(No Model.) 2 Sheets—Sheet 1.

W. H. CHAFEY & D. A. WILLCOX.

RUNNING GEAR FOR VEHICLES.

No. 385,744. Patented July 10, 1888.

Fig. 1.

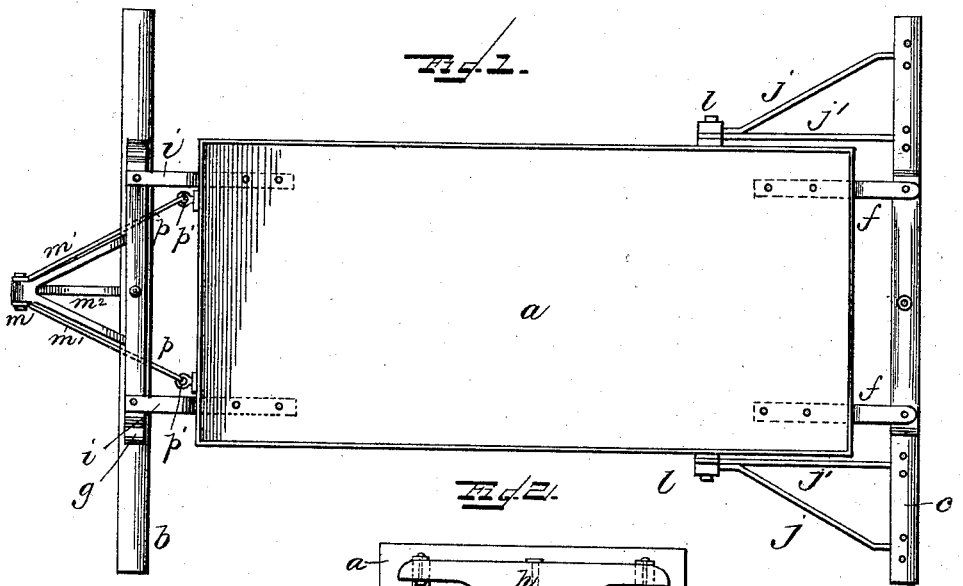


Fig. 2.

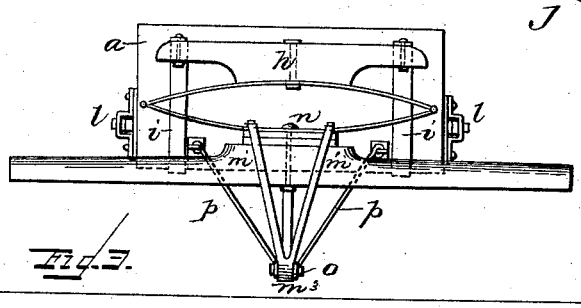


Fig. 3.

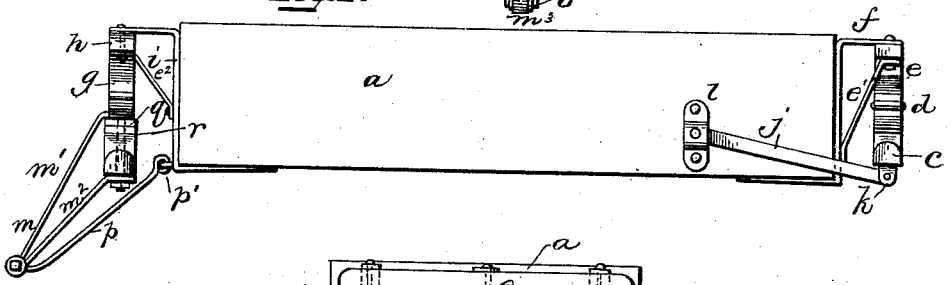
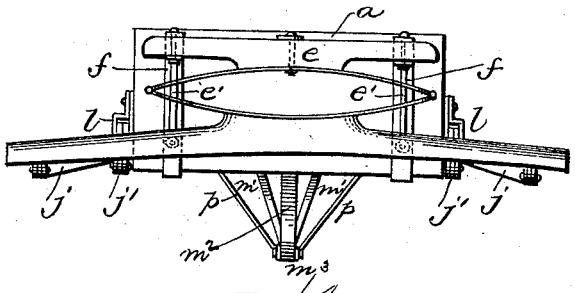


Fig. 4.



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(No Model.) 2 Sheets—Sheet 2.

W. H. CHAFEY & D. A. WILLCOX.

RUNNING GEAR FOR VEHICLES.

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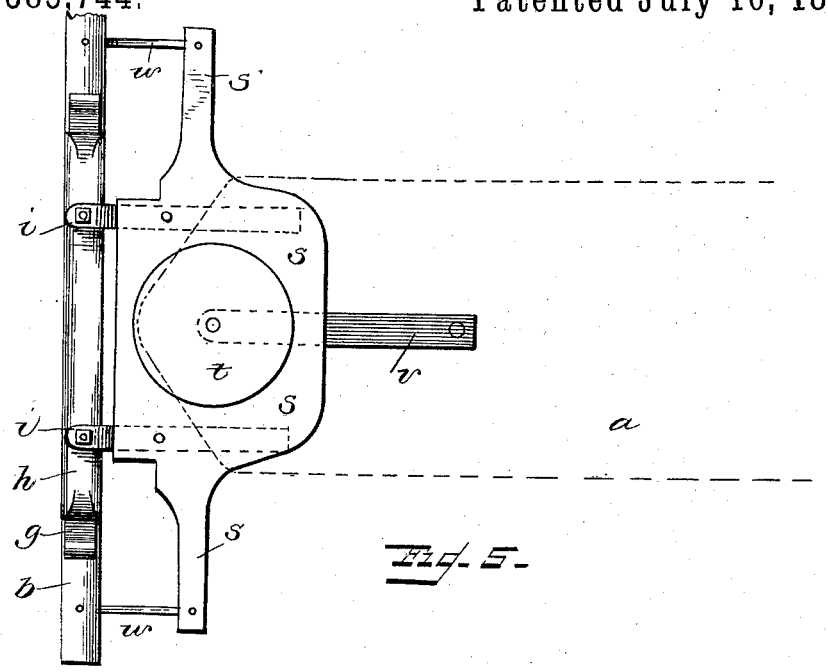


Fig. 5.

Fig. 6

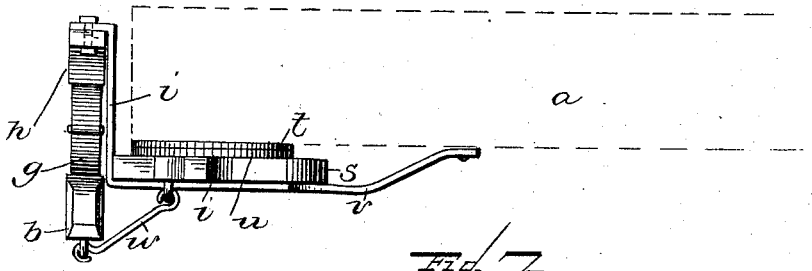
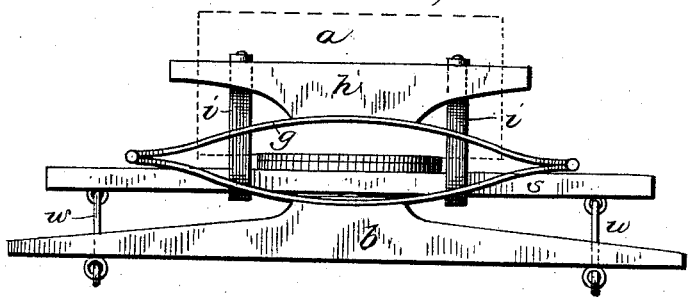


Fig. 7



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UNITED STATES PATENT OFFICE.

WILLIAM H. CHAFEY AND DEFOREST A. WILLCOX, OF LEBANON, NEW YORK.

RUNNING-GEAR FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 385,744, dated July 10, 1888.

Application filed November 23, 1887. Serial No. 256,004. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM H. CHAFEY and DEFOREST A. WILLCOX, citizens of the United States, residing at the town of Lebanon, in the county of Madison (but whose post-office address is Earlville, in said county) and State of New York, have invented a certain new and useful Improvement in Running-Gear for Vehicles, of which the following is a full, clear, and exact description.

Heretofore various constructions have been devised or invented for hanging the bodies of wagons and other wheeled vehicles between and from their springs, rather than setting the body directly or indirectly on top of the springs. It is desirable in some cases to hang the body as first above stated; but inasmuch as the advantages of such construction are well known it is needless to repeat them here.

Our invention relates to this class of vehicles; and it consists in the peculiar construction of the rear and the front trucks constituting the running-gear.

The invention is illustrated as applied to vehicles adapted to turn in arcs of long and of short radii.

In the accompanying drawings, illustrating our invention, in the several figures of which like parts are similarly designated, Figure 1 is a plan view. Fig. 2 is a front view; Fig. 3, a side view, and Fig. 4 a rear view. Figs. 5, 6, and 7 are side, plan, and front views, respectively, of a modification.

The body *a* will be of approved construction of the class of vehicle to be supplied with our improvement. The front and rear axles, *b* and *c*, will be of ordinary construction. The rear axle has mounted upon it, in any suitable manner, the spring *d*, of any desired manufacture, and on top of the spring is secured the head-block *e*. Jacks *f* extend from the bottom of the body up its rear end, and thence outward at right angles to the body, and are rigidly affixed to the head-block *e*. A similar construction is followed at the front end of the vehicle—that is to say, the spring *g* is secured to the axle, with a sort of fifth-wheel or turning-plates between them, as will presently appear, and a head-block, *h*, is connected with the spring, and jacks *i* connect the head-block and body. These jacks *f* and *i* form the primary mediums of hanging the body to the rear and front trucks.

In order to prevent undue relative lateral movement of the body and its trucks, we provide certain braces or stays, now to be described, which constitute the principle features of our invention. The rear braces, *j*—one on each side of the body—are acute angles in general outline, and are jointed to the axle at two points, *k k'*, by any suitable clips, and at their vertex they are pivoted in bearings *l*, attached to the sides of the body. These bearings are preferably composed of a base-plate, *l'*, and a top plate, *l²*, the latter having a square socket, *l³*, in which the braces *j* are pivoted.

The sides *j'* of the angular braces are arranged next the body and as closely thereto as may be without chafing the body. As will be seen, these braces permit the body and axle to rise and fall freely, and yet resist any undue lateral movements thereof. Moreover, the springs and sockets *l³* are so proportioned that when the springs are about reaching their non-yielding plane under the burden of a load the braces take a bearing against the upper edge of the socket, and so take the burden off the springs. This provision saves the springs in rough usage and greatly enhances the durability of the trucks. The rear truck is further braced by the rods or stays *e' e'*, extending obliquely from the head-block *e* to the corners or jacks. A similar provision of braces or stays, *e²*, may be applied to the front truck. (See Fig. 3.)

In the front truck a three-fingered brace, *m*, has its two outer fingers, *m' m'*, clipped to the lower half of the spring, and its third finger, *m²*, secured by the king-bolt *n*, which unites the spring, fifth-wheel, and axle, and admits of the turning of the axle and vehicle. The fingers *m' m'* and *m²* terminate in front and below the axle in an eye, *m³*, to each side of which is secured by a bolt, *o*, the braces *p*, which extend thence obliquely toward the corners of the body, where they are jointed to any suitable eyes, *p'*. These braces *p* prevent undue lateral movement of the front truck relatively to the body. In addition, they prevent the undue movement of the truck toward the body, and in conjunction with the jacks keep the truck upright.

Plates *q* and *r*, of metal, interposed between the spring and axle of the front truck and respectively secured to them, form a sort of fifth-wheel in conjunction with the king-bolt *n*.

When it is desired to have a front truck turn short, as in wagons for city use, the axle *b*, spring *g*, and head block *h* are rigidly connected, (see Figs. 5, 6, and 7,) and the jacks *i i* are secured to a platform, *s*, which is bolted, as by a king-bolt, to the body, with metal plates *t u* interposed and respectively secured to the body and platform and forming turning-plates or a fifth-wheel. The plate *u* may be integral with the platform when the latter is wholly of metal. A coupling-bar, *v*, may extend from the king-bolt in this form of front truck to the body to stay the platform. Coupling links or braces *w w* connect the outer ends of the platform with the axle, so as to preserve the alignment and parallelism of parts, in this respect being the equivalents of the braces *p*. With this front truck a rear truck, as hereinbefore described, may be employed.

The arms *s' s'* of the platform *s*, in conjunction with the couplings *w w*, take the place of the braces in the first-described form of front truck in preventing undue lateral movement.

The braces *e' e'* are specially useful in low-down delivery-wagons, but need not be employed in buggies and such like driving-vehicles.

All the braces and jacks are designed to be rigid and without inherent elasticity, and hence the trucks will be very stiff and durable.

The three-fingered brace *m* may be employed advantageously also in the modification shown in Figs. 5, 6, and 7, and in that case the braces *w* will be replaced by braces *p*, and the arms *s'* of the platform will extend only to the sides of the body, and will there receive the said braces *p*. Such an arrangement will add stiffness and strength to the front truck, and while allowing it sufficient play will at the same time keep it properly upright.

What we claim is—

1. The rear truck comprising rigidly-connected axle, spring, and head block, and jacks to conect them to the vehicle-body, combined with angular braces jointed to the axle and to the body, substantially as described.

2. The rear truck comprising rigidly-connected axle, spring, and head-block, and jacks to connect them to the vehicle-body, combined with angular braces jointed to the axle and pivoted in squared sockets attached to the body to take off strain from an overburdened spring, substantially as described.

3. In a front truck, the axle, spring, and head-block, and the rigid jacks to connect them with the vehicle-body, combined with a king-bolt, a fifth-wheel, and braces for preventing undue lateral movement and preserve the parallelism and alignment of parts, substantially as described.

4. The front axle, spring, and head-block rigidly connected together, combined with a platform connected to the body by a sort of fifth-wheel and king-bolt, jacks rigidly connecting the head-block and platform, and couplings connecting the platform and axle, substantially as described.

5. The vehicle-body and rear truck composed of an axle, spring, head-block, and jacks, and pivoted braces connecting the body and axle, combined with the front truck, comprising an axle, spring, head-block, jacks, braces, and king-bolt, substantially as described.

6. The three-fingered brace *m*, combined with the front truck, and braces *p*, substantially as described.

In testimony whereof we have hereunto set our hands this 18th day of November, A. D. 1887.

WILLIAM H. CHAFEY.
DEFOREST A. WILLCOX.

Witnesses:
JOHN R. PARSONS,
E. C. DART.