

GILMER & DE VALIN.

Carriage Spring.

No. 93,703.

Patented Aug. 17, 1869.

FIG. 1.

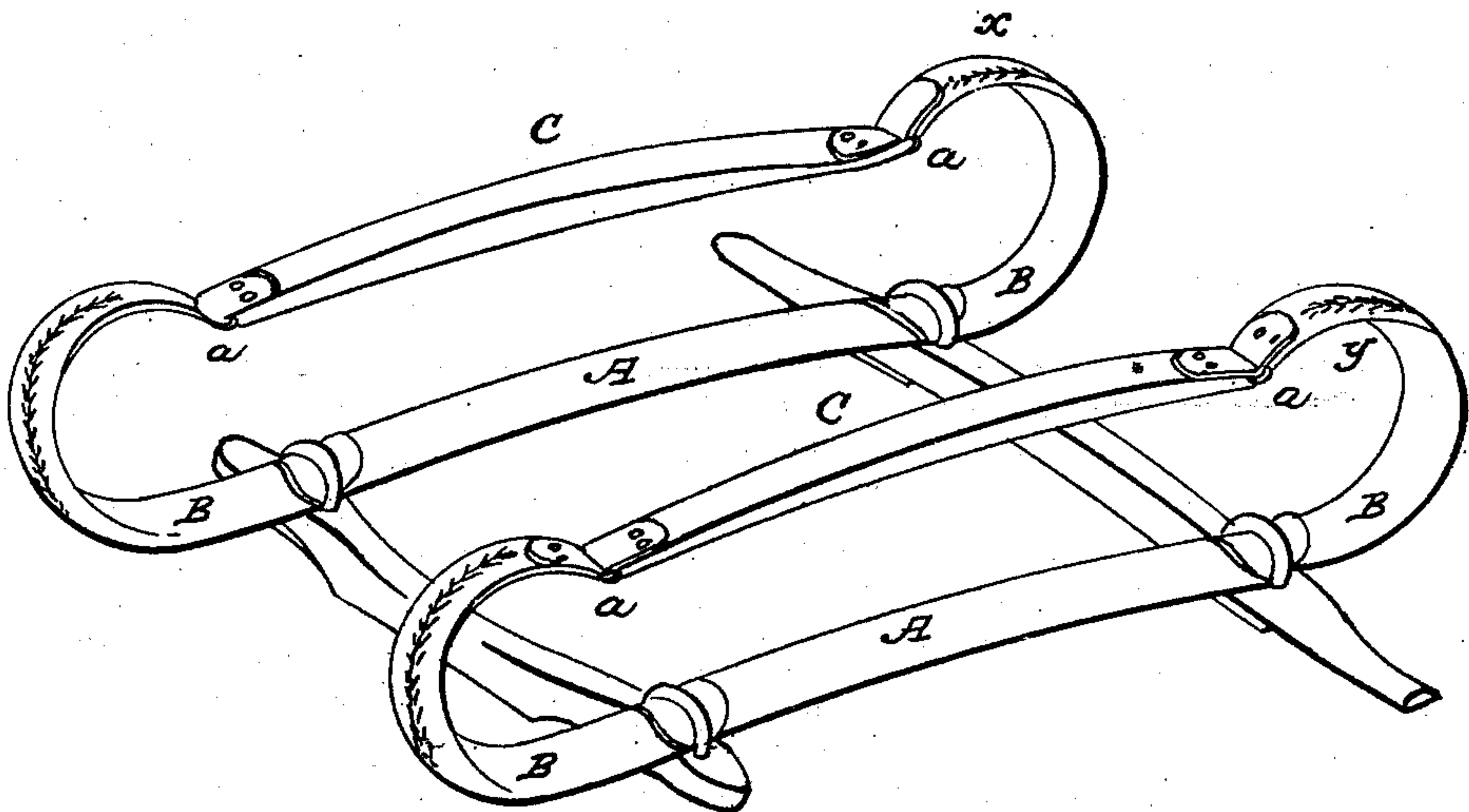
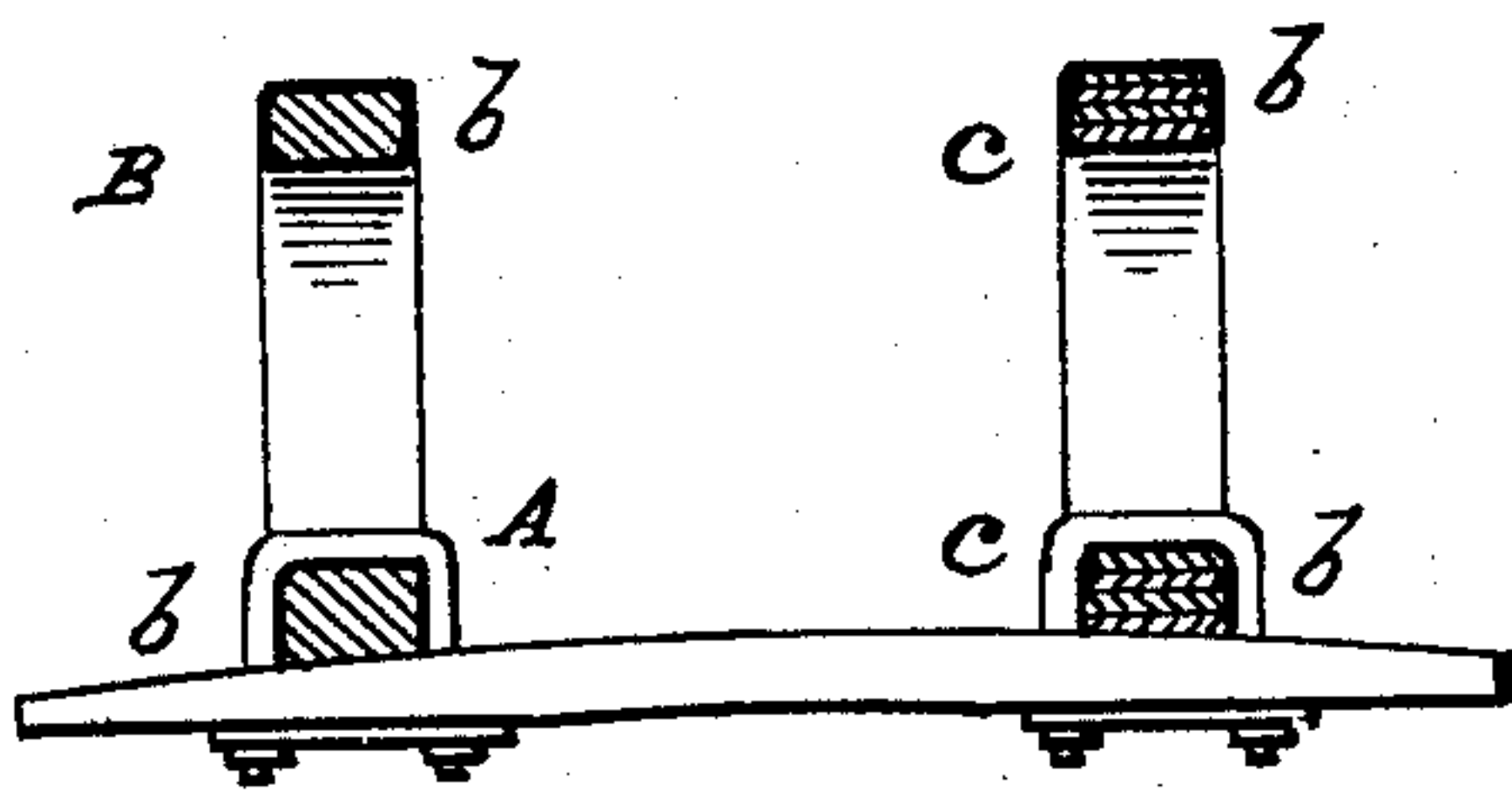


FIG. 2.



WITNESSES:

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J. W. GILMER AND W. H. DE VALIN, OF SACRAMENTO, CALIFORNIA.

Letters Patent No. 93,703, dated August 17, 1869.

IMPROVEMENT IN CARRIAGE-SPRINGS.

The Schedule referred to in these Letters Patent and making part of the same.

To whom it may concern:

Be it known that we, J. W. GILMER and W. H. DE VALIN, of Sacramento, in the county of Sacramento, and State of California, have invented certain new and useful Improvements in Carriages and other Vehicles; and we hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, in which—

Figure 1 is a perspective view of a carriage-spring, embodying our invention.

Figure 2 is a transverse vertical section of the same, on the line *x y*, fig. 1.

Our invention has relation principally to the construction of C-springs, for carriages or other vehicles, as well as to the means for supporting the carriage-body upon the springs; but in some features it is well adapted to other parts of the carriage, such as the running gear, &c.

The carriage-body is ordinarily supported upon through-braces or leather straps, which pass over the bows or ends of the springs, and are fastened underneath. These leather straps are very liable to stretch, and must therefore be provided with buckles, or other devices, for shortening them; and, moreover, they are not durable, being usually the first part to wear out; and, again, the leather braces, when the vehicle is tipped or canted, on the side of a hill or rise of ground, for instance, allow the body to swing, and to throw the weight toward the lower side of the carriage, thus causing it, in many cases, to upset.

To obviate these and other disadvantages, is the object of the first part of our invention, which may be stated to consist in the employment of a wooden bar, for supporting the carriage-body, extending between, and jointed or hinged to the ends of the front and rear C-springs.

The springs themselves may be of wood or metal, and of any suitable construction, being either formed separate from each other, or in one continuous piece.

The connecting-bar we prefer to make strong enough to sustain the weight of the body of the vehicle, and yet have sufficient elasticity to act in some measure as a spring.

The springs, as well as the cross-bar, we prefer to make of wood, both because it is a lighter and more inexpensive material, and for other reasons.

It is desirable, however, to impart as much strength as possible to the springs and bar, and not only to them, but also to the poles, shaft, whiffletrees, and other parts of the running gear made of wood. And in order to effect this result, and without increasing materially the size or weight of the articles referred to, our invention further consists in covering the springs, poles, shafts, &c., as aforesaid, with rawhide, or its equivalent, which, while wet, is stretched over and sewed or fastened around said articles. The hide,

when thus put on, forms a tight, strong, and perfectly-fitting casing, which protects and strengthens the wood, and makes it much more durable.

The employment of the hide in this connection enables us to simplify the construction, and reduce the cost of the springs themselves; to which end, our invention further consists of a wooden C-spring, made of a series of strips of wood, held together and covered by rawhide, applied to and secured around the same in the manner above specified.

To enable those skilled in the art to understand and use our invention, we will now proceed to describe the manner in which the same is or may be carried into effect, by reference to the accompanying drawing.

A represents a combined spring and perch, which extends between the two axles of the carriage, and has its ends bent up, so as to form two C-springs, B.

We have represented, in illustration of our invention, a continuous wooden spring and perch; but so far as this portion of our improvement is concerned, the springs may be separate from the perch, and made either of metal or wood, as desired.

The ordinary brace or leather strap, which supports the body of the carriage, extends between the two springs, and passing around them, is fastened underneath at each end in the usual manner.

To obviate the disadvantages which, as above stated, attend the use of the strap, we dispense with it entirely, and employ instead a wooden cross-bar, C, which extends between, and is hinged or jointed to the ends of the springs by means of shackles or other suitable connecting-devices, *a*, as seen in fig. 1.

The carriage-body rests upon these two bars, which should be made of sufficient size not to yield too much, but to have, at the same time, a certain springiness, as hereinbefore mentioned.

These bars are, of course, not liable to stretch or work loose, and, unlike the leather braces, have no lateral play or movement, thus obviating entirely the disadvantages above referred to; and they are also very durable, lasting fully as long as the springs themselves.

In order to increase the durability of the springs and cross-bar and perch, we cover them with raw hide, *b*, fig. 2, which, when wet, is stretched around them, and fastened by sewing or like means. When the hides dry it of course shrinks, and forms an extremely air-tight and perfectly-fitting casing, which adds at once to the durability, elasticity, and efficiency of the parts covered.

The use of a covering of this kind enables us to further cheapen and simplify the construction of these parts, for they may be made of much lighter wood, which, when provided with the hide cover, will be quite as strong, or stronger, than heavier material without the hide.

We also make the spring, or the springs and perch combined, of strips of wood, *c*, laid together, and then covered with the hide, as shown in fig. 2. A good, strong, and cheap spring can thus be made.

The strips of wood which form the spring can be united, if preferred, by cement, or other ordinary or suitable means; but this is not necessary, as the hide covering holds them tightly together. Or the springs may be made in one piece, the ends being sawed apart far enough for the bend.

The hide-covering can be applied for like purposes to other parts of the vehicle, such as the poles, shafts, whiffletrees, &c.

The covering may be formed of any suitable part of the integuments and sinews of animals, or of the entrails and skins of the sturgeon and other fish.

The carriage-body is held upon the wooden bars *C* by clips, or other ordinary and suitable means.

The bars may also be used for sleighs, by bending the runners up behind as well as in front, and then connecting their ends by means of the bars, upon which the body of the sleigh can rest.

Having now described our invention, and the manner in which the same is or may be carried into effect,

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

1. The combination, with the double wooden *C*-springs, of a wooden spring-bar, for supporting the body of the carriage or other vehicle, extending between, and connected with said springs by means of links, substantially as and for the purposes specified.

2. A wooden spring, constructed of two or more layers or strips, and covered with hide or its equivalent, substantially in the manner, and for the purposes described.

3. The covering of the wooden *C*-springs and spring-bars, which support the vehicle, as specified, with hide or its equivalent, as aforesaid, substantially in the manner, and for the purposes set forth.

In testimony whereof, we have signed our names to this specification, before two subscribing witnesses.

J. W. GILMER.
W. H. DE VALIN.

Witnesses:

JAS. E. SMITH,
LEWIS RAMAGO.