

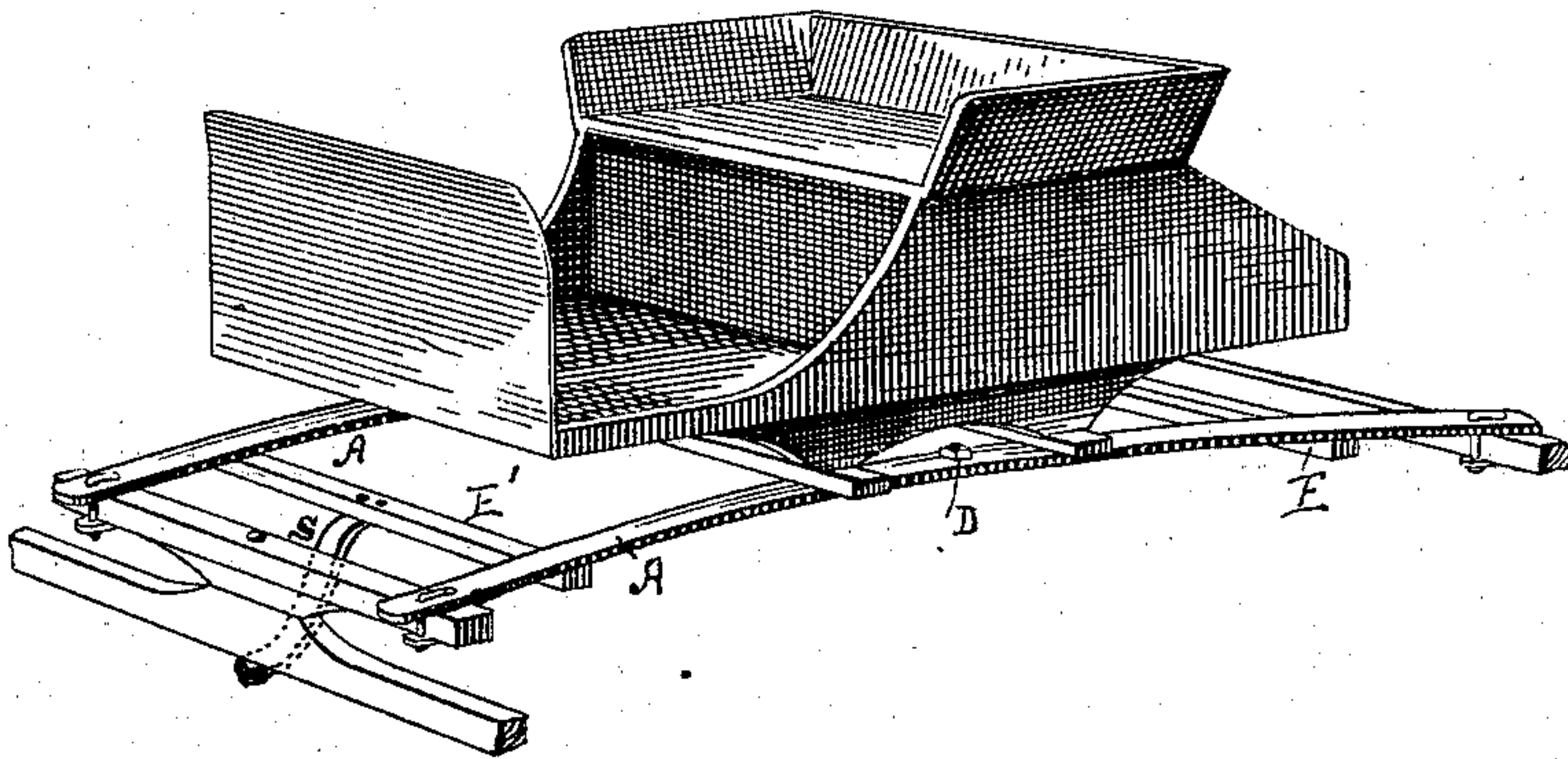
(No Model.)

H. B. OSBORN.  
Carriage Spring.

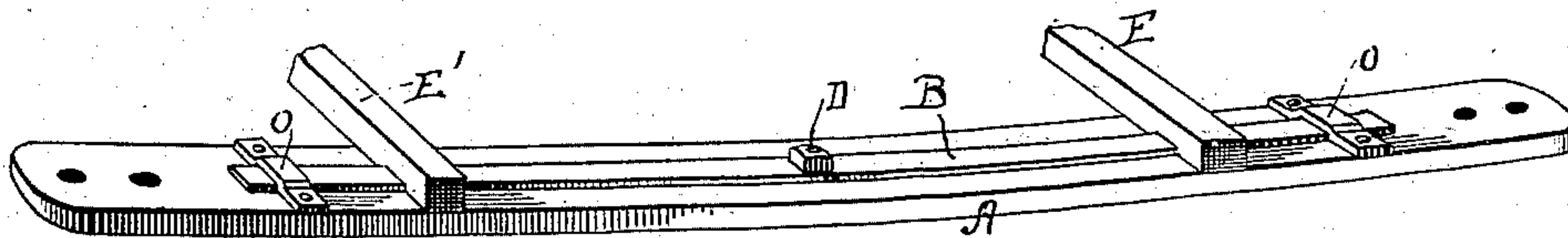
No. 237,443.

Patented Feb. 8, 1881.

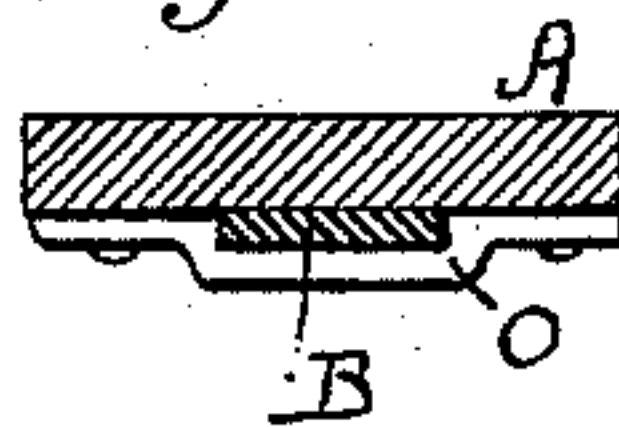
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Attest:

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# UNITED STATES PATENT OFFICE.

HENRY B. OSBORN, OF DANBURY, CONNECTICUT, ASSIGNOR TO HIMSELF  
AND PHINEAS D. CROSBY, OF SAME PLACE.

## CARRIAGE-SPRING.

SPECIFICATION forming part of Letters Patent No. 237,443, dated February 8, 1881.

Application filed November 29, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY B. OSBORN, of Danbury, in the county of Fairfield and State of Connecticut, have invented a new and useful Improvement in Springs for Carriages; and I do hereby declare that the following is a full and exact description of the same.

In the manufacture of carriage-springs, especially those for buckboards, wooden bars are employed; and it is found that they will, after a time, lose their form—that is to say, they will bend downward or sag in the middle, and will “set” or retain that form. The object of my invention is to prevent this result, in a cheap and inexpensive way, by applying a steel spring to the wooden one in a peculiar manner.

I am aware that wooden side bars have heretofore had bars of steel embedded in them, but in all such cases, so far as I am aware, the wood served but little purpose except to cover the metallic bar which forms the real spring. My invention is different from those, inasmuch as it simply re-enforces the wooden spring, but does not supplant it.

That others may fully understand my invention, I will particularly describe it, having reference to the accompanying drawings, wherein—

Figure 1 is a perspective view of a buggy-body mounted upon my springs. Fig. 2 is an under-side perspective of one side spring. Fig. 3 is a transverse section of the same.

A is a wooden spring constructed with the usual form and proportion. Along its lower surface a steel spring, B, is laid, and secured in place by clips or cross-pieces *o*, the ends whereof are securely attached to the wooden spring A, so as to permit a longitudinal movement of the steel spring between them and the wood. The spring B is retained in place lon-

gitudinally by a bolt, D, which passes through both wood and metal, or, if preferred, by a clamping-clip or other proper equivalent clamping device. The bars E E' are cross bars or braces extending from one spring to the other to support the body or box. From the forward cross-bar, E', a brace, S, may be extended down to the axle to restrain forward and backward sway of the body and its load, and prevent the front bolster and king-bolt from being racked.

When the wagon having these springs is loaded the steel supplemental springs B B assist in supporting the load, and when the load is removed said supplemental springs press the wood upward and enable it to regain its normal and proper form. As this recurs after each release from load the wood will be prevented from becoming set out of form. If desired, the steel springs B B may be extended at the ends past the axle and head-block or bolster, and the cross-bars E E' may then be dispensed with.

Having described my invention, what I claim as new is—

1. A wooden carriage-spring, A, combined with a steel spring, B, attached to and in contact with the under surface of said wooden spring at its middle by the bolt D, or its equivalent, and secured in place at its ends, without clamping, by the cross-pieces *o o*, as set forth.

2. A wagon provided with wooden springs A, each re-enforced with the steel spring B along and in contact with its under side, secured together at the middle by bolt D, combined with cross-bars E E', and the longitudinal braces S, as set forth.

HENRY B. OSBORN.

Witnesses:

WILLIAM E. BAILEY,  
J. W. SAGENDORF.