

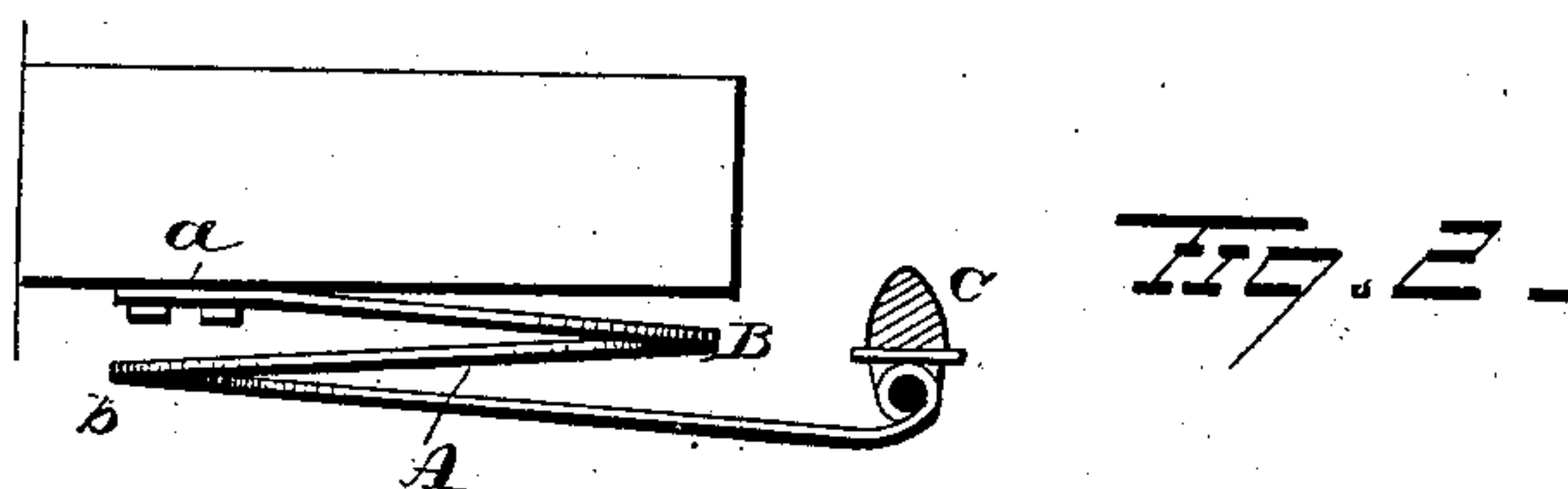
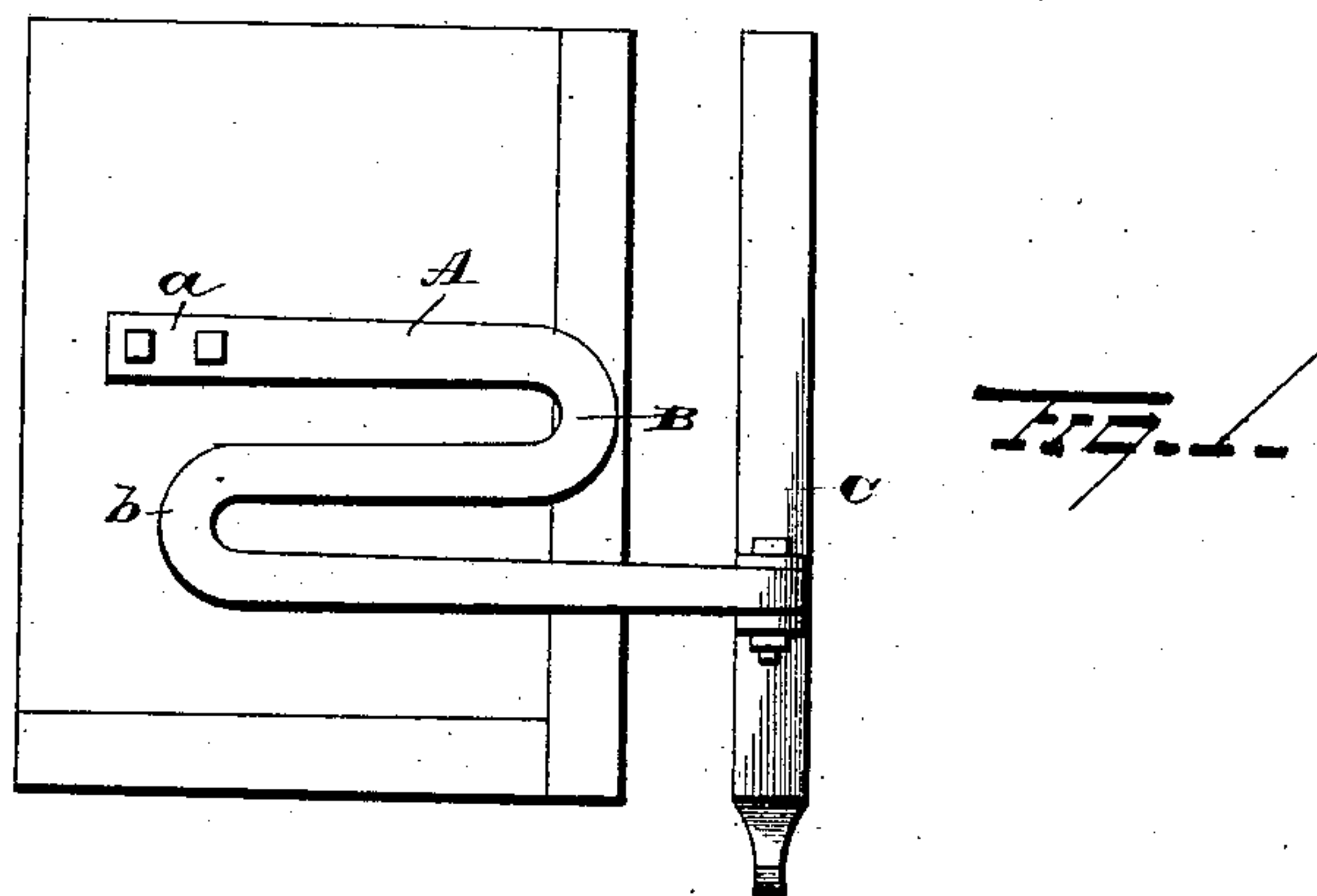
(No Model.)

H. W. MOORE.

CARRIAGE SPRING.

No. 336,131.

Patented Feb. 16, 1886.



WITNESSES

Nottingham
Geo. Downing

INVENTOR

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UNITED STATES PATENT OFFICE.

HOLLIS W. MOORE, OF OLEAN, NEW YORK, ASSIGNOR TO THE HOLLIS SPRING COMPANY, OF SAME PLACE.

CARRIAGE-SPRING.

SPECIFICATION forming part of Letters Patent No. 336,131, dated February 16, 1886.

Application filed September 16, 1885. Serial No. 177,242. (No model.)

To all whom it may concern:

Be it known that I, HOLLIS W. MOORE, of Olean, in the county of Cattaraugus and State of New York, have invented certain new and useful Improvements in Carriage and Wagon Springs; 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 an improvement in carriage and wagon springs.

In Letters Patent No. 314,702, granted to me on March 31, 1885, a coiled wagon-spring was shown and described, one end of which was adapted to be firmly secured to the wagon-body, and the free end of which, or the end secured to the side bar, crossed the body end at or nearly at right angles thereto.

The object of my present invention is to provide a spring of the same general character as that described in the patent above referred to, but of such shape as to combine both torsional and compressional elasticity in supporting the weight of the wagon-body and its load.

With this end in view my invention consists in certain features of construction and combination of parts, as will be hereinafter described, and pointed out in the claim.

In the accompanying drawings, Figure 1 is a plan view of the spring; Fig. 2, a view in elevation.

A represents the spring, firmly secured to the wagon-body, as shown at *a*. The end *a* may be simply a flat-faced continuation of the body of the spring, or it may be L or T shaped to form a more extended bearing against the bottom of the wagon-body. From the point of attachment at *a* the spring extends gradually downwardly and outwardly toward the edge of the wagon-body, or beyond the edge; then curving, as shown at B, returns beneath the body without crossing itself; then curving,

as shown at *b*, it extends outwardly, without crossing itself, to the point of its attachment to the side bar, C. The plan view of the spring is therefore S-shaped, or composed of connected U-shaped bights. The spring is preferably rectangular in cross-section, and gradually tapers from the body end *a* to the side bar end; but it may be oval, semi-oval, round, polygonal, semi-polygonal, or any other desired shape in cross-section, and may, if found expedient, be made of the same size throughout. It will be readily seen that the application of weight on the body end of the spring will, supposing the straight parts of the spring to be of rigid material, tend to twist the spring at the bights B *b*, and so far the spring will act as a torsional spring; but as the straight parts are in fact composed of spring metal, they will act as compression-springs, and combine with the torsional elements to produce an extremely easy and at the same time stiff and durable spring for general use.

It is evident that the forms above described may be attached to the axle or bolster on the axle as well as to the side bar, and thereby form end springs instead of side springs.

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

A wagon-spring having the form of two or more semi-coils, substantially as shown and described, one of its ends being adapted to be firmly secured to the wagon-body and the other to the side bar, at a point in front or back of a vertical plane passing through the point of its attachment to the wagon-body, transversely to the wagon-body, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

HOLLIS W. MOORE.

Witnesses:

C. D. CLARKE,
J. E. WORDEN.