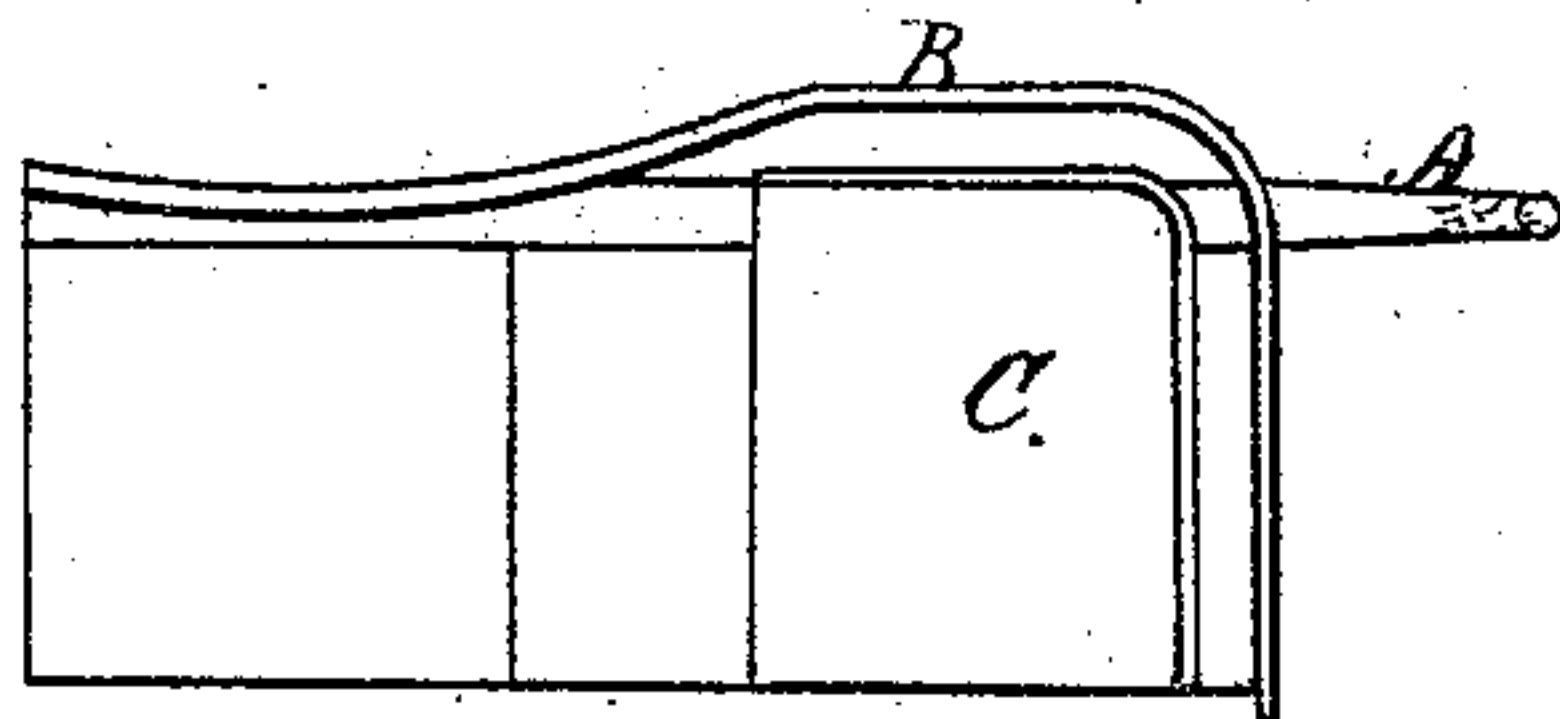


E. KIRSCH.  
Carriage-Spring.

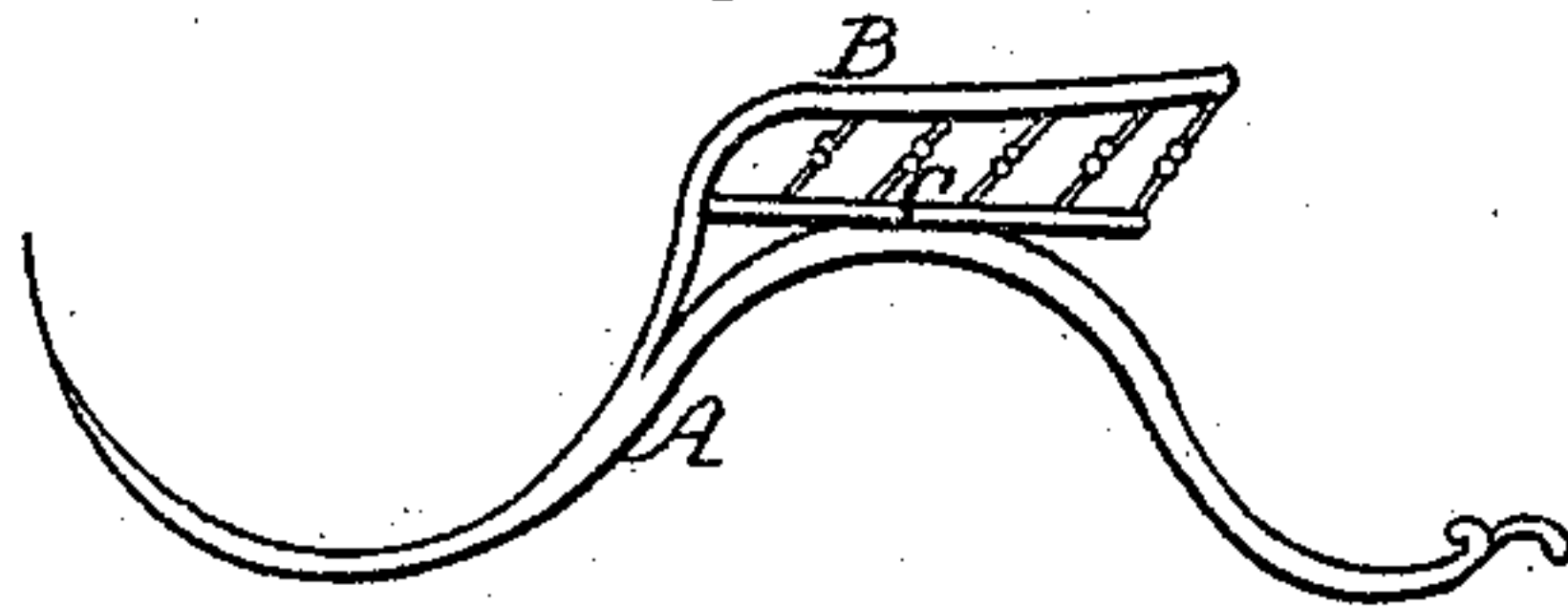
No. 29,386.

Patented July 31, 1860.

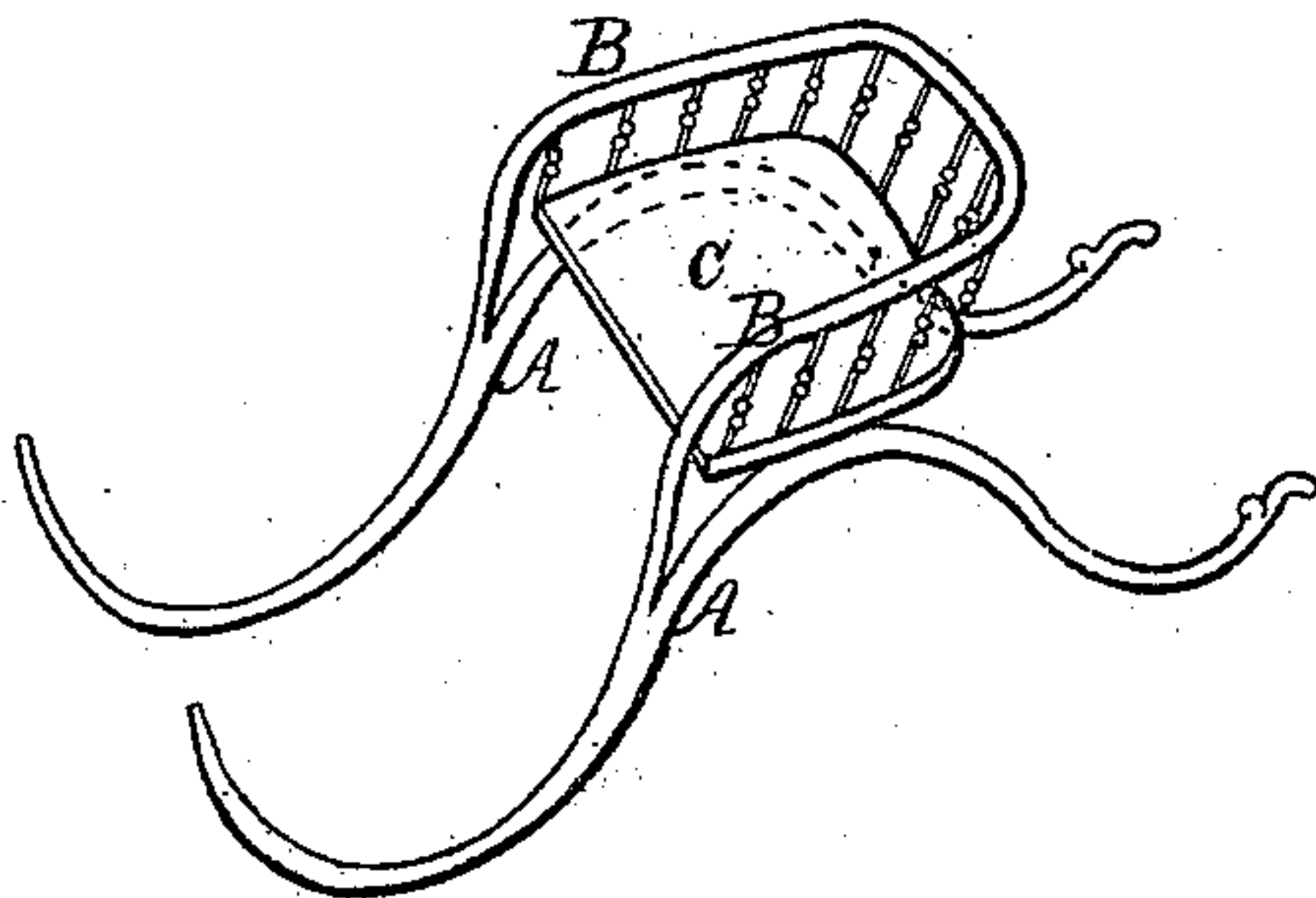
*Fig. 1.*



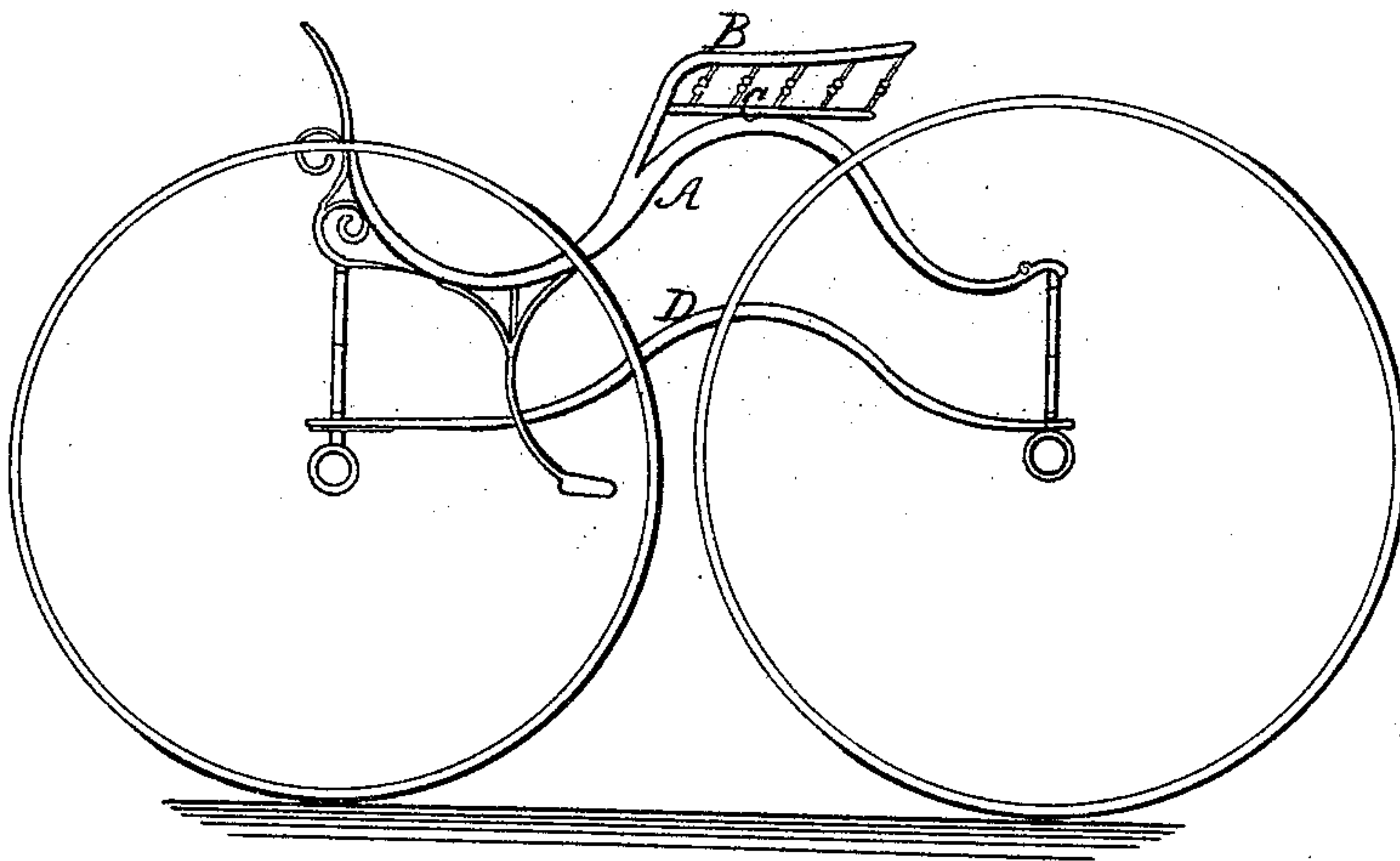
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses:

*Homer B. Dikeman*  
*R. H. H. H. H.*

Inventor:

*Ernst Kirsch*

# UNITED STATES PATENT OFFICE.

ERNST KIRSCH, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO HIMSELF AND IRA DIKEMAN & SON, OF SAME PLACE.

## CARRIAGE-BODY.

Specification of Letters Patent No. 29,386, dated July 31, 1860.

*To all whom it may concern:*

Be it known that I, ERNST KIRSCH, of the city and county of New Haven, in the State of Connecticut, have invented a new and  
5 useful Improvement in Carriage-Bodies; and I do hereby declare that the following is a full, clear, and exact description of the construction, character, and operation of the same, reference being had to the accompany-  
10 ing drawings, which make part of this specification, in which—

Figure 1, is a bird's-eye view of a section of the body, and seat, showing a portion of the seat rail. Fig. 2, is a plan of one of the  
15 sides of the body and a part of the seat rail. Fig. 3, is a perspective view of the skeleton of the body, showing both sides, and the seat rail with the seat attached. Fig. 4, is a direct side view of a carriage, showing the  
20 shape of the body, reach, &c.

My improvement consists in making each side of the body, and one half of the seat rail, of a single piece of timber, as split from the log, so that no part shall be cross  
25 grained; and, in sawing, or splitting, the rear portion as far forward as is necessary to form one half of the seat rail; and, in then bending the parts into suitable curves, or sweeps, to form the skeleton frame, or  
30 body, ready to receive the bottom boards, and seat, when it will be ready to be attached to the spring bars; thus using but two pieces of timber to form the whole frame of the body, and making each part of any desired  
35 curve or sweep, and yet no part, or portion will be cross grained, thus giving the greatest amount of strength with the least weight of wood.

To make each side of the body, and one  
40 half of the seat rail, I take one piece of timber as split from the log, and split or saw open the rear portion far enough to form one half of the seat rail; and, after the proper dressing, I bend that portion which  
45 is to form the side of the body substantially into the form, or shape, represented at A, Figs. 2, 3, and 4, and that portion which is to constitute one half of the seat rail, substantially, into the form, or shape, represent-

ed at B, Figs. 2, 3, and 4, so that the two  
50 sides and the whole of the seat rail, will consist of but two pieces of timber, as represented in Fig. 3, while no part will be cross grained, thereby preserving the full strength  
55 of the fibers, with the additional support of the curves. I then fit in the bottom boards, (in front of the seat,) in the usual way; and I fit in the seat, C, substantially, as represented in Fig. 3 and indicated in Figs. 2, and  
60 4, or in any other convenient way of fitting a light seat, the great object being to combine lightness with strength, while symmetry and neatness are preserved. I attach the body to the spring bars of the running  
65 gear in the usual way, substantially, as represented in Fig. 4. I also make the reach, or perch, of a straight piece of timber, and bend it to the desired shape—that is, suited to the shape of the body, as represented at  
70 D, Fig. 4—thus giving it much more strength in proportion to the weight of timber than could be obtained by cutting the curves across the grain.

The advantages of my improvement consist, in that, the body can be made at less  
75 expense for labor; with much less timber, and much less iron, while it will possess much more strength, and yet be much lighter, which is a characteristic very highly  
80 prized by those who use sporting wagons; while the strength, and beauty, will commend them to all.

I may make the two sides of the body, and the whole of the seat rail, of one piece  
85 of timber of double the length and work it from the middle, but in that case the finished body will only differ from the one already described, by not having a lap in the center of the seat rail, as there must be when  
90 two pieces are used; but the lap does no harm, and it is more convenient to work the shorter pieces.

I am aware that timber has been bent for a very great variety of purposes; and that curved sides, and reaches, are very  
95 common in carriages. I, therefore, do not claim either of them, as such, as my invention; but,

What I claim as my invention, and desire to secure by Letters Patent, is—

The construction of the crooked or curved, body, when no more than two pieces are  
5 used to compose the two sides of the body, and the seat rail, while the fibers of the timber always run in the direction of the curves, or sweeps, so that no part is in any degree

cut across the grain of the timber, and the whole is constructed, and fitted for use, substantially, as herein described. 10

ERNST KIRSCH.

Witnesses:

HOMER H. DIKEMAN,  
R. FITSGERALD.