(No Model.)

W. J. STETHEM.

Car Coupling.

No. 241,165. Patented May 10, 1881.

Fig. 3.

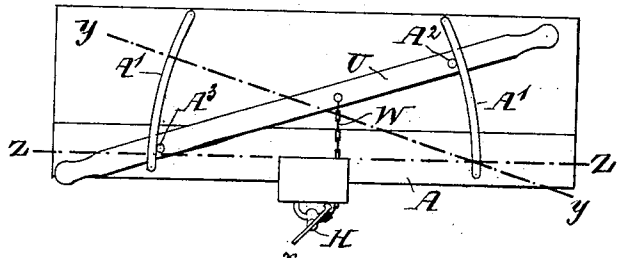


Fig. 4.

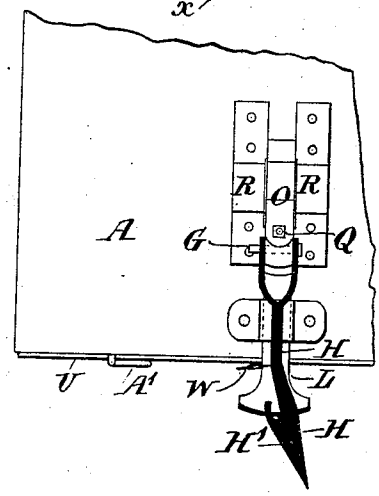


Fig. 5.

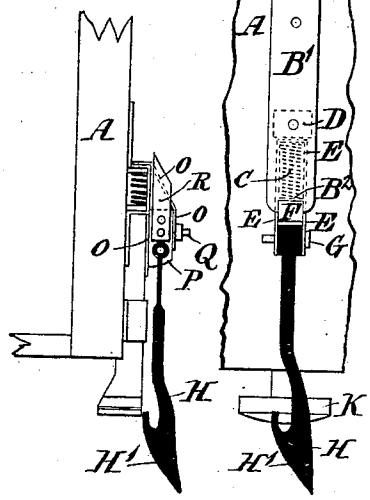


Fig. 2.

Fig. 1.

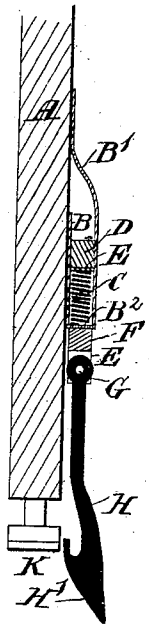


Fig. 6.

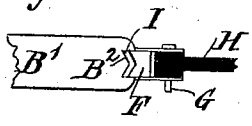
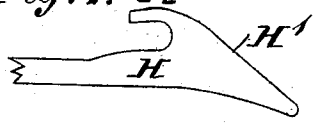


Fig. 7. H2



Witnesses

Charles G. L. Simpson

A. Duffy

Inventor

H. Stethem

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

WALTER J. STETHEM, OF MONTREAL, QUEBEC, CANADA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 241,165, dated May 10, 1881.

Application filed June 14, 1880. (No model.)

To all whom it may concern:

Be it known that I, WALTER JOHN STETHEM, of the city and district of Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Car-Couplers; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention has reference to a new arrangement of mechanism for coupling cars, to enable the same to be performed without a person having to go between the cars, and thereby risk his life; also, to provide a quicker means of coupling and uncoupling the said cars, in which the principal feature consists in setting the coupling-hooks at an angle of forty-five degrees from the perpendicular or horizontal, and this in combination with the arrangement of parts hereinafter fully described, and as claimed.

Before proceeding to further describe my invention I would remark that by setting the coupling-hooks at an angle of forty-five degrees, as above stated, it gives the very material advantage that neither hook comes what may be called "under the other"—that is to say, each or either hook may be lowered to disengage with the other. This will not be the case if one hook is horizontal and the other vertical, and by setting the hooks all at the same position or direction of angle in relation to each end of each car. Thus the reversed end of one car, coming next to the car to which it is to be coupled, causes the hook of the one car to be at right angles to the next car, and therefore in a proper position to engage with it.

In the drawings hereunto annexed similar letters of reference indicate like parts.

Figure 1 is a side sectional elevation of my invention. Fig. 2 is a plan of Fig. 1 inverted. Fig. 3 is an end elevation of car with modification of my invention as applied to the bunters at present in use. Fig. 4 is a plan of Fig. 3 inverted. Fig. 5 is a side elevation of Figs. 3 and 4. Fig. 6 is a detail modification of Figs. 1 and 2. Fig. 7 is a plan of hook in plane of line *x x*, Fig. 3.

Letter A is the platform, body, or frame of the car to which my invention is to be attached.

B is a metal plate in the form of a stirrup, having its lower end, B′, brought back a considerable distance, if desired, to engage with the ordinary king-pin of the truck, and to be further securely fastened on the body of the car. The bottom of this stirrup-strap is marked B^2, and within it is placed a compression-spring, C.

D is a distance block or thimble.

E is a forked strap, the bottom of which fork forms the surface for the other end of the spring C to rest upon to that which rests on B^2. Now, from the relative positions of the straps B and E, it will be seen that the strap B covers the spring C on the upper and lower sides and E on the two horizontal sides. The spring C is therefore inclosed within a chamber thus formed, as will be seen by Figs. 1 and 2.

F is a distance block or thimble, placed and secured between the two ends of the forked strap E. These ends are extended, and to their extensions is pivoted, by a pin, G, the eye of the coupling-hook H.

In Figs. 1, 2, 4, 5, and 6 the coupling-hook and its parts are shown in solid black to the more particularly distinguish it from the other parts; but in these figures neither a true plan nor side elevation is given, as the hook is therein shown at an angle of forty-five degrees; but the true plan of this hook is given on a somewhat larger scale in Fig. 7.

As shown in Fig. 2, the block F is so situated in the strap E that it does not allow the inner end of the strap to rest upon the block D. The block F having a flat side to rest upon the flat end B^2 of the stirrup-strap B, which the spring C causes it to do, as the spring must be arranged to be somewhat compressed in this position, the hook is thus brought to and held in its proper central position in the center line of the car and track.

In Fig. 6 the bottom B^2 of the stirrup-strap is shown with a mitered configuration and the block F with a corresponding matrical form. They are shown with a space, I, between them, as there will be when there is a strain upon the hook H, as in drawing the car along the railway-track. The object of this mitered configuration is to increase the compression of the spring and cause a greater amount of force to be exerted by the spring C to bring the hook to a central position when it has from any cause been compelled to move to a lateral one, and thus hold it in the proper position for coupling. Each hook, as shown in Fig. 7, has an extended end, forming an incline, H′, so that when two cars are coupled together the incline H′ of the

one hook coming in contact with the similar incline of the other, each hook has to yield a little laterally while in the act of engaging.

I would here call attention to the peculiar construction of the hooks H, in their being each provided, in addition to the incline H′, with a return-projection, H^2, the said projection being in this case necessary, for if they were simply made with an inclined flat surface or an inclined curved surface the hooks would not have a sufficiently certain or positive hold of each other to constitute a reliable coupling.

K is any suitable spring bunter or buffer, one or more of which may be used on each end of each car.

Thus far the above description has been confined chiefly to the invention as shown in Figs. 1, 2, 6, and 7. Now, it is a feature with regard to railway inventions succeeding that they must be arranged to be used with the things at present in use—at least it is so with this invention; or at least it must be arranged so that the things at present in use may be employed until the invention comes into general use, for with the system of running cars all over the various roads on this continent, regardless, I might almost say, of what road they belong to, a car may have to pass over fifty or more different roads before it arrives at the end of its voyage, and it may have to be coupled to cars of some hundreds of different roads, north, south, east, and west. It therefore becomes necessary, for the adoption of this invention, to show such a modification of it as will enable it to be used in conjunction with or without the couplings at present in use, or to make it additional thereto, so that the present couplings may be used without it.

For the above purpose I have given the modification shown in Figs. 3, 4, and 5, which consists of attaching to the ordinary bunter, L, (in common use on this continent,) a strap, O, to which is pivoted a block, P, by means of a pivot-pin, Q. To the side of the block P are attached springs R. These answer the purpose of bringing the coupling-hook H to the center and holding it in the center line of the car, the same as the arrangement in the other modification above described does. The eye of the hook H in this case is made in the form of a double eye, and is attached by the pivot-pin G to the block P. As the bunter L is provided with the ordinary springs to give it elasticity, no further means are required for the purpose, as such provide an equivalent for the spring C, above mentioned. Nevertheless, I would here observe that, if desired, the modification shown in Figs. 1 and 2 may be attached to any common bunter now in use.

We now come to the description of the means by which the hooks are held up when it is desired to couple the cars; and as these means are common to the two modifications I have reserved the description of them to this period. It is most particularly delineated in Fig. 3, where a lever, U, is shown, to which is attached a chain, W, connected to the hook H. A′ are guides for the said lever, and A^2 A^3 are pins or projections formed on the lever, so that by the said pins and guides the said lever is held in position and guided. By this arrangement the guide at the pin A^3 may be said to become the fulcrum when the lever is placed in the position shown in Fig. 3 in solid lines, the hook now being in the proper position for coupling with the next car, which will also have its hook similarly raised. When the cars are coupled the lever will be lowered to the position indicated by the line Z in Fig. 3. By raising the lever to the position shown by line *y* the hook is also raised, the same as first above mentioned, in which case the guide at the pin A^2 becomes the fulcrum. Thus it will be seen that the hook may be operated from either side of the cars.

If desired, a chain or handle, &c., may be attached to operate from the top, as in the case of box-cars.

It will be understood that a sufficient notch or catch, &c., will be provided to hold the lever in the position required; but I should prefer the hold to be a friction, or any ordinary form of one that may be overcome by force; otherwise the operator will have to reach in between the cars to lower the lever after the cars are coupled.

It is to be understood that both levers U of two coupled hooks will, after they are engaged, be lowered together, and thus allow the hooks to come to their normal position.

When the hooks have been coupled, and it is desired to uncouple them, only one lever is raised; and if no strain be on them at the time the hook on the other car will drop out. If the cars are in motion or there is a strain upon the couplings, a slack will be required after one lever is raised in order to let the other hook drop.

What I claim as my invention, and wish to obtain Letters Patent for, is as follows:

1. The combination of a hook, H, having incline H′ and return-projection H^2 on one car set at an angle of forty-five degrees from the horizontal or perpendicular, with a similar hook, H, having incline H′ and return-projection H^2 on the other car, and similarly situated as to the relative position or direction of the angle in the other car, the said hooks being, by the reversed ends of the cars, brought together at right angles to each other, substantially as and for the purpose described.

2. The combination of the hook H, set at an angle of forty-five degrees, and having incline H′, forked strap E, block F, situated with regard to the end of stirrup-strap B as described, spring C, and stirrup-strap B, substantially as and for the purposes set forth.

3. The hook H, set at angle of forty-five degrees, as described, and having an incline, H′, and return-projection H^2, substantially as and for the purpose set forth.

Witnesses: W. J. STETHEM.
CHARLES G. C. SIMPSON,
A. DUFFY.