

G. WILKES.
Running-Gear for Vehicle.

No. 204,868.

Patented June 11, 1878.

Fig. 1.

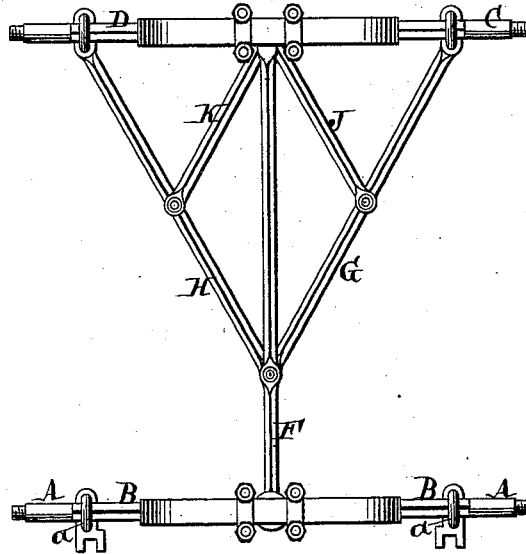


Fig. 2.

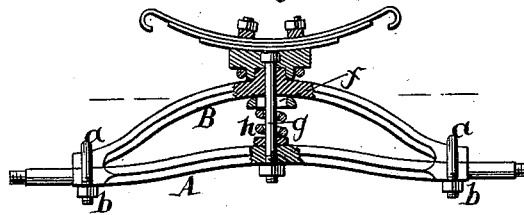
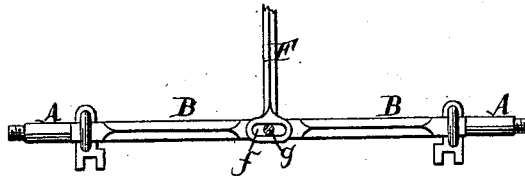


Fig. 3.



Witnesses.
Charles W. Fuller
Henry F. Kilburn

Inventor.
George Wilkes by
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Fig. 4.

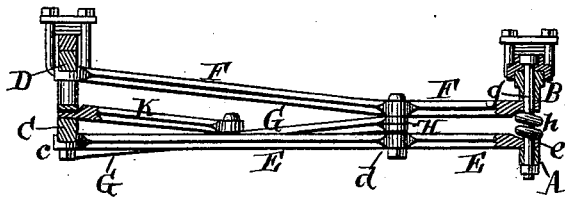
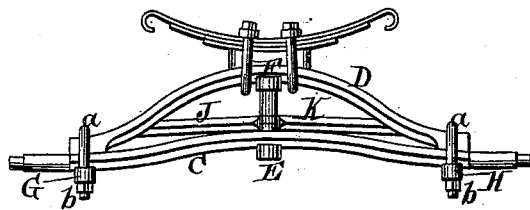


Fig. 5.



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UNITED STATES PATENT OFFICE.

GEORGE WILKES, OF MONROE, IOWA.

IMPROVEMENT IN RUNNING-GEARS FOR VEHICLES.

Specification forming part of Letters Patent No. 204,868, dated June 11, 1878; application filed October 27, 1877.

To all whom it may concern:

Be it known that I, GEORGE WILKES, of Monroe, in the county of Jasper and State of Iowa, have invented a new and useful Improvement in Vehicle-Frames, of which the following is a specification, reference being had to the accompanying drawings.

My invention consists of a vehicle-frame which will yield to any sudden shock without any wrench to its parts, and in which the material is so disposed that with given weight far greater strength is obtained than in any frame now in use or known, or, vice versa, a given strength may be obtained with far less weight and quantity of material.

In the drawings, Figure 1 is a plan of my invention, viewed from above. Fig. 2 is a view of the front axle as it appears in use when faced by the spectator. The shaded portions are sectional to show king-bolt and fifth-wheel. Fig. 3 is the forward end of upper portion of the reach, viewed from above to show its connection with king-bolt and forward axle. Fig. 4 is a side elevation of the reach, showing its construction and its connection with the front and rear axles. Fig. 5 is an elevation of the rear axle as seen when the spectator faces the rear of the vehicle.

Like letters refer to like parts in all the figures.

My invention is as follows: In a vehicle-reach such as described and shown, the method of connecting said reach to the forward and rear axles, (the same being double, as shown,) and the interposition of a spring between the forward ends of such reach. The lower portion, E, of this reach, Fig. 4, consists of a straight bar of metal or other suitable material, with holes at *c*, *d*, and *e*, that at *e* being counter-sunk. The upper portion, F, of the reach consists of a bar of metal or other suitable material, straight for about one-third of its length from the forward end. It then takes a sudden bend upward and away from E, so that E and F are about twice or three times as far apart at the rear axle D and C as they are at the front axle A and B. The parts E and F may be made parallel throughout; but it is inferior in strength to the method of construction described.

F is provided at its forward end with an

enlargement, which is convex above, and pierced with a slot, (see Fig. 3, *f*,) the length of which is about four times its diameter; also with a hole just forward of the bend aforesaid and coincident with the hole *d* in E, (see Fig. 4;) also with a hole where it comes in contact with D and coincident with the hole *c* in E. Wherever these holes occur the material should be enlarged, so that the portion pierced may equal the rest in strength.

The forward ends of E and F rest between A and B of the forward axle, which are provided with holes coincident with those in E and F. The king-bolt *g*, Fig. 2, is passed through said holes, and thus unites the forward end of the reach to the middle of the forward axle. The peculiar shape of the hole *c* in E and the slot *f* in F permits the whole frame to rock and yield to a sudden jolt without strain to the parts. Between the forward ends of E and F, and around the king-bolt, a spiral spring, *h*, is placed. This serves to keep the extremities of E and F apart, yet permits them to yield for the moment to any sudden shock.

The ordinary fifth-wheel may be used in the forward axle, and secured above B by clips and nuts or the device shown in the drawings.

Between E and F, at hole *d* in E, are inserted the ends of two similar bars of metal or other suitable material, G and H, Fig. 1, which ends are pierced with holes similar to *d* in E, Fig. 4, and the corresponding hole in F. A bolt passes through these four holes, and is secured with a nut, thus securing the forward ends of G and H firmly between E and F, as appears in Figs. 1 and 4. The rear extremities of G and H are carried to and underneath C, Fig. 5, and are there secured by the same bolts and clips which unite D to C near the extremities of D.

From or near the middle of G and H two similar bars of metal, J and K, Fig. 1, extend to and rest upon the middle of C, Fig. 5. The extremities of J and K are perforated, and secured to G and H and to C by bolts.

The rear end of F is placed under and in contact with D. The rear end of E is placed under and in contact with C. A bolt is then inserted through the middle of D and through the rear ends of F, of J, and K, through the middle of C and through the rear end of E,

and, being secured with a nut, unites all these parts solidly together. The rear ends of E and F may be varied in position with relation to C and D. Thus they might be placed above C and D, instead of underneath. The same is true of G H and J and K. Also, the method of connection may be varied without changing the character of my invention. Those I have given are simple and effectual, and I therefore prefer them.

The half-springs shown in drawings, or the diamond-spring, may be used and secured to B and D with clips or hasps and nuts; or springs may be put on longitudinally near the hub.

The material I prefer is iron or other metal. It may be of diamond, round, square, or oval section.

I claim as new and desire to patent—

1. A reach for a vehicle, composed of two parts, E and F, one placed above the other, in which the forward end of the upper part F is connected with the king-bolt by means of a slot.

2. A reach for a vehicle, composed of two parts, E and F, one placed above the other, in

which the forward end of the upper part F is enlarged and made convex on its upper side, so as to permit the forward axle to rock from side to side without twisting the reach.

3. The struts or braces G H, J, and K, in combination with a double reach and rear axle of a vehicle, in which the rear ends of G and H are fastened below the axles and the rear extremities of J and K are fastened above the same, or vice versa, substantially as shown and described.

4. A spring, *h*, in combination with the forward extremities of a double reach of a vehicle, which said forward ends are kept apart by, and any tendency to cause them to approach one another is resisted by, said spring in addition to the natural rigidity of the material of which said reach is composed.

In testimony that I claim the forgoing improvement in vehicle-frames, as above described, I have hereunto set my hand.

GEORGE WILKES.

Witnesses:

J. KODER,

T. W. GARBER.