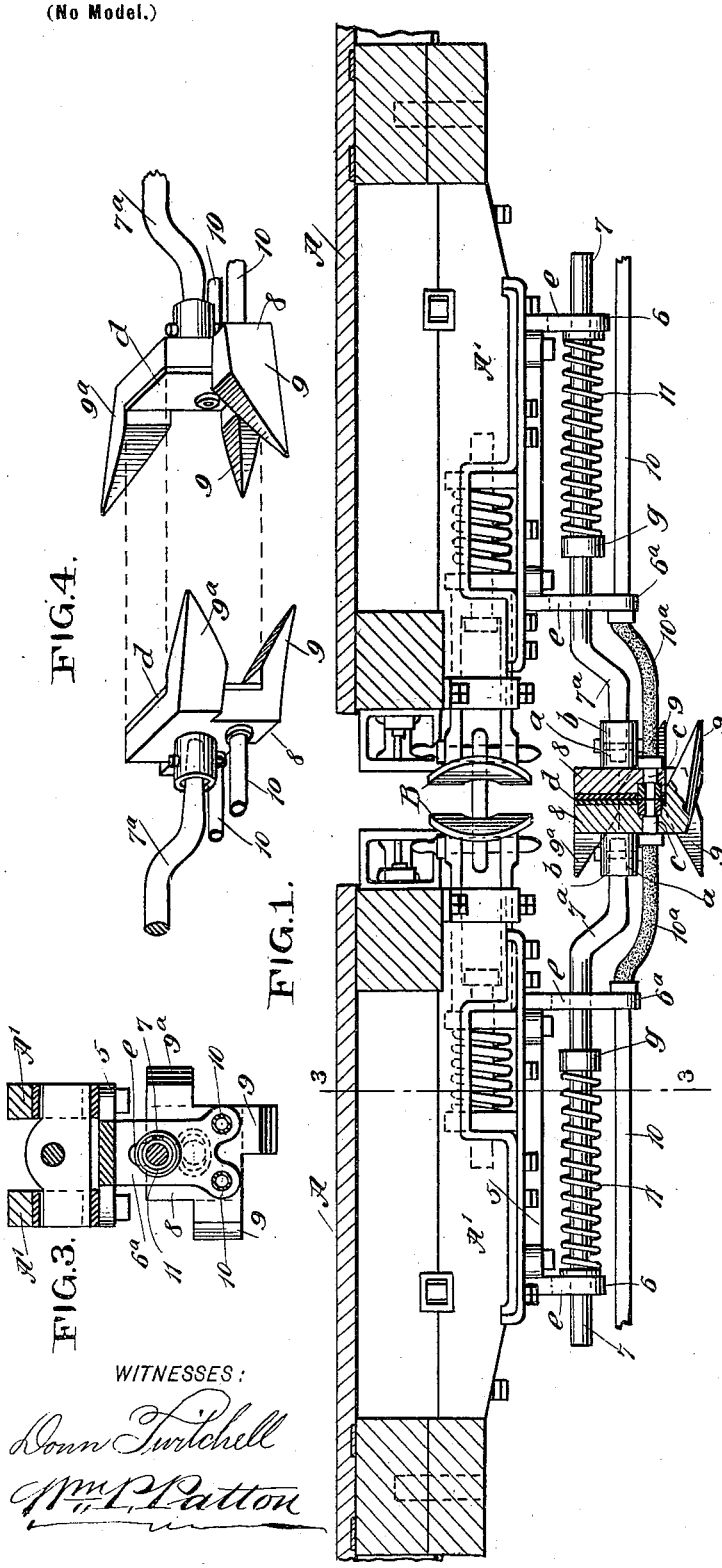

FIG. 1.

FIG. 4.

FIG. 3.

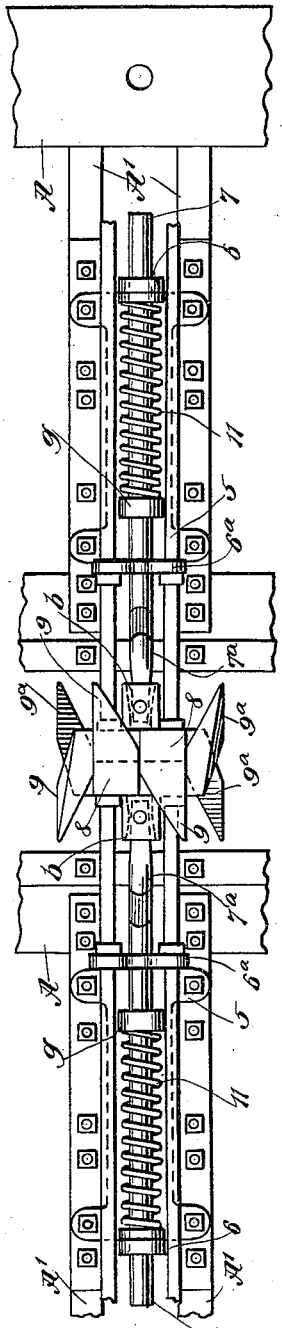

FIG. 2.

WITNESSES:

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AUTOMATIC AIR-PIPE COUPLING FOR CARS.

SPECIFICATION forming part of Letters Patent No. 646,240, dated March 27, 1900.

Application filed October 17, 1899. Serial No. 733,881. (No model.)

To all whom it may concern:

Be it known that I, JOHN WALTER SPURLOCK, of Ty Ty, in the county of Worth and State of Georgia, have invented a new and Improved Automatic Air-Pipe Coupling for Cars, of which the following is a full, clear, and exact description.

The object of this invention is to provide simple and efficient means of novel construction for the automatic coupling together of air-pipes on cars at the same time that the car-couplings are brought together and coupled.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and defined in the claims.

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

Figure 1 is a longitudinal sectional view of two car-frames in part coupled together by ordinary car-couplings and showing the improved air-pipe coupling in coupled connection. Fig. 2 is an inverted plan view of the same. Fig. 3 is a transverse sectional view substantially on the line 3 3 in Fig. 1; and Fig. 4 is a detached perspective view of two coupling-heads which are essential parts of the invention, said heads being shown separated and having a carrier-rod and two air-pipes attached to each head.

In carrying into effect the features of the invention, A A indicate, respectively, the frame portions of two cars, and B B are ordinary link-and-pin car-couplings, being shown as one means for detachably connecting the two cars represented by the frames A A, it being understood, however, that any other approved form of car-couplings may be employed for the purpose.

On the lower sides of the spaced longitudinal timbers A′, that are portions of the car-frames A and which directly support the car-couplings B at the transverse center of the car-frames, as usual, a bracket-plate 5 is secured, and from each bracket-plate two spaced arms 6 6^a project downwardly. The forward arm 6^a on each bracket-plate 5 is preferably of greater length than the arm 6, and said arms are oppositely perforated for the reception and support of a carrier-rod 7, which is held to slide therein.

On the portion of the carrier-rod 7 that projects in advance of the bracket-arm 6^a a goose-neck formation 7^a is formed, whereby the forward end of the carrier-rod is projected in a lower plane than the parts engaged by the bracket-arms 6 6^a and parallel therewith, as shown in Fig. 1.

Upon the forward extremity of the goose-neck 7^a the coupling-head 8 is loosely secured. Preferably this connection between the coupling-head and the end of the rod 7 is in the form of a horizontal hinge-joint *a*, which permits the coupling-head to rock sidewise a limited extent; but the coupling-head is held projected, so that the front face thereof is disposed in a vertical plane, as shown in Fig. 1. Preferably the body of the coupling-head 8 is in the form of a rectangular block, from which the hub *b* extends centrally and rearward, said hub being perforated longitudinally for the reception of the end of the goose-neck formation 7^a, whereon it is affixed.

From the forward face of the coupling-head body two prongs 9 project, these prongs being located oppositely on each side of the block and tapered on the inner faces and the tops thereof, so as to terminate at their free front ends in points adjacent to the straight outer side surfaces of the prongs, as shown in the drawings. A like prong 9^a is formed on the upper outer corner of the coupling-block body and has the inner and lower faces thereof tapered outwardly, thus providing a point on the free end similar to the point on the prong 9 directly below it; but the top face and outer side of the prong 9^a are straight, as is clearly shown in Fig. 4.

The lower portion of the bracket-arm 6^a is preferably widened and perforated at two points suitably spaced apart for the reception of two similar air conduit-pipes 10. The pipes 10 (shown broken off) in complete form are extended along each side of the car-frame and preferably supported thereon, having connection with a source of air-supply under pressure, as usual, for the operation of air-

brakes of any preferred type, and as these features are not essential to illustrate the invention they are omitted from the drawings.

The portion 10^a of each air conduit-pipe 10, which extends forwardly from the bracket-arm 6^a, is of pliable material, such as gum hose, of sufficient strength to withstand air-pressure of proper degree. A metallic nipple *c* is secured in the forward end of each flexible pipe-section 10^a, and said nipples are secured in spaced perforations formed to receive them in the coupling-head 8 a suitable distance below the hub *b* thereon.

The front end of each nipple *c* is enveloped with an elastic packing-joint that is held air-tight in a counterbore of the perforation wherein the nipple is inserted, and said annular joint may be formed integral with the elastic joint *d*, that is secured as a facing on the flat front side of the coupling-head, as clearly shown in Figs. 1 and 4.

Preferably the apertures *e*, formed in the depending bracket-arms 6 6^a for the reception of the carrier-rod 7, are vertically elongated sufficiently to permit the body of the carrier-rod to rock therein from a horizontal plane.

As shown in Figs. 1 and 2, a strong spiral spring 11 is mounted upon the carrier-rod 7 between the bracket-arms 6 6^a, having contact at the rear end thereof with the arm 6 and at the front end with a collar *g*, fixed upon the rod 7, which spring holds the coupling-head 8 normally projected somewhat in advance of the draw-head B, as shown in Fig. 1.

In operation the act of bringing together the ends of two cars having the improvement, so as to effect a coupling of the car-couplings B, will cause the pipe-coupling heads 8 to first engage their prongs 9 9^a with each other, and said prongs will assuredly guide the coupling-heads, so that their faces, which are elastically shod, will have contact.

The provision of two prongs 9 on the lower side corners of the coupling-head body 8 not only affords effective guides, but by their weight assures their maintaining a lowermost level position as they coact with the gooseneck 7^a of the carrier-rod 7 to effect such a desirable result.

It will be seen that if the cars which are to be coupled together approach each other on a curve in the track, so that the carrier-rods 7 do not aline with each other, the horizontal hinge-joints *a* on the forward ends of the goosenecks 7^a will facilitate the lateral rocking movement of the coupling-heads 8 sufficiently to permit the meeting coupling-heads to be automatically adjusted by pressure thereon and have contact throughout their front surfaces. It will also be evident that the provision of vertically-elongated apertures *e* in the bracket-arms 6 6^a will enable the carrier-rods 7 of two pipe-couplings on approaching cars to rock from a horizontal plane if one car is higher than the other, and thus permit the coupling-heads 8 to have proper contact at their front faces, which will effect an air-tight connection of the air-pipes on the coupled cars. The simple act of disconnecting two coupled cars having the improved pipe-coupling thereon will draw the coupling-heads 8 away from each other, and thus disconnect the air-pipes in an obvious manner.

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

1. The combination with a slidable and spring-pressed carrier-rod, of a coupling-head jointed to rock horizontally on the forward end of said rod and having three tapered or beveled prongs projecting therefrom, two of the prongs extending from the lower corners of the head and having their inner and upper faces beveled, and the other prong extending from an upper corner of the head and having its inner and lower face tapered or beveled, and an air conduit-pipe connected with the coupling-head, substantially as described.

2. The combination with a slidable and spring-pressed carrier-rod having one end bent into gooseneck form, of a coupling-head in rectangular form, horizontally jointed upon the forward end of the gooseneck formation, two prongs tapered or beveled on their inner and upper faces and projecting from the lower corners of the coupling-head forwardly, a prong projected from the outer upper corner of the coupling-head and tapered or beveled on its inner and lower face, an elastic facing on the front face of the coupling-head, and an air-pipe having a flexible forward portion which is connected with a nipple secured in a perforation in the coupling-head.

3. The combination with a car-frame, a bracket-plate secured on the frame near its transverse center at the end thereof, and two spaced arms depending from the bracket-plate, each arm having a vertically-elongated aperture therein, of a spring-pressed carrier-rod loosely engaging said arms within their apertures, and having a gooseneck formation on the forward portion thereof, a rectangular coupling-head having three tapered prongs projecting from the corners thereof forwardly, two of the prongs being tapered or beveled on their upper and inner faces and the third one tapered or beveled on its inner and lower face, a horizontal hinge-joint connecting the gooseneck with the coupling-head, two supported and spaced air-pipes inserted in the coupling-head below the carrier-rod connection and having flexible portions at the forward ends and an elastic-joint facing-piece on the front end wall of the coupling-head.

4. In an air-pipe coupling, coupling-heads rectangular in shape and each provided with two prongs projecting from the lower corners of the head and having their inner and top

faces beveled, one of the prongs being flush with the side thereof and the other extending beyond the side, and with a prong projecting from one upper corner of the head, said prong extending beyond the side of the head and having its inner and lower face beveled, substantially as described.

5. In an air-pipe coupling, the combination with a coupling-head having an opening therein, an elastic facing for the coupling-head formed with a tubular projection fitting in the opening of the said head, and an air-pipe having a nipple fitting in the opening of the head with its end projecting into the tubular projection of the facing, substantially as described.

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Witnesses:
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ELI WORRELL.