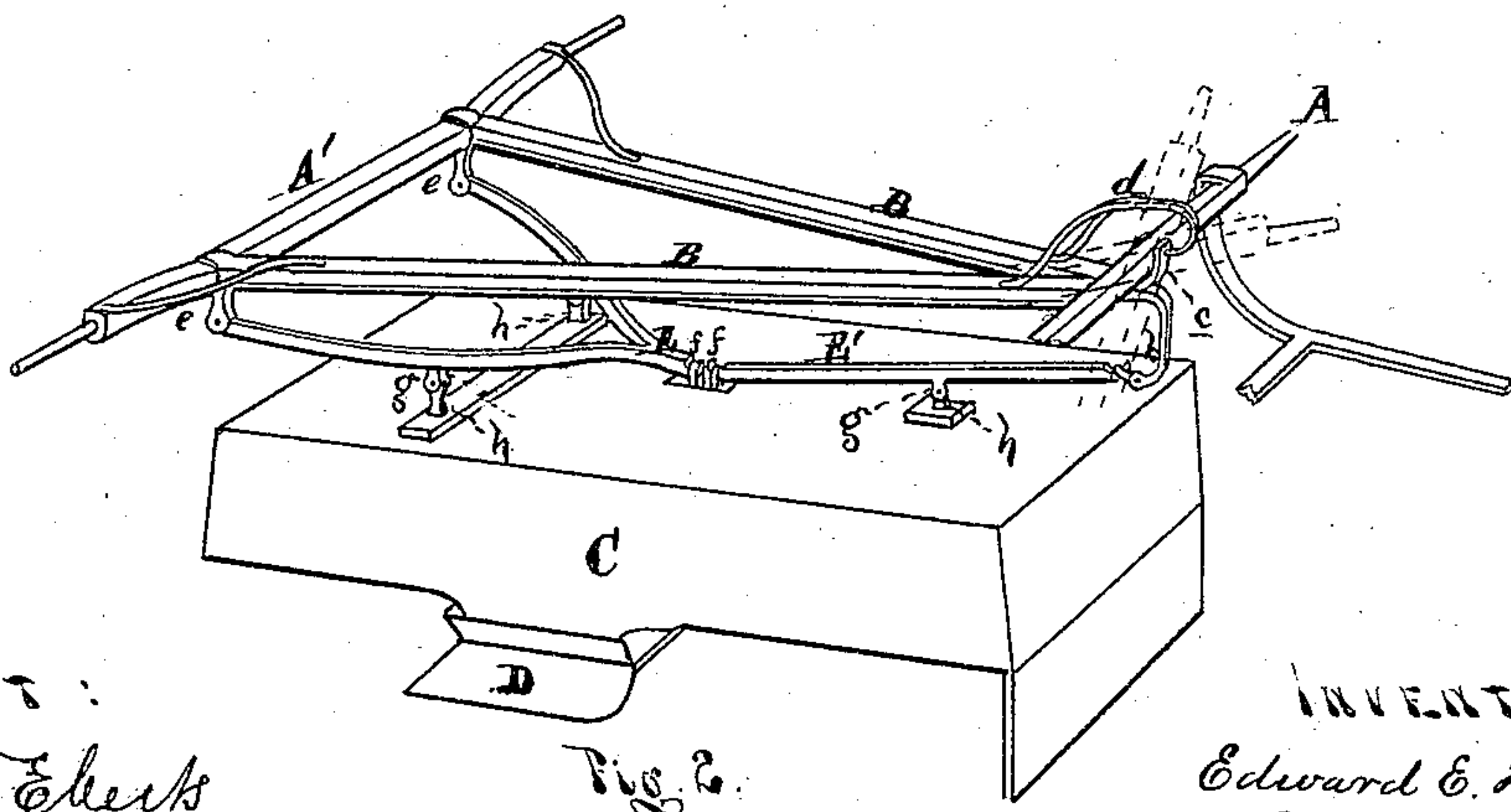
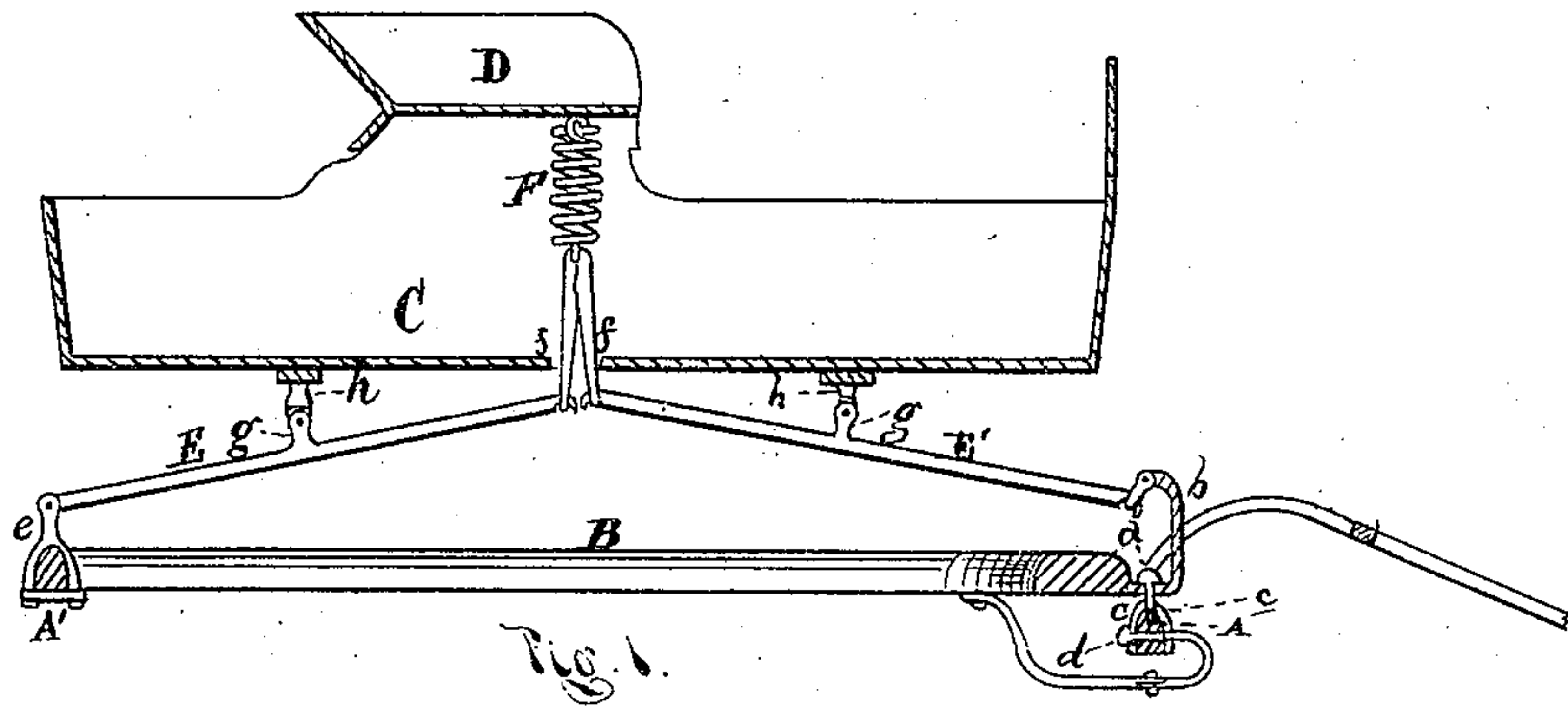


E. E. HERRINTON & G. W. IRISH.

Running-Gears for Carriages.

No. 153,337.

Patented July 21, 1874.



ATTEST :

H. F. Check.
C. E. Lester

INVENTORS

Edward E. Herrinton.
George W. Irish,
per attorney.

W. Sprague

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Fig. 3.

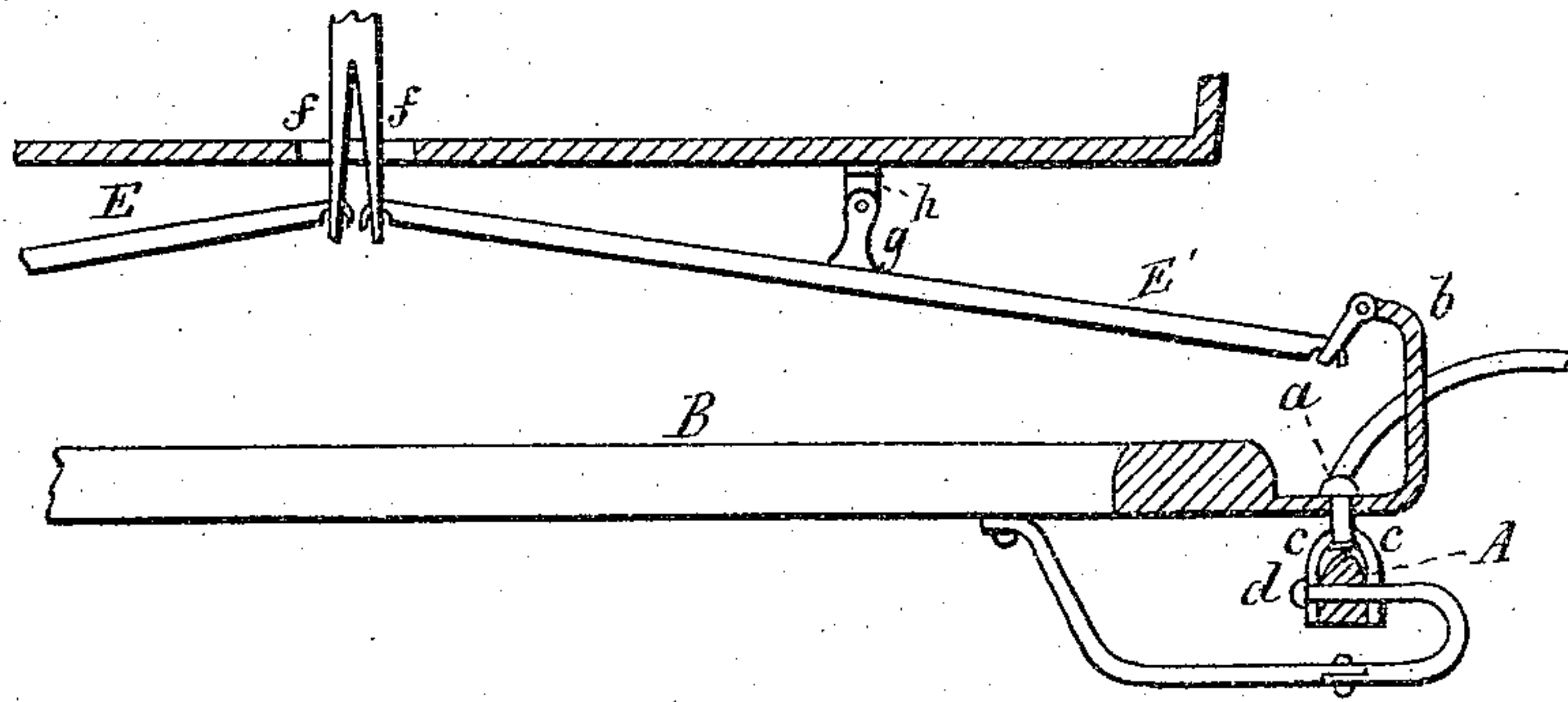
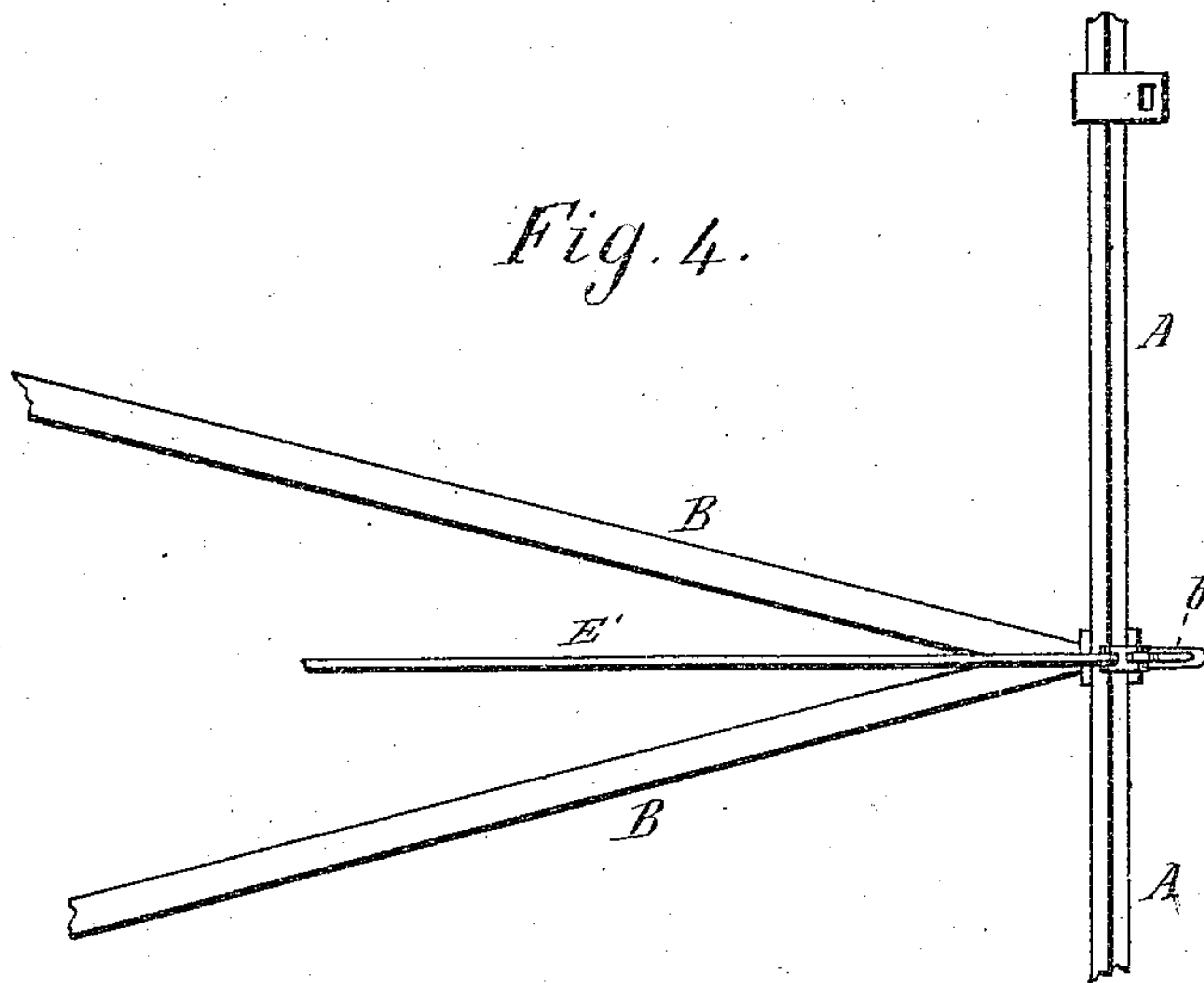


Fig. 4.



Witnesses

R. N. Syer.
C. Thurman.

Inventors

Edward E. Herrinton,
George W. Irish,
by Geo. W. Syer & Co
Attys.

UNITED STATES PATENT OFFICE.

EDWARD E. HERRINTON AND GEORGE W. IRISH, OF GRAND LEDGE, MICHIGAN; SAID IRISH ASSIGNOR OF ONE-HALF HIS RIGHT TO WILLIAM J. McMASTER.

IMPROVEMENT IN RUNNING-GEARS FOR CARRIAGES.

Specification forming part of Letters Patent No. 153,337, dated July 21, 1874; application filed November 8, 1873.

To all whom it may concern:

Be it known that we, EDWARD E. HERRINTON and GEORGE W. IRISH, of Grand Ledge, in the county of Eaton and the State of Michigan, have invented an Improvement in the Running-Gear for Carriages, of which the following is a specification:

The nature of this invention relates to an improvement in the construction of four-wheeled carriages, having for its object to reduce the weight and cost of the vehicle, and to afford the body a better support, dispensing with the usual elliptic springs, spring-bars, circle-iron, head-block, body-loops, and several other parts, for which are substituted a forked bar at the rear, and a straight bar in front, pivoted at their outer ends to axle-perches, and at their inner ends to short hangers connecting them to a strong spiral spring suspended from the under side of the seat. The body is supported at three points upon these bars, which supports form fulcrums through which the bars act upon the spring. The invention also consists in the peculiar method of connecting the fore axle to the reach, by which the said axle may move or sweep in the vertical as well as in the horizontal plane.

Figure 1 is a central longitudinal vertical section of our improved carriage. Fig. 2 is a perspective view of the same as it would appear when inverted and the wheels removed.

In the drawing, A represents the fore, and A' the hind, axle, connected by a V-reach, B, whose rear ends are secured to the hind axle, while its apex has a jack, *b*, through which passes a king-bolt, *a*, into a stirrup, *c*, which straddles the middle of the fore axle, and which is secured thereto by a pivot formed at the end of an iron, *d*, passing through the stirrup and axle in a horizontal plane. The iron *d* is curved around under the axle and forked, its rear ends being bolted to the bars of the reach.

The king-bolt permits the fore axle to turn

in a horizontal plane, while the pivot *d* allows it to vibrate in a vertical plane, so that either wheel running over an obstruction will not disturb the equilibrium of the body.

C is the body of the carriage, provided with a stationary seat, D. *e e* are jacks rising from the rear axle, to which are pivoted the forked ends of a bar or lever, E, whose front end is under the middle of the body. E' is a straight lever, suspended at its front end from the jack *b* of the fore axle. F is a strong spiral spring suspended under the center of the seat. To its lower end are secured two spring-hangers, *f*, into whose lower ends are hooked the inner ends of the levers E E', each of which is provided at the upper edge, at about the middle of its length, with a pair of ears, *g*, to which is pivoted a supporting-lug, *h*, projecting downwardly from the bottom of the body, the effect of which is that weight, being imposed on the body, is, through the fulcrums *g h*, transferred to the levers E E', which in turn transfer it to the spring F, which is more sensitive, and fully as strong, as an elliptic spring, if properly proportioned, making the carriage easy to ride in, while its weight and cost are less than those of ordinary construction.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The king-bolt *a*, passed through the jack *b* of the reach into the stirrup *c*, the iron *d*, and axle A, all constructed and combined substantially as set forth.

2. The combination, with the jacks *b e e*, body C, and seat D of a vehicle, of the forked lever E, straight lever E', spiral spring, F, and supporting-fulcrums *g h*, as and for the purpose set forth.

EDWARD E. HERRINTON.
GEORGE W. IRISH.

Witnesses:

G. HOMER JONES,
JAS. WINNIE.