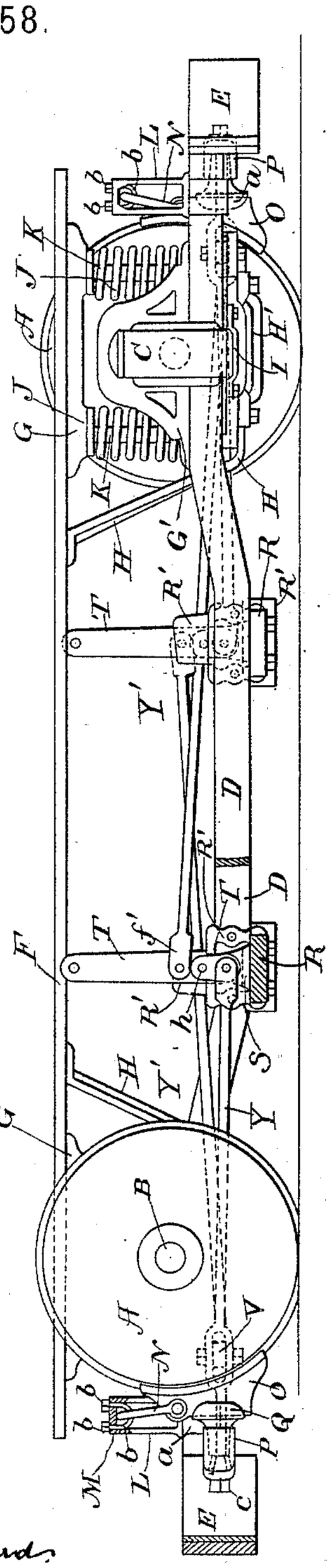
(No Model.) 2 Sheets—Sheet 1.

G. M. BRILL.

BRAKE MECHANISM FOR CAR TRUCKS.

No. 485,858. Patented Nov. 8, 1892.

Fig. 1.



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(No Model.) 2 Sheets—Sheet 2.

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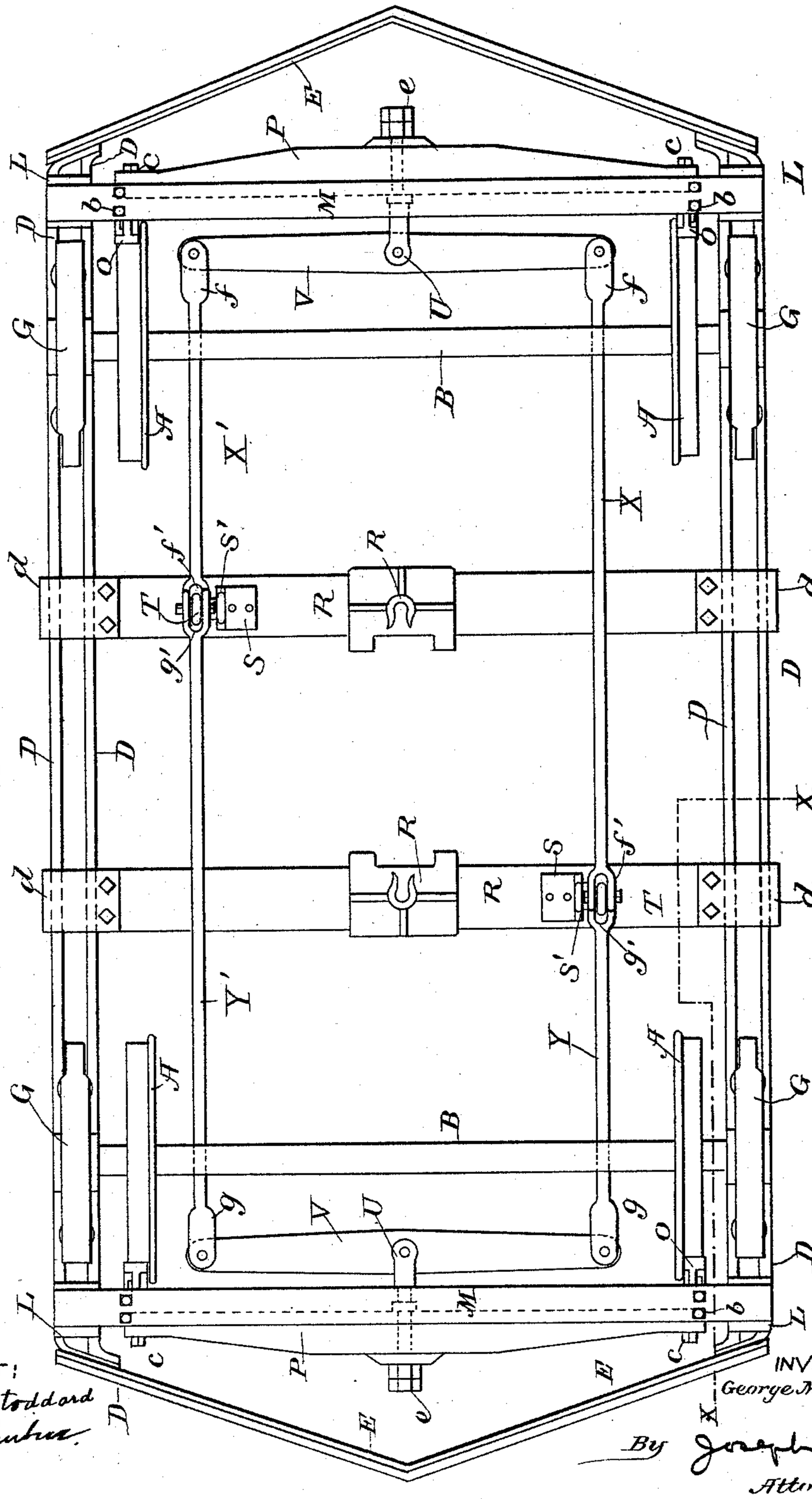
Fig. 2.



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GEORGE MARTIN BRILL, OF PHILADELPHIA, PENNSYLVANIA.

BRAKE MECHANISM FOR CAR-TRUCKS.

SPECIFICATION forming part of Letters Patent No. 485,858, dated November 8, 1892.

Application filed April 23, 1891. Serial No. 390,125. (No model.)

To all whom it may concern:

Be it known that I, GEORGE MARTIN BRILL, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Brake Mechanisms, of which the following is a specification.

My invention comprises a particular wheel-brake mechanism which will have the capacity of simultaneous application of all the brake-shoes upon the wheels when one of the operating-levers is vibrated, which mechanism is so disposed as to permit a motor or grip mechanism to be carried on the truck in such a manner as to encircle either of them and without taking up any room which should be used for such purposes.

This invention further consists in the combination, construction, and arrangement of parts, as hereinafter described and claimed.

Figure 1 represents a side elevation of a car-truck having my improvements in brake mechanism thereon, a portion of the same being in section, taken on the line *x x*, Fig. 2, the supports for the beams R being omitted for clearness. Fig. 2 is a plan view of Fig. 1 with the upper chord and spring supporting and holding devices removed.

In the drawings, A are the truck-wheels, and B the axles. The axles B enter axle-boxes C in the usual manner.

D are side beams suspended from the axle-box saddles G′.

E are fenders supported on the side beams, and F is the upper chord of the truck or longitudinal sill of the car, as the case may be.

G are the upper spring-plates.

H are braces secured to the upper chord or sill F and to the lower spring-plate, both ends of the said plate being united by the strap H′.

I is a strap bracing the ends of the side beams D about the axle-boxes.

J are springs, and K spring-posts. The lower ends of the springs rest on the lower spring-plate, which may be formed integral with the saddles G′, if desired, the upper ends engaging with the spring-plates G, all of which parts may be constructed in any desirable manner.

By the use of the structure before described it is intended to secure a car-body spring-supported from the axle-boxes and a truck-frame composed of the side beams D, (which may be united laterally by other beams, as hereinafter set forth, instead of the fenders E,) mounted upon and supported by the axle-boxes and practically having no vertical vibration derived from the car-body—that is, preserving a constant relation to the axles, as previously described, while at the same time permitting the axles to have a side or lateral thrust in the boxes. It is by this structure that I am enabled to constantly preserve a uniform relation of the brake-shoe to the wheels, the arc of oscillation of the shoe being always the same in relation to the tread of the wheel.

If the brake-shoe and operating mechanism were not supported as herein shown and described and the brake-shoes hung from the car body or sill, they would partake of the vertical and other vibrations of the car and be constantly changing their point of contact to the tread of the wheel, the disadvantages of which are well known.

In carrying out my invention I locate upon the end extension of the side beams D upright pillars L, which straddle the side bars D D, and are rigidly secured thereto by means of the legs *a*. The pillars L are so located in relation to the truck-wheels that the brake-shoes will preserve a uniform plane of vibration in relation to them. Extending laterally across the truck and suspended by the pillars L are brake-beam hangers M, which may be either integral with the pillars L or bolted to them. Pending from the hanger M and pivotally connected thereto by means of the strap-bolts are links N. These links are pivotally connected with the brake-shoes O, and the shoes being rigidly secured to the brake-beam P by means of the jaw-bolt Q and nuts *c* the shoes and brake-beams are thereby pivotally suspended from the hangers M. It is clear that a description of the brake mechanism at one end of the frame D answers for the one at the other end, as they are similar in structure and operation.

It will be seen by reference to Fig. 2 that the brake-shoes, by reason of the accommodation afforded by the hangers M, are suspended directly in line with the tread of the wheel, and should a narrower gage be employed the only change necessary would be to place the

strap-bolt nearer the center of the hanger and connecting the brake-shoe to the brake-beam in accordance with the change. Should it be desired to change the point of contact of the shoes with the tread of the wheel, the only alteration necessary would be to shorten the links or lengthen them. It will thus be seen that by reason of the means of suspending the brake-shoes herein shown and described I am enabled not only to readily and economically accommodate my brake mechanism to any gage used, but to adjust the point of contact of the shoes upon the tread of the wheel in accordance with the location of the side beams or other part of the truck structure upon which the supports are located.

The mechanism for operating the brake beam and shoes and for supporting the brake-rods is substantially as follows: Extending across the frame D and secured to it by straps, as shown at *d*, Fig. 1, are beams R, which may be used alone or in conjunction with other devices, as fenders, &c., to form the side beams D into an integral frame, and which in this case may be used for the support of a grip or electric motor if the car is to be used for such purpose, seats for a grip mechanism being shown at R′. Firmly secured to the bars R are brackets S, Fig. 2, having upwardly-extending arms S′, to which an upright brake-lever T is pivotally attached. Secured to the brake-beam P by means of the jaw-bolt U and nut *e*, Fig. 2, is a horizontal or equalizing brake-lever V. X X′ Y Y′ are connecting-rods having bifurcated ends *f f′ g g′*, the ends *f g* being attached to the equalizing-levers V and the end *f′ g′* being attached to the brake-levers T.

The foregoing is a description of the brake-operating mechanism and by it I secure the simultaneous action of all the brake-shoes by the operation of one of the brake-levers T. This is accomplished by the ends *f f′ g g′* of the connecting-rods being arranged in series above and below the fulcra *h*, Fig. 1, of the brake-levers T, so that when one is operated all the brake-shoes are brought to bear on the tread of the wheel.

If desired, a spring or other flexible device could be hung from the sill or upper cord F and connected with the brake-beam or other connecting mechanism for the purpose of disengaging the brake-shoes from the wheel without departing from the spirit of the present invention.

In actual practice the specific structure or relation of the parts may be altered without deviating from the nature of my invention and I do not therefore confine myself to such specific structure or relation of parts.

The means for supporting the brake beam and shoe comprising the pillars L on the frame D, brake-hanger M, supported by the pillars, and links N, depending from the brake-hanger, form the subject-matter of an application filed by me June 19, 1890, Serial No. 355,952, and although the same is shown and described herein I make no claim to the same in this application, and I do not limit myself to any particular method of supporting the brake beam and shoes.

I claim—

1. In a brake mechanism, the combination of a transverse brake-beam P, having brake-shoes, transverse equalizing-levers V, secured to the brake-beams, upright brake-levers T, fulcrumed to the truck, and longitudinal brake-rods X X′ Y Y′, secured to the said equalizing-levers at their extremities and to the upright brake-levers above and below their fulcral points, the said upright brake-rods being secured to the longitudinal brake-rods between their connection with the equalizing-levers, substantially as described.

2. In a brake, the mechanism for securing the simultaneous action of all the brake-shoes at one time, in which the transverse brake-beams and longitudinal brake-rods are normally disposed in rectangular form, comprising brake beams and shoes secured to the truck, transverse equalizing-levers secured to the brake-beams, and longitudinal brake-rods secured to the equalizing-levers at each side of the point of the union of said levers to the brake-beams and to upright brake-levers fulcrumed between the equalizing-levers, the said brake-rods being secured to the brake-levers above and below their fulcral points, substantially as described.

GEO. MARTIN BRILL.

Witnesses:
R. S. REED,
P. HAWKINS.