No. 776,531. PATENTED DEC. 6, 1904.

M. G. MOORE.

MINE CAR COUPLING.

APPLICATION FILED SEPT. 30, 1904.

NO MODEL. 4 SHEETS—SHEET 1.

Fig. 1.

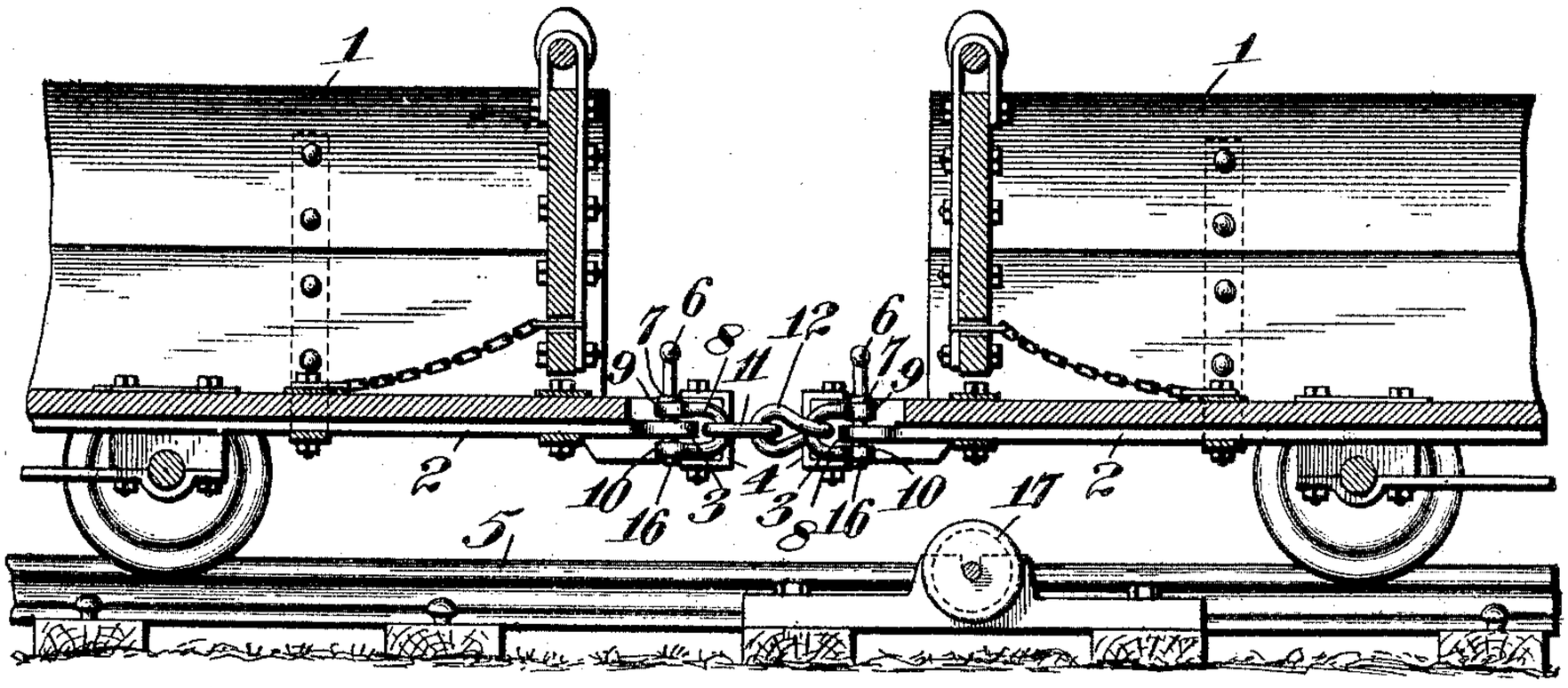
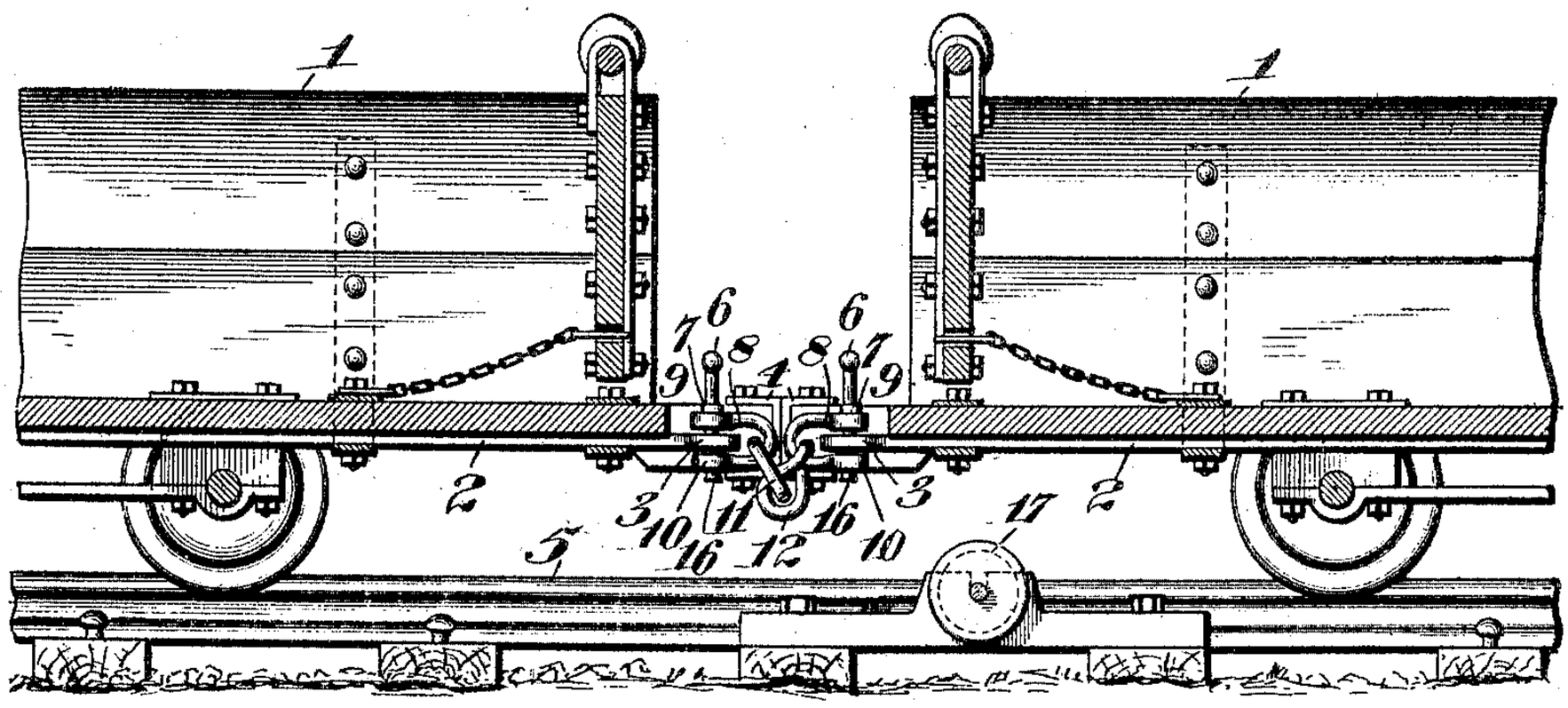


Fig. 2.



WITNESSES,

Elmer Seavey

Geo. Beatty

INVENTOR.

Marshall G. Moore.

by Geo. E. Thackray

his ATTORNEY.

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NO MODEL. 4 SHEETS—SHEET 2.

Fig. 3.

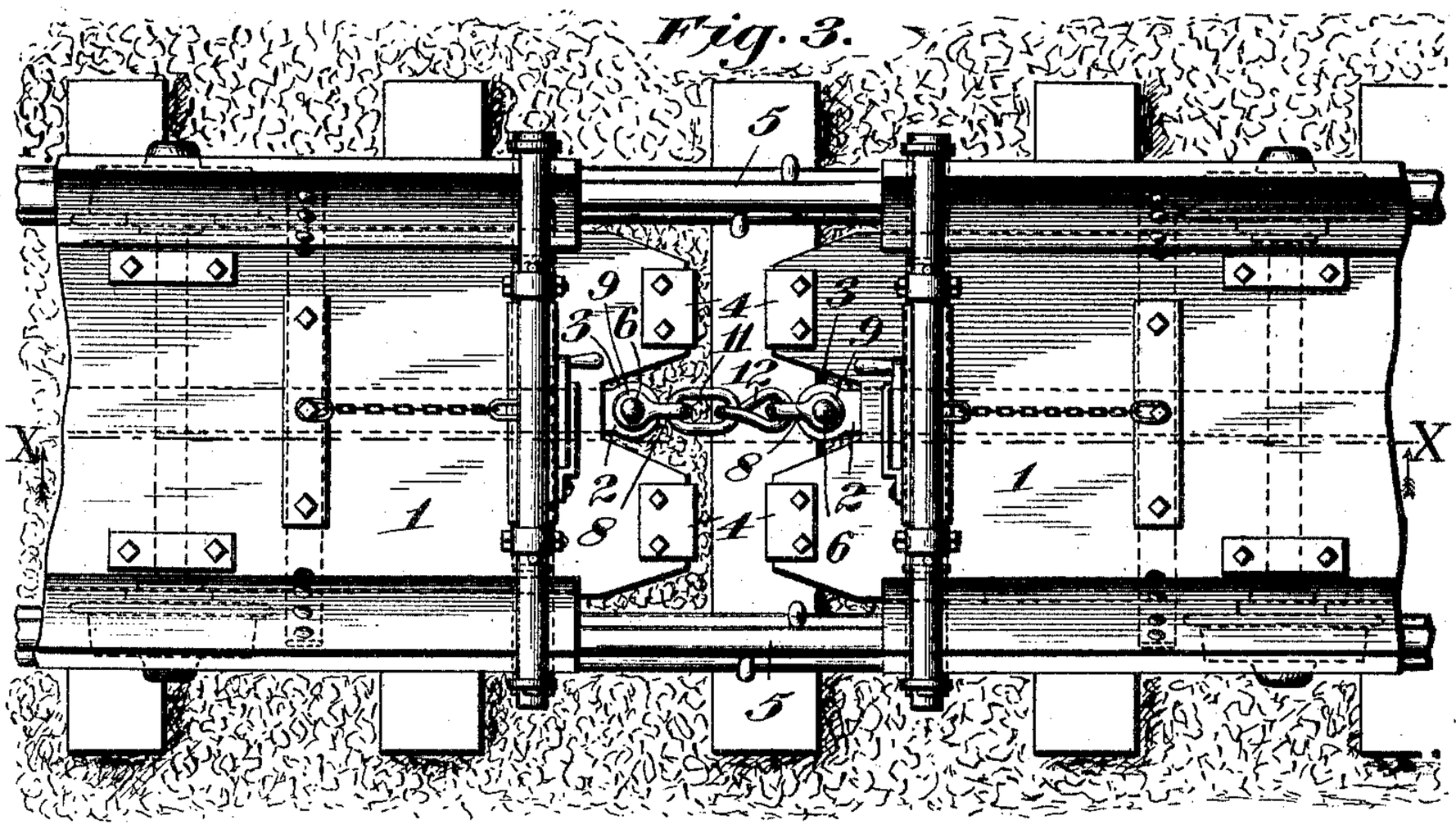
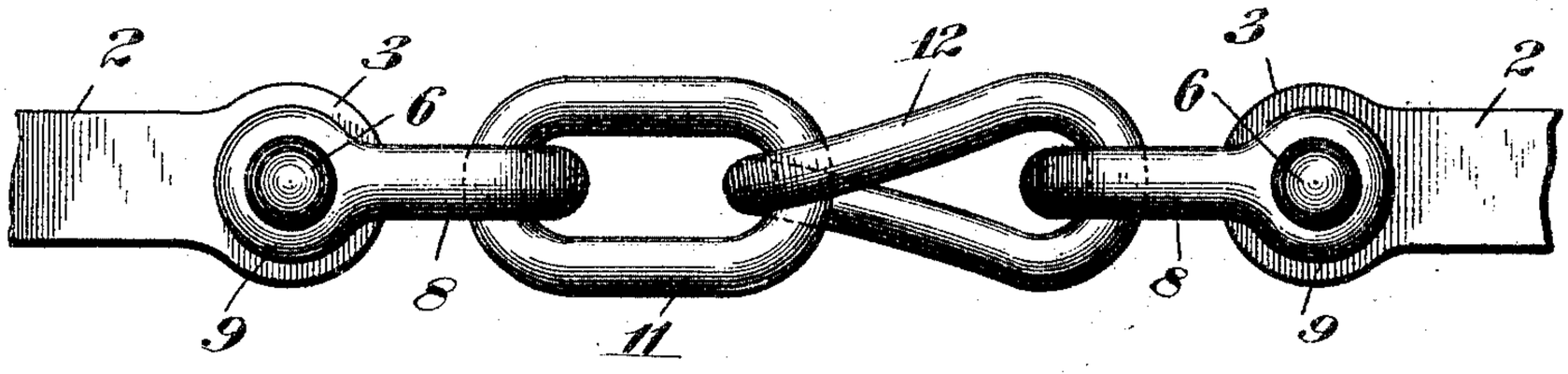


Fig. 4.



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NO MODEL. 4 SHEETS—SHEET 3.

Fig. 5.

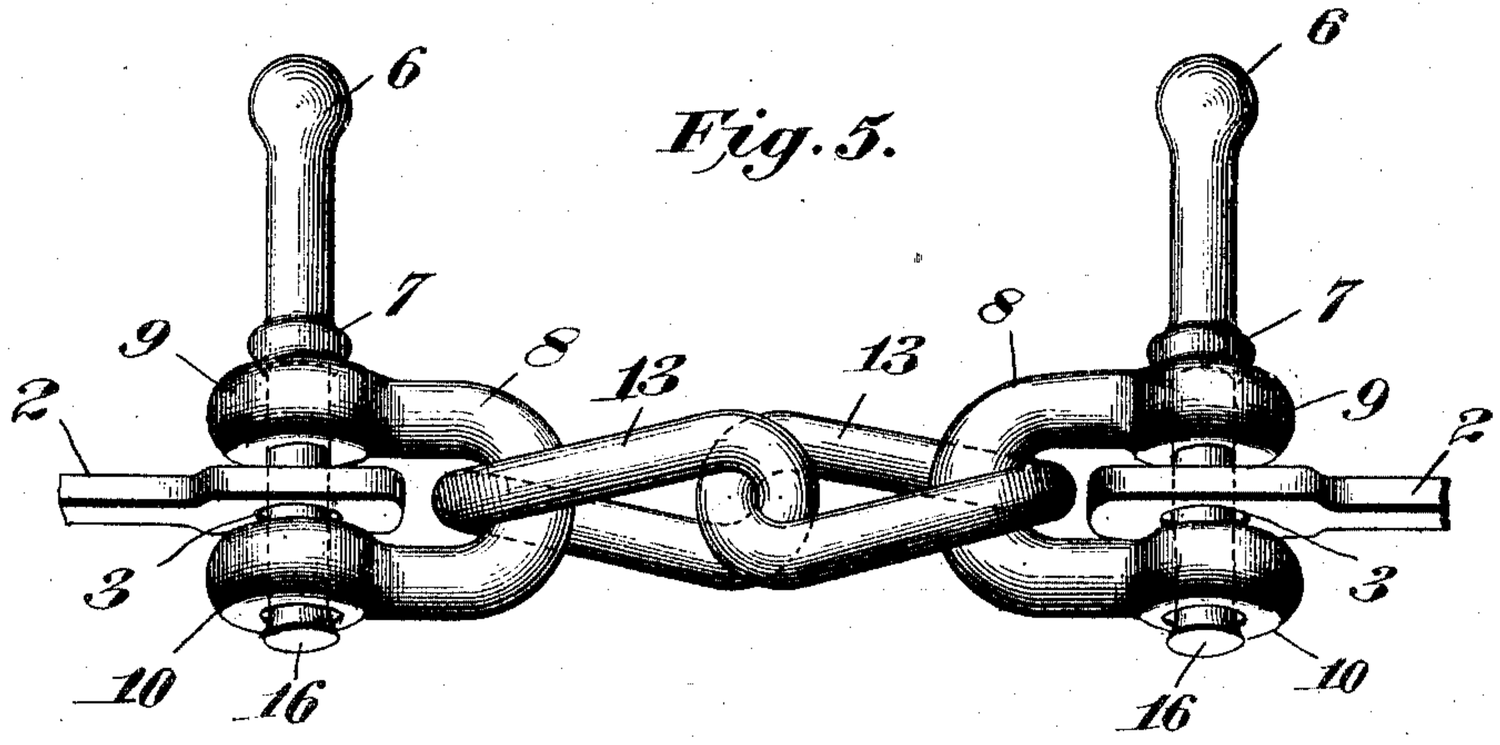
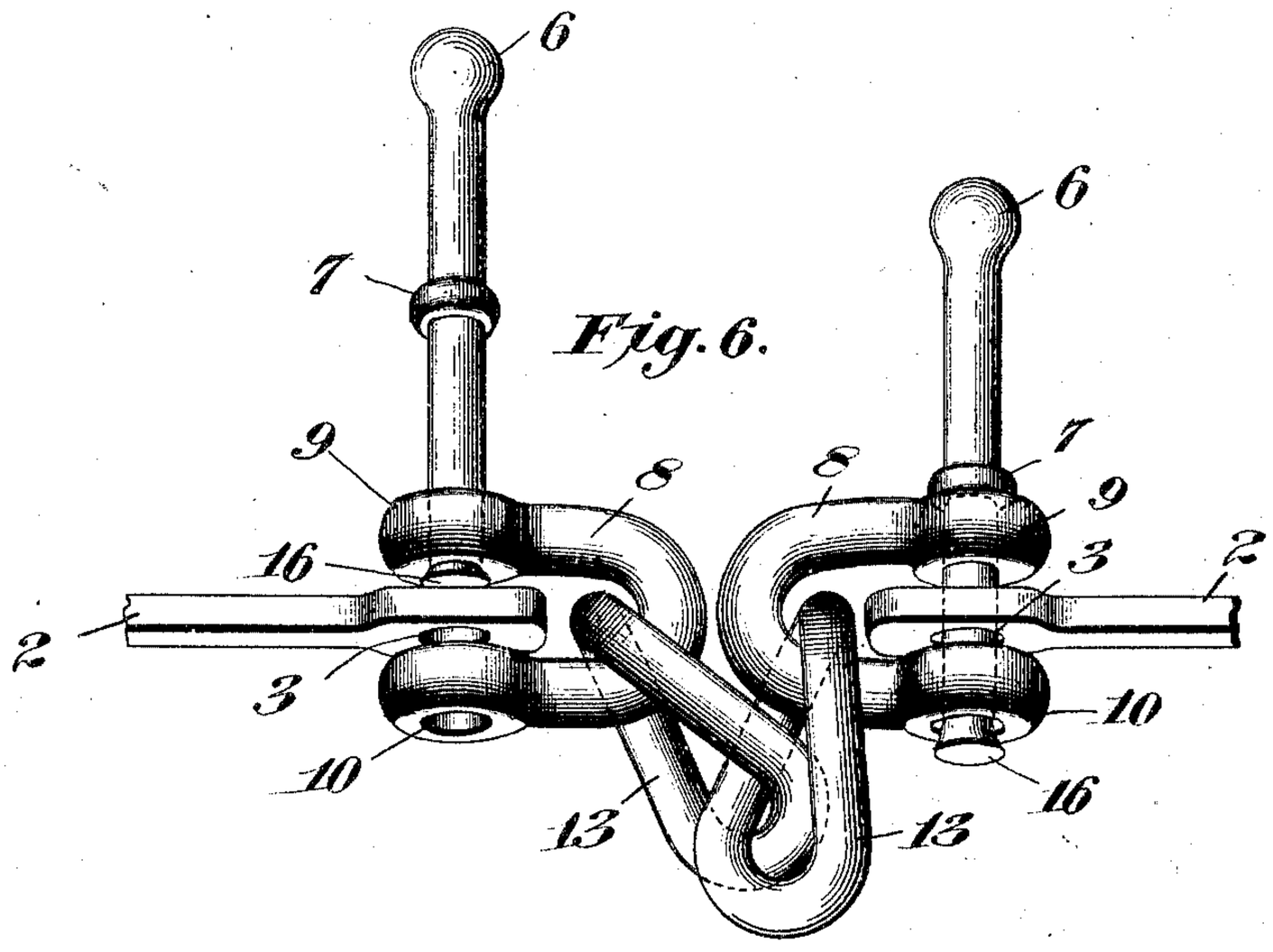


Fig. 6.



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NO MODEL. 4 SHEETS—SHEET 4.

Fig. 7.

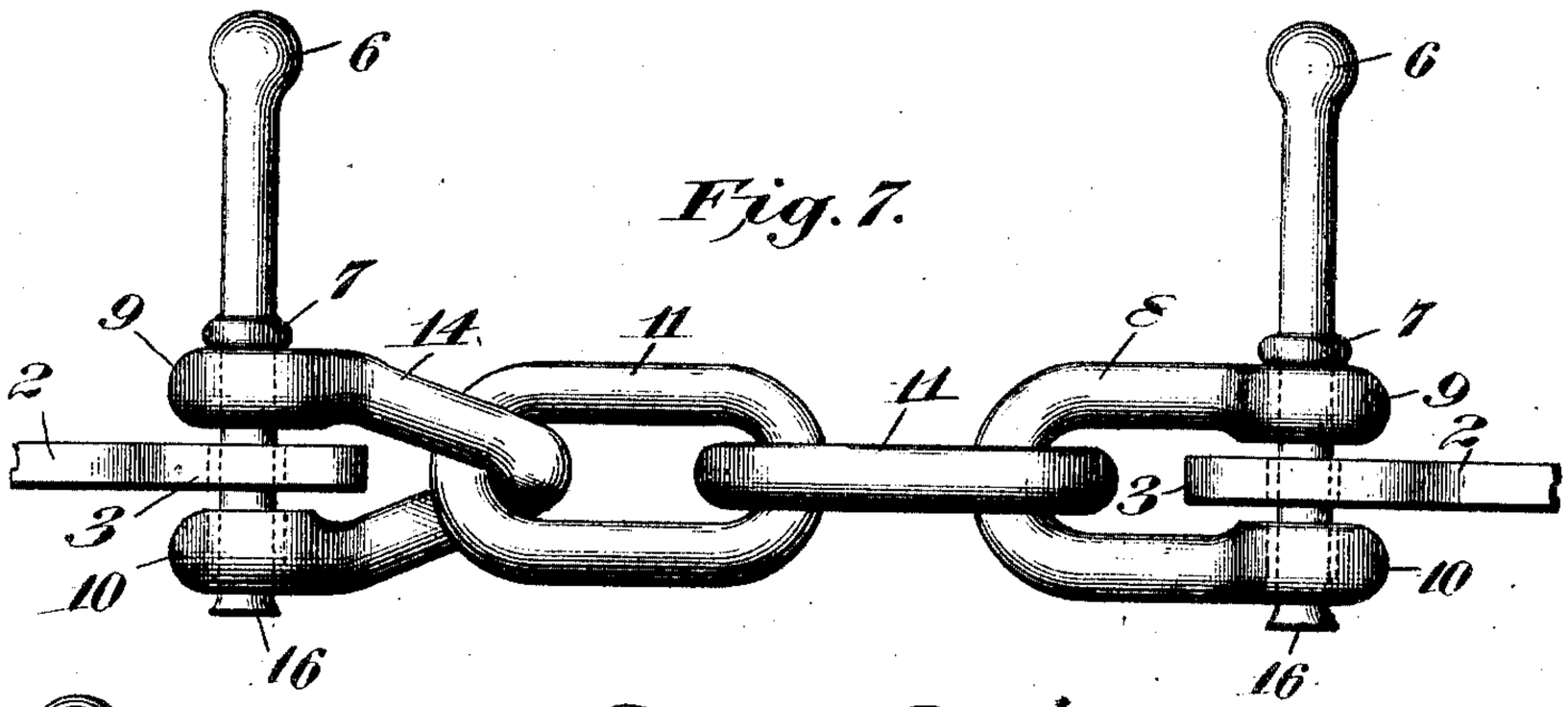


Fig. 8.

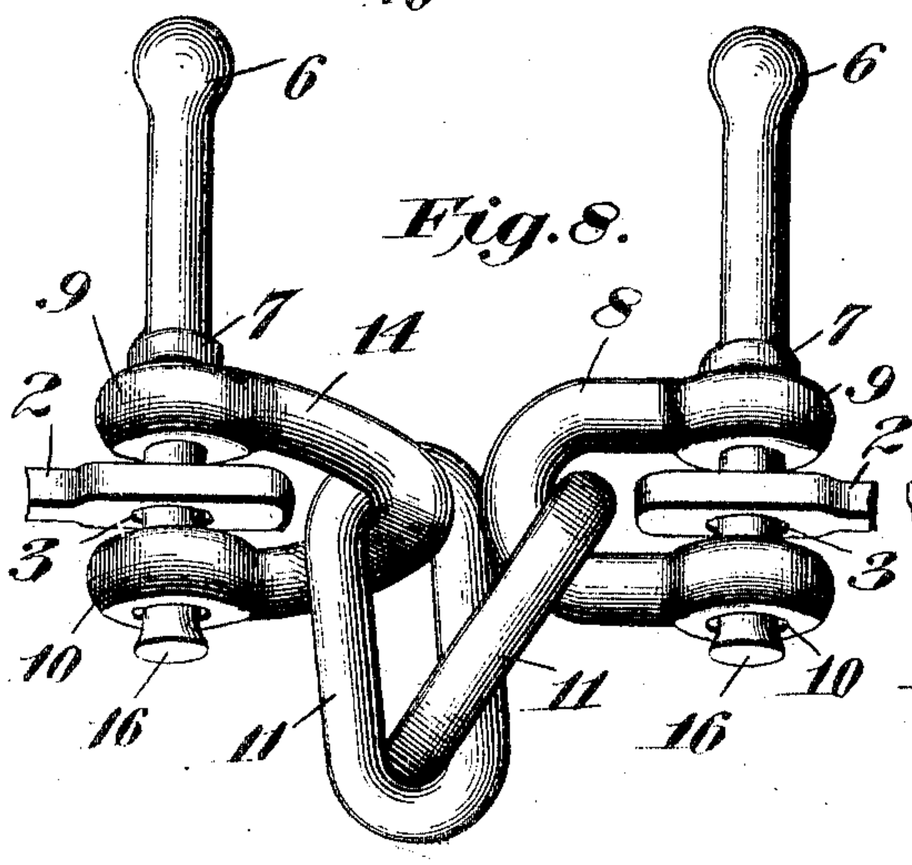


Fig. 9.

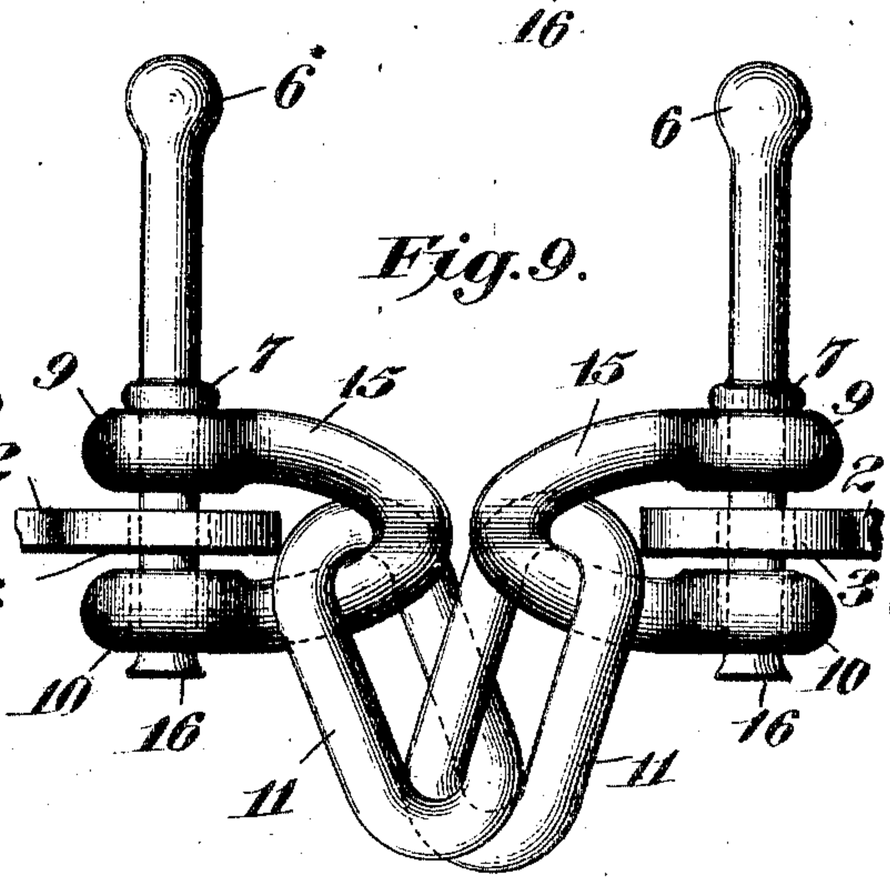
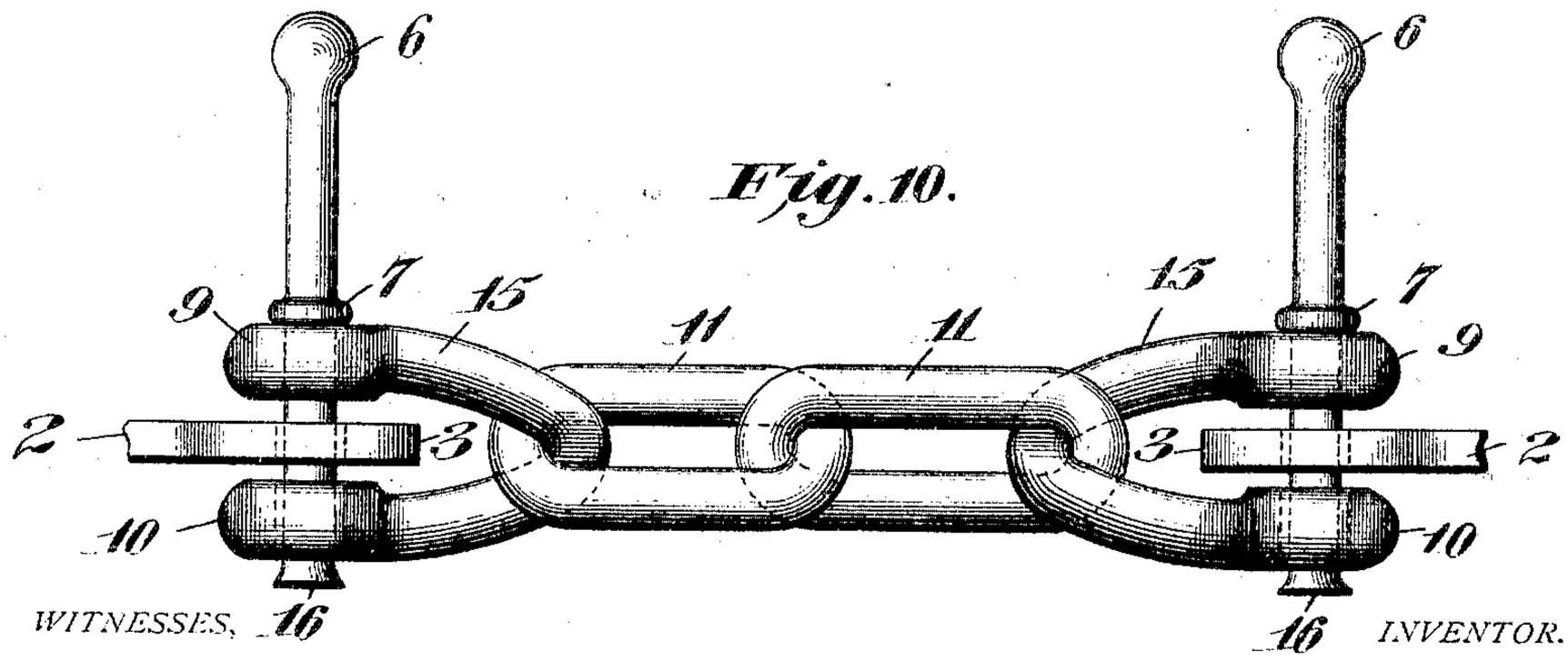


Fig. 10.



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UNITED STATES PATENT OFFICE.

MARSHALL G. MOORE, OF JOHNSTOWN, PENNSYLVANIA.

MINE-CAR COUPLING.

SPECIFICATION forming part of Letters Patent No. 776,531, dated December 6, 1904.

Application filed September 30, 1904. Serial No. 226,612. (No model.)

To all whom it may concern:

Be it known that I, MARSHALL G. MOORE, a citizen of the United States, residing in the city of Johnstown, in the county of Cambria and State of Pennsylvania, have invented certain new and useful Improvements in Mine-Car Couplings; and I 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 appertains to make and use the same.

My invention relates to certain novel and useful improvements in chain couplings for small cars, such as mine-cars; and certain of the objects of the same are to provide an economical and practical form of coupling, which I obtain by means of special construction, as will hereinafter more fully appear, thus reducing the total number of parts, as compared with the ordinary chain coupling, with the desired result of decreasing the distance between the centers of the coupling-pins, while retaining said pins at the same time in their usual location and position.

One of the particular objects of my invention is to provide a coupling such that the bottom portions of the intermediate links of the same are a sufficient distance above the ties or track when the couplings are slack or the car-bumpers are in contact so that during the movement of the car under these conditions the hanging links will not bump against the substructure. This feature of my invention is a particular and important one, for the reason that the old styles of car-couplings, which hang in a long loop when slack, have their lower ends so low that they bump against the ties or track-rollers which are ordinarily used for supporting the cable which hauls the cars, and as the old forms of hanging links bump along the tracks or rollers during the passage of the cars the links are often swung violently against the coupling-pins, thus knocking them out, thereby parting the train and causing accidents and wrecks. This is obviated by the use of my improved form of coupling, which hangs in a short loop when slack and well out of the way of the track-ties and rollers, as previously explained, thus preventing the links from bumping against the substructure, and thereby avoiding the difficulties before mentioned. My improved car-coupling, being shorter than the ordinary style of chain coupling, also holds the cars together more compactly, gives less slack to the train, and permits more cars to be placed on a given length of track or siding.

In further explanation of my invention it should be noted that a clevis of the proper size for securing a chain coupling to a car requires that the eyes thereof shall be of comparatively large dimensions, and in order to replace a broken link the opening in said link must be large enough to pass over the eye of the clevis, which consequently makes the link of correspondingly large size.

My invention in general consists of a car-coupling composed of links and clevises or their equivalents, one or more of which is twisted about the longitudinal axis of the coupling in such a way as to allow the intermediate members to hang free in a short loop when the coupling is slack or the car-bumpers in contact, while the coupling-pins are maintained in their ordinary position and location. In order to accomplish this, I prefer to use a coupling comprising two clevises, one at each end, and two intermediate links so arranged, as above described, that the links hang in a short loop when in their slack position, this result being obtained by means of a twist in one or more of the parts, as previously described, said twist allowing them to move freely into a short hanging loop.

Having thus given a general description of my invention, I will now in order to make the same more clear refer to the four sheets of drawings, which form part of this specification, and in which like numbers refer to like parts.

Figure 1 is a longitudinal sectional elevation taken on the line X X of Fig. 3, showing one form of my improved coupling in its taut or pulling position as applied to a mine-car, while Fig. 2 is a longitudinal sectional elevation of the same, but showing the coupling slack and the car-bumpers in contact. Fig. 3 is a top plan view of the adjoining ends of two mine-cars provided with the form of my improved coupling shown in Figs. 1, 2,

and 4, said coupling being in its taut or pulling position. Fig. 4 is a plan view, on an enlarged scale, of my improved form of coupling shown in Figs. 1, 2, and 3, this coupling consisting of two straight clevises with coupling-pins in the perforated eyes thereof, one straight link, and one link twisted one-fourth revolution around its longitudinal axis. Fig. 5 is a perspective view of another form of my improved coupling having two straight clevises with the usual coupling-pins and two coupling-links each twisted one-eighth revolution around their longitudinal axes, this view showing the coupling in its extended or pulling position, while Fig. 6 is a perspective view of the same coupling shown in Fig. 5, but with the clevises nearly in contact, as when slack. Fig. 7 is a side elevation of another form of my improved coupling consisting of one clevis bent one-fourth revolution around its longitudinal axis, two straight links, and one straight clevis, all in their extended or pulling positions, while Fig. 8 is a perspective view of the coupling shown in Fig. 7, but with the clevises nearly together, as when slack. Fig. 9 is a side elevation of still another form of my improved coupling, consisting of two clevises, each twisted one-eighth revolution around their respective longitudinal axes, and two straight links, this view showing the parts in the position they assume when slack, while Fig. 10 is a side elevation of the coupling shown in Fig. 9, but with the parts extended, as when pulling.

Referring now to the various characters of reference shown on the drawings, 1 1 represent the ends of two cars. 2 is a draw-bar attached to the cars 1, having an eye 3, through which the coupling-pin 6 passes connecting said draw-bar to the eyes 9 and 10 of the clevises 8, 14, or 15. 4 represents the bumpers on cars 1. 5 represents the track-rails on which the cars 1 travel. 7 represents a collar on the coupling-pin 6 for the purpose of preventing said coupling-pin from dropping through the eyes 3, 9, and 10. 11 represents a straight link, and 12 is a link twisted or bent one-fourth revolution around its longitudinal axis.

Referring to the form of coupling shown in Figs. 5 and 6, 13 represents links, each bent or twisted a one-eighth revolution around their respective longitudinal axes.

Referring to the form of coupling shown in Figs. 7 and 8, 14 is a clevis having its loop twisted or bent one-fourth revolution, as shown, the eyes of said clevis being maintained in their ordinary relations to each other.

Referring to the form of coupling shown in Figs. 9 and 10, 15 represents clevises, each of which has its loop bent or twisted one-eighth revolution, as shown. 16 is the flange on the end of the coupling-pin 6 for the purpose of preventing its entire withdrawal from the clevis, and 17 is a track-roller such as may be used for supporting a cable, chain, or other flexible connection for hauling the cars on the track 5.

One of the particular features of my invention is the twisted form of the link or clevis comprising a part of the car-coupling, whereby I am enabled to provide a coupling composed of a small number of parts, such as two clevises and two links or their equivalents. These twisted links or clevises permit the intermediate members of the coupling to hang free when the coupling is slack or when the car-bumpers are in contact and also allow them to freely assume their taut or pulling position when required, as may be readily understood.

As compared with the older forms of coupling my arrangement has one less link, and thus the distance between the center of the coupling-pins is decreased, thereby bringing the car-bumpers closer together, in consequence of which less damage results to the cars when their bumpers come into forcible contact, and this feature of the shorter coupling is also very important where siding room is limited, as a reduction of about four inches in the length of each coupling is accomplished, the total saving being equal to about the length of two mine-cars in a train of fifty.

In addition to the advantages hereinbefore stated it should be noted that by reason of the less number of links in my improved coupling as compared with the number of links in older forms my coupling is of less weight, thus conducing to ease of handling and economy in manufacture.

While I have shown and described my invention with considerable minuteness, I do not wish to be limited to the exact and specific particulars of the arrangements and details shown, but reserve the right to such substitutions, modifications, or equivalents thereof as are embraced within the scope of my invention and as pointed out in the claims.

Having thus given a description of my invention, what I claim, and desire to secure by Letters Patent, is—

1. A car-coupling comprising links and clevises or their equivalents, one or more of said members being twisted about the longitudinal axis thereof, whereby said coupling works freely into its slack position, thus forming a short hanging loop.

2. A car-coupling having a clevis or its equivalent at each end, two links connecting same, one of said links being twisted one-quarter turn about its longitudinal axis, whereby said coupling forms a short hanging loop when in its slack position.

3. In a car-coupling the combination of two straight clevises, one at each end of said coupling, coupling-pins mounted in the perforated eyes of the clevises, said clevises being in the same plane and connected by one straight link and one link containing a twist, said twist be-

ing equal to one-quarter of a revolution of a straight link about its longitudinal axis.

4. A car-coupling having a straight clevis or its equivalent at each end, one straight link and one twisted link connecting said clevises and coupling-pins normally arranged parallel to each other and passing through the eyes of said clevises.

5. A car-coupling comprising two straight clevises each having perforated eyes provided with coupling-pins mounted therein, two links connecting said clevises, one or both of said links being twisted about the longitudinal axis thereof, whereby said coupling works freely into a short hanging loop when in its slack position.

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

MARSHALL G. MOORE.

Witnesses:

GEO. BEATTY,

STONE EDELEN.