

(No Model.)

G. R. ALLEN & E. J. WALLACE.
STREET CAR COUPLING.

No. 413,838.

Patented Oct. 29, 1889.

Fig. 3.

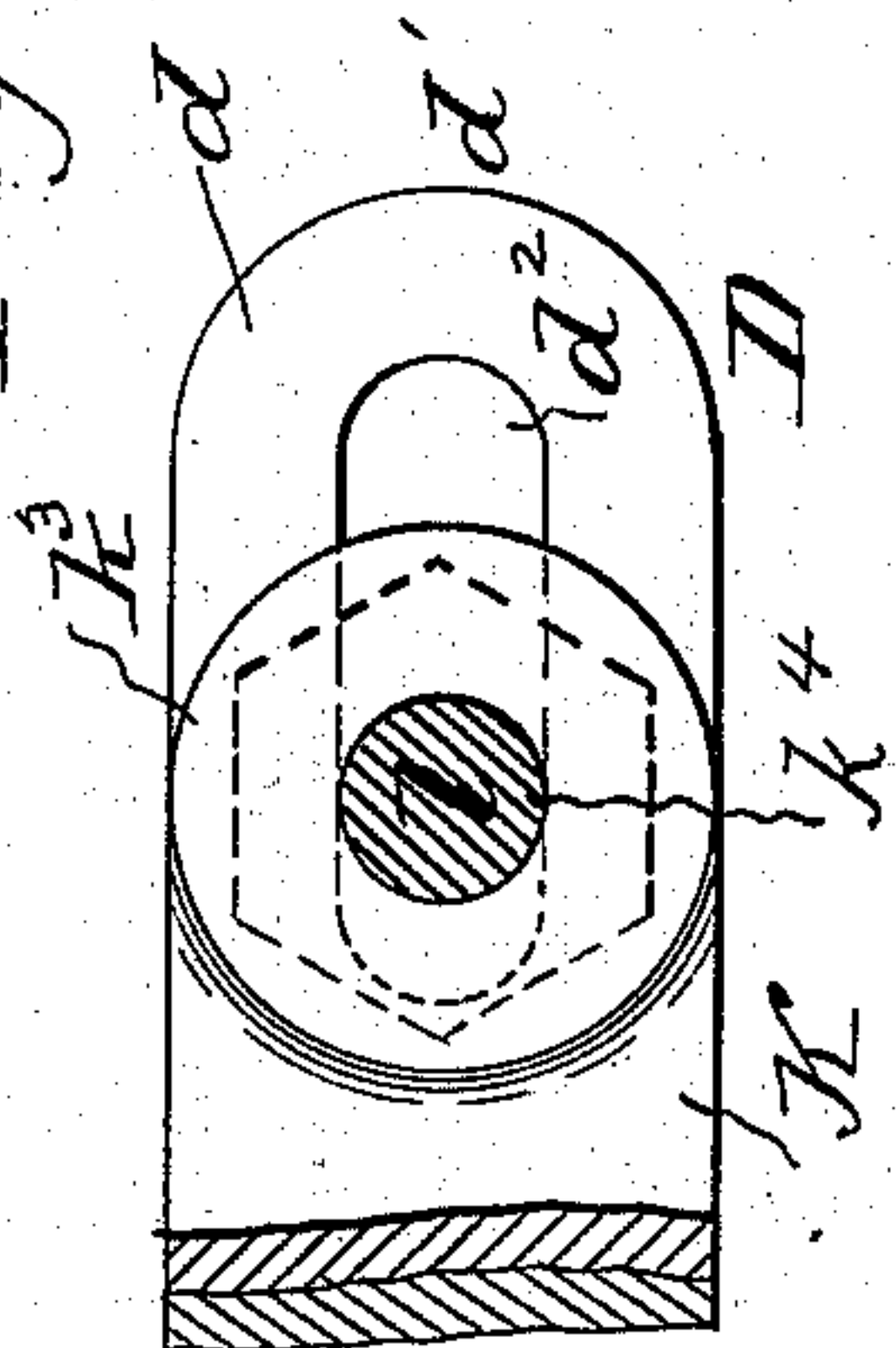


Fig. 2.

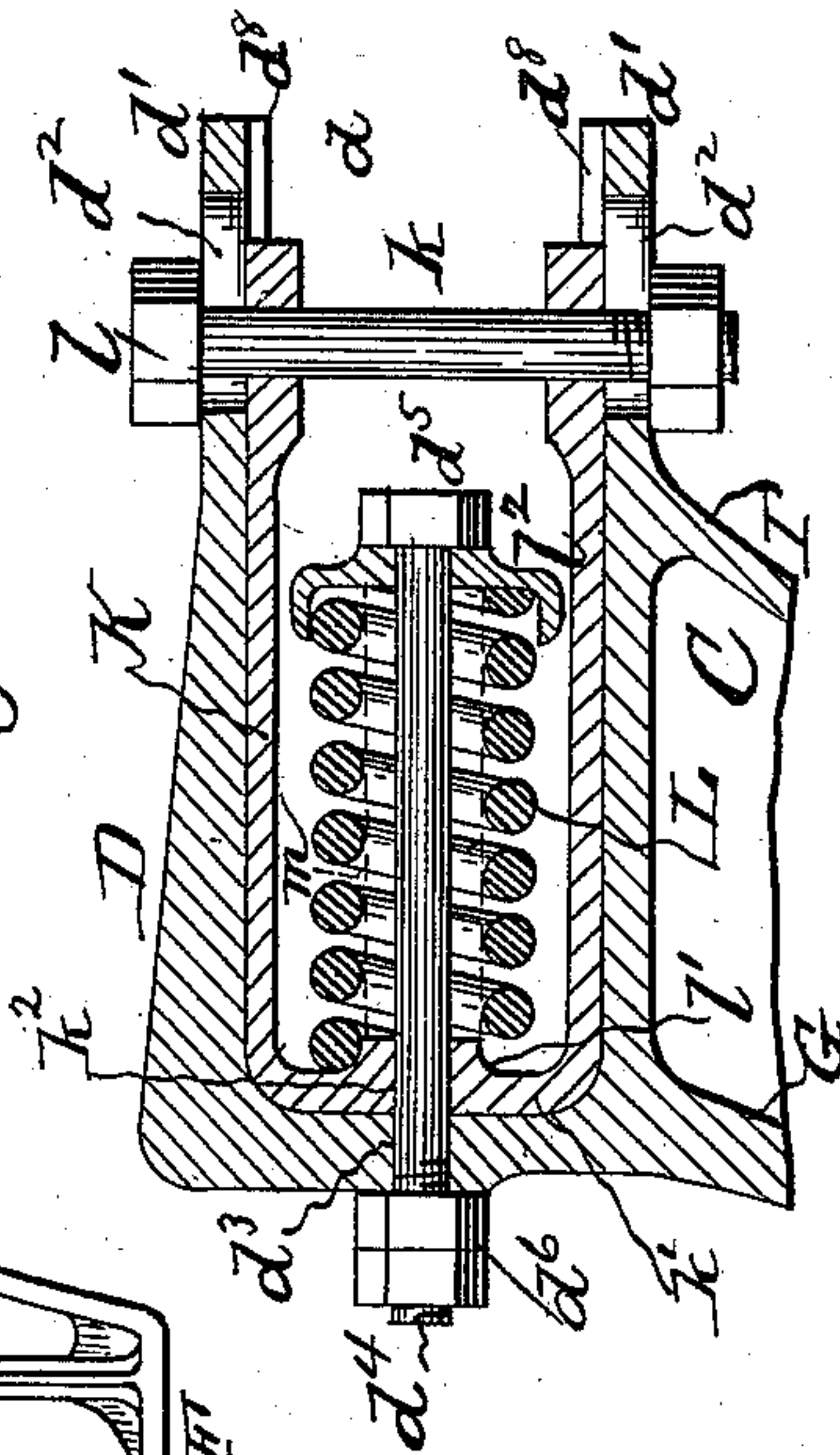


Fig. 1.

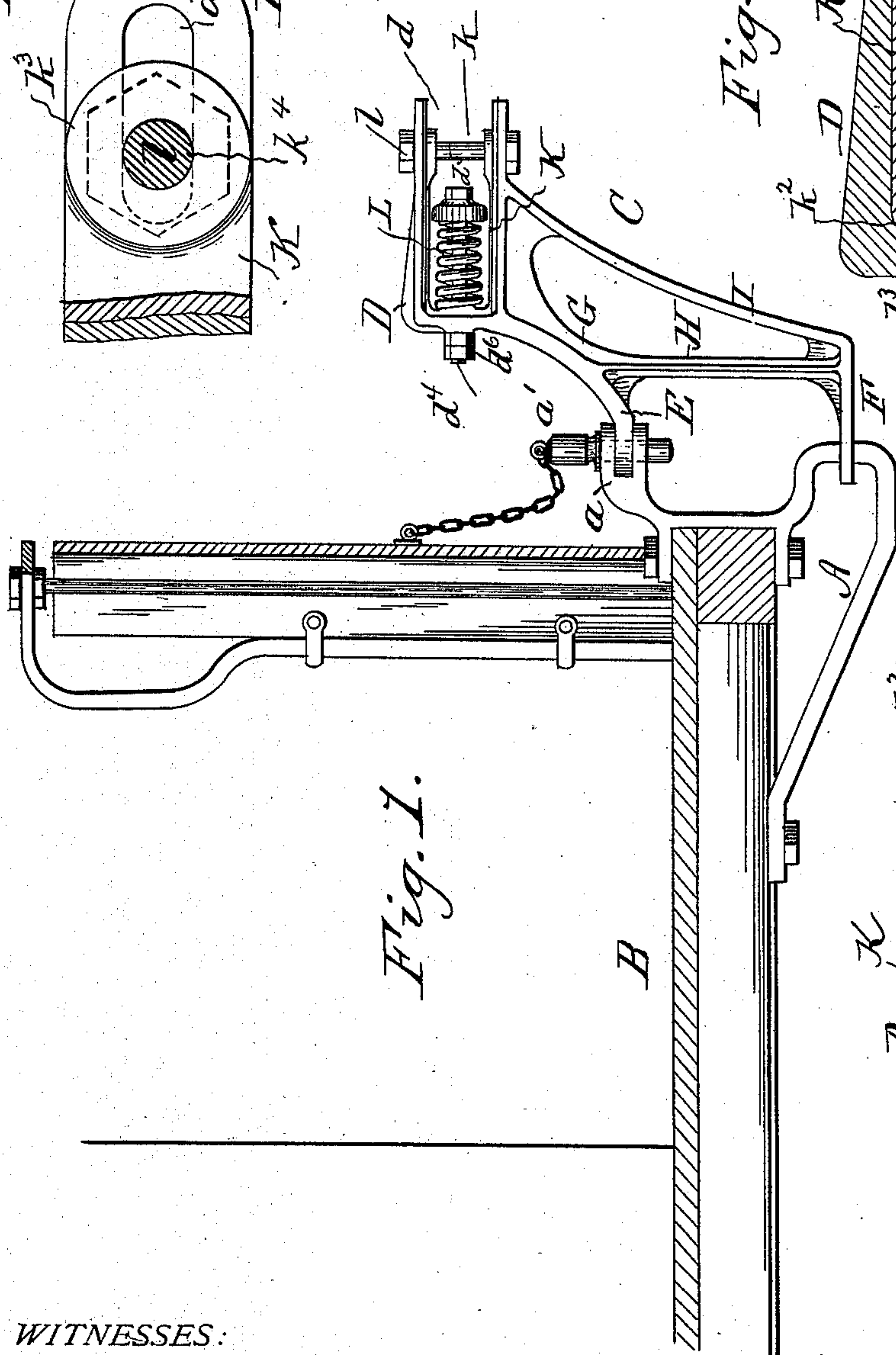
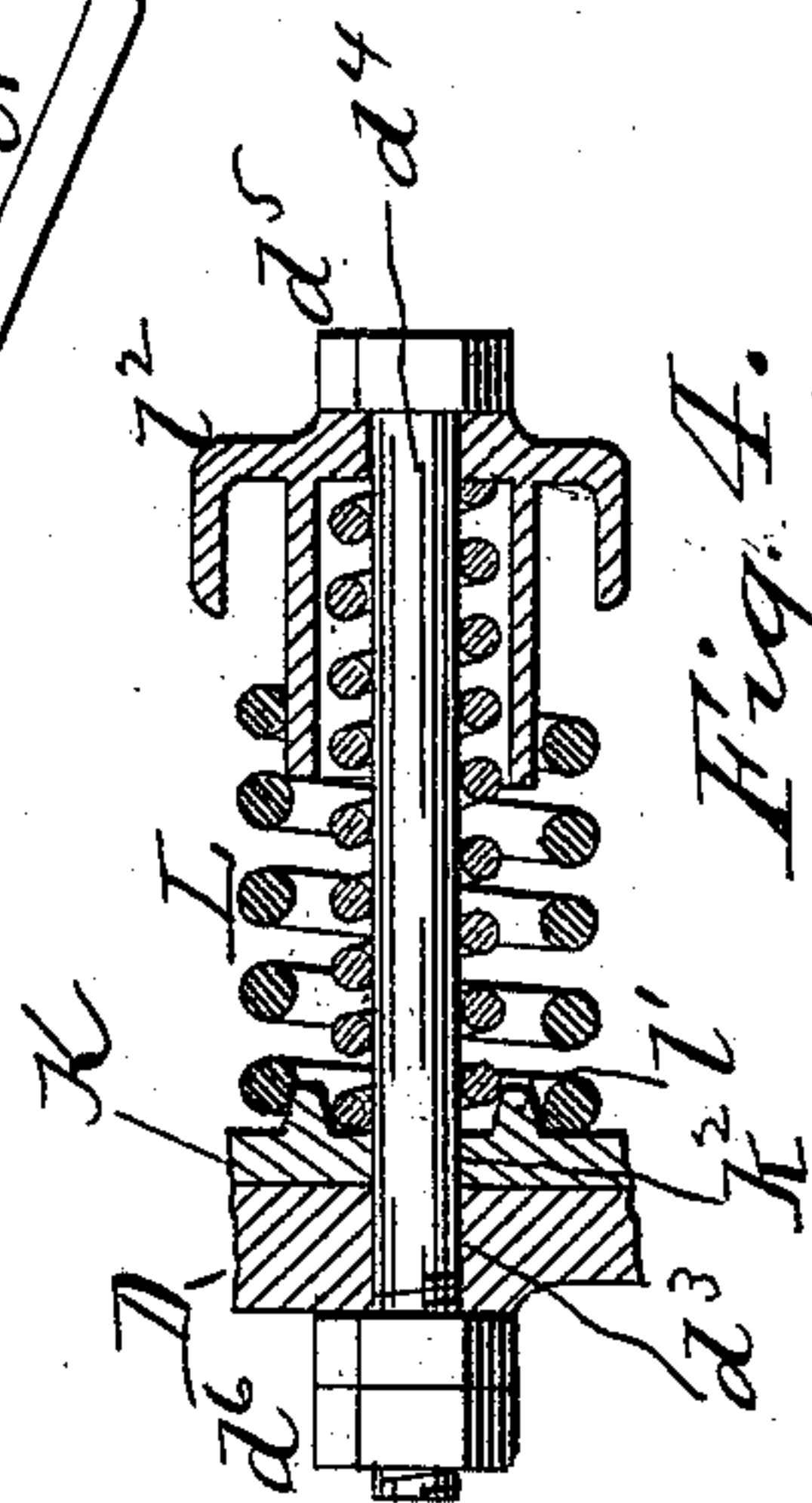


Fig. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE R. ALLEN AND EDWARD J. WALLACE, OF PHILADELPHIA,
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STREET-CAR COUPLING.

SPECIFICATION forming part of Letters Patent No. 413,838, dated October 29, 1889.

Application filed April 27, 1889. Serial No. 308,820. (No model.)

To all whom it may concern:

Be it known that we, GEORGE R. ALLEN and EDWARD J. WALLACE, citizens of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Street-Car Couplings, of which the following is a specification.

Our invention has relation to street-car draw-bar couplings having spring attachments for affording a light initial draft for the horses in starting the car and for avoiding sudden jerking of the car as it is started; and it has for its object a simple, economical, and durable form of spring-coupling attachment for the singletree-supporting iron or bracket which admits of said iron or bracket being attached to any of the usual forms of draw bars or heads used on street-cars, and which avoids undue setting or loss of resiliency of the springs and admits of the latter function of the springs being adjusted or regulated as is desired or as it sets.

Our invention accordingly consists of the combinations, constructions, and arrangements of parts, as hereinafter described in the specification, and pointed out in the claims.

Reference is had to the accompanying drawings, wherein—

Figure 1 is a vertical section, partly in elevation, of part of one end of a street-car, showing a singletree-supporting iron or bracket embodying our improvements. Fig. 2 is a longitudinal vertical section, drawn to an enlarged scale, of part of said supporting iron or bracket, and showing more plainly the construction of the spring-draft attachment thereon. Fig. 3 is a plan, partly sectional, of a detail part of same, showing a modification of construction of details; and Fig. 4 is a similar view showing another modification.

A represents the draw-bar for the street or horse car B, which bar may be of any of the usual or other types of construction having bifurcated end *a* and coupling-pin *a'*.

C indicates the singletree-supporting iron or bracket, of any desired or suitable configuration. In the drawings we have shown it composed of a yoke-shaped upper end D, having open end *d* and horizontally-arranged

parallel arms E and F, for coupling-connection with the draw-bar A, the lower arm F being preferably bifurcated for engagement with the draw-bar A, as is usual, said arms E and F and yoke D being connected by webs G, H, and I, and are preferably made or cast to form a singletree supporting iron or bracket C, to give to it the proper strength required therefor. At or near the outer ends *d'* of yoke D are formed or provided elongated slots *d²*, (see more plainly Figs. 2 and 3,) and at the rear end of yoke D is a longitudinal central opening *d³* for the passage of a bolt *d⁴*, having head *d⁵* and jam-nuts *d⁶*. Within yoke D is a sliding frame or casing K, having outer open end *k*, and in its rear end *k'* an opening *k²*, which aligns with the opening *d³* in the rear end of yoke D for the passage of said bolt *d⁴*. In the outer ends of casing K and registering with the elongated slots *d²* in yoke D are round or other suitably-configured openings *k⁴*, through which and the slots *d²* in yoke D passes the bolt or pin *l* for coupling the single or double trees to the sliding casing K, as more plainly indicated in Fig. 2. The open ends *d* and *k* of the yoke D and casing K admit of the insertion of the singletree for coupling-connection with said pin *l*. Between the head of bolt *d⁴* and the end *k²* of casing K and surrounding the bolt is a spiral spring L. If desired, suitably-formed seats *l'* and *l²* may be respectively provided on the casing end *k²* and on the bolt *d⁴* for the ends of the spring L to abut against, as more plainly indicated in Fig. 2; but said seats are not absolutely essential, as the ends of the spring may abut directly with the head *d⁵* of bolt *d⁴* and with the end of the casing K when a single spring L is used. When the mandrel-opening of spring L is larger than the diameter of the bolt *d⁴*, as shown in the drawings, a sleeve of rubber or other suitable material surrounding the bolt *d⁴* may be employed to keep the spring from buckling, as indicated by dotted lines *m*, Fig. 2; but when the spring snugly fits the bolt *d⁴* such sleeve is not required. A pull or draft on singletree-pin *l* slides casing K to compress spring L to give an initial light draft and to take up or compensate for any sudden jerks in starting the car, the elongated slots

d^2 in the stationary yoke D permitting said pin and casing K to slide forward in the direction of the draft or pull.

It will be observed from the foregoing construction that the singletree-supporting arm or bracket C has a laterally-oscillating motion upon the draw-bar A, as is usual, and that it is provided with the spring attachment, as described, so that the same can be coupled to and uncoupled from the draw-bar A the same as in the form of singletree irons or supports now in use, and no special form of draw-bar A is required in connection with our improvements.

The sliding casing K is securely held in position within yoke D against lateral movement by the bolt d^4 and pin l ; but to give additional strength to the same and to remove all lateral strain from said bolt and pin edge ways or guides d^8 are formed on the adjacent sides of the yoke D, between which guides the casing K slides, said guides being more plainly shown in Figs. 1 and 2. In said named figures we have shown a single coiled spiral spring; but it is obvious that rubber or any other suitable form of spring may be used. So, too, instead of employing only a single spring, two or more springs, if desired, of different capacity may be used, as indicated in Fig. 4, in which case the lighter spring is first brought into action and fully or partially compressed before the heavier spring comes into action. This last-described construction and arrangement of springs is especially desirable for use, as it admits of a light initial draft and avoidance of sudden jerking of the cars in starting either under a light or heavy load.

The lengths of the slots d^2 are such relatively to the length of spring or springs L that the pin l meets or contacts with the forward ends of said slots before the casing K fully compresses said springs, the entire pulling-draft then coming on the yoke D or coupling C and the draw-head A. As the springs L are not in practice fully compressed, or do not have the entire pulling-load imposed upon them, they do not rapidly lose their elasticity, and are exceedingly durable. Any set of the springs or regulation thereof may be taken up or provided for by adjusting the nuts d^6 .

What we claim is—

1. A street-car singletree iron or bracket having an outer open end, a sliding casing in said open end, draft-springs in said casing, and a singletree coupling-pin mounted in said open end and sliding casing, substantially as set forth.

2. A street-car singletree iron or bracket C, having an open-end yoke D, a sliding open-end casing K, bolt d^4 , and spring L, substantially as set forth.

3. A street-car singletree iron or bracket C, having open-end yoke D, provided with elongated slots, a sliding open-end casing K, having pin-openings registering with said slots, a bolt d^4 , and spring L, substantially as set forth.

4. A street-car singletree iron or bracket having a fixed yoke with open end provided with elongated slots, a sliding open-end casing having pin-openings registering with said slots, a bolt passing through the rear ends of said yoke, and a spring or springs between the head of the bolt and the rear end of said sliding casing, substantially as set forth.

5. A street-car singletree iron or bracket having an open end, sliding casing, a draft-spring therefor, and guides or ways for said yoke, substantially as set forth.

6. A street-car singletree iron having limbs E and F, yoke D, provided with slots d^2 , and ways or guides d^8 , sliding casing K, and bolt d^4 , with adjusting mechanism and spring or springs L, substantially as set forth.

7. A street-car singletree iron or bracket having an outer open end, guides or ways on said end, a sliding casing in said open end between its guides or ways, draft-springs of different capacities in said sliding casing, and a singletree coupling-pin mounted in said open end and sliding casing, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE R. ALLEN.
EDWARD J. WALLACE.

Witnesses:

FRANK L. KEELER,
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