

(No Model.)

F. A. REHKOPF & C. A. ROGERS.

ROAD CART.

No. 327,019.

Patented Sept. 29, 1885.

FIG. 1.

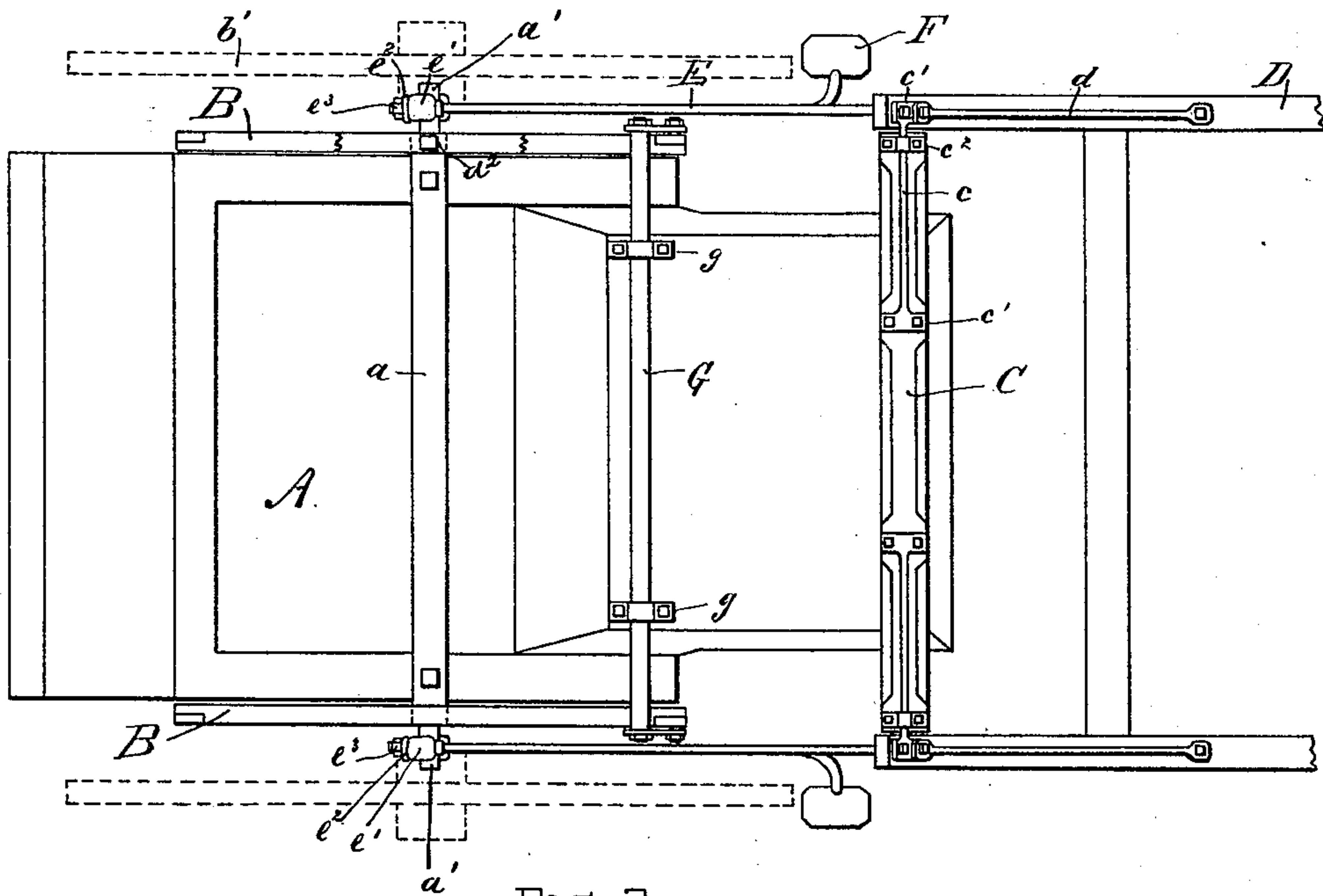
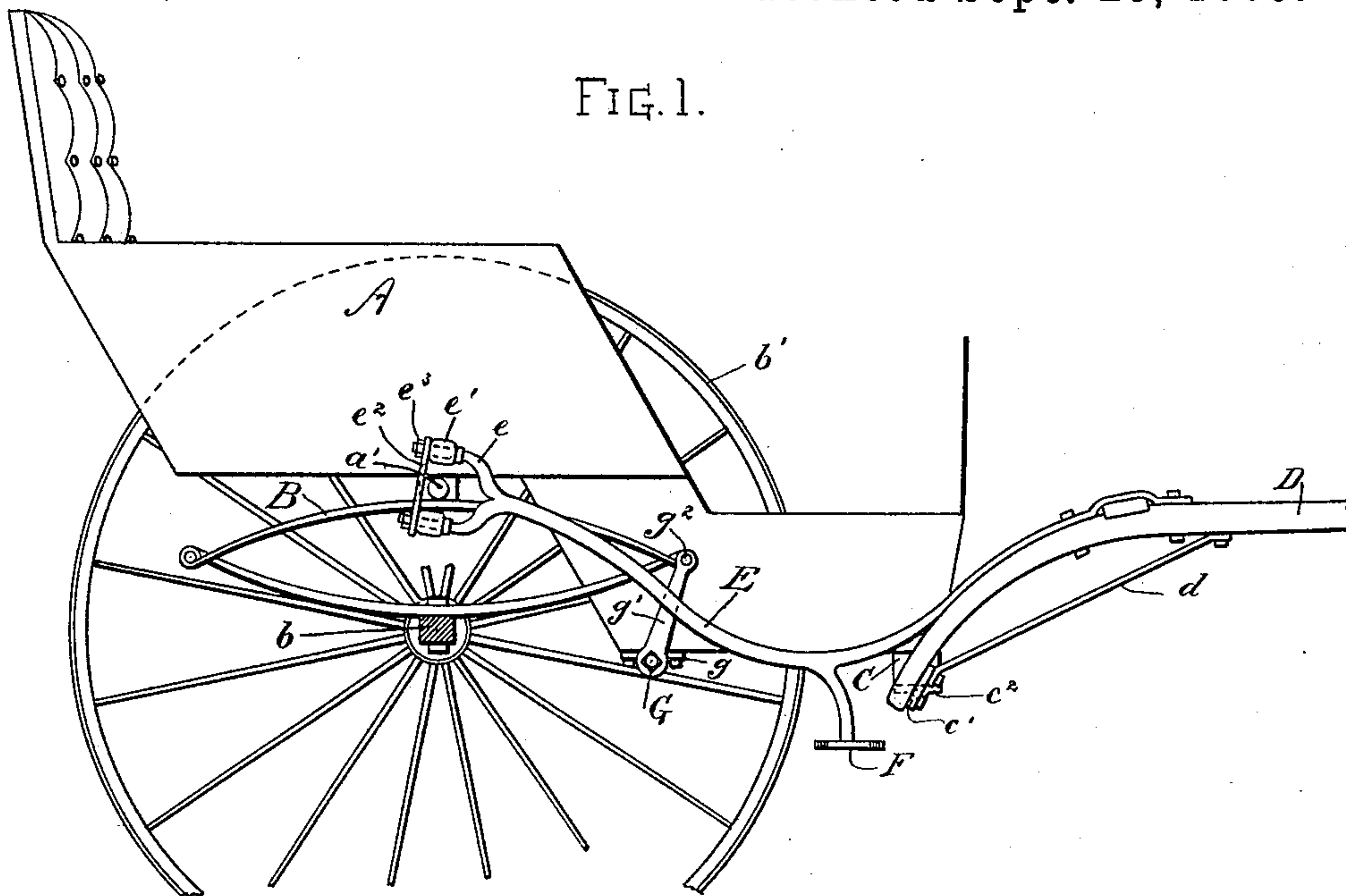


FIG 2.

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ROAD-CART.

SPECIFICATION forming part of Letters Patent No. 327,019, dated September 29, 1885.

Application filed August 13, 1884. (No model.)

To all whom it may concern:

Be it known that we, FREDRICK A. REHKOPF and CHARLES A. ROGERS, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Road-Carts; and we do hereby declare the following to be a full, clear, and exact description of said improvements, sufficient to enable others skilled in the art to which they appertain to make and use the same.

In two-wheel road-carts of the old construction the occupants are subjected to an annoying jerky sensation, due to the movements of the horse and to the rigid connection between the thills and wagon-body.

Our invention is designed more especially to obviate this defect; and it consists, primarily, in joining the thills, not, as heretofore, directly to the wagon-body, but to one end of a torsion-spring bar, the opposite end whereof is secured to the hound-bar or other convenient fixed portion of the cart. Said spring-bar serves not merely as a connection, but, by reason of its elasticity, acts also to take up and neutralize the jolting motion which would otherwise be communicated from the horse to the cart.

The invention further consists in a guard or shaft extension to act in conjunction with the yielding thill-coupling, and by contact with a stationary part of the wagon-body to control the movement of the shaft.

In the accompanying drawings, which form part of this specification, like letters of reference denote like parts throughout.

Figure 1 is a view in side elevation, and Fig. 2 a bottom plan view, of a road-cart embodying our improvement.

Rigidly attached to the wagon-body A is the cross-bar *a*, the extended ends of which, as at *a*², are secured to the side springs, B, and permit of an easy cradle-like movement of the wagon-body within and upon said springs. Springs B are fastened by usual clip, &c., to the axle *b*, upon which are mounted the wheels *b*¹, as well understood. At the front of wagon-body A is secured the hound-bar C, and at each side of said hound, so as to extend slightly beyond the outer ends thereof, is a torsion-

spring draft-bar, *c*. The spring draft-bar *c* may be formed of tempered steel, and preferably has welded thereto at its ends the flat plates, as at *c*¹, by which the spring draft-bar may be bolted to the hound and to the thill D, respectively. The usual brace, *d*, may be secured at its end by the same bolt which holds plate *c*¹ to the shaft. A journal-plate, *c*², fastened to the hound, incloses the spring draft-bar and serves to sustain the same near the outer end, relieving the main fastenings of said spring draft-bar from undue strain, and holding the shafts to their work, without, however, affecting the easy rotary or torsional movement of the spring draft-bar.

From this organization of parts it will be understood that the jolting action of shafts D, when the horse is in motion, instead of being communicated directly to the hound C, and so to the wagon-body, will be taken up and neutralized by torsional strain on the intermediate spring-bar, *c*, and much greater comfort be thereby insured to the occupants of the cart. While the torsion-spring bar is shown and described as secured to the hound-bar, it is manifest that as the latter exercises no peculiar function as such, but furnishes merely a convenient means for attachment, it might readily be dispensed with and the torsion-bar be joined directly to the wagon-body.

Extending backward from the shafts D, to which they are fastened, are the guards E, having forked ends, as at *e*, to strike the abutting ends of cross-bar *a*¹, or other convenient stay-piece projecting at the sides from the wagon-body. Rubber cushions *e*¹ are slipped over the forks *e*, and are retained by the tie *e*² and by the set-nuts *e*³ on forks *e* acting in conjunction therewith. The tie *e*² also serves to strengthen the forks against the strains to which they may be subjected.

As thus constructed, the guard or shaft extension E co-operates with torsion-bar *c* to neutralize the jerking action of the shaft. In either the upward or downward movement of the shaft about the spring thill-coupling the forks *e* of the guard, when they encounter the stay-piece *a*¹, tend to throw the further leverage of the shaft ultimately upon the side spring, B,

of the vehicle; but before this occurs the spring buffers e' , by striking upon the stay a' , will ordinarily suffice of themselves to take up the shaft movement and to neutralize the jolt. Other forms of buffer e' may be employed without departing from the invention, which involves the employment of the guard to supplement the action of the torsion-spring thill-coupling.

10 The foot-step F is secured, by welding or otherwise, directly to the guard E, and when sustaining the weight of a person causes the upper fork, e , of said guard to bear upon the stay a' , and so to furnish a firm support.

15 The equalizing-bar G, mounted in journal-plates, as at g , beneath the cart-body, has its crank ends g' joined pivotally, as at g^2 , to the side springs, B. In mounting into or dismounting from the cart at either side, the body of the cart is more or less depressed and gives a disagreeable lurch. To remedy this objection is the purpose of the equalizing-bar, for when the cart and its springs are depressed at either side the crank-arm g' , attached to such spring, is forced downward, and in consequence tends to force down the opposite crank-arm and side spring, B; hence the descent is approximately equalized, since the weight is evenly distributed upon both side springs.

30 We are aware that prior to our invention the thills of road-carts had been pivotally coupled to the wagon-body by a stout journal bolt or pin, about which a coil-spring was set, the ends of said spring being secured to the body and thill, respectively, to insure requisite elasticity in the connection. In our device the coil-spring is dispensed with, and a torsion-bar employed in lieu of the journal-bolt, which bar, being suitably tempered, acts not only to connect the thill and wagon-body, but furnishes in itself the elastic tension previously derived from the separate coil-spring.

45 We are aware also that torsion-spring rods have heretofore been arranged between the thills and the wagon-body of road-carts; but such springs were light and delicate. They did not serve to connect or sustain the thill about the wagon-body, and in consequence did not take the direct strain of the draft. The

thills were not secured to the wagon-body at all, but to the axle or running-gear, and the torsion-rods in the devices named were merely supplemental, acting not as connections, but simply as springs. In our construction the stout torsion-bar is spring and connection combined. It is the essential element for sustaining the thill about the wagon-body. It directly receives the pulling strain, and by reason of its temper holds the thill elastically. Aside from similarity of names, it will be seen that in function, substantial relation, and mode of operation our invention differs essentially from these earlier devices which preceded.

Not wishing to restrict the invention to the precise details of structure set forth, and having thus described the same, what we claim as new, and desire to secure by Letters Patent, is—

1. In two-wheel carts, the combination, with the thill and with the wagon-body, of the intermediate torsion-spring draft-bar joined rigidly at its ends to said parts, respectively, and serving to elastically connect and sustain the thill about the wagon-body, substantially as described.

2. In two-wheel carts, the combination, with the thill and with the wagon-body, of the intermediate torsion-spring draft-bar joined rigidly at its ends to said parts, respectively, and the journal-bearing to retain the spring-bar in place, said bar serving to elastically connect and sustain the thill about the wagon-body, substantially as described.

3. In two-wheel carts, the combination, with the thill and with the wagon-body, of the intermediate torsion-spring draft-bar joined rigidly at its ends to said parts, respectively, and the guard extending from the thill and contacting with the wagon-body to co-operate with the spring-bar, said bar serving to elastically connect and sustain the thill about the wagon-body, substantially as described.

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