

2 Sheets—Sheet 1.

No. 411,068.

Patented Sept. 17, 1889.

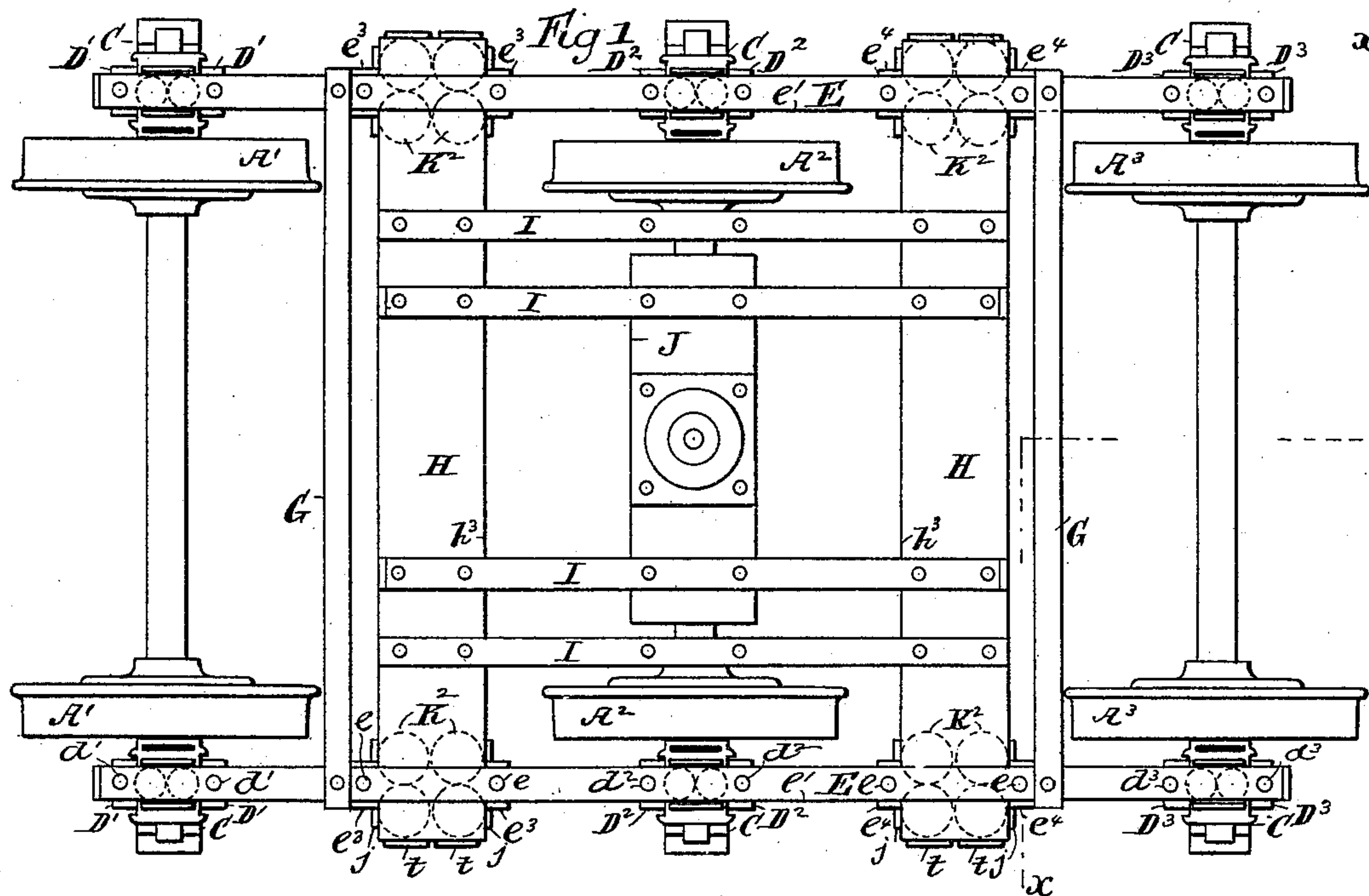


Fig. 2.

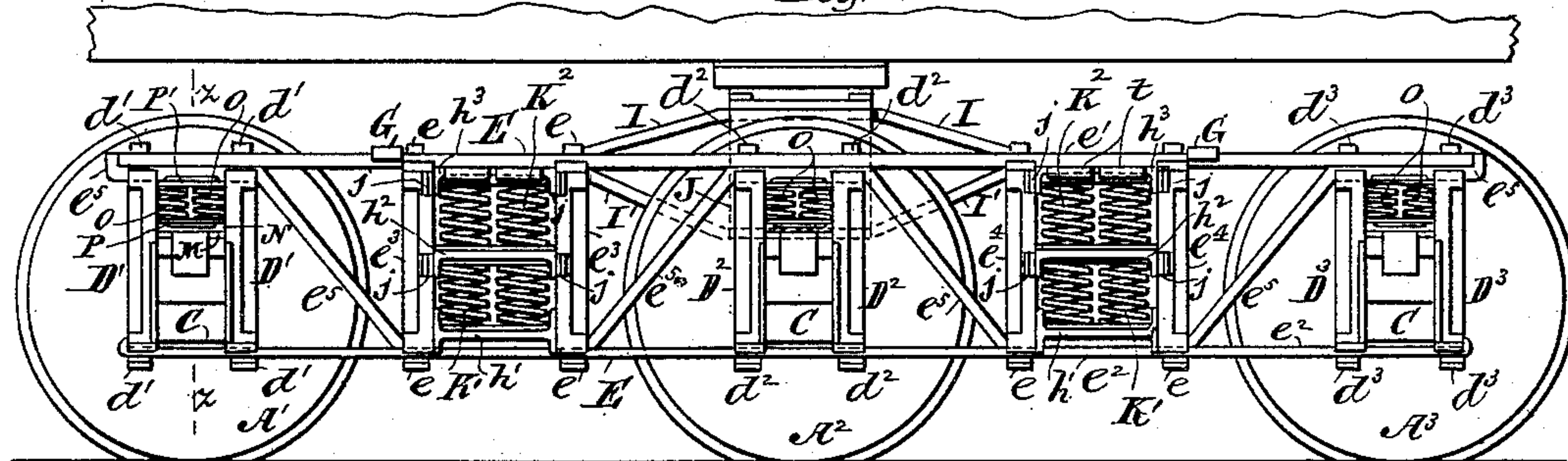
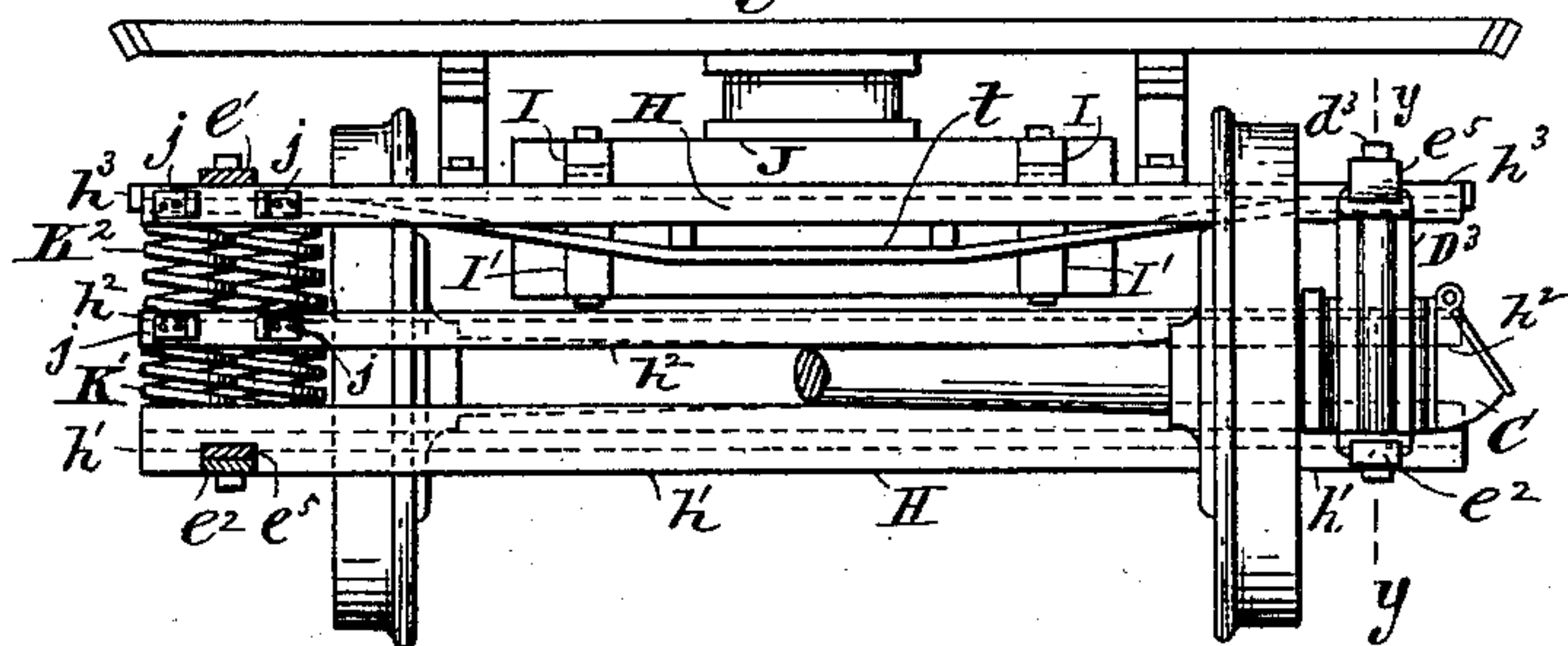


Fig. 3.



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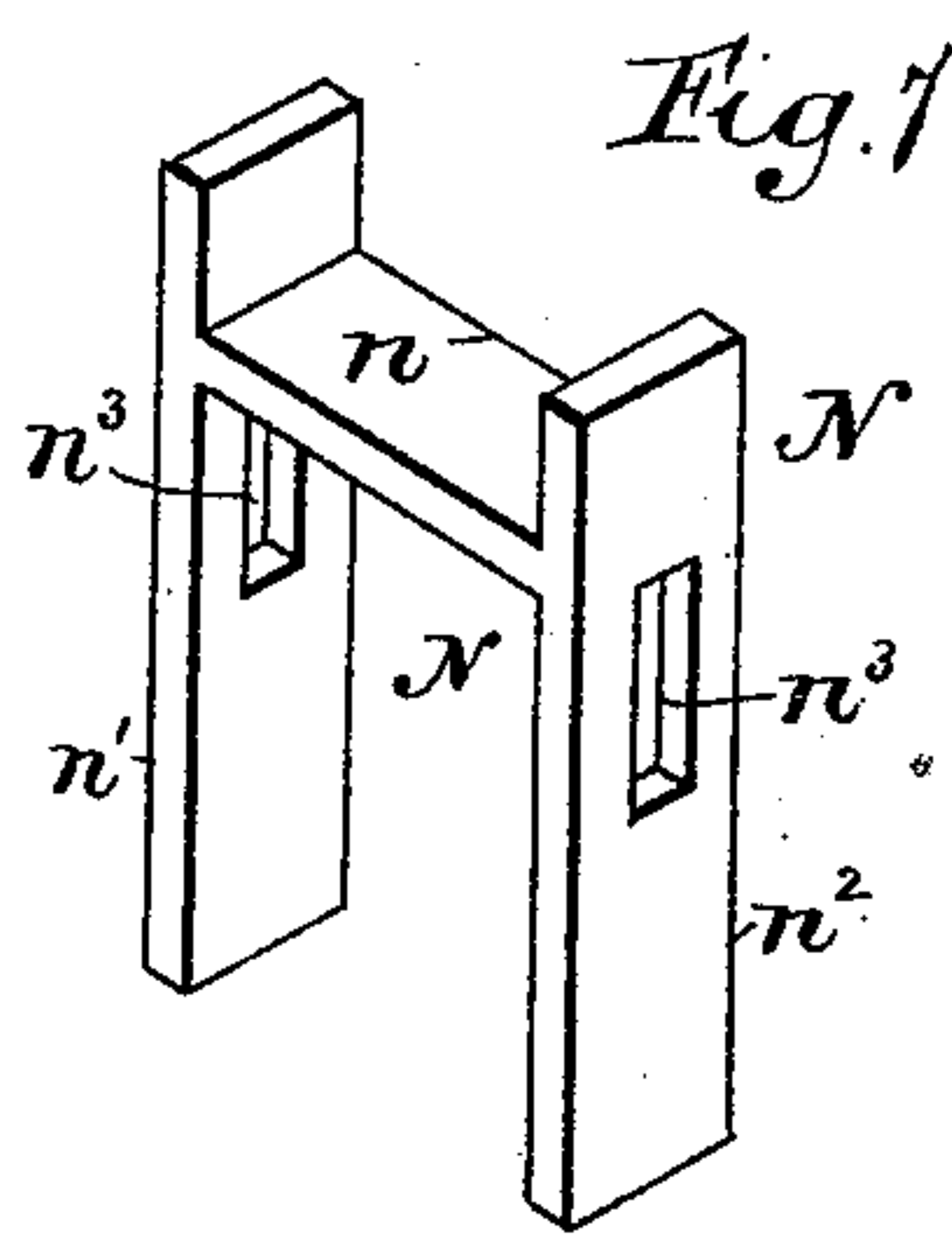
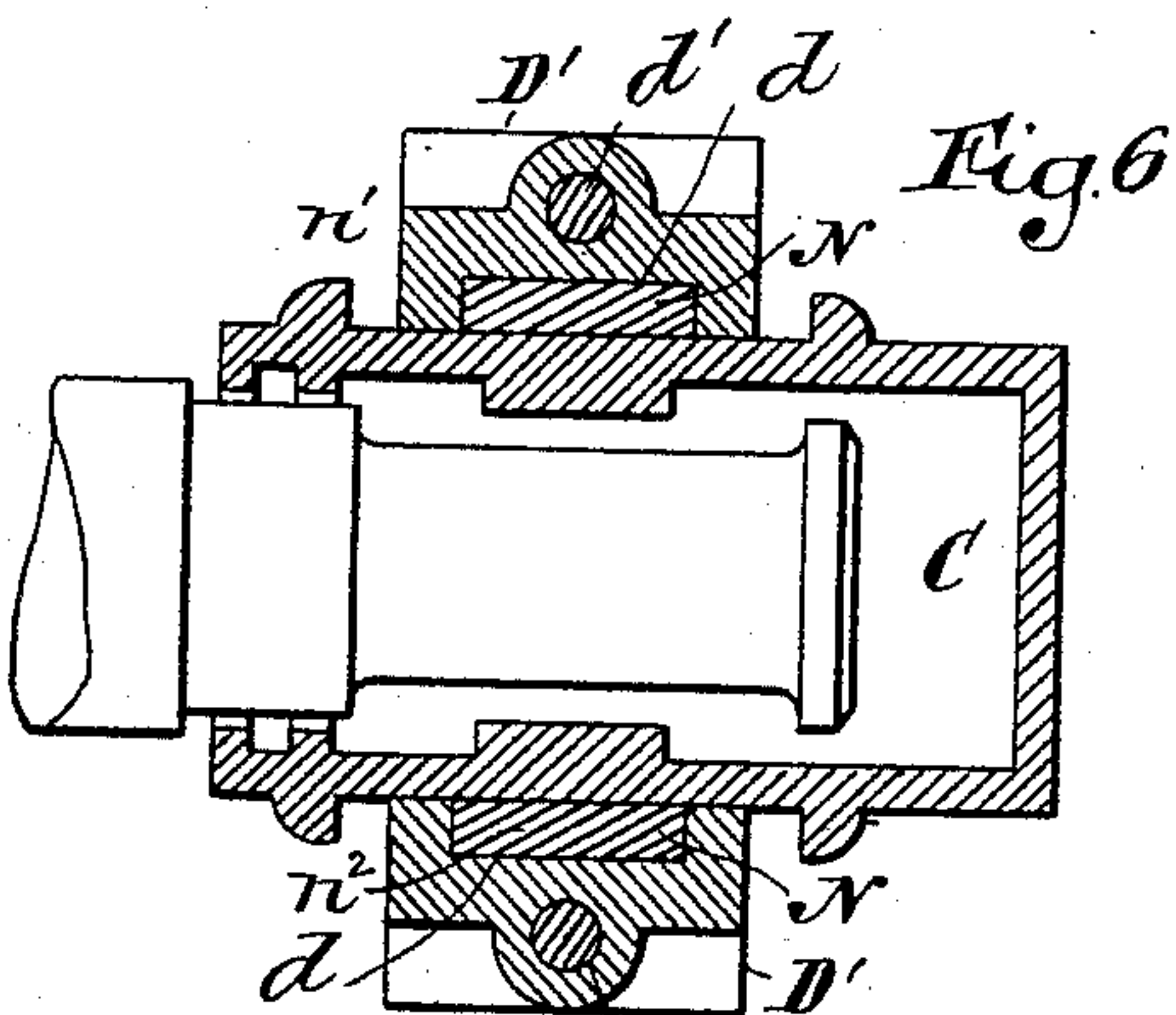
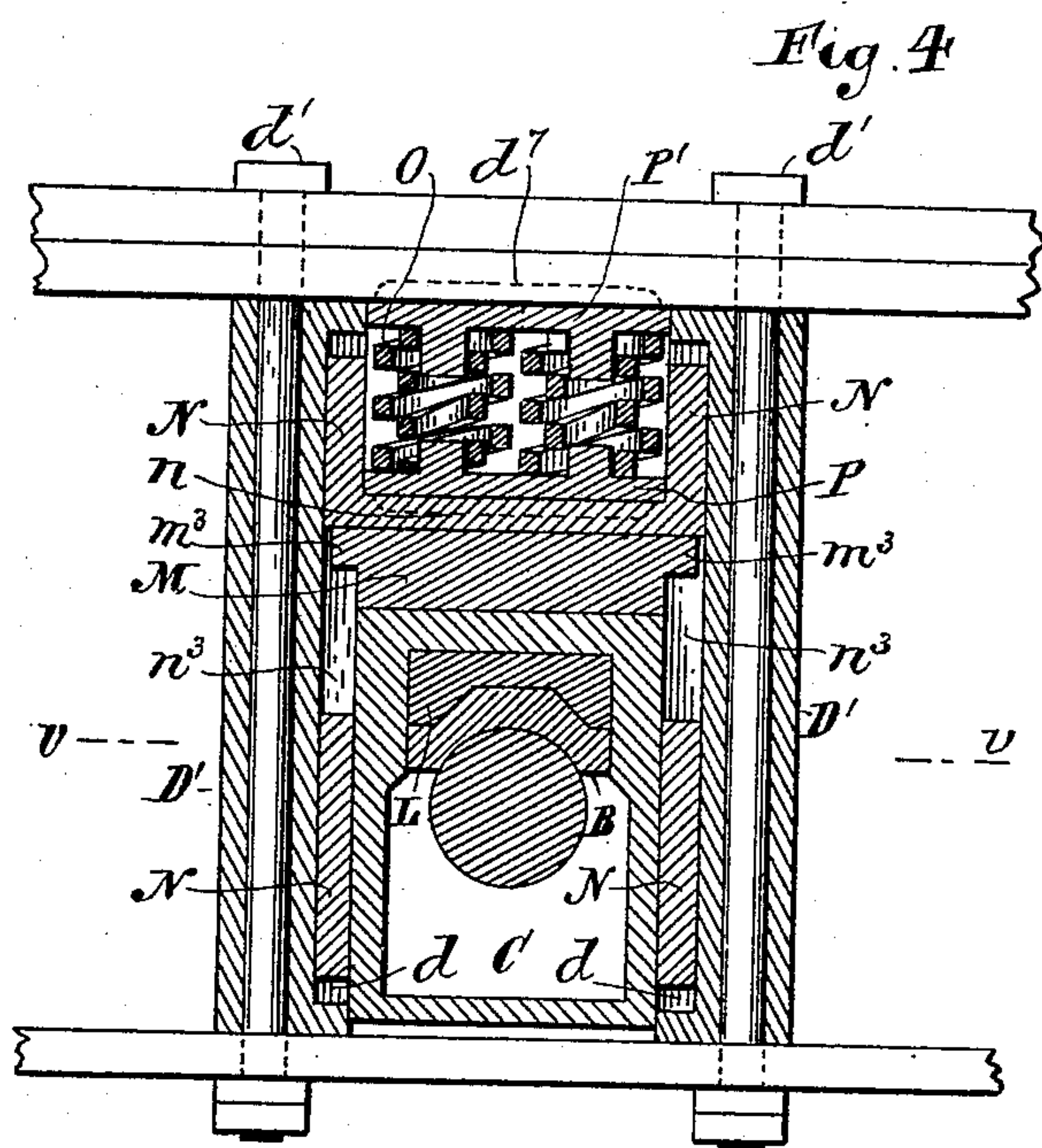
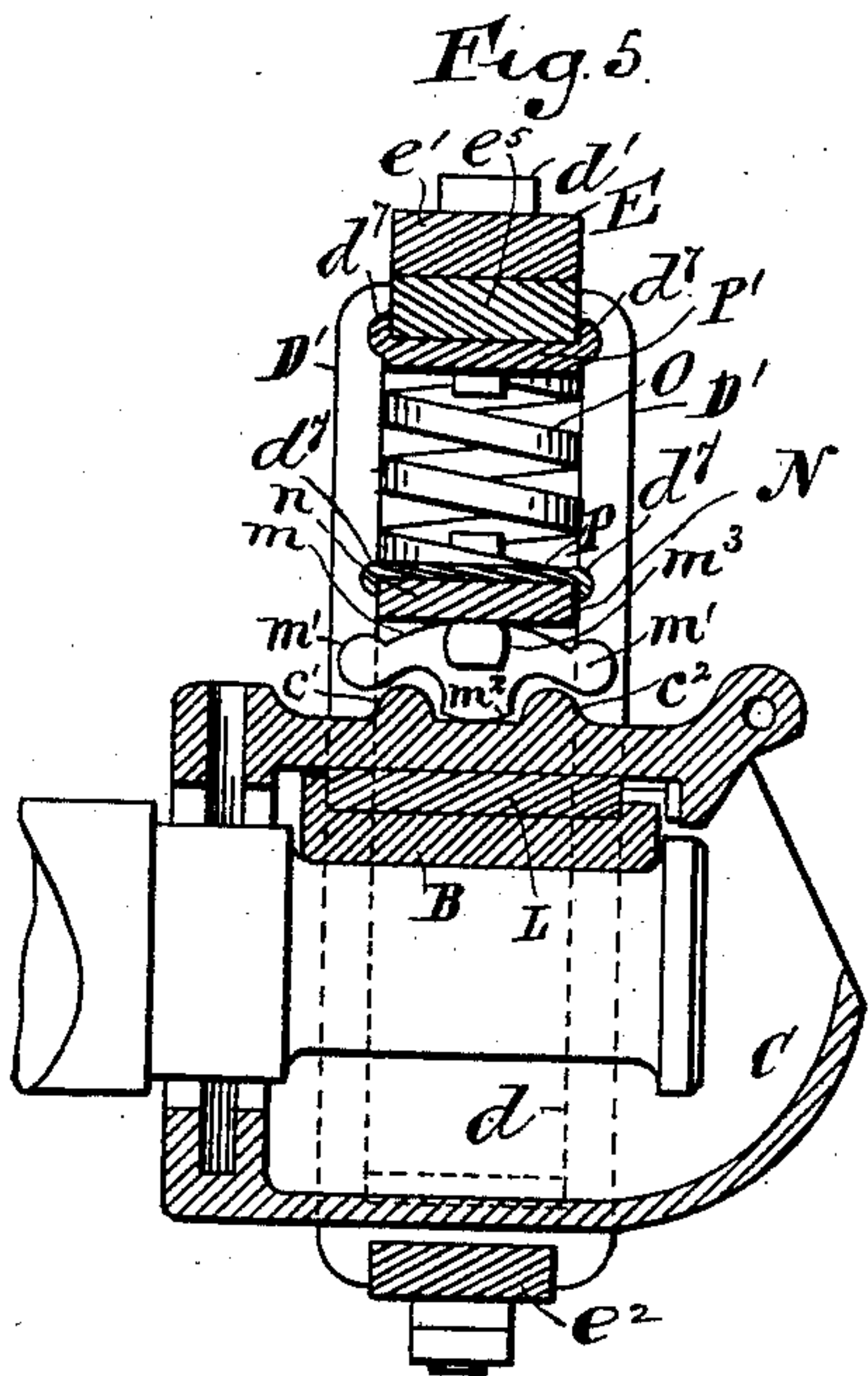
(No Model.)

W. H. H. SISUM.
CAR TRUCK.

2 Sheets—Sheet 2.

No. 411,068.

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UNITED STATES PATENT OFFICE.

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CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 411,068, dated September 17, 1889.

Application filed September 19, 1888. Serial No. 285,826. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. H. SISUM, of Brooklyn, in Kings county, and the State of New York, have invented a certain new and useful Improvement in Car-Trucks, of which the following is a specification.

I will describe a car-truck embodying my improvement, and then point out the novel features in the claims.

10 In the accompanying drawings, Figure 1 is a plan or top view of a car-truck embodying my improvement. Fig. 2 is a side elevation of the same. Fig. 3 is a transverse vertical section taken as indicated by the dotted line xx , Fig. 1. Fig. 4 is a vertical section taken as indicated by the dotted line yy , Fig. 3. Fig. 5 is a vertical section taken upon the line zz , Fig. 2. Fig. 6 is a horizontal section taken on the line vv , Fig. 4. Fig. 7 is a perspective view of a stirrup comprised in my improvements. Figs. 4, 5, 6, and 7 are made to a larger scale than Figs. 1, 2, and 3.

Similar letters of reference designate corresponding parts in all the figures.

25 $A' A^2 A^3$ designate three pairs of wheels, which may be of any suitable construction, affixed to their axles in the usual manner. The journals of the axles fit in bearings B, arranged in oil-boxes C. The oil-boxes C extend into pedestal-jaws $D' D^2 D^3$. The pedestal-jaws $D' D^2 D^3$ on one side of the car-truck are comprised in a frame E, and those on the other side are comprised in another and similar frame E. Each frame E has a bar e' extending lengthwise of it above the pedestal-jaws, and a bar e^2 extending lengthwise of it below the pedestal-jaws. Between the bars $e' e^2$ columns $e^3 e^4$ are arranged. It will be seen that the columns e^3 are located about midway between the pedestal-jaws D' and the pedestal-jaws D^2 , and that the columns e^4 occupy a corresponding position between the pedestal-jaws D^2 and the pedestal-jaws D^3 . A brace-bar e^5 extends from one end of the longitudinal bar e' , thence along the under side of this bar past the pedestal-jaws D' , thence obliquely downward to the longitudinal bar e^2 near the columns e^3 , thence along the upper side of the bar e^2 beneath the columns e^3 , thence upwardly in an oblique direction to the longitudinal bar e' , thence along the under side of this longitudinal bar

past the pedestal-jaws D^2 , thence obliquely downward to the longitudinal bar e^2 , thence along the upper side of the latter beneath the columns e^4 , thence obliquely upward to the under side of the longitudinal bar e' , and thence along the under side of the latter to its end and up against the end.

The longitudinal bars $e' e^2$, the pedestal-jaws D' , and the brace-bar e^5 of each frame are secured together by bolts d' , extending transversely through the longitudinal bars and brace-bar and lengthwise through the pedestal-jaws. This feature of construction may be well understood by reference to Fig. 4.

The pedestal-jaws D^2 are secured to the longitudinal bars $e' e^2$ and the brace-bar e^5 by bolts d^2 , applied similarly to the bolts d' . The longitudinal bars $e' e^2$, the brace-bar e^5 , and the pedestal-jaws D^3 are secured together by similar bolts d^3 . Similar bolts e secure the columns e^3 and the columns e^4 to the longitudinal bars and brace-bar. The side frames E are connected by cross-bars G, which may be bolted or otherwise fastened to the longitudinal bars e' .

H designates bolsters which are secured together by bars I I', extending lengthwise of the truck. The bars I I' are arranged in pairs. Each bar of a pair has a horizontal portion and inclined end portions. The horizontal portions of the bars I I' of a pair are opposite, and the inclined end portions converge and are together bolted or otherwise secured to the bolsters. Between adjacent pairs of the bars I I' a central bolster J is secured. This is provided with a cavity for the reception of a king-bolt or other swiveling device. It will be seen that the three bolsters are secured together to form in effect one structure, which extends entirely across the truck. The ends of the bolsters H extend between the pairs of columns $e^3 e^4$. Each bolster H is made of three parts $h' h^2 h^3$ and of any suitable material. The part h' of each bolster H is secured to the brace-bar e^5 and to the lower longitudinal bars e^2 of the two frames E. As shown, the lower part h' of each bolster H is made of an I-beam or girder and notched on the under side near each end to embrace the bars $e^2 e^5$, its flanges fitting between the columns $e^3 e^4$. The part h^2 of each bolster H is shown as consisting of

a trough-shaped or U-shaped beam, having its ends extended between the pairs or columns $e^3 e^4$. The sides of this part h^2 near the ends are provided with lugs or jaws j , adapted to embrace the adjacent columns. These jaws embracing the columns preclude any endwise movement of the part h^2 independently of the columns, but leave the part h^2 free to rise and fall between the pairs of columns. The part h^3 of each bolster H is shown as consisting of a trough-shaped or U-shaped beam, provided with jaws j on the sides near the ends embracing the columns. This part of each of said bolsters may therefore rise and fall while secured against endwise movement independently of the columns. The part h^3 of each bolster II is shown as having a truss-bar t combined with it. It is to this part h^3 of each bolster II that the bars I are secured. The several parts h' h^2 h^3 of each bolster II are unconnected save through the interposition of springs K' K^2 . The springs K' rest upon the lower part h' and support the part h^2 . The latter supports the springs K^2 , and these springs sustain the part h^3 . The springs may be seated in the parts of the bolster II in any approved manner.

It is advantageous to employ two sets of springs, with a divided bolster, as described, because the resilience afforded by a given length of springs may be obtained and yet the springs may individually be made of such lengths as to be free from any serious tendency to deflection out of a vertical line.

It remains for me to describe the manner in which the frames E are supported. The journals may be of ordinary form. This is also true of the bearings B and oil-boxes C. Keys L are interposed between the tops of the bearings and the tops of the oil-boxes.

Above the oil-boxes are rockers M, one for each box. Each box and rocker have combined with them a stirrup N. Above each stirrup are springs O, and these springs take the strain from the frames E to the stirrups.

Each of the rockers M (see particularly Fig. 5) is approximately T-shaped. Its upper portion has an extended arc-shaped surface m , upon which the cross-bar n of the adjacent stirrup N rests. The ends of this upper portion beyond the arc-shaped surface m are extended upwardly to form projections m' , which may limit the action of the rocker by contacting with the cross-bar of the stirrup. The lower part of each rocker is provided with a bottom arc-shaped surface m^2 , which bears upon the top of the adjacent oil-box C. Each oil-box C is provided with two projections c' c^2 from its top, and between these two projections the lower part of the rocker works.

Each stirrup N consists of two upright parts or bars n' n^2 and a cross-bar n . The cross-bar extends between the upright bars n' n^2 at a short distance from the upper ends of the latter. All the parts may be formed

integral. The opposite sides of each pair of pedestal-jaws D' D^2 D^3 are provided with vertical grooves d . The upright bars n' n^2 of the stirrup fit in these grooves and the stirrup is therefore free to work up and down within the pedestal-jaws. Each rocker is provided on its sides with lugs m^3 , which have curved side surfaces and extend into the slots n^3 of the corresponding stirrup. The curvature of the side surfaces of the lugs enables the rockers to rock or oscillate, despite the fact that the lugs extend into the slots n^3 . The stirrups being engaged in the grooves of the pedestal-jaws cannot move out of the pedestal-jaws, although they are free to move up and down within the same, or to permit of the upward and downward movement of the pedestal-jaws relatively to them. As the lugs of the rockers engage with the stirrups, the rockers are maintained in place, although allowed to rock or oscillate.

The springs O may be secured in place in any way. I have shown two pairs or sets of springs as arranged between each pair of pedestal-jaws. On the top of the cross-bar of the stirrup belonging to each pair of pedestal-jaws I have shown a seat P, consisting of a flat plate having upwardly-extending pin-like projections entering the coils of the springs. The seat is maintained in position upon the cross-bar of the stirrup by flanges d' , extending from the pedestal-jaws. Similar spring-seats P' are shown as arranged above the springs and similarly retained in place by flanges d' .

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a car-truck, the combination, with side frames provided with bearings, of a bolster made in three parts, comprising upper, middle, and lower parts, and springs arranged between the lower and middle parts, and other springs arranged in pairs between the middle and upper parts, substantially as specified.

2. In a car-truck, the combination, with side frames provided with bearings for three pairs of wheels, of two bolsters connected together and severally composed of three parts, comprising an upper, a central, and a lower part, springs arranged between the lower and middle parts of each of said bolsters, and springs arranged between the middle and upper parts of each bolster, substantially as specified.

3. In a car-truck, the combination, with frames provided with bearings, of a bolster comprising an upper, a middle, and a lower beam, spiral springs arranged near the ends between the lower and middle beams, and other spiral springs between the middle and upper beams, substantially as specified.

4. In a car-truck, the bolster, comprising the upper, the middle, and the lower portions, extending across the truck, and spiral springs arranged between the upper and middle por-

tions, and other spiral springs arranged between the middle and lower portions, substantially as specified.

5 In a car-truck, the combination of a side frame having two longitudinal bars, one above the other, and pedestal-jaws consisting of pieces fitted and secured between the two longitudinal bars by means of bolts extending transversely through the said bars and
10 lengthwise through the pedestal-jaws, substantially as specified.

6. In a car-truck, the combination, with a side frame and an oil-box working within pedestal-jaws comprised in said side frame, of a
15 rocker supported upon the oil-box, and a stirrup supported upon the rocker and engaged with said pedestal-jaws, substantially as specified.

7. In a car-truck, the combination, with a
20 side frame and an oil-box working within pedestal-jaws comprised in said side frame, of a

rocker supported upon the oil-box, and a stirrup consisting of two upright bars and a cross-bar, the cross-bar resting upon the rocker and the upright bars being engaged
25 with the pedestal-jaws, substantially as specified.

8. In a car-truck, the combination, with a side frame and an oil-box working within pedestal-jaws comprised in said side frame, of
30 a rocker supported upon the oil-box, and a stirrup consisting of a cross-bar resting upon the rocker, two upright bars engaging with the pedestal-jaws and provided with vertical slots receiving lugs with which the rocker is
35 provided, substantially as specified.

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