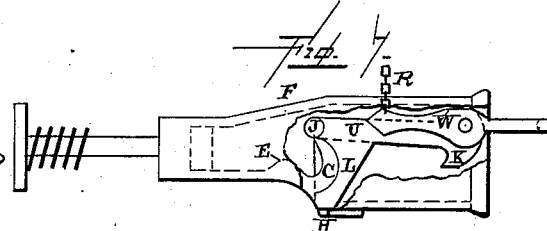
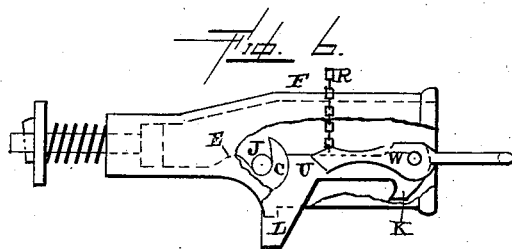
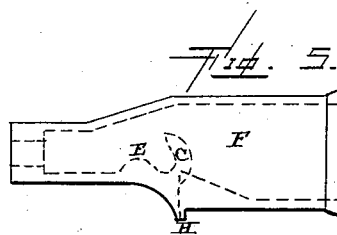
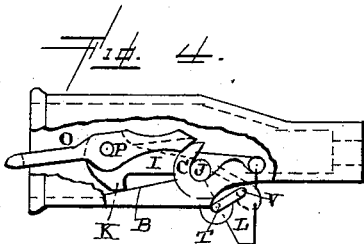
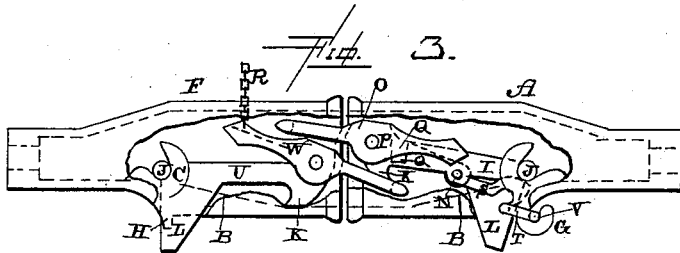
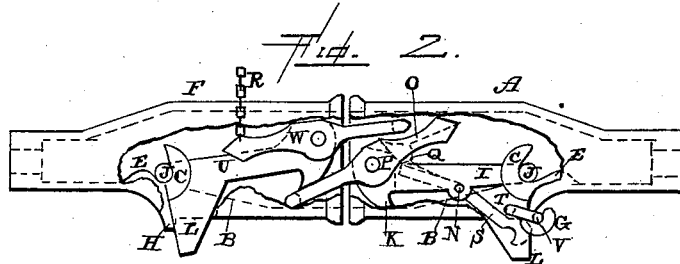
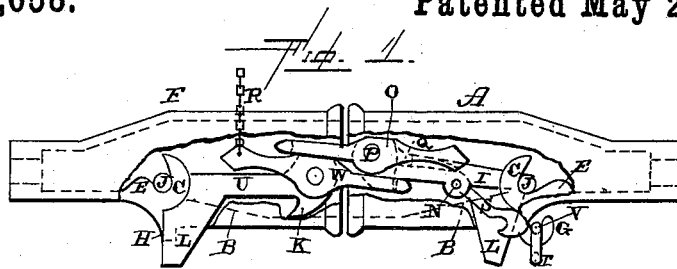


F. A. WESTBROOK & W. S. COOK.

CAR COUPLING.

No. 342,658.

Patented May 25, 1886.



Witnesses.

L. F. Gardner
A. W. Brecht

Inventors.

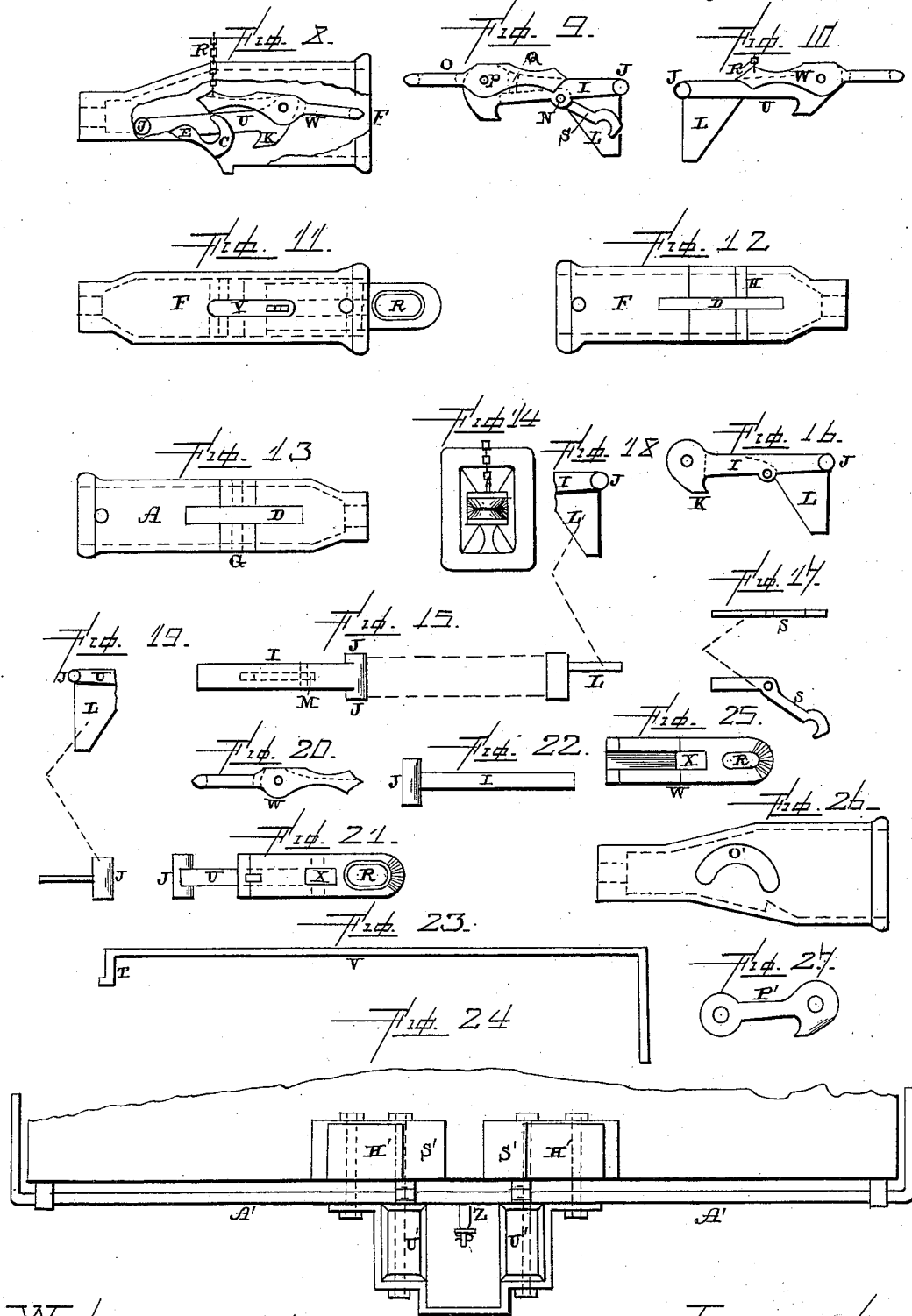
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UNITED STATES PATENT OFFICE.

FRANK A. WESTBROOK AND WINFIELD S. COOK, OF PORT JERVIS, N. Y.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 342,658, dated May 25, 1886.

Application filed March 29, 1886. Serial No. 196,980. (No model.)

To all whom it may concern:

Be it known that we, FRANK A. WESTBROOK and WINFIELD S. COOK, of Port Jervis, in the county of Orange and State of New York, have invented certain new and useful Improvements in Car-Couplings; and we do hereby 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

Our invention relates to an improvement in car-couplings; and it consists in, first, a draw-head having an inclined bottom near its outer end, hooks formed as a part thereof near its inner end, and a rise, projection, or lug formed upon the bottom in the rear of the hooks, in combination with suitable hooks which can be forced back into the head when they strike an immovable object, or it is desired that the cars shall not couple when they run together; second, the combination of the coupling-bars with the coupling-links which are pivoted upon the bars, and suitable means for operating each one of the links; third, the combination of the coupling-bars provided with lugs upon their rear ends to engage with the hooks in the bottom of the draw-heads, and having formed upon their under sides projections for raising the rear ends of the bars upward, the coupling-links, which are pivoted upon the front ends of the coupling-bars, and a means connected with each one of the coupling-links for uncoupling it from the draw-bar, with the draw-heads, which have suitable slots through their lower sides for the extensions on the coupling-bars to pass through, and hooks for the coupling-bars to engage with; fourth, the combination of the coupling-bar, the coupling-link pivoted thereon, and the uncoupling-rod, which is pivoted to the coupling-bar, and a suitable device for engaging with the rear end of this uncoupling-rod for the purpose of operating the coupling-link; fifth, the arrangement and combination of parts, which will be more fully described hereinafter.

Figure 1 is a side elevation of a car-coupling embodying our invention, the sides of the draw-head being broken away so as to show the

position of the different parts when they are coupled together. Figs. 2 and 3 are similar views showing the positions the different parts assume in being coupled. Fig. 4 is a side elevation of one of the heads alone, partly in section, showing the coupling bar and link forced back into the head so that they will not couple. Fig. 5 is a vertical section of one of the draw-heads alone. Fig. 6 is a side elevation of a draw-head, partly in section, showing the parts of the coupling at rest. Fig. 7 is a similar view showing the parts about to be removed from the draw-head. Fig. 8 is a similar view to Fig. 4, showing the other parts of the coupling forced back into the draw-head so as not to couple. Fig. 9 represents the parts of the coupling in one draw-head entirely detached and shown by themselves. Fig. 10 is a similar view of the parts of the coupling which is used in the other draw-head, and which are also detached and shown by themselves. Fig. 11 is a plan view of the draw-head with the different parts in place. Figs. 12 and 13 are inverted views of the draw-heads. Fig. 14 is a front end view of one of the draw-heads. Figs. 15, 16, 17, 18, 19, 20, 21, 22, 23, and 25 are detail views. Fig. 24 shows a portion of a car to which our invention is applied. Fig. 26 shows a draw-head which is a modification of the one shown in the other figures. Fig. 27 shows a coupling-bar which is adapted to be used with the draw-head shown in Fig. 26.

A represents one of the draw-heads, which has as large a mouth as possible, and which has the bottom of the opening which is made in it extend horizontally back a suitable distance, and this bottom inclined upward, as shown at B, to the base of the hooks C, which are cast as a part of the draw-head. These two hooks C are formed for the rear ends of the coupling-bars to catch behind, and are separated from each other by means of the slot D, which is formed through the bottom of the draw-head. In the rear of these hooks C are formed rises E, which are also cast as a part of the draw-head, behind which the lugs on the coupling-bars move when the parts of the coupling are forced inward, as shown in

Figs. 4 and 8, so as to prevent them from coupling, or when the outer ends of the coupling-links strike some immovable object, and thus automatically force the coupling parts back into the draw-head.

Both the draw-heads A F are constructed exactly alike as far as above described; but the head A is provided, in addition, on its under sides with hooks G, which form a bearing for the cranked rod by means of which the uncoupling and moving of the coupling parts back into the draw-head are done. On the under side of the head F are also made the flanges H, which extend on each side of the slot D, which is made through the bottom of the head. Through the rear end of each of the heads is made a suitable opening, through which the headed rod is passed, by means of which the heads are secured to the cars, and upon which rods the buffer-springs are placed in the usual manner.

In the head A is placed a coupling-bar, I, which has lugs J formed on its rear end to catch behind the hooks C, and which has a hook, K, formed upon its front end to pass through the opening in the coupling-link of the other draw-head. On the outer side of the rear end of this coupling-bar I is formed the extension L, which projects down through the slot D, which is made in the bottom of the head, and which extension L is placed to one side of the center of the bar, so as to make room for the uncoupling rod or lever. The draft-lugs are formed on the rear end of the coupling-bar, so that there can be no possible oscillating movement, and hence no unnecessary wear on the hook K upon its front end. Through the top of this coupling-bar I is made a slot, M, as shown in Fig. 15, and in its under side is made a recess, which runs backward from the slot M past the pivotal point N. Placed upon the top of this coupling-bar I is the coupling-link O, which is recessed on its under side, as shown in dotted lines in Fig. 9, so as to fit down over the top of the coupling-bar I, to which it is pivoted at the point P. On the under side of this coupling-link O is made a projection or flange, Q, which passes down through the slot M, made in the bar I, to be operated upon by the uncoupling-rod. The rear end of each one of the coupling-links is curved or recessed upon the top of its rear end, as shown, and these rear ends are made heaviest, so that they will also be left free to move and settle down upon the top of the coupling-bar, so that the outer end will project outward in a horizontal position ready for coupling. The pivot P, upon which this coupling-link O turns, should be cast after the coupling-bar has been formed, and thus unite both of the coupling-bars and their coupling-links together, allowing the links a pivoted movement upon the coupling-bars. Through the outer end of each one of the coupling-links is made an opening, R, through which the hooks K on the front ends of the coupling-bars catch for the purpose of coupling the

cars together. A recess or curve is made in the top of the rear end of each one of the coupling-links, so as to allow the front end of the opposite coupling-link to pass into the draw-head and settle into the recesses in such a manner that the links will have no vertical movement, and hence cannot possibly become uncoupled by accident. The rear ends of both of the coupling-links are beveled to a point, as shown, so that when their rear ends are thrown upward they will have more room to move without striking the top of the head.

Pivoted in the recess which is formed in the under side of the coupling-bar I is the uncoupling-lever S, which has its front end to extend forward in the recess in the coupling-bar far enough to strike against the projection Q on the under side of the coupling-link O. The rear end of this coupling-bar S drops downward at a suitable angle, as shown in Fig. 17, and is formed into a hook, so as to engage with the crank T on the uncoupling-rod V. This rod V extends across the car, and is supported in the hooks G on the under side of the head A, the cranked portion T being made to sweep around and either engage with the under side of the hook for the purpose of throwing its front end downward, as shown in Fig. 3, or catch upon the top of its rear end and throw its front end upward.

When the crank T is made to catch upon the top of the rear end of the rod S, the front end of the rod S is forced upward so as to strike against the projection Q, which passes down through the slot M in the draw-bar I, and thus raise the rear end of the coupling-link O upward, so as to cause it to disengage from the coupling-bar in the opposite draw-head. This movement is made for the purpose of uncoupling when the two heads have run together and the coupling-link O has passed down under the front end of the coupling-link in the opposite head, as shown in Fig. 2.

When the cars run together, should the front end of the coupling-link O happen to run upon the top of the other coupling-link, as shown in Fig. 1, then, in order to uncouple, the crank T is turned so as to catch under the rear end of the coupling-rod S, and thus throw its front end downward, so as to bear upon the front end of the coupling-link and force the coupling-bar I upward, so that its hook K will become disengaged from the opening R in the coupling-link of the other head. The front end of this uncoupling-rod S reaches forward just far enough to follow the curve of the circle formed by the hook K, and thus bear upon the top of the coupling-link in such a manner as to disconnect the parts without fail. When the crank T is made to catch in the hook on the rear end of the uncoupling-rod S and the crank is forced on around, this uncoupling-rod serves to draw the coupling-bar I and its coupling-link O back into the draw-head, as shown in Fig. 4, where the parts will not couple in case the cars run together.

The coupling-parts of each draw-head will be forced backward into the position shown in Figs. 4 and 8 when it is desired that the cars shall not couple together or when the outer ends of the coupling-links strike against some immovable object. In that case, as will be seen, the lugs J upon the rear end of each of the draw-bars pass up over the rises E on beyond the hooks C. In case these parts are not to be held in this position, owing to the inclined surface B in the bottom of each head, they will move forward into position again from their own gravity.

In the coupling-head F the coupling-bar U is provided simply with the lugs J, the extension L on its rear end, and the hook K. Upon the top of the front end of this bar U is pivoted a coupling-link, W, which has an opening, R, through its end, a recess in its under side, and a recess in its top edge, and through this coupling-link W is formed a slot or opening, X, up into which the front end of the coupling-bar U passes. Instead of the coupling-link W being operated by an uncoupling-rod, S, and a cranked rod, V, it has a chain, R, attached to its rear end, as shown in Figs. 6, 7, and 8, which chain passes up through a slot, Y, in the top of the coupling-head. The upper end of this chain R is connected to an arm, Z, which extends out from the operating-arm A', which extends across the end of the car, as shown in Fig. 24. When this chain is drawn upward, the front end of the coupling-link W is depressed, as shown in Fig. 3, so as to bear against the bottom of the opposite draw-head at the same time that its rear end forces upward against the outer end of the coupling-link O, and thus lifts the hook of the draw-bar I out of the opening R in its front end.

When it is desired to remove the coupling-bars and coupling-links from the draw-heads, it is only necessary to raise the parts upward, as shown in Fig. 7, so as to release the lugs J from the hooks C and the extensions L from the slots D, and then the parts can be drawn forward out of the heads without any further difficulty. In case the coupling device here shown should be attached to a car and should come in contact with a car having the ordinary pin-and-link coupling-head, it will only be necessary to have the outer ends of one of the coupling-links run into this head, and then the pin can be dropped through the opening R.

In case it should be desired to dispense with the hooks C and rises E in the coupling-heads, the curved slots O' (shown in Fig. 26) may be made through the head, and then a coupling-bar, P', (shown in Fig. 27,) may be used. In this case the lugs J will be formed by a pin or bar, which is passed through the slots and the coupling-bar. The front end of the slot will act in the same manner as the hooks C, and the rear end will be the equivalent of the rise E.

In Fig. 24 is shown the end of the car with

the operating-lever A', for operating the chain R, connected to the coupling-link W, fastened to the end sill or car. The object of fastening this lever A' to the end sill, in contradistinction to fastening it to the end siding of the car, is to obviate the loosening of the lever when the end siding is broken or pushed from the end sill. The end siding of the car comes to within about three inches of the bottom of the end sill, leaving room enough below it upon which to fasten the lever A' directly to the sill. The draft-timbers U' are placed upon opposite sides of the space into which the coupling-head is to be inserted.

S' S' are dead-woods, and H' H' the buffer-blocks.

In applying the lever A' as here shown, there is no change in building the cars, with the exception that the end siding does not reach to the bottom edge of the sill, thereby leaving room for the lever.

The extensions L upon the coupling-bars serve also to automatically release the coupling-bar from the draw-head in case the key or nut of the draft-bolt is broken or comes off. Ordinarily, when the draft-bolt becomes broken or its nut comes off, the draw-head becomes detached from the car and falls upon the track, where it is in danger of causing great injury to the locomotive or cars passing along the track upon which it lies. Many cars and locomotives have been thrown from the track by means of draw-heads which have become detached from the cars in this manner. In the present instance, in case any of the hooks should become broken, the draft upon the draft-bars will cause them to rise upward in the coupling-heads and then pull out without in any manner injuring or detaching the draw-head itself.

Having thus described our invention, we claim—

1. The combination of the draw-heads, having hooks C and rises E formed as parts thereof, with the coupling-bars provided with lugs, and the coupling-links pivoted upon the coupling-bars, and a means connected with each draw-head for uncoupling the links, substantially as shown.

2. The combination of the coupling-heads provided with the hooks C and rises E, and having slots through their bottoms, with the coupling-bars provided with extensions and lugs upon their rear ends, the coupling-links, pivoted upon the coupling-bars, and a means for uncoupling the links from the bars, substantially as described.

3. The combination of the draw-head A, provided with means for holding the coupling-bar in position, a coupling link pivoted upon the coupling-bar, the coupling-rod S, and a cranked operating-rod, substantially as set forth.

4. The combination of the two draw-heads A F, the coupling-bars I U, provided with hooks K at their outer ends and lugs or retaining devices at their inner ends, the two

coupling-links O W, which are pivoted upon the coupling-bars, the uncoupling-rod S, the cranked rod V, the chain S', and the lever A', substantially as specified.

5 5. The combination of the coupling-bar I, having a recess in its under side and an opening, M, through its top, the coupling-link O, provided with a projection, Q, the uncoupling-rod, and cranked operating-lever, substantially as described.

10 6. The combination of the draw-heads having slots through their bottoms with the

draw-bars having extensions upon their lower edges, and which extensions extend through the slots so as to lift the draw-bars upward 15 when a strain is brought to bear upon them, substantially as specified.

In testimony whereof we affix our signatures in presence of two witnesses.

FRANK A. WESTBROOK.
WINFIELD S. COOK.

Witnesses:

W. E. McCORMICK,
GEO. C. ALTHISUR.