

No. 634,891.

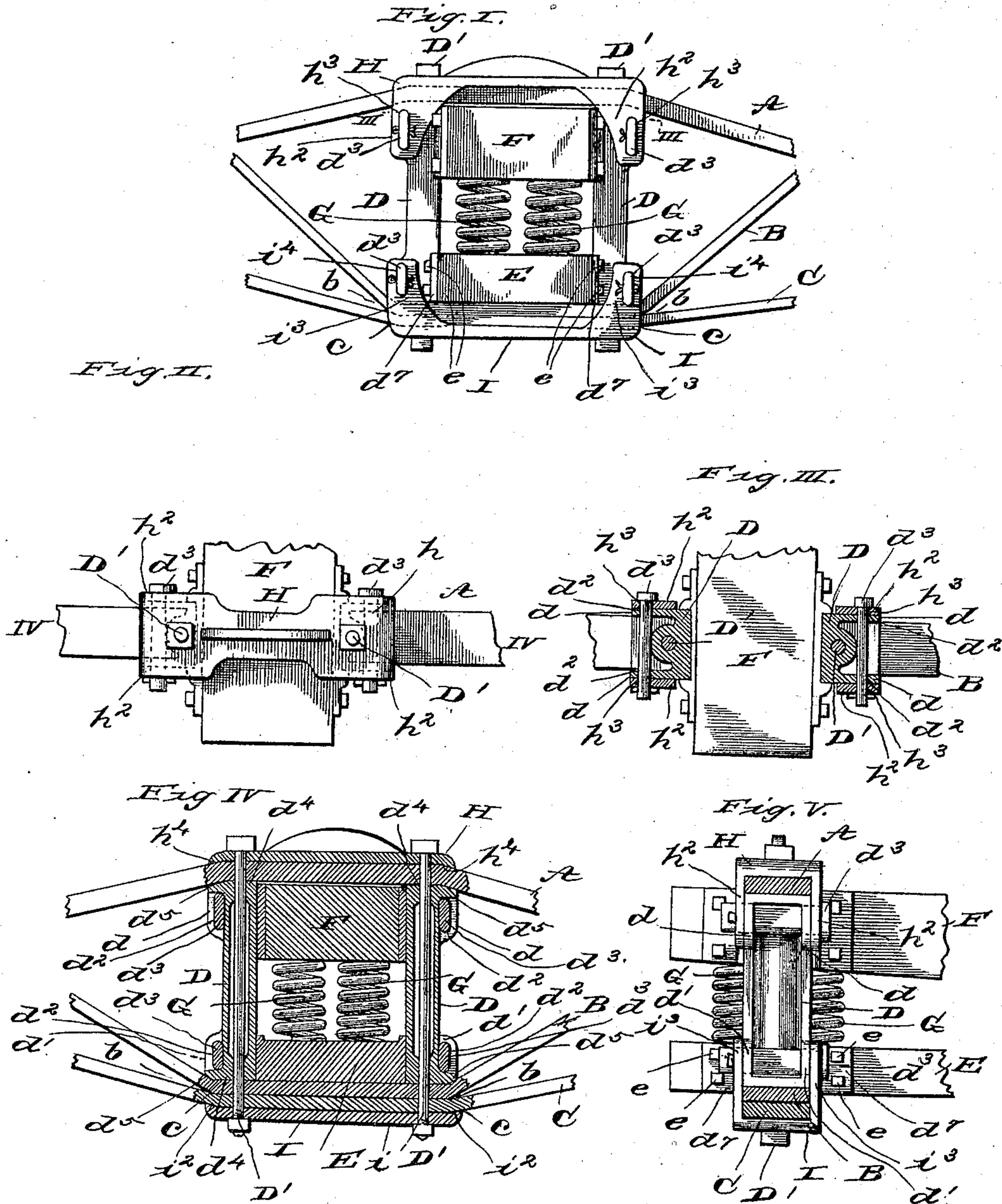
Patented Oct. 17, 1899.

L. A. HOERR.
CAR TRUCK.

(Application filed Apr. 24, 1899.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES—

C. A. Rauberschnitt,
Melville L. Hawley

INVENTOR—

Louis A. Hoerr
By Ruf. S. Papp

Attorney

UNITED STATES PATENT OFFICE.

LOUIS A. HOERR, OF ST. LOUIS, MISSOURI.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 634,891, dated October 17, 1899.

Application filed April 24, 1899. Serial No. 714,161. (No model.)

To all whom it may concern:

Be it known that I, LOUIS A. HOERR, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented an Improvement in Car-Trucks, of which the following is a specification.

My improvement relates to the ends of car-trucks; and the chief objects of my invention are, first, to provide improved means for holding the arch-bars in position in case of the breakage of a column-bolt; second, to provide means for preventing the inverted-arch bars and tie-bars from becoming displaced when column-bolts break; third, to provide means for diminishing the strain upon the column-bolts and thus preventing them from breaking, and, fourth, to provide means for preventing arch-bars and inverted-arch bars from buckling, as they frequently do in the constructions now in use. I secure these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a portion of a truck end embodying my improvement in its preferred form. Fig. 2 is a plan view of the same parts. Fig. 3 is a horizontal cross-section on the line 3 3, Fig. 1. Fig. 4 is a vertical section on line 4 4, Fig. 2. Fig. 5 is a side elevation. Fig. 6 is a detailed vertical longitudinal section on line 6 6, Fig. 7. Fig. 7 is a detailed isometric projection of a pair of column-caps formed integral. Fig. 8 is a detailed vertical section on line 8 8, Fig. 9. Fig. 9 is a detailed isometric projection of a column. Fig. 10 is a vertical longitudinal section of a detail. Fig. 11 is a central vertical longitudinal section of a modification corresponding to Fig. 4, but with the bolster-springs omitted; and Fig. 12 is a detailed isometric projection of the form of corner-cap shown in Fig. 11.

Similar letters refer to similar parts throughout the several views.

A, Figs. 1, 2, 3, 4, 5, and 11, represents an arch-bar, B an inverted-arch bar, and C a tie-rod, all of which are of common form.

D, Figs. 1, 3, 4, 5, 7, and 11, represents truck-end columns. Each column D preferably has a pair of outwardly-projecting ears d at its upper end and a similar pair of ears d' at its lower end. The ears are pierced by

holes d^2 for the passage of keys or bolts d^3 . The ends of the columns are preferably each closed by a web d^4 , having an exterior bevel d^5 along its outer edge, and each column contains a bolt-hole d^6 for the passage of a column-bolt D' . The columns are arranged opposite each other in the usual manner. In the form of truck end shown the lower ends are connected by a spring-seat E and bolts e passing through said seat and column-flanges d^7 ; but this form of connection is not essential. The spring-seat may be of any suitable form and may be formed integral with the column-girders, if desired, as will be obvious.

F is the truck-bolster, and G bolster-springs.

The arch-bar A preferably rests directly upon the upper ends of the columns, whose lower ends preferably rest upon the inverted-arch bar B, and the tie-bar C may lie next the inverted-arch bar, as shown, though this is not essential. The arch-bars are held in place and connected with the columns by means of a pair of caps H, which are preferably formed integral, as shown in Figs. 1, 2, 4, 6, and 7; but though I consider it best to form them integral they retain a large share of their value when made separate, as indicated in Figs. 11 and 12. Each cap is preferably composed of a top h , containing a bolt-hole h' and a pair of downwardly-projecting ears h^2 , each pierced by a hole h^3 for the passage of a key or bolt, and said cap is preferably secured in place in part by the column-bolt D' , passing through the hole h' in its top h , and partly by a bolt or key d^3 , passing through the holes h^3 in its ears h^2 and the holes d^2 in the column-ears d . The cap preferably rests directly upon the arch-bar beneath, and its top h preferably inclines downward on the under side of its outer end h^4 , as shown most clearly in Figs. 4 and 6, so as to be substantially parallel with the bevel d^5 beneath in the top of the column. This formation of the inside of the cap and the corresponding form of the top of the column beneath enable the arch-bars to be clamped securely between the columns and caps at the points where the bends in the arch-bar are located. They are the points at which such bars have heretofore buckled, and such buckling is effectually prevented by my caps.

The shearing strain upon the column-bolts is very great where truck ends are constructed according to the methods heretofore adopted, and this has frequently resulted in accidents. In the case of my improved truck end the cap-ears h^2 and the cap-keys or bolt d^3 take a large part of the strain heretofore borne by the column-bolts, and where the caps H are formed integral, as I prefer to make them, the caps and their keys cooperate directly in relieving the column-bolts from strain in a very advantageous manner. Where they are not made integral, they still cooperate together by reason of the transmission of strains from one to the other through the arch-bar, but the cooperation is not quite so perfect.

The inverted-arch bars, like the arch-bars, have heretofore buckled at the points where the bends are located. Said bends in the inverted-arch bar are lettered b , and in case of the breakage of a bolt both the arch-bar and the rods C are liable to become displaced. To prevent these difficulties, I preferably use a pair of inverted caps I', Figs. 1, 4, 5, 10, and 11, one for each column.

The caps I are preferably like the caps H in all their features and are given a different letter merely by reason of their positions and for purposes of convenience. Like the caps H, they are preferably formed integral, as shown in Figs. 1, 4, and 10, but may be made separate, as indicated in Fig. 11. Their bases i are provided with column bolt-holes i' and preferably turn up at the outer edge i^2 , so as to fit the bends in the part resting therein. In the form of truck end shown this part is the tie-bar C, whose bends c lie between the part i of the cap and the bend c of the inverted-arch bar. Each cap I is provided with a pair of upwardly-projecting ears i^3 , provided with holes i^4 , through which a bolt or key i^5 passes, which also extends through the holes d^2 in the ears d' of a column.

In the form of truck end shown the upper ends of the columns are not connected by any part formed integral therewith and no such part is necessary. My caps H are very useful, however, no matter how the columns are connected, though they are most useful where the upper ends of the columns are connected substantially as shown. The caps I are also useful, whether the lower ends of the columns are connected by a separate part, as shown, or by a part formed integral therewith in the manner customary in many well-known forms.

Where in my claims I use the word "cap," I desire to be understood as including inverted caps as well as those which are up-
right.

I claim—

1. As a new article of manufacture, a removable column-cap having perforated ears for connecting it to a column, substantially as described.

2. As a new article of manufacture, a removable column-cap having a pair of perforated ears connected by a part formed to fit the outside of the bend in a bar or tie.

3. As a new article of manufacture, a pair of column-caps formed integral and separable from the columns, and each having a pair of ears for attachment to a column, substantially as described.

4. As a new article of manufacture, a pair of removable column-caps, formed integral and each having a pair of ears connected by a part formed to fit the outside of the bend in a bar or tie.

5. The combination in a truck end of a column having a lateral perforation; a removable column-cap having perforated ears; and a part passing through the ears and said lateral perforation and fastening the cap to the column.

6. The combination in a truck end, of a column; a bent bar or tie; a cap having ears connected by means of a part formed to fit the outside of the bend in the bar or tie, and means for detachably fastening the cap to the column.

7. The combination in a truck end of a pair of columns; a pair of caps made integral and formed to fit the outside of the bends in a bar or tie; and means for detachably fastening each cap to the adjacent column.

8. The combination of a pair of columns, an arch-bar; a pair of removable caps formed to fit the outside of the bends in the bar; and a pair of column-bolts passing through the arch-bar and each passing through one of said caps.

9. The combination of a pair of columns, each having a pair of outwardly-projecting perforated ears; a bent bar; a pair of caps formed to fit the bends in the bar; and each provided with a pair of perforated ears and means for fastening said caps to the column-ears, which pass through the column and cap ears, substantially as described.

10. The combination of a pair of columns; an arch-bar, an inverted-arch bar, a tie-bar, a pair of caps H formed integral; a pair of caps I; and means for securing the caps to the columns substantially as described.

LOUIS A. HOERR.

In presence of—

BENJ. F. REX,

C. D. GREENE, Jr.