

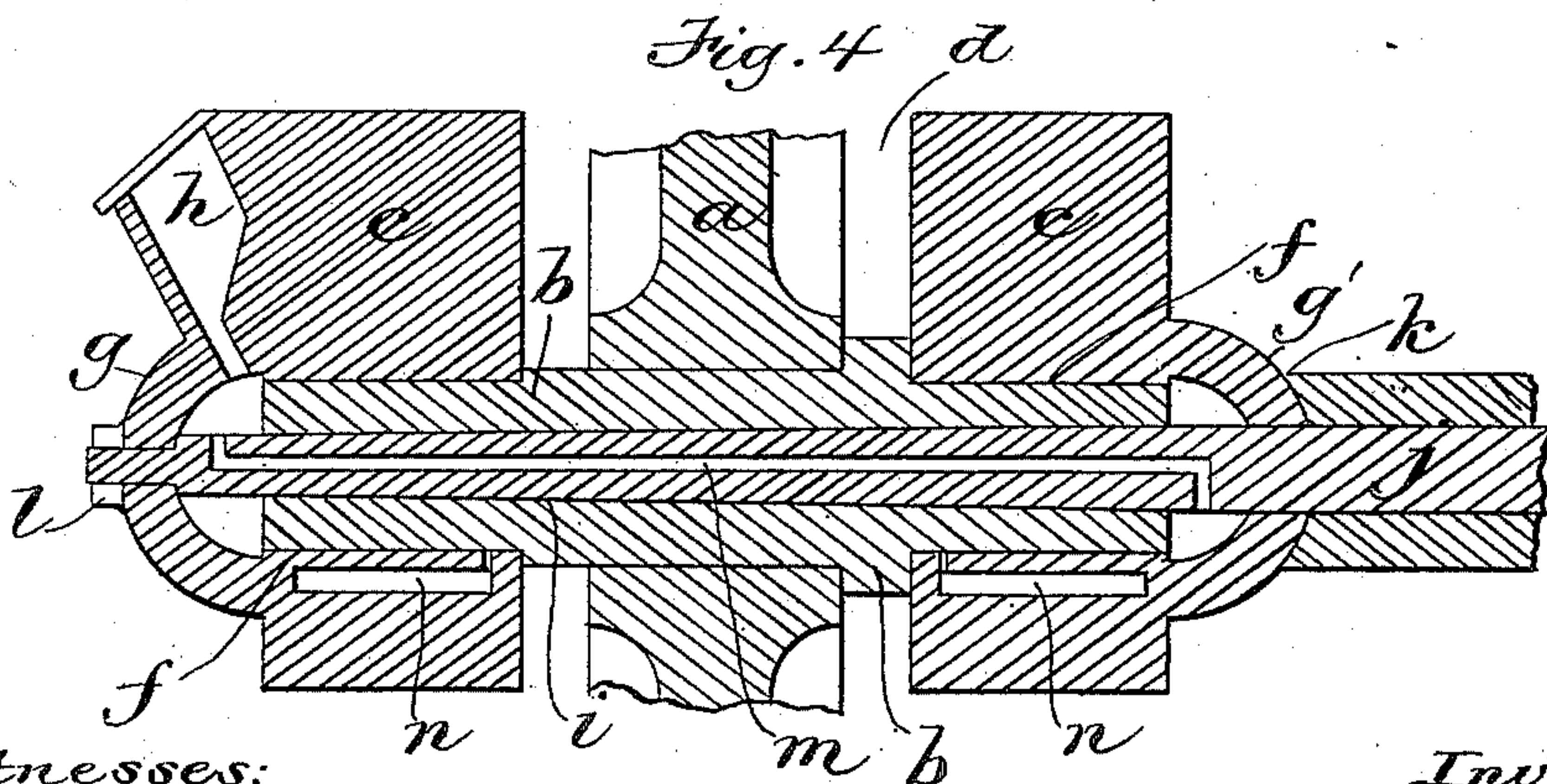
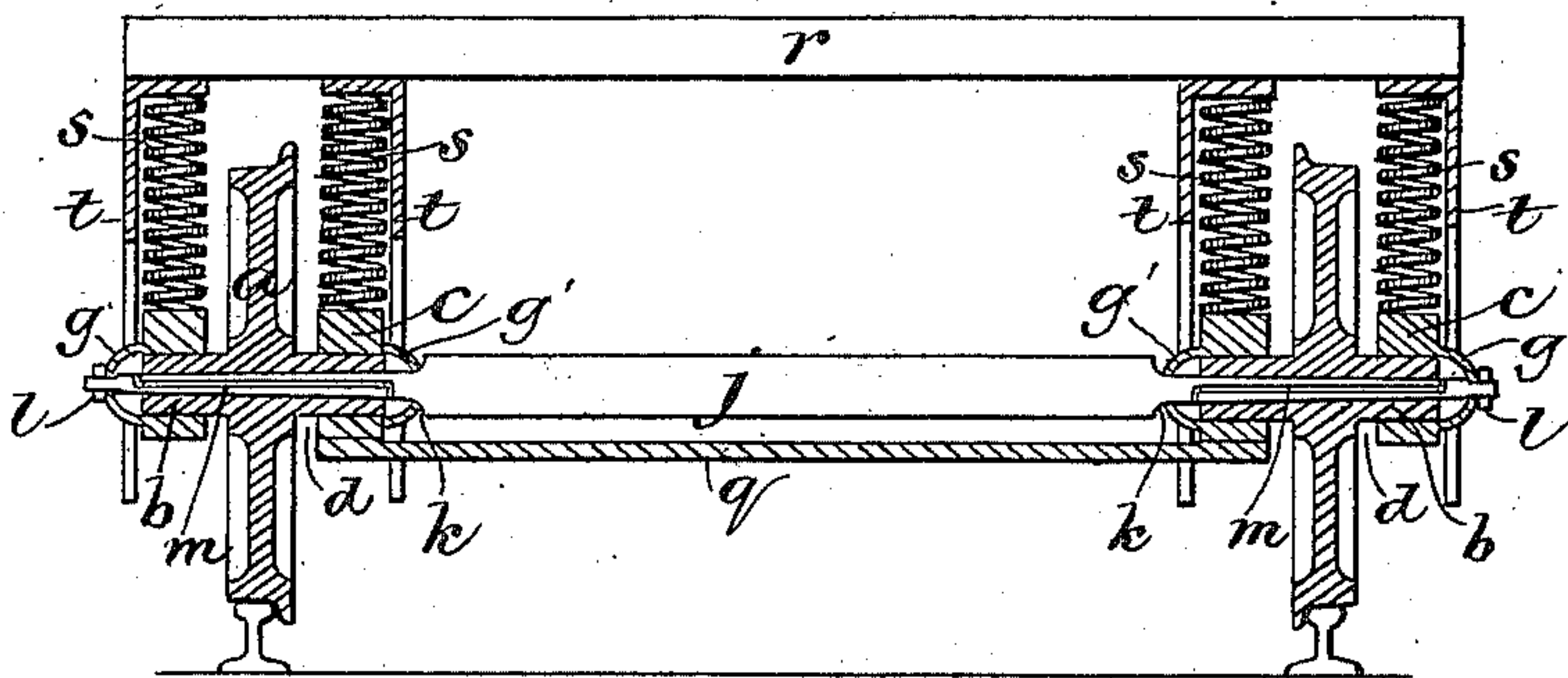
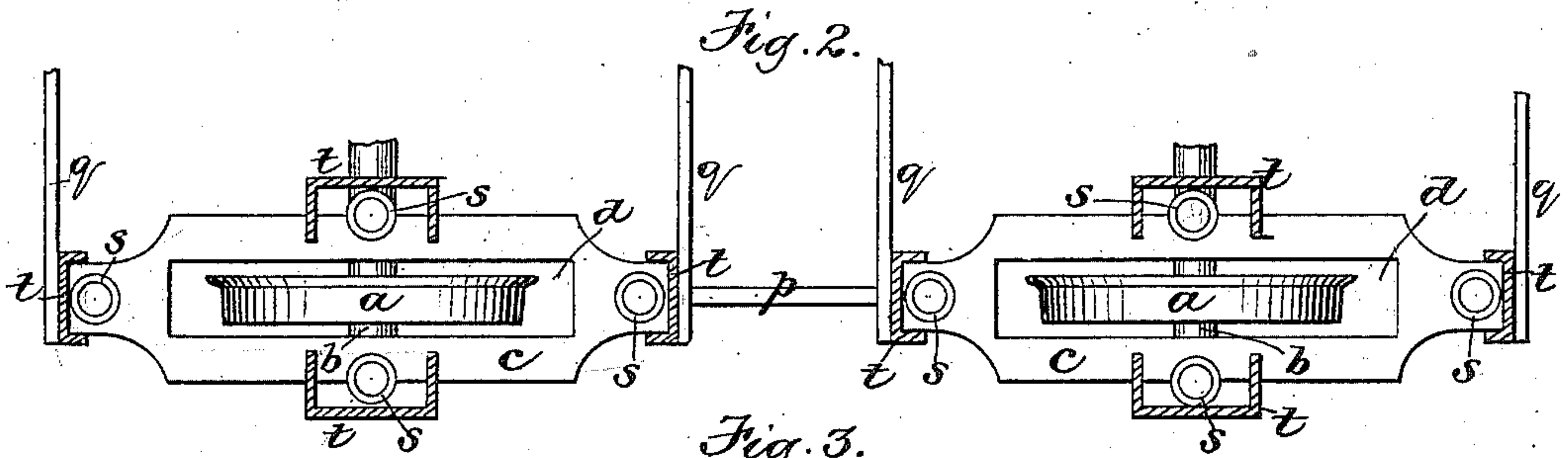
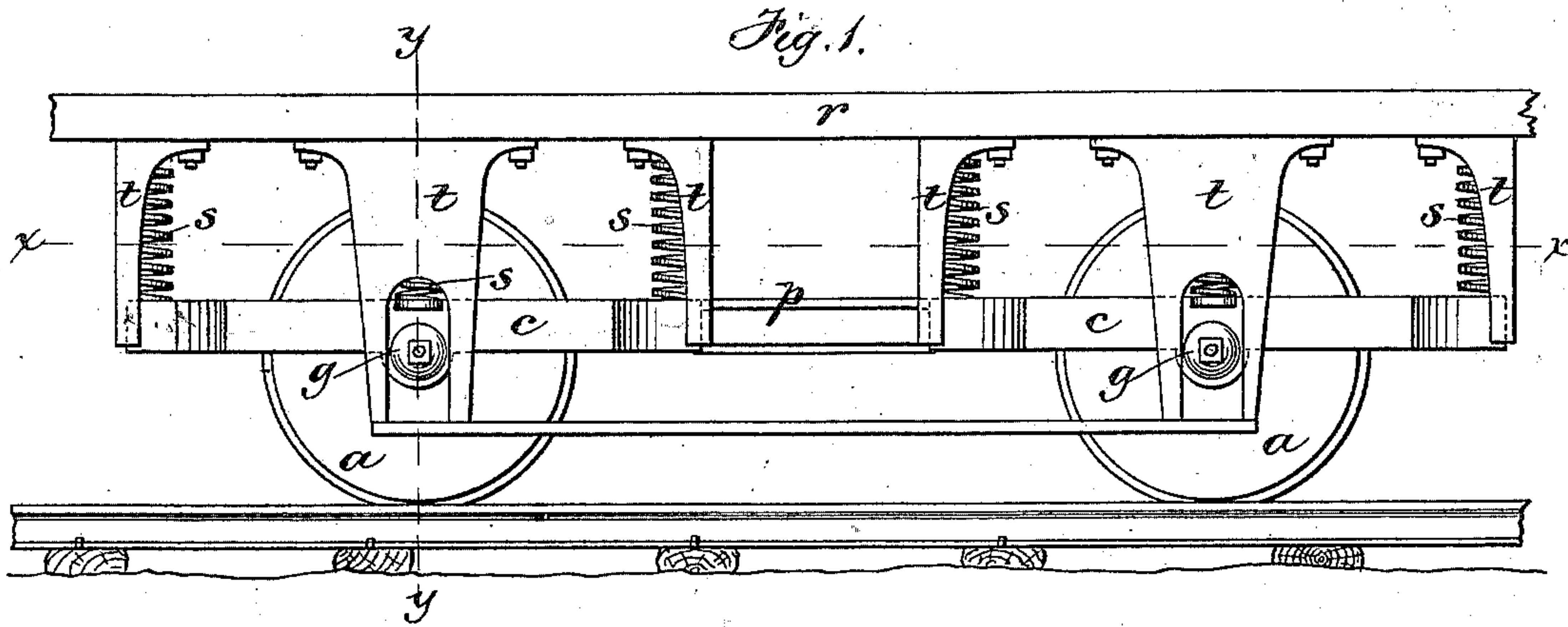
(No Model.)

G. W. SIMONDS.

CAR TRUCK.

No. 299,026.

Patented May 20, 1884.



Witnesses:  
John M. Sugay  
A. L. White

Inventor.  
Geo. W. Simonds  
by Wright & Brown  
Attys.



# UNITED STATES PATENT OFFICE.

GEORGE W. SIMONDS, OF BOSTON, MASSACHUSETTS.

## CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 299,026, dated May 20, 1884.

Application filed May 5, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE W. SIMONDS, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Railroad-Cars, of which the following is a specification.

This invention has for its object to provide certain improvements in the manner of securing wheels to steam and street cars, whereby each wheel is adapted to rotate independently, is securely connected, is braced against lateral strain on its flanges, and is continuously and efficiently lubricated.

The invention also has for its object to provide certain improvements in the load-supporting portion of a car, looking to strength of construction and ease of motion.

To these ends my invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation of a portion of a car embodying my invention. Fig. 2 represents a horizontal section on line *x x*, Fig. 1. Fig. 3 represents a vertical section on line *y y*, Fig. 1. Fig. 4 represents an enlargement of a portion of Fig. 3.

The same letters of reference indicate the same parts in all the figures.

In the drawings, *a a* represent the wheels of a car, on which are rigidly formed tubular axles *b b*, either formed integral with the wheels or rigidly attached thereto.

*c c* represent what I term "box-frames," the same consisting of stout metal frames, each having an opening, *d*, of sufficient size to receive one of the wheels, and each having two boxes, *f f*, Fig. 5, adapted to receive and permit the rotation of the axles *b*. Each box-frame *c* has on its outer sides two hollow bosses, *g g'*, constituting oil-reservoirs, communicating with the boxes *f*, the outer boss, *g*, having a suitable mouth or aperture, *h*, for the introduction of oil. Each axle *b* has a central longitudinal passage, *i*, which is tapered, as shown in Fig. 4, being larger at the inner than at the outer end of the axle.

*j* represents a stout connecting-bar, which connects each wheel with the corresponding opposite wheel. Said bar is formed and tapered to fit in the longitudinal passages in the

axles *b*, and is provided with shoulders *k k*, bearing against the bosses *g' g'*, and at its outer ends with nuts *l l*, bearing against the bosses *g g*. It will be seen that the connecting-bar *j* constitutes a firm support, which prevents the wheels and box-frames from moving independently in lateral directions, each wheel being at the same time adapted to rotate independently. The tapered form of the passages *i* through the axles enables the oil to flow downwardly from the outer boss, *g*, to the inner boss, *g'*, between the surfaces of said passages and the portions of the bar *j* resting therein, so that the reservoir in the boss *g'*, which is at the inner side of the wheel, and is not therefore as easily reached as the reservoir in the boss *g*, is supplied with oil from the latter reservoir. I prefer to make longitudinal passages *m m* in the portions of the bar *j* resting in the axles *b*, said passages connecting the outer with the inner reservoir, as shown in Fig. 4. If desired, the bosses *g'* may have openings for the introduction of oil, like the bosses *g*. The oil from the oil-reservoirs finds its way between the bearing-surfaces of the axles *b* and boxes *f*. To prevent leakage of oil, the box-frames *c* may be provided with drip-chambers or cavities *n* under the boxes, to receive the excess of oil from said boxes. Suitable wicks or capillary conductors may be employed to conduct the oil from said drip-chambers and supply it again to the boxes. The box-frames *c c* of the several pairs of wheels are connected by longitudinal bars *p* and transverse bars *q* in such manner as to constitute a rigid primary wheel-containing frame. The body of the car is supported by a secondary frame, *r*, between which and the box-frames are interposed springs *s* of any suitable construction. Said springs are equally distributed around the wheels, as shown in Fig. 2—that is to say, for each spring there is a corresponding spring at a point at the opposite side of the wheel. The weight of the load is thus evenly distributed on the frames. The secondary frame has suitable frames or pedestals, *t*, projecting downwardly, and inclosing or partially inclosing the springs, and formed at their lower ends so that they will not interfere with the free vertical movement of the secondary frame.

I claim—



1. The combination, with the box-frames, of the tubular wheel-axles contained in said frames, and the connecting-bar passing through said tubular axles, and having rigid bearings resting on both sides of each frame, as set forth.
2. The box-frames having the hollow bosses *g g'*, forming oil-reservoirs and supports for the shoulders or bearings on the connecting-bar, as set forth.
3. The combination of the box-frames having the oil-reservoirs and the boxes communicating therewith, the axles having the tapering longitudinal passages, and the connecting-rod having tapering portions fitting in said passages, the tapering form of said passages and rod facilitating the passage of oil from the outer to the inner box, as set forth.
4. The combination of the box-frames having the oil-reservoirs and the boxes communicating therewith, the tubular axles journaled in said boxes, and the connecting-bar having cylindrical portions passing through the axles, and longitudinal passages extending from one oil-reservoir to the other in each frame, as set forth.
5. In a car, the combination of the series of

box-frames connected longitudinally by suitable bars and laterally by bars passing through the box-frames and through the wheel-axles, to form a rigid primary frame or structure, the wheels journaled independently in said box-frames, and the secondary load-supporting frame resting on springs interposed between the primary and secondary frames, as set forth.

6. In a car-truck, the combination of the box-frames, as *c*, which surround and inclose the wheels, said box-frames being connected longitudinally by rigid bars, the wheels and separate axles inclosed by said box-frames, the axles being connected by bars *j*, and the secondary body-frame *r*, supported on the box-frame by springs, all arranged to co-operate substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 2d day of May, 1883.

GEORGE W. SIMONDS.

Witnesses:

C. F. BROWN,  
A. L. WHITE.