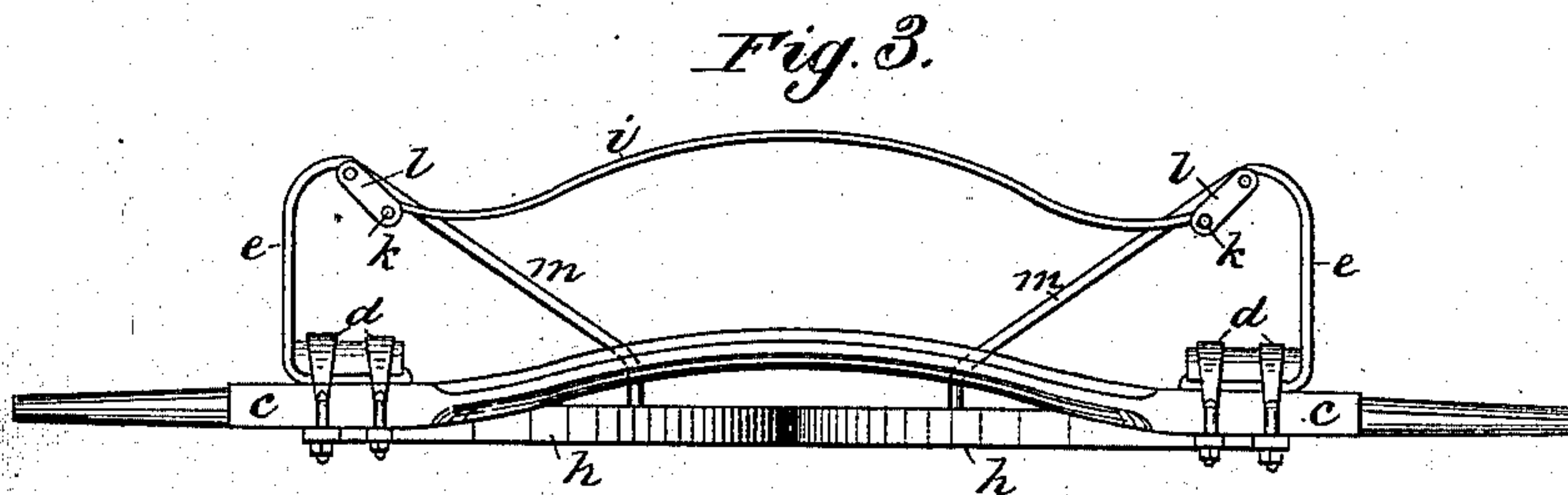
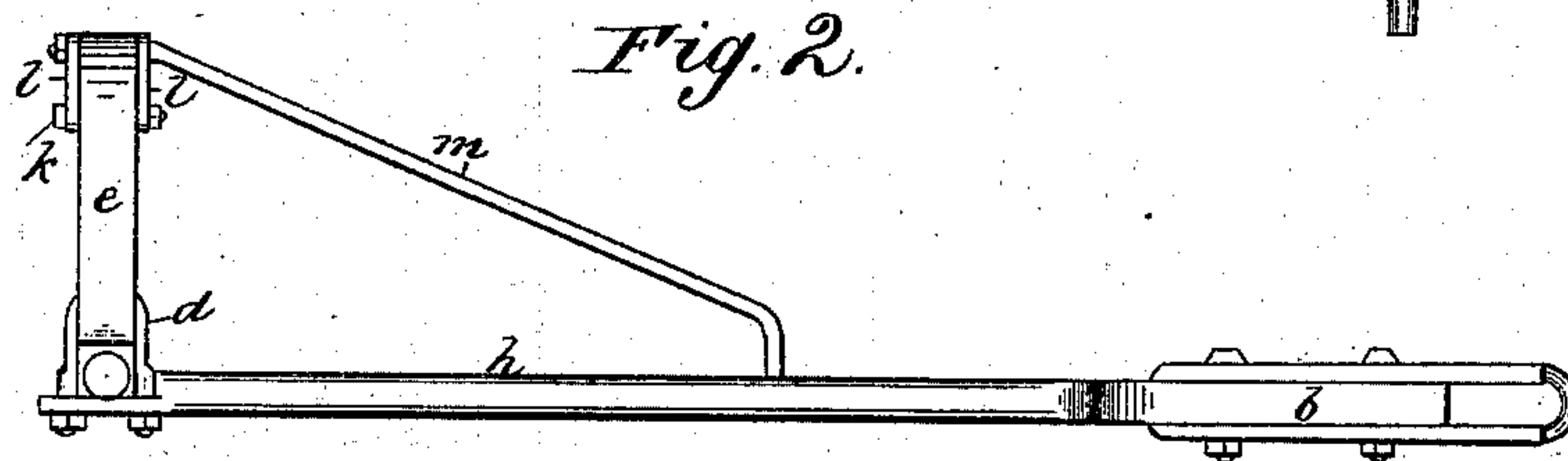
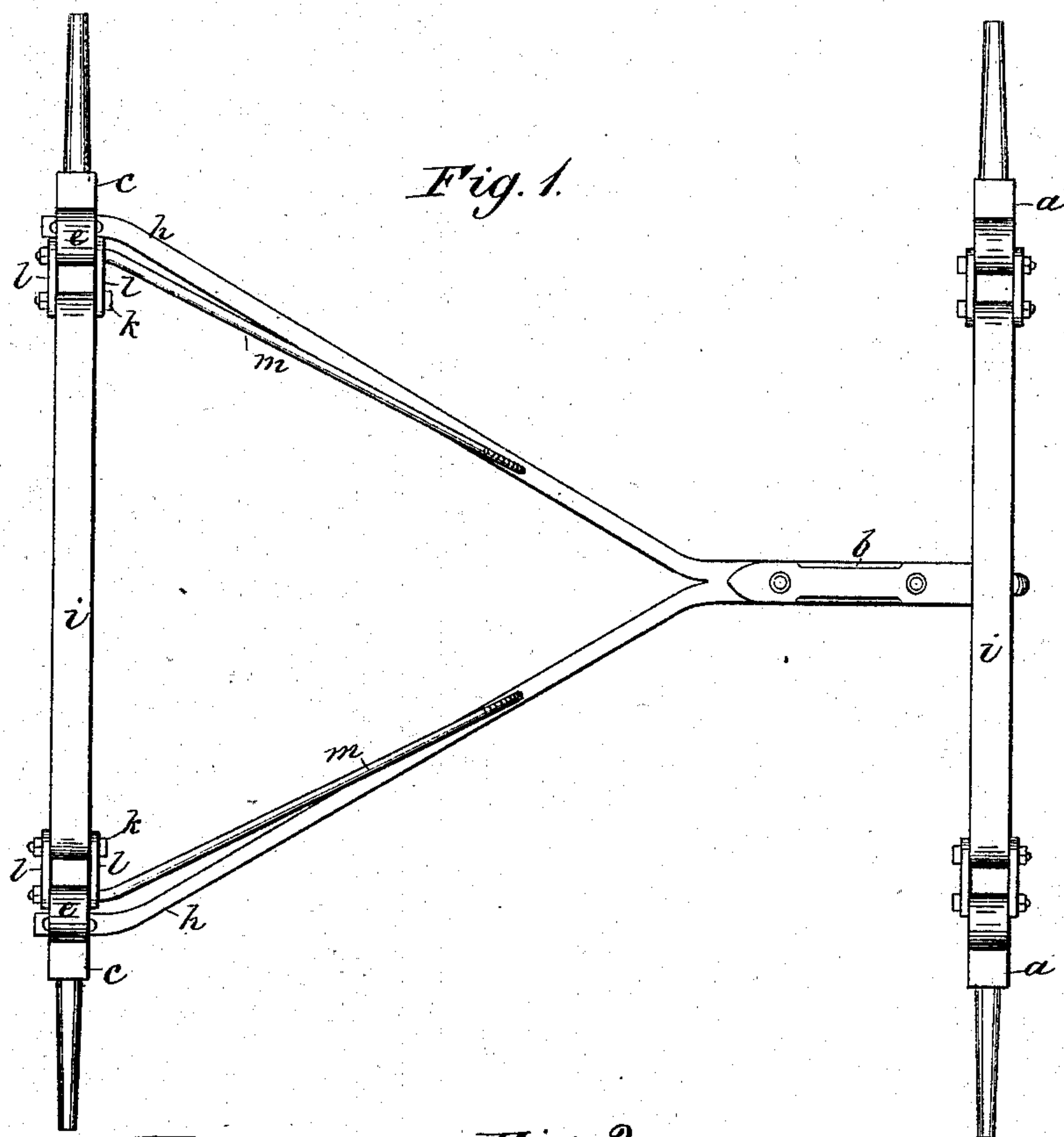


(No Model.)

J. W. HARRIS.
RUNNING GEAR FOR WAGONS.

No. 249,519.

Patented Nov. 15, 1881.



WITNESSES:

W. W. Hollingsworth
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INVENTOR:

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UNITED STATES PATENT OFFICE.

JOSHUA W. HARRIS, OF WAYNESBOROUGH, VIRGINIA.

RUNNING-GEAR FOR WAGONS.

SPECIFICATION forming part of Letters Patent No. 249,519, dated November 15, 1881.

Application filed March 21, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOSHUA WASHINGTON HARRIS, of Waynesborough, Augusta county, Virginia, have invented a new and Improved Running-Gear for Vehicles; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of my improved running-gear. Fig. 2 is a side elevation of rear axle, reach, and brace. Fig. 3 is a rear elevation of same.

My invention relates to improvements in the running-gear of vehicles; and it consists in the peculiar construction and arrangement of parts, as hereinafter more fully set forth.

In the accompanying drawings, *a* represents the front axle, to the middle of which is pivoted by a bolt the reach *b*, the bifurcated rear ends, *h h*, of which are secured to the hind axle, *c*, by clamps *d* passing over the lower bent ends of the standards *e* and the hind axle, *c*, and thence through holes in the ends of the bifurcations of the reach, to which they are secured by nuts. Similar clamps also pass over the lower projecting ends of the standards *e*, and over the hind axle, and the threaded ends of said clamps pass through holes in a plate lying under the hind axle, to which they are secured by nuts. The front standards, similarly formed, are secured to the front axle in a similar manner by clamps. *i* is a flat spring, having its ends bent around bolts *k*, passing through holes in links *l*. The outer ends of the links *l* are provided with holes, through which pass the

threaded outer ends of braces *m*, the forward ends of said braces being secured to the bifurcated ends *h* of the reach. The upper ends of the standards *e* are bent around the outer ends of the braces *m*.

It will be seen that by my construction the wood ordinarily employed on the axle is dispensed with, the springs are suspended above the axle and hinged at their ends to the standards, and that the braces prevent any backward or forward movement of the spring, and the running-gear is cheap, light, and strong.

What I claim as my invention is—

1. The combination, with the hind axle, *c*, and bifurcated reach *b*, of the curved standards *e*, secured to the hind axle, links *l l*, pivotally secured to the upper ends of the standards, hind spring, *i*, pivoted to the links, and inclined braces *m*, secured at their lower ends to the bifurcations of the reach and attached at their upper ends to the upper ends of the standards, substantially as described.

2. The combination, with the front and rear axles having standards *e* clamped thereto, and carrying flat front and hind springs, hinged at their ends, of the bifurcated reach *b*, pivoted to the front axle and clamped to the rear axle, braces *m*, secured to the bifurcations of the reach and the upper ends of the standards *e*, links *l*, and bolts *k*, substantially as described, and for the purpose set forth.

JOSHUA WASHINGTON HARRIS.

Witnesses:

M. W. QUADLES,
H. H. SACKELFORD.