(No Model.) 3 Sheets—Sheet 1.

G. S. STRONG & A. MITCHELL.

CAR TRUCK.

No. 312,928. Patented Feb. 24, 1885.

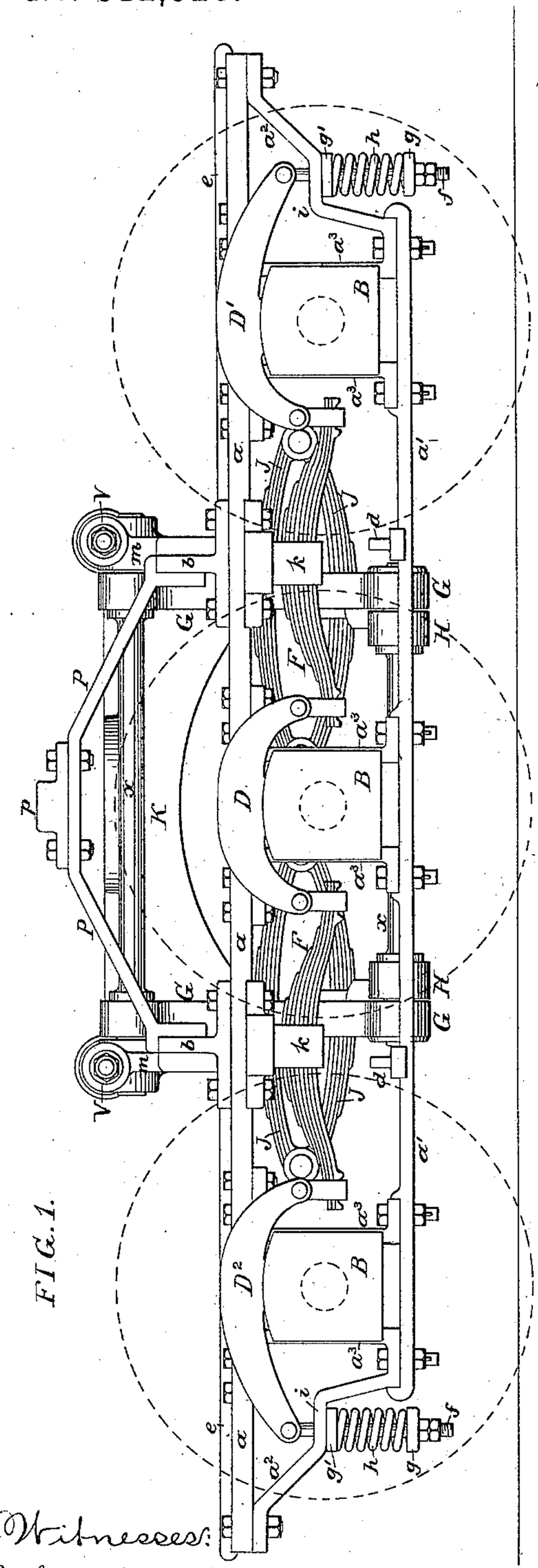

FIG. 1.

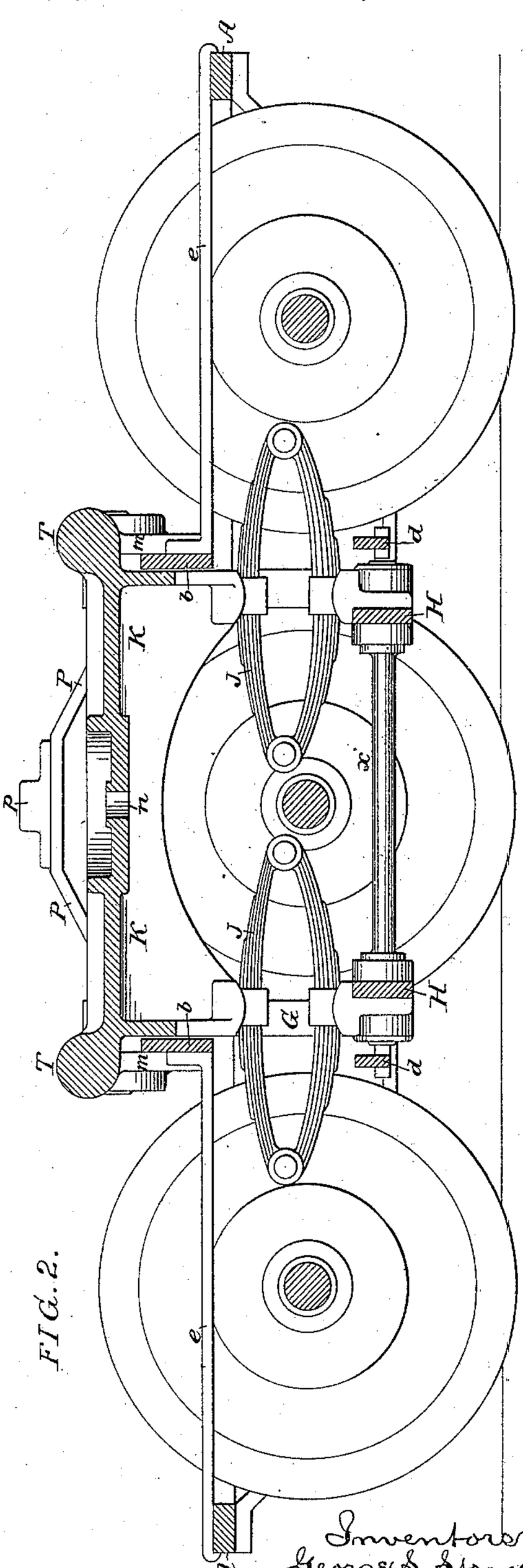

FIG. 2.

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Howson & Sons

(No Model.) 3 Sheets—Sheet 2.

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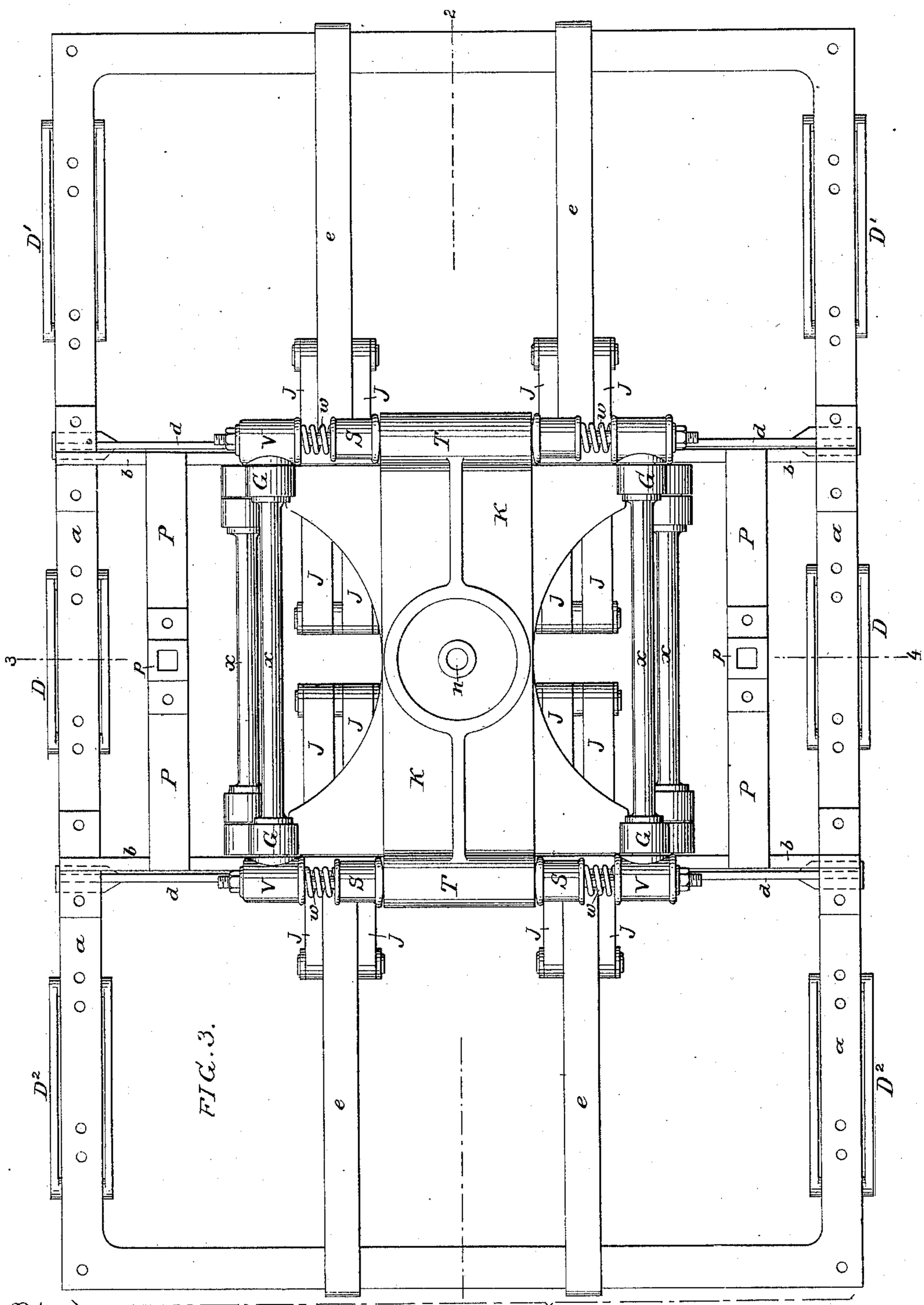

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(No Model.) 3 Sheets—Sheet 3.

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CAR TRUCK.

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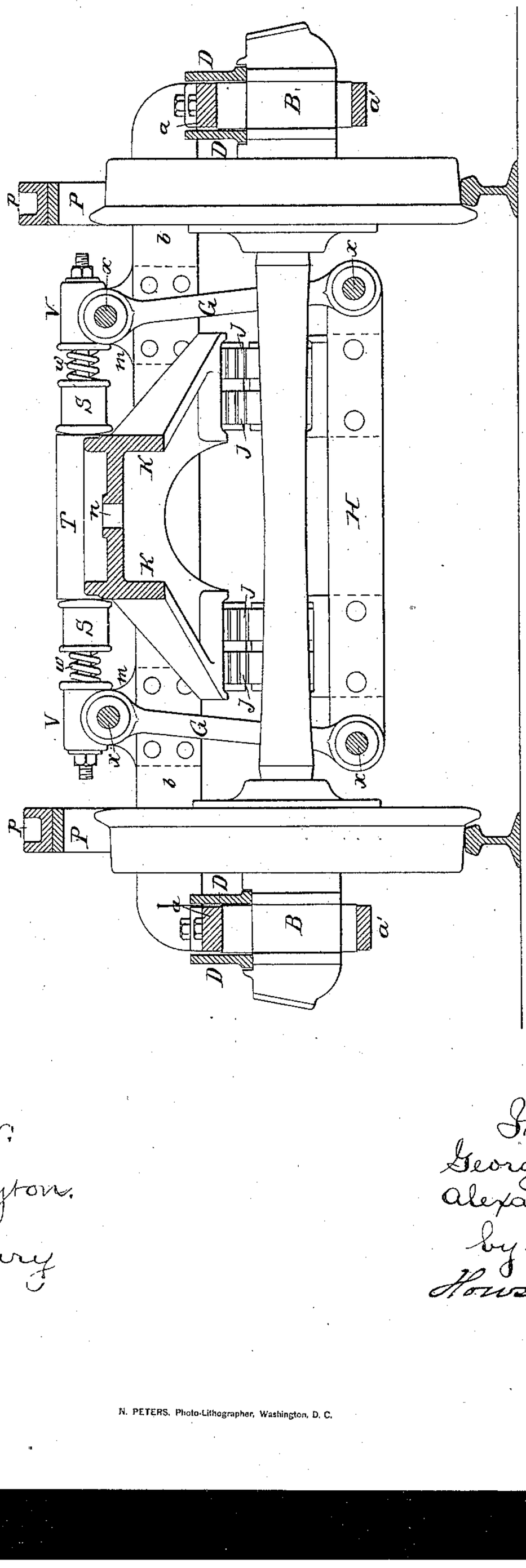
FIG. 4.



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UNITED STATES PATENT OFFICE.

GEORGE S. STRONG, OF PHILADELPHIA, AND ALEXANDER MITCHELL, OF WILKES-BARRÉ, PENNSYLVANIA.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 312,928, dated February 24, 1885.

Application filed November 6, 1884. (No model.)

To all whom it may concern:

Be it known that we, GEORGE S. STRONG, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, and ALEXANDER MITCHELL, a citizen of the United States, residing in Wilkes-Barré, Pennsylvania, have invented certain Improvements in Trucks for Cars and Tenders, of which the following is a specification.

The object of our invention is to provide a truck for railroad-cars, locomotives, tenders, &c., with a system of springs which, while of simple and economical construction, will insure an elastic support for the body of the car or tender, will thoroughly equalize the bearing of the truck-frame on the axle-boxes, and will permit the placing of the wheels closer together than usual.

In the accompanying drawings, Figure 1, Sheet 1, is a side view of a six-wheeled truck constructed in accordance with our invention, the wheels and axles being shown by dotted lines; Fig. 2, a longitudinal section of the truck on the line 1 2, Fig. 3; Fig. 3, Sheet 2, a plan view of the truck without the wheels, axles, or axle-boxes; and Fig. 4, Sheet 3, a transverse section on the line 3 4, Fig. 3.

A is the rectangular frame of the truck, each side bar, *a*, of which forms the upper bar of an open truss, the remaining members of which are the base bar, *a'*, and end bars, a^2, and vertical bars a^3, the bars being firmly bolted together, and the bars a^3 forming the guides for the axle-boxes B. The truck-frame is completed, in the present instance, by transverse braces *b* and *d* and longitudinal braces *e*, the latter extending from the braces *d* to the end bars of the frame A, as shown in Figs. 2 and 3. In order to equalize the bearing of this truck-frame upon the axle-boxes and distribute strains throughout the entire length of the said frame, we provide the system of levers and springs shown in Fig. 1. On each of the axle-boxes bears a lever composed of opposite side bars connected at the ends.

From the front end of the central lever, D, is suspended the rear end of a spring, F, carried by a box, *k*, on the frame A, the front end of said spring being suspended from the rear end of the lever D', which bears on the forward axle-box, the front end of the latter lever having hung to it a bolt, *f*, which passes through an opening in the bar a^2, and has at the lower end nuts supporting a disk, *g*, a coiled spring, *h*, being interposed between this disk and a similar disk, *g'*, bearing against an offset, *i*, in the end bar, a^2. A spring, F, is likewise interposed between the central lever, D, and the lever D^2, bearing on the box of the rear axle, and the rear end of the latter lever has a rod, *f*, and spring *h*, similar to that of the forward lever, D'. It will thus be seen that the frame has no rigid connection with any of the levers, so that strains can be transmitted to the frame from the boxes or from the frame to the boxes only through the medium of the springs, and a strain exerted upon the truck-frame is transmitted to all three of the boxes, so that elasticity and effective equalization are assured.

To each of the transverse bars *b* of the truck are secured two brackets, *m*, and from these brackets are suspended, by means of links G, two bars, H, carrying a system of elliptic springs, J, two pairs of springs on each bar being shown in the present instance, although this number may be varied as desired.

Mounted on the springs J is a bolster, K, having a central boss forming a bearing for the car-body, which is secured by the usual king-bolt passing through the opening *n*. The car-body may also have a bearing at each side upon blocks of rubber carried by sockets *p*, secured to arched frames P, the latter being supported by the transverse bars *b* of the truck. The car-body is thus free to yield both laterally and vertically independently of the truck-frame; but in order to prevent undue swing and to aid in restoring the car-body to a central position, we provide buffers S, which bear upon the opposite ends of bosses T on the bolster, the buffers being carried by rods passing through the ends of sockets V on the brackets *m*, and being acted upon by springs *w*, contained partly in said sockets. The links G and bars H are connected by longitudinal rods *x*, so as to form in effect one structure. As the bolster-supporting springs J are arranged longitudinally, we are enabled to place the wheels of the truck more closely together than where the said springs are arranged transversely and project between the

wheels, so that in turning curves there is much less friction upon the wheel-flanges than in trucks having an extended wheel-base.

We claim as our invention—

1. The combination of the truck-frame, the bolster K, longitudinal supporting-springs J therefor, and a laterally-swinging support for said springs, as set forth.

2. The combination of the truck-frame having transverse bars *b*, the bolster K, the longitudinal supporting-springs J therefor, the transverse bars H, carrying said springs, and the links G, whereby said bars H are suspended from the bars *b*, as set forth.

3. The combination of the truck-frame, the axles and axle-boxes, a system of equalizing-levers and springs therefor, the bolster K, longitudinal supporting-springs J therefor, and a laterally-swinging support for said springs, as set forth.

4. The combination of the truck-frame, the bolster K and its swinging support, the bumpers S, the sockets V, and the springs *w*, as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

GEORGE S. STRONG.
ALEXANDER MITCHELL.

Witnesses:
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EDMUND G. BUTLER.