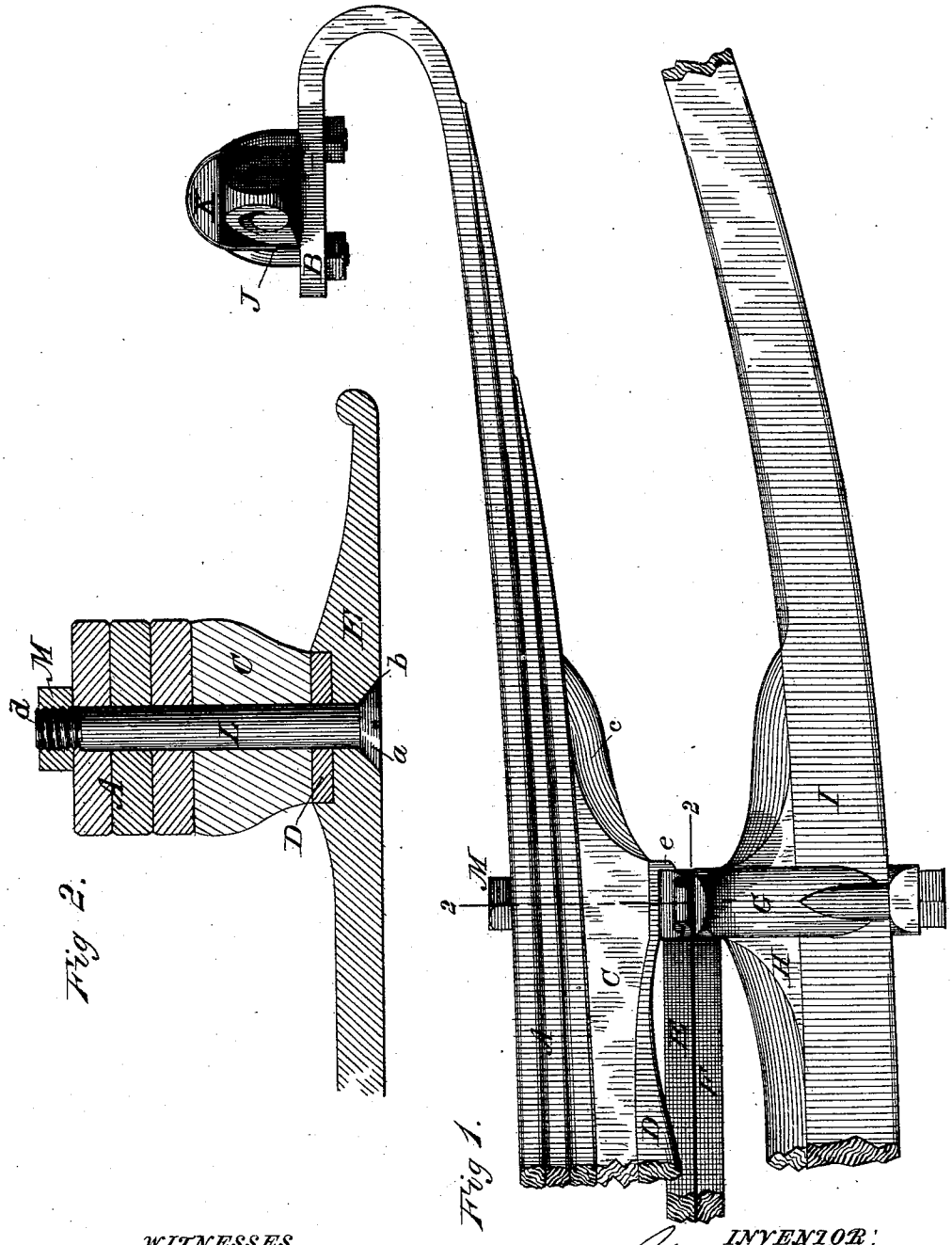
(No Model.)

# E. STORM.

## VEHICLE RUNNING GEAR.

No. 484,259. Patented Oct. 11, 1892.

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# UNITED STATES PATENT OFFICE.

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## VEHICLE RUNNING-GEAR.

SPECIFICATION forming part of Letters Patent No. 484,259, dated October 11, 1892.

Application filed March 8, 1892. Serial No. 424,114. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD STORM, a citizen of the United States, residing at Poughkeepsie, in the county of Dutchess and State of New York, have invented certain new and useful Improvements in Vehicle Running-Gears; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in vehicle running-gears in which side bars are used in connection with springs attached to the side bars; and the objects of my improvements are, first, to unite in a side-bar wagon the advantages of a low-hanging body with the elasticity of separate end springs or of full elliptic springs, and, second, to combine with such elasticity of movement entire freedom from a side-to-side or rocking motion, usual in full-spring gears. I attain these objects by the novel arrangement of springs, head-blocks, and axles illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of a detached portion of the forward part of the running-gear, showing the relation of the various parts of my device; and Fig. 2 is a vertical section cut through line 2 2 of Fig. 1, showing the methods of attaching my device to the fifth-wheel.

Similar letters refer to similar parts throughout the several views.

In the drawings, A represents a spring having at each side an upwardly and inwardly bent portion terminating in a horizontal bearing B, upon which rest the side bars K, secured firmly in place by the ordinary clip J. Below the spring A extends the head-block C, which is about three times the length of the ordinary head-block, so that it is at least as broad as the diameter of the fifth-wheel E F. Underneath the head-block C is a metal bearing-plate D, which also extends the full diameter of the upper half of the fifth-wheel E and terminates at *e*. These superincumbent parts A, C, D, and E are firmly joined by the bolt L, having a tapering head *a* countersunk in the upper half of the fifth-wheel circle E at *b* and terminating at the top in the threaded end *d* for attaching the bolt-nut M.

H and I show the ordinary axle-bed and lowered or cranked axle, respectively, joined in the usual way to the lower half of the fifth-wheel circle F by the clip G.

The foregoing description and the drawings show my device as applied to a front axle and fifth-wheel; but it is evident without a special view that the essential parts of my device may be applied to the hind axle of a wagon by the use of a spring A in the form shown in connection with a broad bearing-surface on the axle-bed, to which it may be clipped or bolted, as desired, the points of fastening being about the same distance apart as is required on the front spring by the diameter of the fifth-wheel circle. My device may, if for any special reason it seems best, be used on either the front or rear axle and omitted on the other. So, also, the spring A may be a leaf-spring, as shown, or a single bar of metal possessing sufficient elasticity to give an increased ease of motion to the wagon-body; nor do I confine myself to the precise form of spring shown. Hitherto it has been possible to hang a side-bar wagon very low and to avoid rocking motion only by dispensing with the end springs and using what is commonly known as the "hard-road" style of gear.

In order to secure a low steady wagon-body, especially desired for light trotting-wagons, it has been necessary to sacrifice elasticity of spring movement, which rendered such wagons uncomfortable for use upon any but the smoothest surfaces. My invention renders it possible, especially when used upon a lowered or cranked axle, to hang the body fully as low as in the ordinary hard-road gear, and yet to give, by the additional spring over the axle, between the bent sides of which the body has play, an elasticity which is sufficient for comfort on any road, yet steadiness or freedom from side-to-side motion, which has hitherto been one of the peculiar features of a hard-road wagon, is secured in my device by the greater length of bearing between the points of fastening upon the head-block or axle-bed. This greater bearing-surface also has the advantage of requiring less metal in the spring to furnish a given strength for supporting the side bars, thus diminishing weight and contributing to the lightness and neatness of appearance of the whole gear. In vehicles

where this steadiness from rocking motion is not so essential as in speeding-wagons, but where it is desired to hang the wagon-body very low and yet secure the advantage of ease of motion which end springs afford, my end springs, having an upwardly and inwardly bent portion terminating in the horizontal bearing-surface B, as shown in the drawings, may be used with a head-block or axle-bed of the ordinary shorter length in combination with a lowered or cranked axle at either the front or rear end of the gear.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

In a vehicle running-gear, the combination, with a lowered or cranked axle, of the end spring having inwardly-turned ends to which the side bars are secured, the head-block, the bearing-plate, and the fifth-wheel, to which said spring is connected at points midway between the king-bolt and the side bars, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD STORM.

Witnesses:
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WILLET E. HOYSRADT.