

3 Sheets—Sheet 1.

Patented Apr. 5, 1892.

No. 472,236.



Witnesses:
 Wm A Schoenborn.
 Arthur E. Fowell



Inventor:
John Taylor
by
T. H. Alexander
Atty

(No Model.)

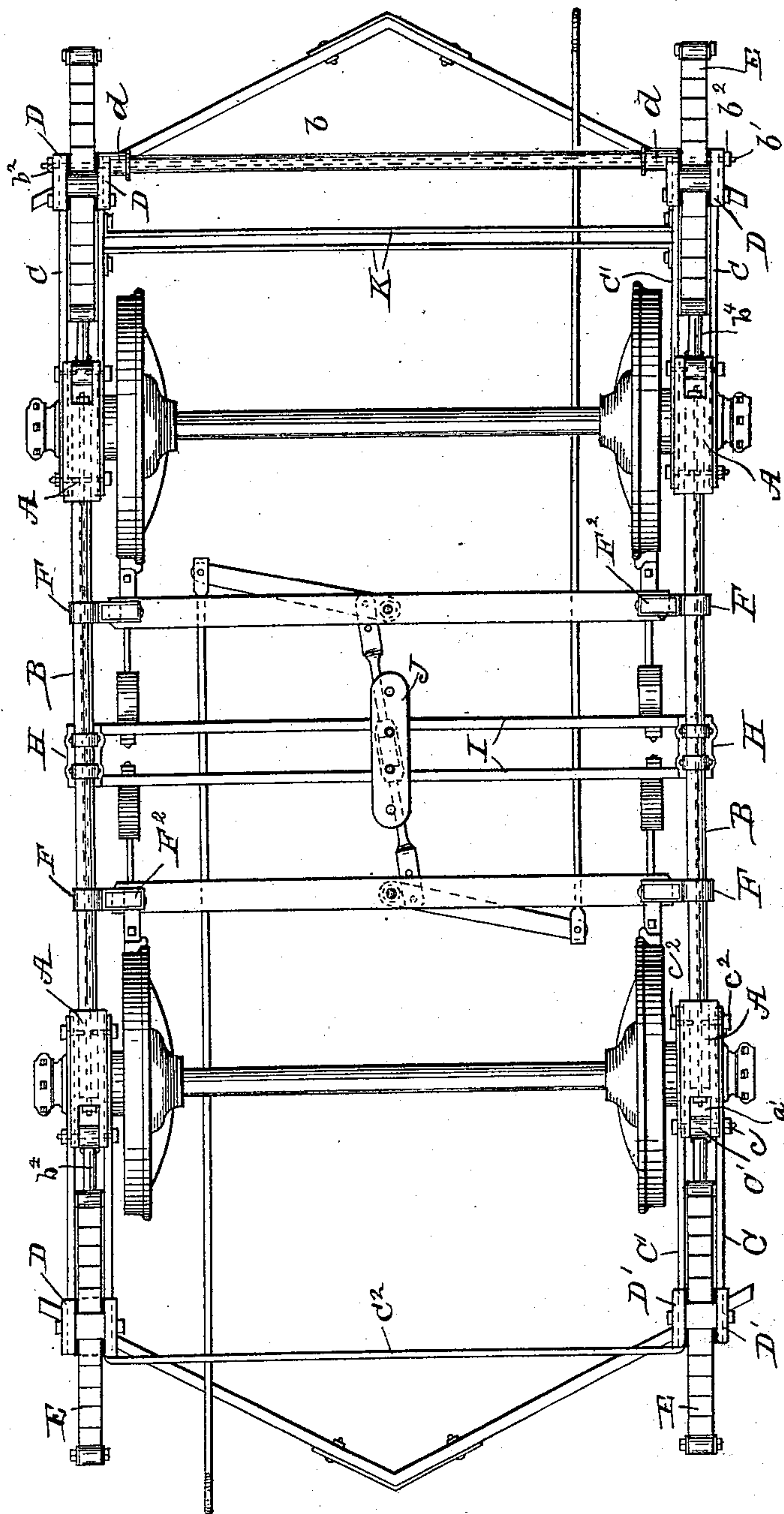
3 Sheets—Sheet 2.

J. TAYLOR.
CAR TRUCK.

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Fig. 2.



Witnesses.

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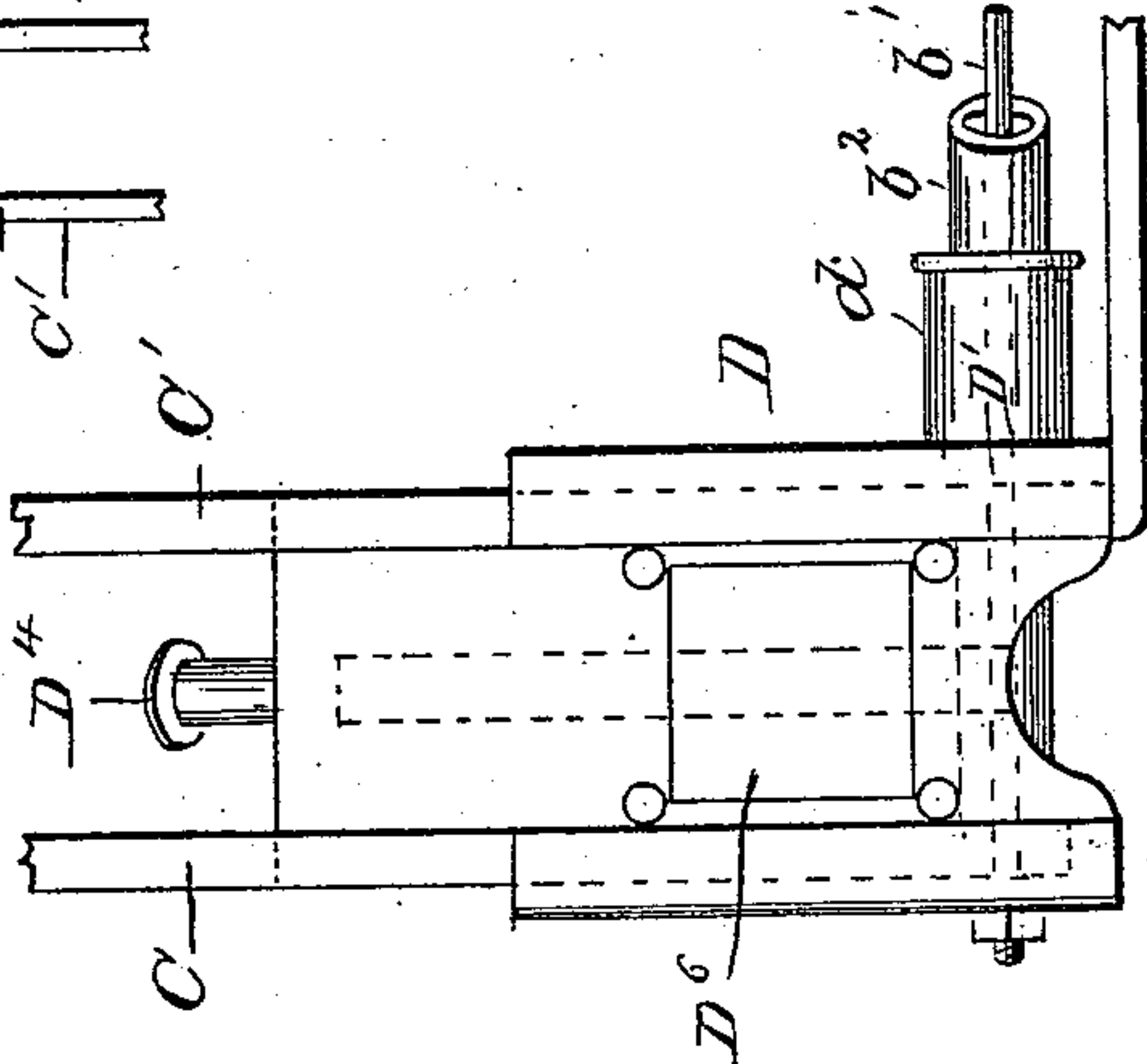
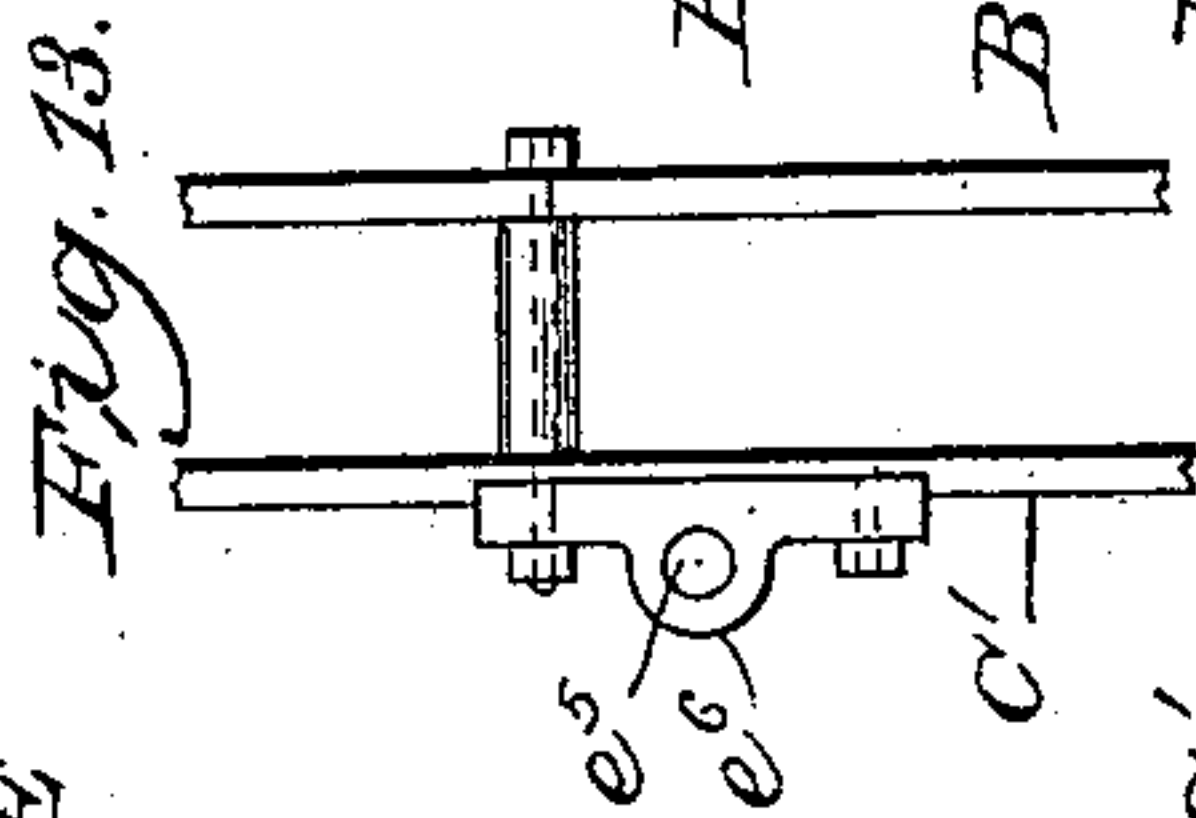
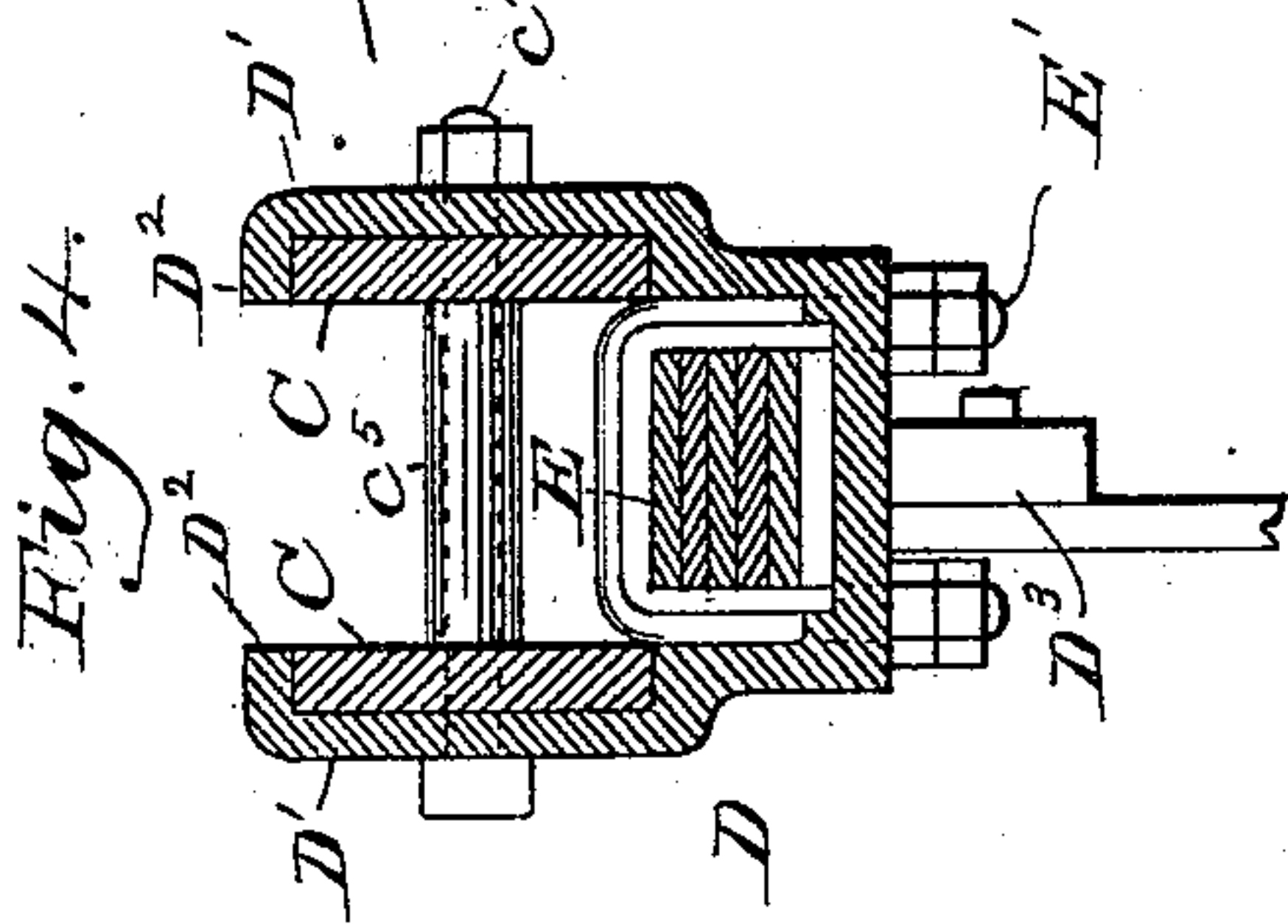
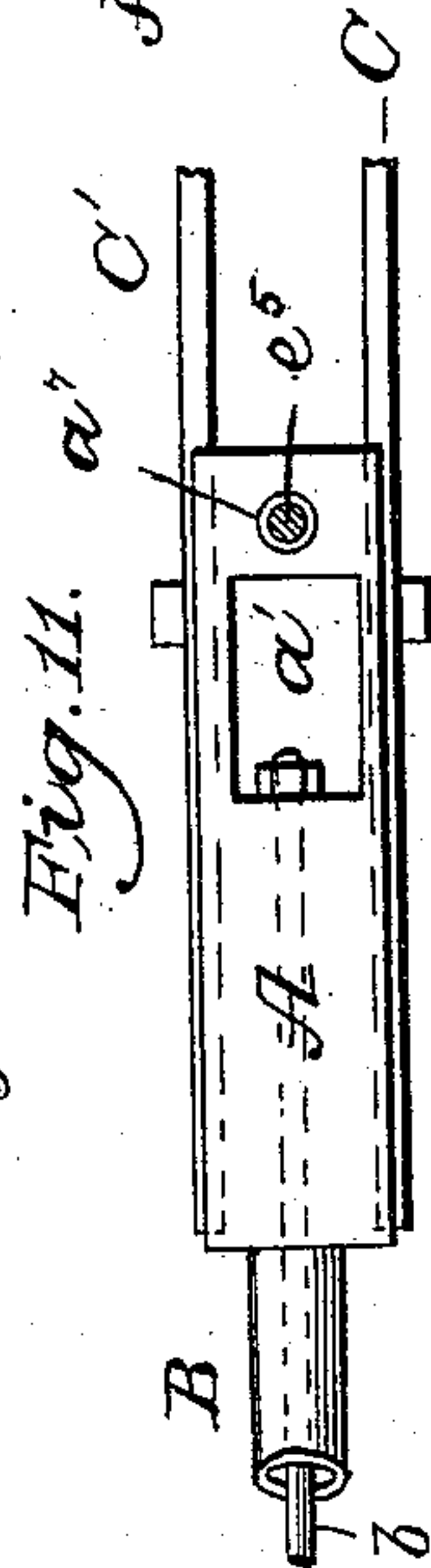
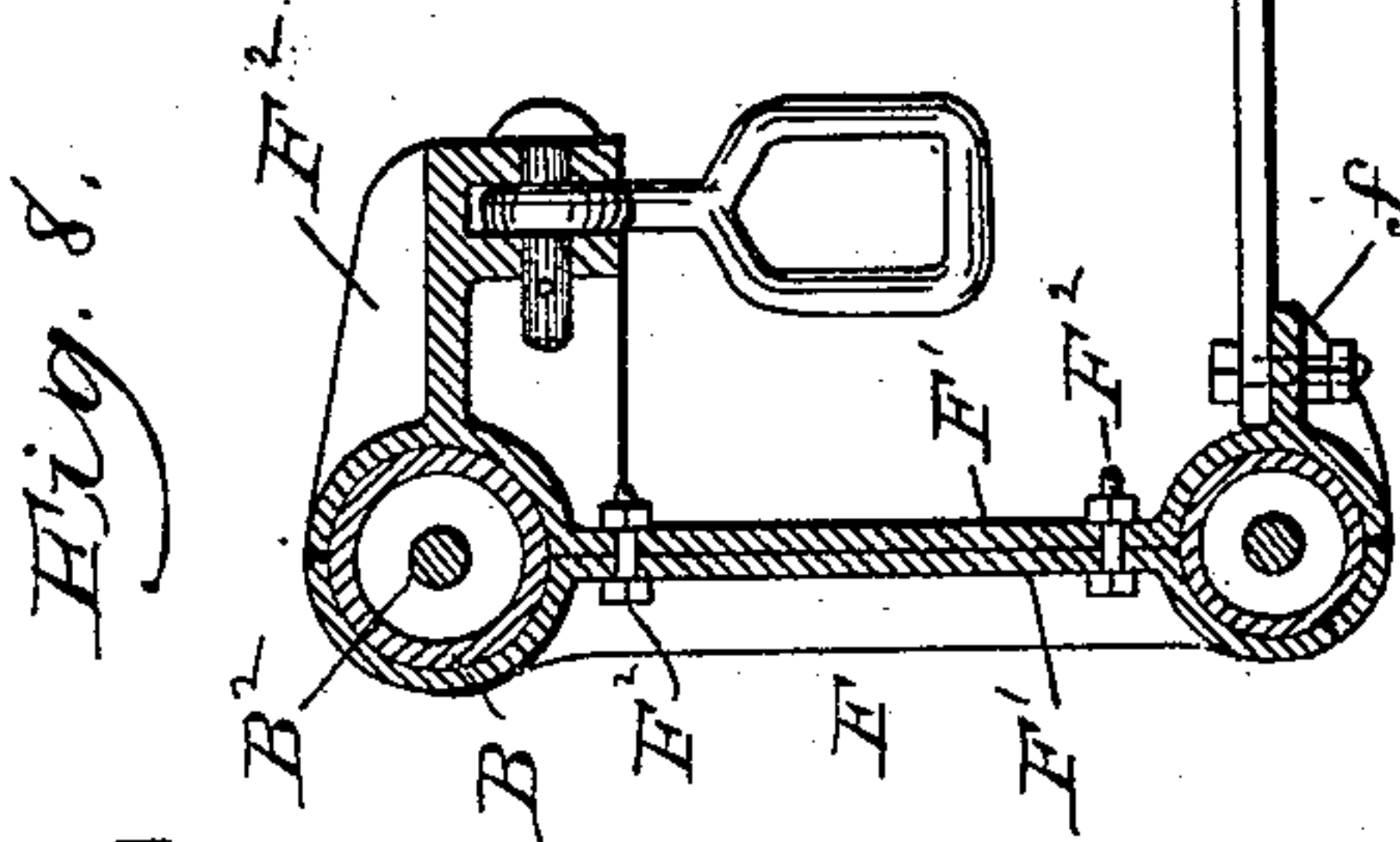
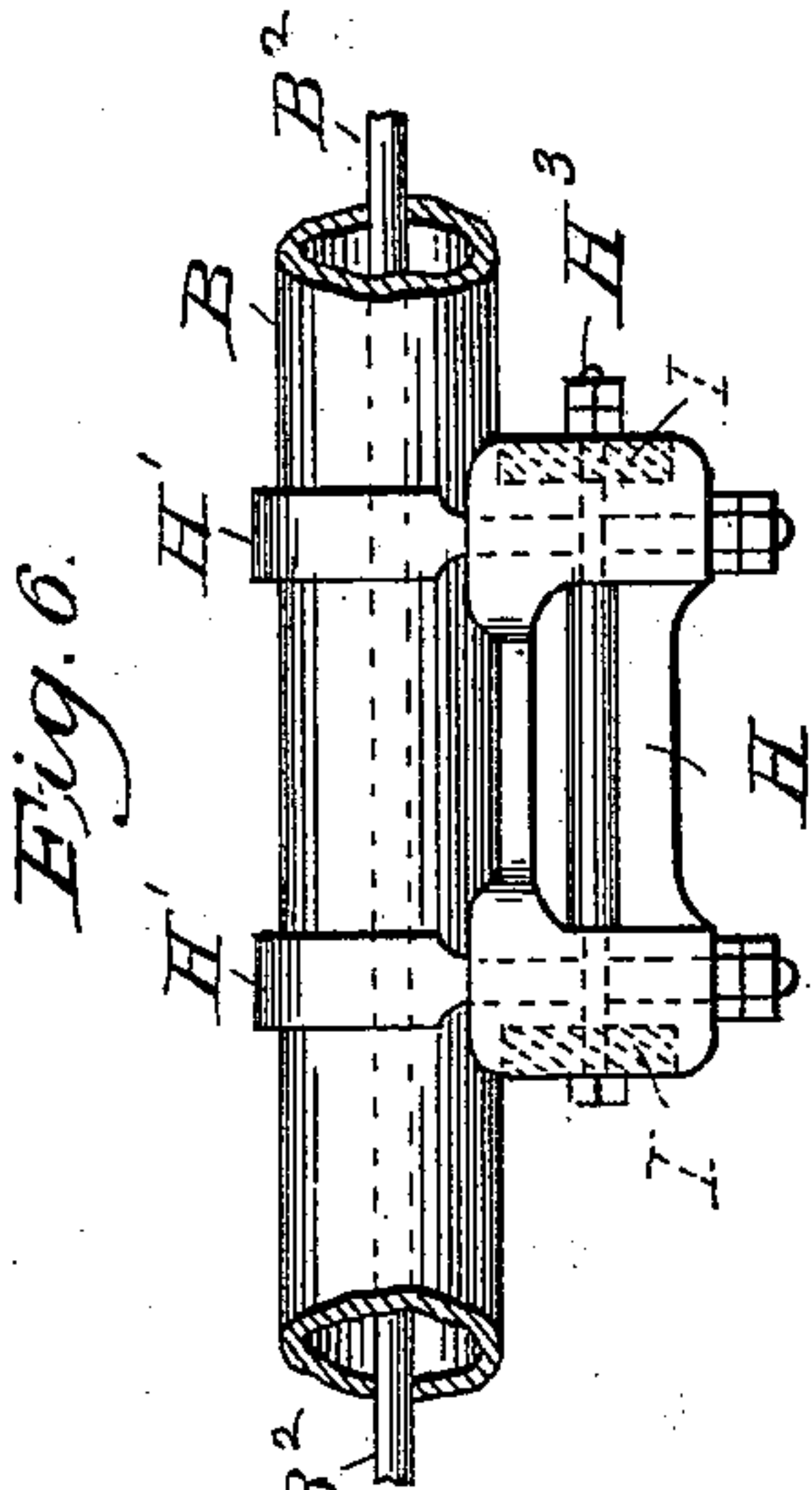
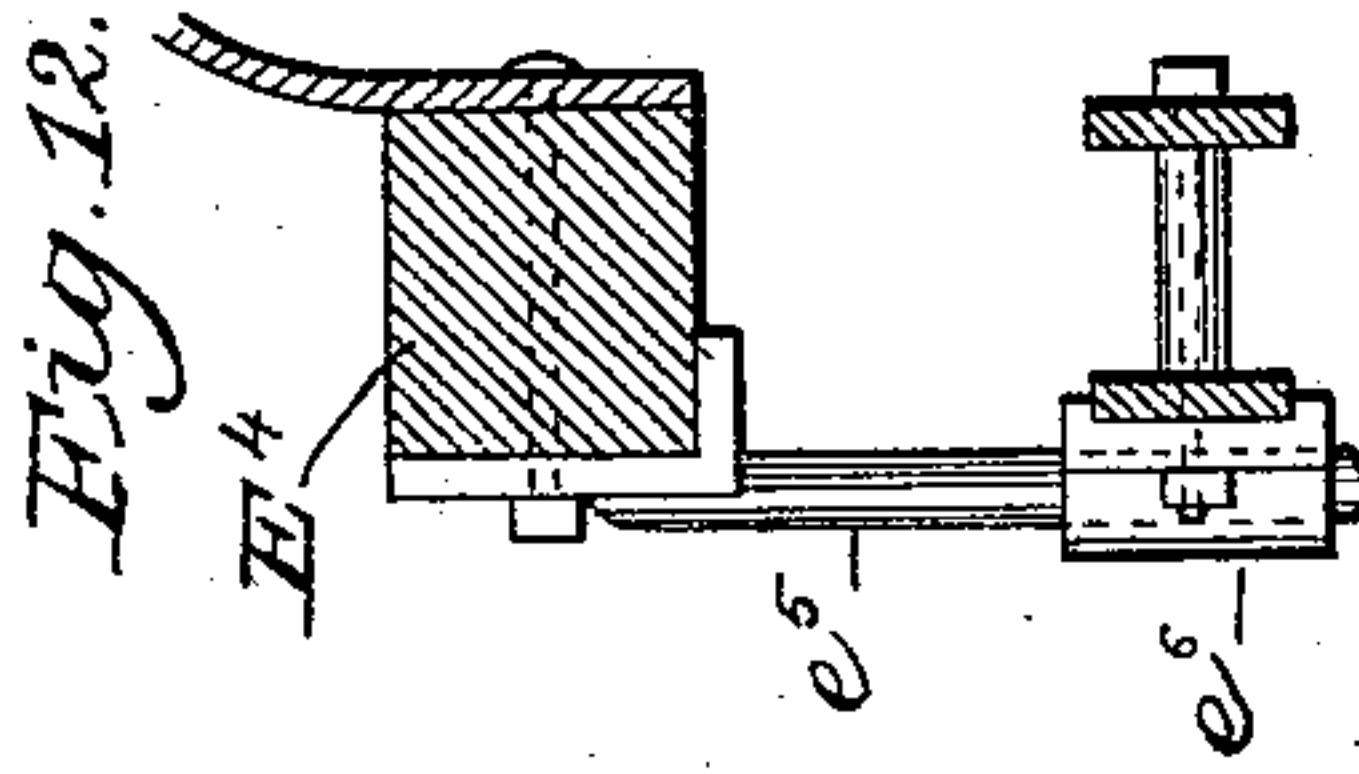
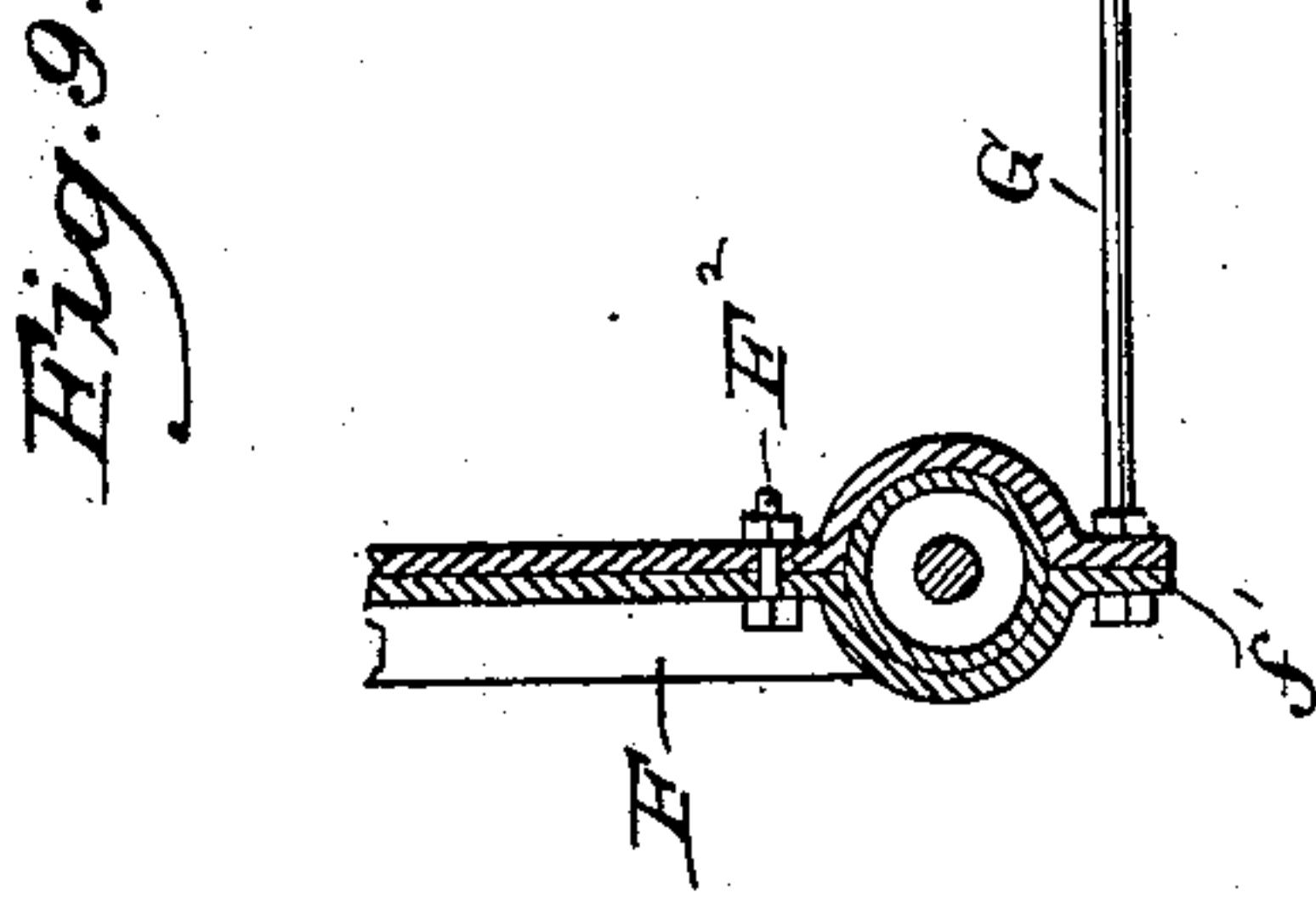
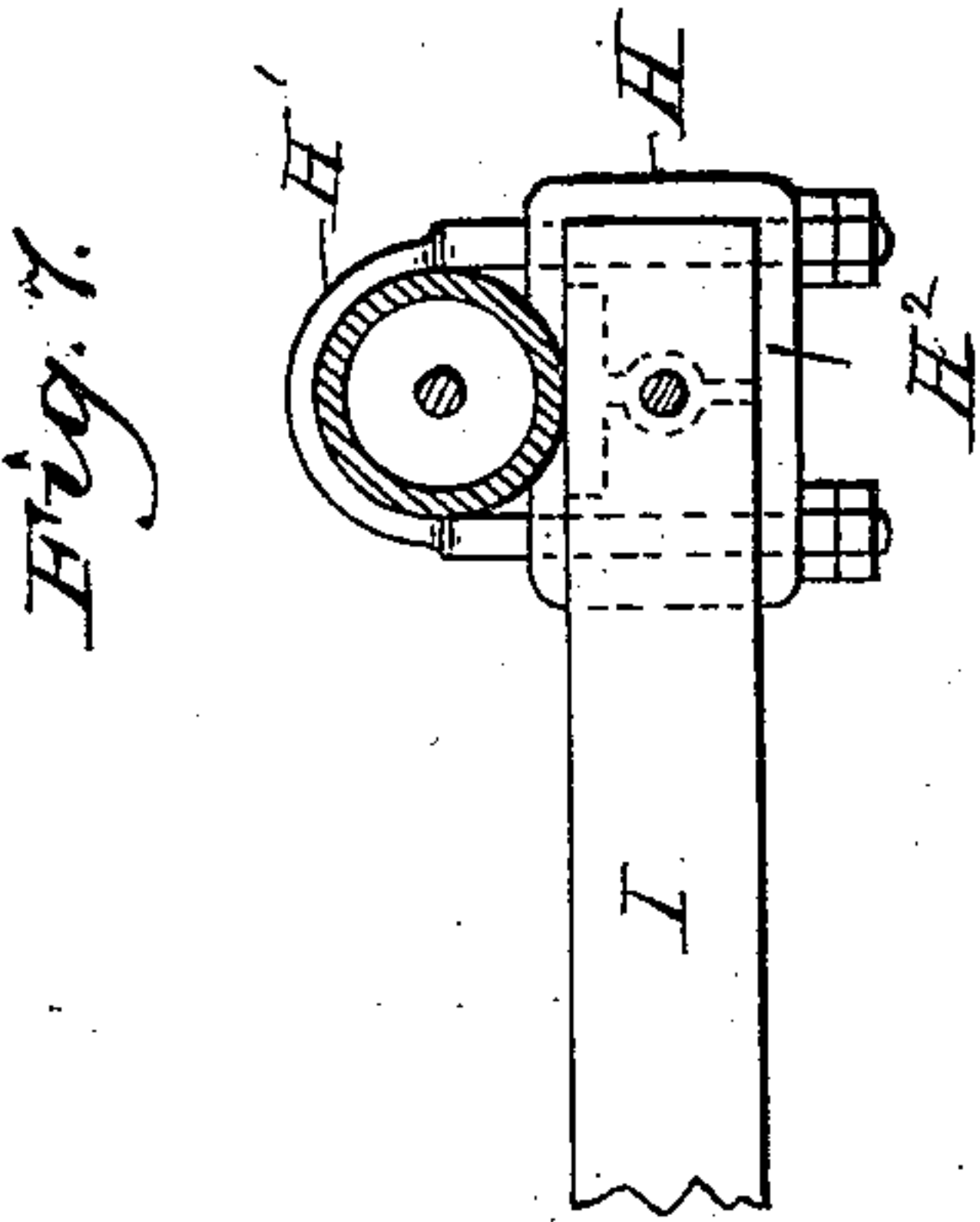
(No Model.)

3 Sheets—Sheet 3.

J. TAYLOR.
CAR TRUCK.

No. 472,236.

Patented Apr. 5, 1892.



Witnesses:

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Arthur E. Fowell

Inventor:

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UNITED STATES PATENT OFFICE.

JOHN TAYLOR, OF TROY, NEW YORK.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 472,236, dated April 5, 1892.

Application filed December 3, 1891. Serial No. 413,916. (No model.)

To all whom it may concern:

Be it known that I, JOHN TAYLOR, of Troy, in the county of Rensselaer and State of New York, have invented certain new and useful
5 Improvements in Car-Trucks; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form
10 part of this specification, in which—

Figure 1 is a side elevation of my improved car-truck. Fig. 2 is a top plan view of the same. Fig. 3 is a longitudinal vertical section through one of the pedestals, corner-cast-
15 ings, and connected parts, the axle-box being removed. Fig. 4 is a transverse sectional detail view of a corner-casting. Fig. 5 is a detail top view of one of these castings. Figs. 6 and 7 are detail views of the motor-sustain-
20 ing-bars suspending devices. Figs. 8 and 9 are detail views of some of the frame-braces. Figs. 10, 11, 12, and 13 are detail views of the car-body-steadying devices.

This invention is an improved railway-car
25 truck especially designed for electric roads; and its objects are to provide a compact, strong, easily-constructed truck in which the frame and supporting-springs of the car-body may be brought beneath the tops of wheels,
30 thus bringing the body close to the ground; and it consists in the novel construction of the frame as an entirety and in certain other novel details of construction and combinations of parts, as will be fully understood from the fol-
35 lowing description and claims.

Referring to the drawings by letters, A A designate the pedestals of the truck-frame, which are roughly of an inverted-U shape, and each consists of two vertical legs A' A'²,
40 united at top by a horizontal portion A³, which is longitudinally and horizontally bored or socketed, as at *a*, above leg A², this socket extending to about the inner edge of leg A', being closed at its inner end, and the top of the jaw
45 is chambered above leg A', as at *a'*. The lower end of inner legs A² are provided with short horizontal inwardly-opening sockets *a*², and on the lower end of leg A' is formed an upwardly-inclined socket *a*³, through the bot-
50 tom of which is tapped an adjusting-bolt A⁴, hereinafter referred to. These pedestals are

arranged so that the legs A² of the pedestals at the same side of the car adjoin, and they are united by horizontal beams B B', preferably tubular, the ends of which are respectively
55 fitted into the sockets *a* and *a*² of the adjoining pedestals. The beams are confined to the pedestals preferably by tie-rods B², which pass through the pipes and perforations in bases of sockets *a* *a*², and are secured by nuts,
60 as shown, by which means the beams and pedestals are rigidly bound together. The chambers *a'* above legs A' allow the nuts on the upper rods B² to be easily manipulated.

CC' are short flat bars, the inner ends of which
65 are fitted into rabbets A⁶ in the outer and inner faces of the pedestals, as shown, so that said bars stand on edge parallel and horizontal and about in line with the upper beam B. The bars are connected to the pedestals
70 by through-bolts *c* (which pass through the bars and pedestals above legs A' thereof and through sleeves *c'*, interposed between the walls of the pedestals in chamber *a'*) and by tap-bolts *c*², which pass through the walls of
75 the pedestals and into the sides of pipes and prevent the latter turning in sockets *a*.

The outer extremities of the bars C C' are united to corner-castings D. These castings have upstanding flanges D' D', which receive
80 the ends of the bars C C', and are secured thereto by through-bolts *c*⁴, passing through sleeves *c*⁵, interposed between the bars, and the upper ends of the flanges are lipped over the edges of the bars, as at D², so as to relieve
85 the bolts of bearing strain. From the inner flange of each of the corner-castings projects an inwardly-extending socket *d*, into which is fitted the extremities of an end bar *b*, preferably tubular, and *b'* is a tie-rod running
90 through bar *b* and laterally through castings D, transfixing the ends of bars C C' in the casting, (between which bars a sleeve may be interposed on rod *b'*), and *b*² *b*² are nuts on the threaded ends of said rod, which, when
95 tightened securely, binds the end beam to the castings. By this construction a stiff connection is made between the sides of the truck-frame at the ends. In some cases, instead of employing beams *b* the sockets *d* on castings
100 D may be left off and the inner bars C' C' connected together at their outer ends by a flat

bar C²; or a flat bar bent into a U shape will form the end bar and the two opposite inside bars C' C' at the end of truck. Both forms of end bars may be employed on the same truck, if desired, and where motors or brake mechanism is to be suspended from one end only the stiffer connection may be used at that end.

On the bottom of each casting D which is roughly U-shaped in cross-section (see Fig. 4) is a depension D³, to which the fender-hangers are bolted, and at the inner extremity of this depension is formed an inwardly and downwardly inclined socket D⁴.

b⁴ b⁴ are inclined braces, preferably tubular, inserted between sockets D⁴ of casting D and sockets a³ of the pedestals, so that weight on the castings is transferred through said braces direct to the pedestals, and by means of bolts A⁴ the stiffness of braces can be regulated.

The axle-boxes, which move between the legs of the pedestals, as usual, are confined therein by bottom straps A⁷, bolted to the lower ends of the legs, as shown.

E E designate the body-springs, (which, as shown, are elliptical,) supported on castings D, being set longitudinally of the frame and resting on the bottom of the castings and partly between bars C C', the inner ends of the upper and lower leaves being connected by a countersunk rivet or bolt to permit it to play between the bars. The bottoms of the corner-castings are socketed, as at D⁶, Figs. 4 and 5, to accommodate the bottom bands of the springs, which are secured thereto by clip-bolts E', as shown. The tops of springs may be clipped to bolster-plates E², which in turn are bolted to the sills E⁴ of the car-body, as shown in Figs. 1 and 3.

In order to prevent undue lateral vibration of the body of the frame, as in rounding curves, guide-pins e⁵ may be employed. These may be arranged as shown in Figs. 10 to 13. In Figs. 12 and 13 the pins e⁵ are bolted to the top sills of the car and depend through castings e⁶, bolted to the sides of the truck-frame, allowing free vertical movement of the body in relation to truck, but limiting its lateral movement thereon. In Figs. 10 and 11 the guide-pins are bolted to the under surface of the sills and depend through openings a⁷ in the top castings A above legs A' and exterior to chamber a'. When these guide-pins are employed, the springs E E need not be clipped to the car-sills, but may rest against bearing-plates E⁵, attached thereto, as indicated in Fig. 10. When so arranged, the body can be quickly removed, and yet its steadiness while on the frame is insured.

F F are vertical braces connecting the upper and lower beams B and B' near the pedestals. These braces are preferably made in two parts F' F', each having its ends bent to partially embrace the beams, respectively, so that when put together their ends embrace

the beams and constitute a connection equivalent to collars and straps. The two parts are united by bolts or rivets F². These braces give rigidity to the frame and prevent diagonal twisting or working of the side frames of the truck.

G G are transverse stay bars or rods, connected to beams B', preferably at the points of connection of braces F thereto, and also preferably connected direct to said braces,—as, for instance, to a bracket f, inwardly projecting from the lower end of inner piece F', Fig. 8, or to a stud or studs f', depending from the brace F, Fig. 9. The stays also serve as supports for the oil-pan or dust-guards of the motors. When an internal brake is used, an inwardly-projecting hanger F² may be cast on or rigidly secured to the upper ends of braces F, as indicated in Fig. 8.

H H are castings, which are secured centrally to and under beams B B by clips H' H' and have recesses H² H² in their ends, which receive the ends of motor-suspending bars I I, lying transversely of the truck-frame and vertically edgewise, being fastened to the castings by bolts H³, which transfix the castings and ends of bars, as shown. The ends of bars fitting in the recesses of the castings will, when bound thereto, constitute a rigid and stiff support from which the electric motors may be suspended centrally of the car.

J designates the plate, secured centrally to bars I, from which motors are hung. When gearless motors are used, I prefer hanging them to cross-bars K K, riveted or bolted to inside side bars C' C', as shown in Fig. 2, in which case it is necessary to employ inside or between-wheel brakes, which would be suspended from the brackets F². (See Figs. 2 and 8.)

The brake-beams carrying the brake-shoes lie between the wheels and are suspended by links and controlled by springs, as indicated in the drawings. To the center of each beam is pivoted the end of the brake-lever, the free extremity of which is connected by a rod to the brake-chain at opposite ends of the cars. The brake-levers are connected to each other by a pitman, which is pivoted to each lever near the inner end thereof. By this arrangement when either chain is tightened the brake-beams are spread apart and forced against the wheels.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent thereon, is—

1. The combination of the pedestals, the upper and lower side beams intermediate and connecting the same, the parallel side bars connected to the pedestals and serving as a continuation of the upper side beams, and the end bars, substantially as described.

2. The combination of the pedestals, the pair of intermediate upper and lower connecting-beams and the flat bars connected to the pedestals and extending in line with the up-

per beam, the castings connected to the extremities of said bars, and the end bars connecting the same, substantially as specified.

3. The combination of the pedestals, the intermediate tubular beams connecting the same, the flat bars secured to the pedestals and projecting therefrom, and the end bars connected to the extremities of said flat bars, substantially as set forth.

4. The combination of the pedestals, the intermediate upper and lower tubular beams connecting the same, the parallel flat bars connected to the pedestals, projecting in line with the upper beam, the end bars, and the braces between said pedestals and flat bars, substantially as set forth.

5. The combination of the pedestals, the beams connecting the same, parallel side bars connected to the pedestals, projecting in line with the upper beam and the end bars, and the braces between the pedestals and extremities of said side bars, substantially as described.

6. The combination of the pedestals, the intermediate connecting-beams, and the flat bars connected to the pedestals, projecting in line with the upper beam, the castings connected to the extremities of said bars and the end bars connecting the same, and the braces between said pedestals and casting, substantially as specified.

7. The combination of the socketed pedestals, the side beams between the pedestals, secured in the sockets thereof, the parallel flat bars secured to said pedestals, and the end bars, substantially as set forth.

8. The combination of the socketed pedestals, the side beams between the pedestals, secured in the sockets thereof, the parallel flat bars secured to said pedestals and the end bars, and the inclined braces between the extremities of said parallel bars and the pedestals, substantially as described.

9. The combination of the pedestals, the upper and lower side beams between and connected to said pedestals, the braces connecting said beams, the bars connected to the pedestals and projecting therefrom, the braces upholding the ends of said bars, and the end bars, substantially as specified.

10. The combination of the socketed pedestals, the side beams between the pedestals, secured in the sockets thereof, the parallel flat bars connected to and projecting from said pedestals, the castings connecting the extremities of said parallel bars, and the end bars connected to said castings, substantially as set forth.

11. The combination of the pedestals, the

intermediate upper and lower tubular beams connecting the same, the parallel flat bars connected to and projecting from the pedestals in line with the upper beam, the castings connected to the extremities of said bars, the end bars, and the inclined braces, substantially as described.

12. The herein-described pedestal, having a pair of legs, a horizontal socket above one leg and a horizontal socket at its lower extremity, and a chamber above the other leg and an inclined socket at its bottom, substantially as described.

13. A corner-casting for a car-truck, having upstanding lipped flanges adapted to embrace the side bars, a depension for attachment of the hanger, an interior seat for the spring, and an inclined socket at its lower end, substantially as specified.

14. The combination, with the pedestals and side beams connecting the same, of the castings suspended centrally from the beam, having recesses in their ends, and the parallel transverse motor-suspending bars having their extremities fitted in said recesses, arranged vertically edgewise, and the securing bolts uniting said beams to the castings, substantially as and for the purpose described.

15. The combination of the socketed pedestals, the intermediate tubular beams and tie-rods uniting the pedestals, the parallel bars attached thereto, the castings connecting the ends of said bars, the end bars, the inclined braces between said castings and pedestals, the vertical braces connecting the tubular beams, and the transverse stays, substantially as specified.

16. The combination of the pedestals, the intermediate connections, the bars attached thereto, the castings secured to the ends of said bars, having inwardly-projecting sockets, and the end bars fitted in said sockets, substantially as set forth.

17. The combination of the socketed pedestals, the intermediate tubular side beams and tie-rods connecting the same, the flat bars connected thereto, the castings secured to the extremities of said bars, having inwardly-extending sockets, the tubular end bars fitted in said sockets, and the tie-rods passing through said bars and castings, substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JOHN TAYLOR.

Witnesses:

HARRY O. INGALLS,
H. JUDD WARD.