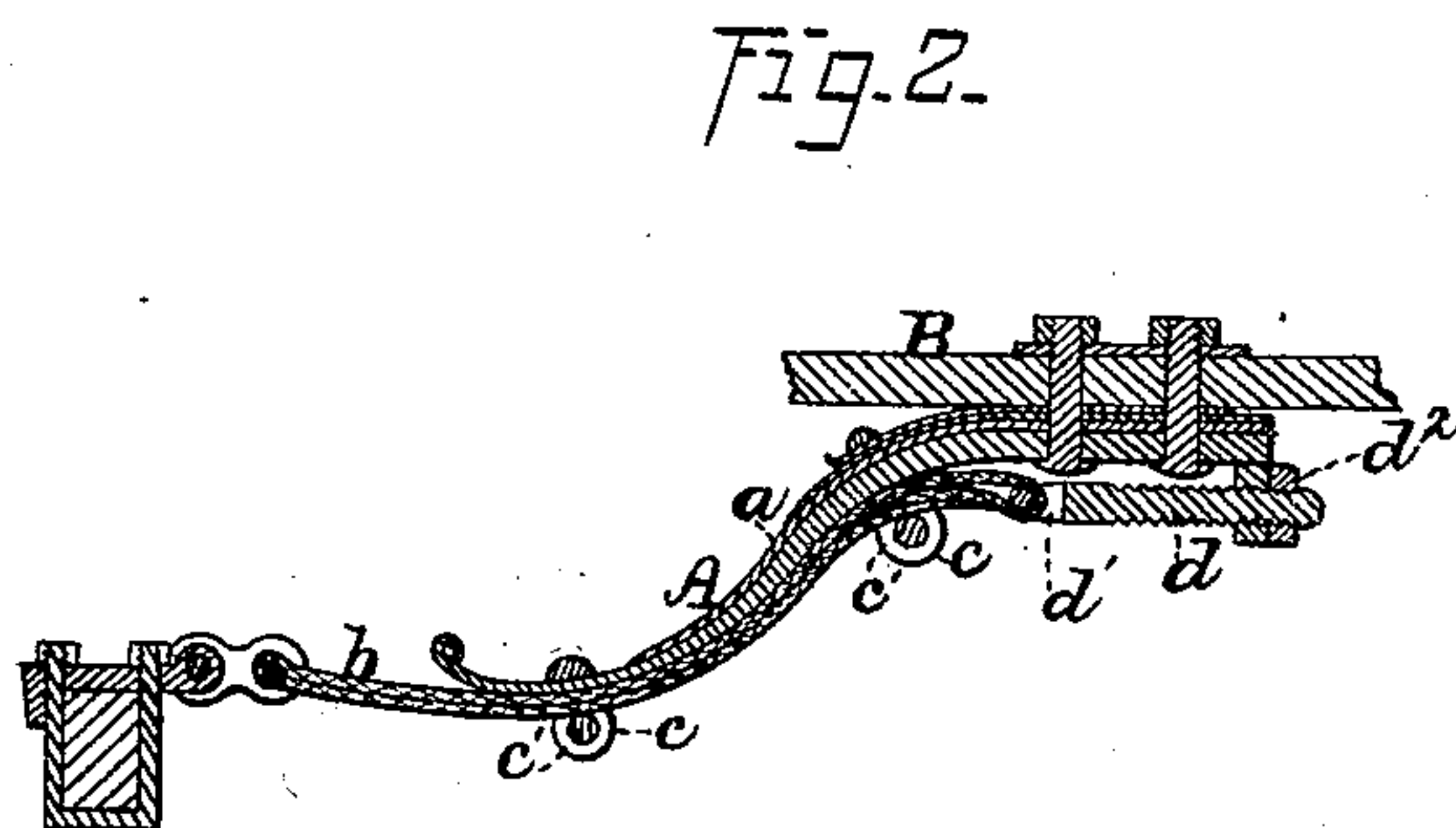
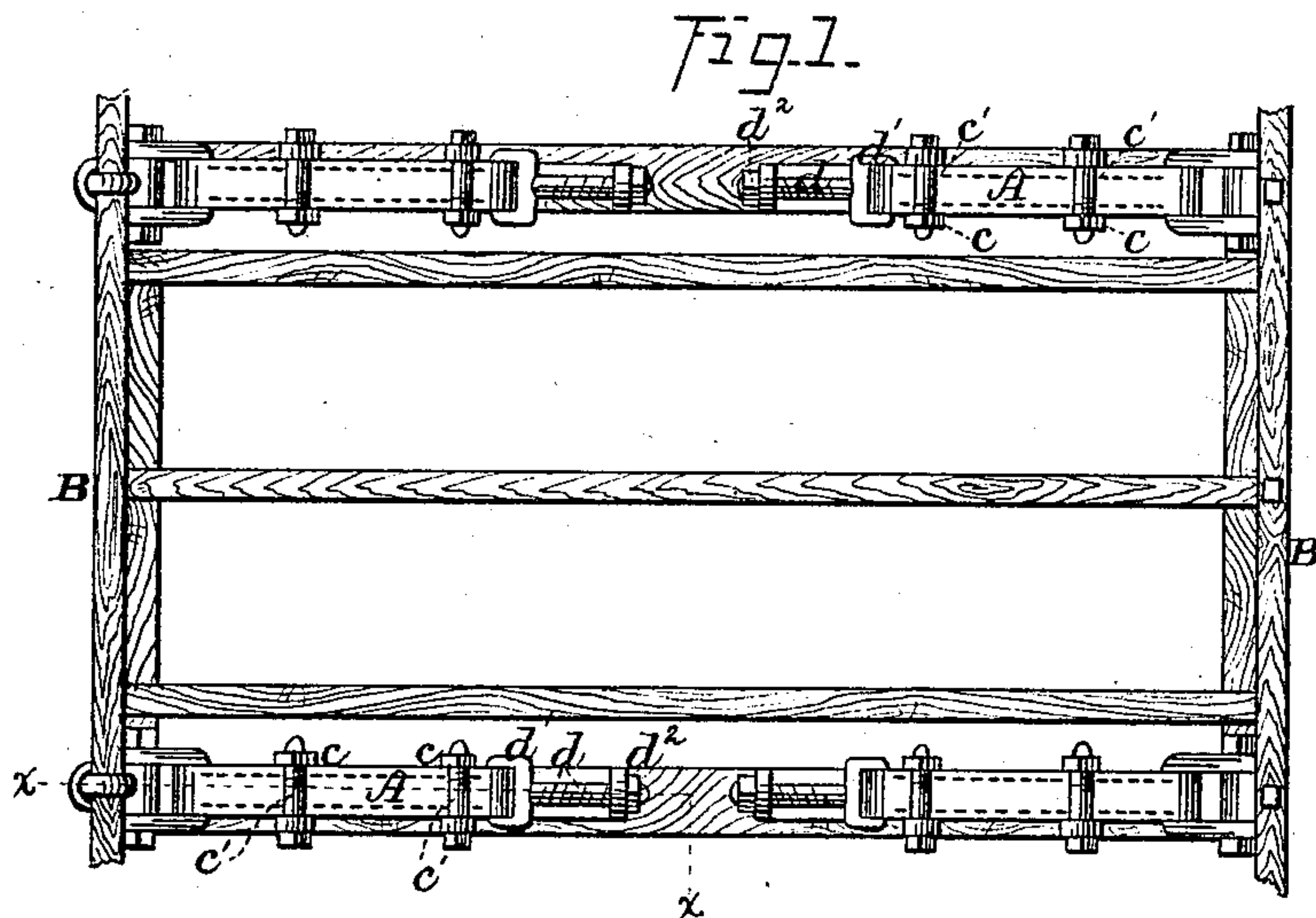


H. L. ISHAM.
VEHICLE-SPRING.

No. 191,150.

Patented May 22, 1877.



WITNESSES-
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UNITED STATES PATENT OFFICE

HARRY L. ISHAM, OF PLATTSBURG, NEW YORK.

IMPROVEMENT IN VEHICLE-SPRINGS.

Specification forming part of Letters Patent No. **191,150**, dated May 22, 1877; application filed March 10, 1877.

To all whom it may concern:

Be it known that I, HARRY L. ISHAM, of Plattsburg, in the county of Clinton and State of New York, have invented certain new and useful Improvements in Carriage-Springs; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification, and in which—

Figure 1 is an inverted view of a vehicle-body with my improved spring applied thereto, and Fig. 2 is a section through the dotted line *x x* of Fig. 1.

Corresponding parts in the two figures are denoted by like letters.

The object of this invention is to provide a light, cheap, and durable spring, and one which will permit of the body being brought in proximity with the reach when in position, and by which slack, &c., from wear can be taken up to true the body; and it consists, first, of a lever-spring, secured to the vehicle-body and resting upon a thorough-brace or strap connected to the axle or bolster and the said spring; and, secondly, of slack take-up mechanism for the thorough-brace; and, thirdly, of the spring, in combination with, and connected to, the thorough-brace by clips or loops, and the thorough-brace having a threaded bolt and nut, substantially as hereinafter more fully set forth.

In the annexed drawing, *a* refers to a lever-spring, of which there are four to a vehicle. This spring may be made of one or more leaves, and is bolted at its inner or upper end to the vehicle-body and rests upon the thorough-brace *b*, with which it may be connected by clips or loops *c c'*. The thorough-brace *b* is

connected at one end, by a shackle, to the axle, thence passed through the clips or loops *c c'*, and provided at its other end with a threaded bolt, *d*, attached thereto by a loop or eye, *d'*, and provided with an adjusting-nut, *d''*, constituting the slack take-up mechanism for the thorough-brace.

My invention possesses, among others, the following advantages: The weight of the springs are reduced over one-half and a proportionate reduction in cost. The slack of each strap can be taken up, or its tension regulated, separately, and where two or more reaches are used they can be placed farther under the vehicle to give more room in cramping. It is applicable to all classes of vehicles, from the light road to the heavy draft or express wagon.

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

1. The spring *a*, secured to the vehicle-body and resting upon the strap or thorough-brace *b*, connected to the axle or bolster and the said spring, substantially as and for the purpose set forth.

2. In combination with the spring *a*, resting upon the strap or thorough-brace *b*, the threaded bolt *d d''*, as and for the purpose set forth.

3. The spring *a*, in combination with, and connected to, the thorough-brace or strap *b*, by the loops or eyes *c c'* and threaded bolt and nut *d d''*, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I hereunto affix my signature in presence of two witnesses.

HARRY L. ISHAM.

Witnesses:

JAMES H. LANGE,
J. WM. MISTER.