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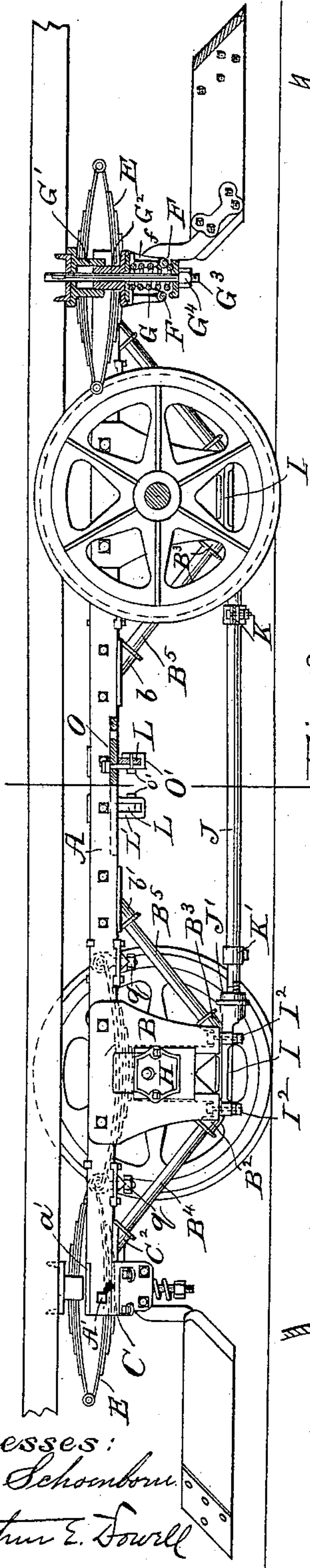
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J. TAYLOR.
CAR TRUCK.

No. 471,912.

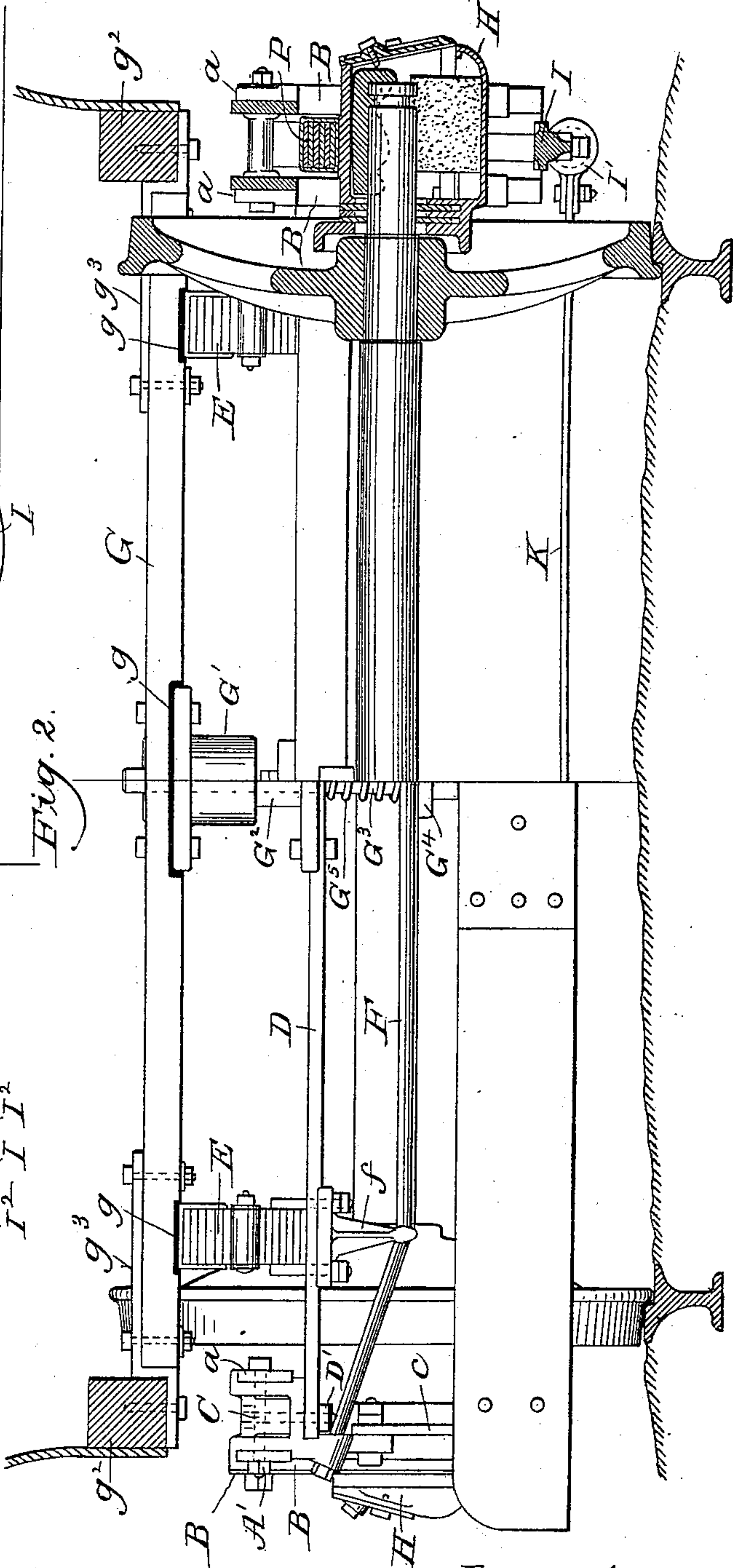
Patented Mar. 29, 1892.

Fig. 1.



Witnesses:
W. A. Schoonover
Arthur E. Towell

Fig. 2.



Inventor:
John Taylor
by T. N. Alexander
attorney

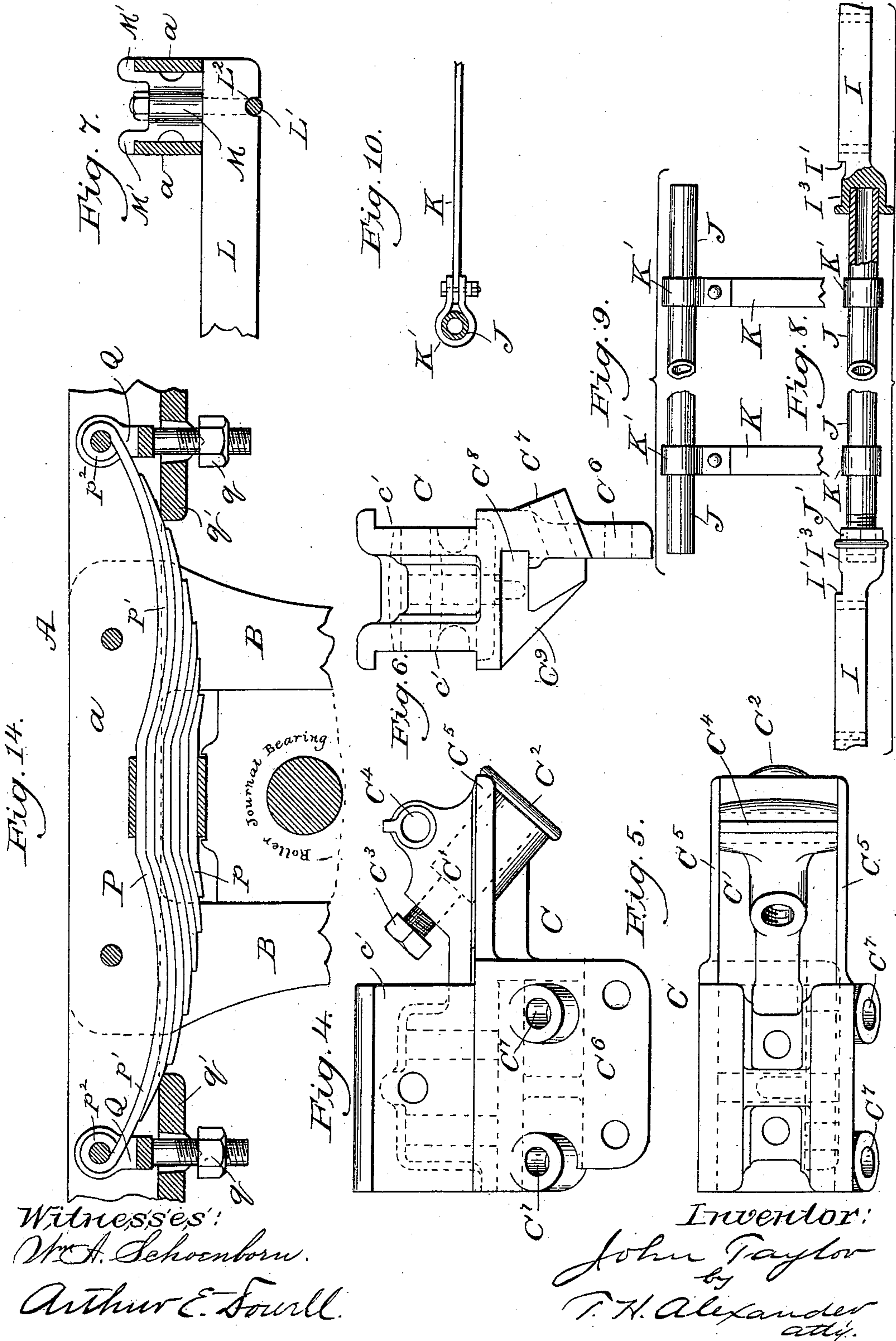
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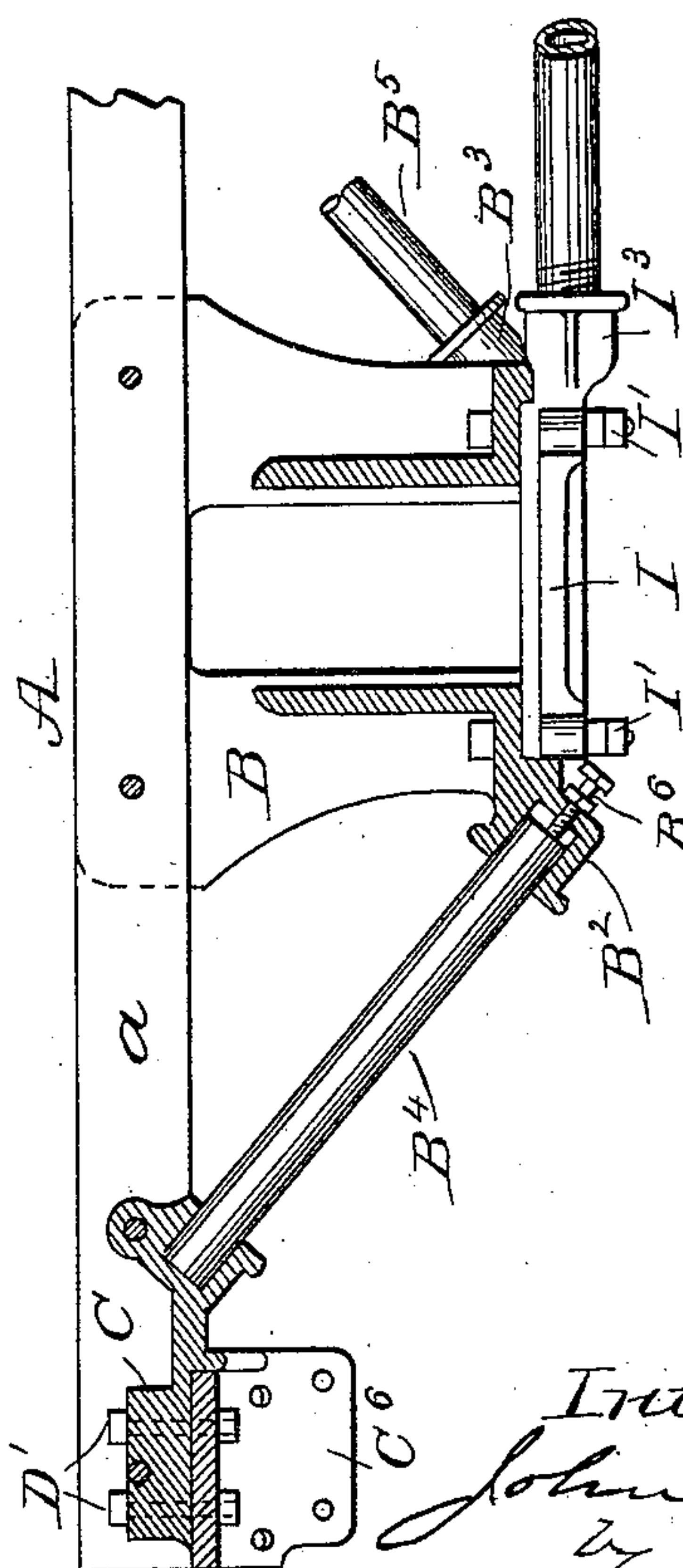
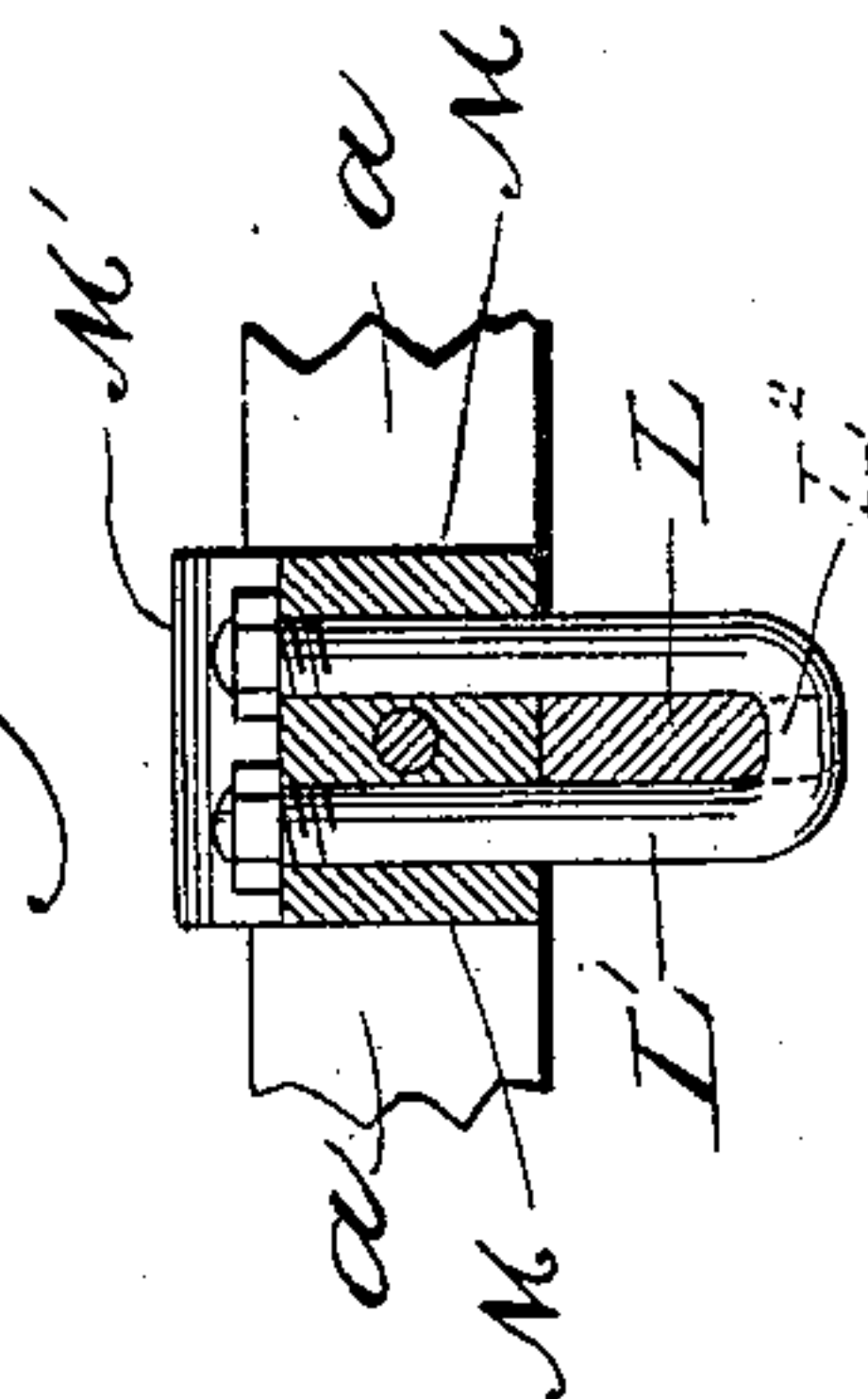
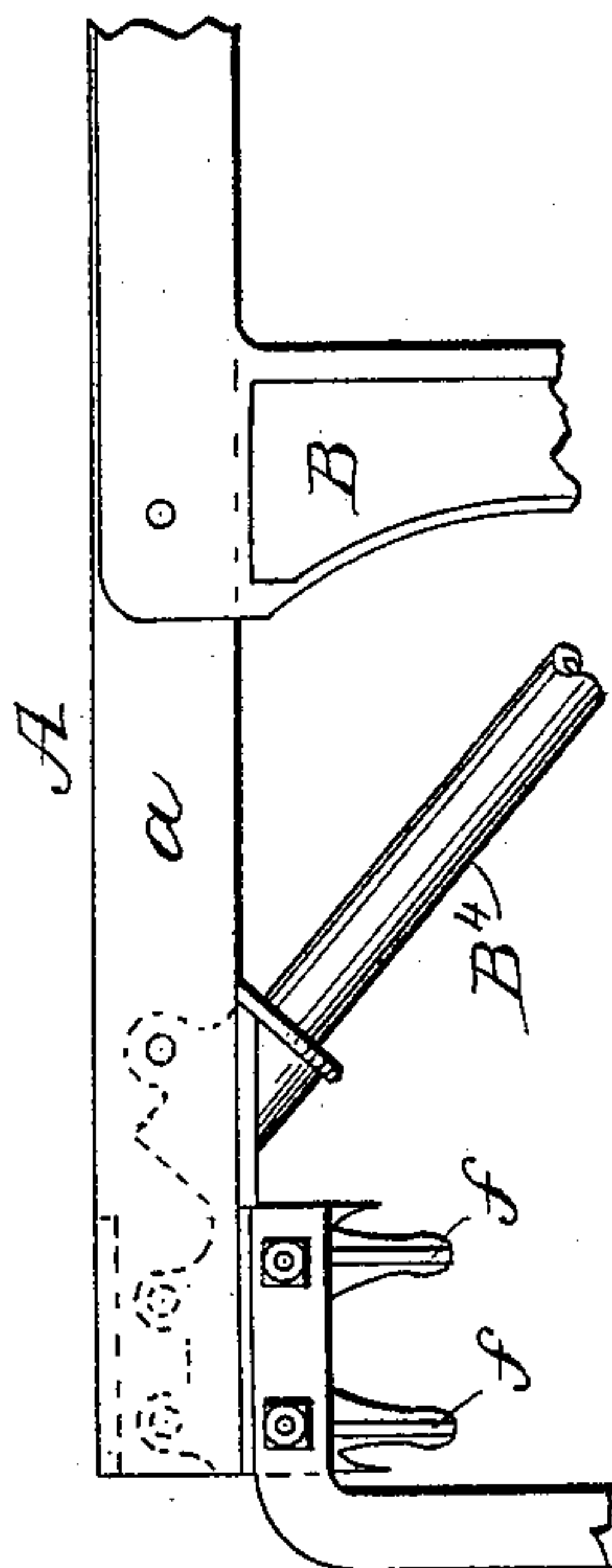
4 Sheets—Sheet 4.

No. 471,912.

Patented Mar. 29, 1892.



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UNITED STATES PATENT OFFICE.

JOHN TAYLOR, OF TROY, NEW YORK.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 471,912, dated March 29, 1892.

Application filed December 5, 1891. Serial No. 414,162. (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
10 form part of this specification, in which—

Figure 1 is a half side elevation and half centrally longitudinal section of a car-truck embodying my improvements. Fig. 2 is a half
15 end elevation and a half transverse section of the truck. Fig. 3 is a plan view of the truck. Figs. 4, 5, and 6 are detail views of the corner-castings detached. Fig. 7 is a detail of the motor-bar hanger. Figs. 8, 9, and 10 are details of the bottom jaw-stays. Fig. 11 is a detail
20 sectional view of the corner jaw-braces. Figs. 12 and 13 are detail views of a modification of the end bars. Fig. 14 is an enlarged side view showing the body-supporting springs. Fig. 15 is a detail of the motor-bar
25 hanger.

The objects of this invention are to improve the car-truck for which Letters Patent No. 437,167 were granted to me on the 23d day of
30 September, 1890; and the present invention consists in simplifying and strengthening the main frame, improving the construction of the jaw stays and braces, the springs, and motor-suspending devices, and in certain other novel details of construction and combination
35 of parts, as will be clearly understood from the following description and claims.

In the drawings the side beams A of the truck-frame are each composed of two parallel metal bars *a a*, set vertically edgewise and
40 securely united by bolts or rivets, being kept apart by interposed sleeves on the bolts or castings, substantially as in my patent referred to above. The jaws B B, which embrace the boxes, are securely bolted to said
45 beams, as shown.

C represents the corner-castings, secured to the extremities of beams A. Said castings have rabbeted *c' c'* in their sides to receive the ends of bars *a a*, and the upper edges of said bars
50 are rabbeted, as *a' a'*, to accommodate the upper flanges of castings C, so that when fitted together the outer side and top faces of the

beams and castings are flush. The castings are secured in place by bolts A', which transfix the same and bars *a a*. The castings have
55 extensions C' on their inner extremities, lying between the bars and terminating in an inclined socket C², the top of which is closed, but has an adjusting-bolt C³ tapped through it and hereinafter referred to. Above socket
60 C² is formed a transverse sleeve C⁴, which lies between bars *a a* and through which is passed a bolt A², securing the same rigidly to the beam. The castings in turn form a connection between the component bars of the beam.
65 The extensions C' have side flanges C⁵ on their lower edges, which underlie the lower edges of bars *a a*, as shown in Figs. 1 and 2. The castings also have dependences C⁶ at their outer edges, in which are two transversely-inclined
70 openings C⁷ C⁷ for the reception of the ends of transverse truss-rods F, and below these openings are bolted the fender-hangers *c c*, as shown.

The end bars D D of the truck-frame are
75 preferably of flat metal and are rigidly united to the corner-castings C C of opposite side beams, as shown, the ends of bars D being fitted into the angles formed at the junction of dependences C⁶ with the main body of the casting,
80 which may also be slightly rabbeted, as at C⁸, to receive the extremities of the bars, and being secured to the castings by bolts D' D', which pass through vertical openings in the castings C, as shown at each side of
85 bolts A'.

C⁹ are webs uniting dependences C⁶ with the main body of the castings. By this construction a strong and stiff framing is produced.

E E are the body-supporting springs, as
90 shown, of elliptical form, mounted transversely of and upon bars D near the side beams A, being bolted thereto, and underneath these springs are double-truss-rod chairs *ff*, which are clipped or bolted to the under surface of
95 bars D, and the bolts that secure the chairs may be utilized for securing the springs to the bars, if desired.

F F are truss-rods lying beneath bars D and upholding chairs *f*, the ends of said rods
100 passing through openings C⁷ in dependences C⁶ of the castings C, as shown, thus forming strong transverse trusses for the bars D and an additional connection between the beams.

G G designate the body-bars or bolsters, lying above bars D and supported on springs E E. I preferably make these bolsters of wood when the trucks are used with electric
 5 motors, as an additional insulation between car-body and truck-frame is maintained thereby, and rubber or other insulation may be interposed between the bolsters G and iron-work of the truck, as indicated at *g g*. When
 10 the wood bolsters G are employed, should the springs E E vary in height the car can be leveled by cutting it out for the reception of the springs where necessary, and as few
 15 springs are of exactly similar height this enables an easier fitting of the car-body on truck-springs to be made than where metal body-bars are used.

To the center of bolsters G are secured depending sockets G' , which telescope with
 20 smaller sockets G^2 , secured centrally to bars D below, and through these pieces pass the body-securing king-bolts G^3 , on the lower ends of which are retaining-nuts G^4 , coiled springs
 25 G^5 being interposed between the nuts, washer, and bars D to make a cushioned connection between the body and truck. The lower ends of bolts G^3 and the springs thereon have free
 30 play between the pairs of truss-rods F F, as indicated in Fig. 1, so that the bolts can be readily removed or adjusted without interfering with the trusses. The car-sills g^2 are connected to bolsters G by hanger-straps g^3 .

The jaws B B are of ordinary construction, except that opposite upwardly-inclined sockets B^2 B^3 are formed at their lower outside
 35 corners to receive oppositely-inclined braces B^4 B^5 , as shown. Braces B^4 are exterior, and their upper ends enter the sockets C^2 of castings C, respectively, and may be adjusted by
 40 bolts C^3 or by bolts B^6 , tapped through the bottoms of sockets B^2 , as shown in Fig. 11. It is not necessary to have adjusting-screws in both sockets B^2 or C^2 , and hence when bolt B^6 is used bolt C^3 may be omitted. In Fig. 11 the
 45 latter is used. The upper ends of braces B^5 enter sockets b' , formed in the ends of castings $b b$, bolted between bars $a a$, and may be adjusted by bolts b^2 , tapped therethrough, as shown.

50 The car-axle boxes H H are fitted in jaws B, as usual, and the lower ends of the jaws are closed and united by stay-castings I I, which have shoulders I' I' fitting against the inner edges of and between the legs of the
 55 jaws, and are secured thereto by bolts I^2 , which pass through horizontal flanges on the jaws behind sockets B^2 B^3 . On the inner ends of stay-castings I are formed sockets I^3 I^3 , which receive the ends of horizontal stays J J, which
 60 thus form a connection between the jaws. One or both ends of stays J J are threaded and nuts J' are screwed thereon, and after the stays are in place these nuts are unscrewed, thereby abutting against the sockets and bind
 65 it between the jaws and keep the latter properly separated. Preferably I employ tubular rods or pipes for stays J.

K K are transverse metal straps bolted to collars $K' K'$ on stays J and lying transversely
 70 of the truck near to the jaws. These straps prevent the lateral spreading apart of the opposite jaws when the truck is thrown violently to one side, as in rounding curves, and they also answer as supports for the pan or hood,
 75 protecting the motors from dust, &c., when motors are suspended on the trucks.

L L designate transverse bars suspended centrally from and between beams A A and designed to uphold an electric motor. These
 80 bars are suspended by loops or U-bolts L' , which embrace the bars and pass through openings in castings M, bolted between the members of beams A, as shown in Fig. 7, said
 castings having top lips M' , which catch on the upper edges of bars $a a$. Bolts L' engage
 85 notches L^2 in the lower edges of the bars L, and thus longitudinal movement of said bars is prevented, while castings M prevent lateral vibration thereof. (See Fig. 7.)

O designates the motor-suspending plate,
 90 which is attached to the centers of the bars L by L-shaped clip-bolts O' , which are riveted or bolted to the bars L' , as at o' .

In order to lower the truck-frame, if desired, and where roller-bearings are employed
 95 in the axle-boxes, I form the springs as shown in Figs. 1 and 14—a half-elliptic spring P, bent into approximately Cupid's-bow shape, the shorter leaf p being lowermost and its ends curving down. The superimposed leaves are
 100 bent at center to correspond with the lowest leaf; but their extended extremities are gradually and successively given an upward bend, so that the ends of the topmost leaf p' rise above the center thereof and are formed into
 105 eyes $p^2 p^2$, which are connected to the hangers Q Q by bolts p^3 . The springs are thus kept below the tops of beams A and play between the members thereof. Hangers Q Q depend
 110 between bars $a a$ and have rocking nuts q on their lower ends, which coact against washer-plates q' , clipped to the beams, and by which means the beams and truck-frames are suspended on the axle-boxes. When the ordinary
 115 semi-elliptic springs may be employed.

In Fig. 13 I have illustrated the end bar as formed of channel-iron, substantially as in my patent referred to, and trussed up by rods
 120 like the flat end bars hereinbefore described. The ends of the truss-rods in this instance pass through the depensions on the castings and through the ends of fender-hangers, so that their nuts confine the latter in place. These truss-rods greatly stiffen the end bars
 125 and enable them to be made much lighter than would be practical if they were not trussed.

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

1. The combination of the side beams, the end bars connected to the extremity of said beams, and the double parallel truss-rods un-

derlyingsaid bars and connected to the beams, and the chairs interposed between said rods and bars, substantially as described.

2. The combination of the side beams, the 5 castings attached to the ends thereof, having depensions, the end bars connected to said castings, the truss-rods underlying said bars and secured to said depensions, and the truss-chairs supporting said bars on said rods, substantially as described. 10

3. The combination of the side beams, the corner-castings constructed substantially as described, secured to the ends thereof, the flat end bars secured to said castings, and the 15 truss-rods for said bars, substantially as specified.

4. In a truck, the corner-castings C, having an inwardly-projecting socketed and laterally-flanged extension, rabbeted sides, and 20 perforated depensions for attachment of truss-rods and fender-hangers, substantially as described.

5. The combination, in a truck-frame, of the side beams, the corner-castings, the end bars 25 and truss-rods therefor connected to and suspended from said castings, the jaws suspended from said beams having sockets on their lower ends, the socketed castings secured to the beams between the jaws, and the outer 30 inclined braces engaging sockets in the jaws and in the corner-castings, and the inner inclined braces engaging sockets in the jaws and in said socket-castings, substantially as described.

6. The combination of the side beams, the jaws connected thereto, the stay-castings 35 bolted to the lower ends of said jaws, having shoulders fitting between the legs of the jaws and sockets on their inner ends, and the stay secured between said jaws in the sockets of 40 said stay, substantially as specified.

7. The combination of the truck side beams, the jaws suspended therefrom, the stay-castings secured to the lower ends of said jaws, 45 having shoulders fitting between the legs of the jaws and sockets on their inner ends, the stays on tubes fitted between the stay-castings in the sockets thereof, and the transverse straps connecting said stays on tubes, 50 substantially as described.

8. The combination of the side beams of a truck-frame and the castings attached thereto with the motor-suspending bars and the U-shaped bolts L, engaging notches L² in the lower ends of said bars and suspending them 55 from the castings, substantially as described.

9. The combination of the side beams, the corner-castings, the flat end bar and the pair of parallel truss-rods therefor bolted to said castings, the springs mounted on said bar, the 60 car-bolster mounted on said springs, the king-bolt transfixing said bolster and end bar, and the spring on the lower end of said bolt, substantially as specified.

10. The herein-described jaw, stay-castings 65 I, having shoulders I' I' and the sockets I³, as and for the purpose described.

11. The combination of the side beams, the jaws, the stay-castings I, the stays J, and nuts J', substantially as and for the purpose 70 specified.

12. The combination of the side beams, the castings M M, bolted thereto, the transverse bars LL, and the U-shaped bolts L', suspending said bars from said castings, substantially 75 as and for the purpose described.

13. The combination of the side beams composed of opposite parallel bars, the jaws suspended from said beams, the axle-boxes, the Cupid's-bow-shaped springs P, mounted on 80 said boxes between the members of the jaws and beams, the hangers Q Q, the rock-nuts q, and washer-plates q', all constructed substantially as described.

14. The combination of the side beams composed of bars a a, the corner-castings C C, and intermediate castings b, secured between the members of the beams, the jaws B B, bolted 85 to the beams, the end bars D D, bolted to castings C, the truss-rods E E thereof suspended 90 from said corner-castings, the inclined braces B⁴ and B⁵, the stay-castings I, and stays J, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two 95 witnesses.

JOHN TAYLOR.

Witnesses:

HARRY O. INGALLS,
H. JUDD WARD.