

C. W. SALADEE.

Improvement in Springs for Vehicles.

No. 132,694.

Patented Oct. 29, 1872.

Fig. 1.

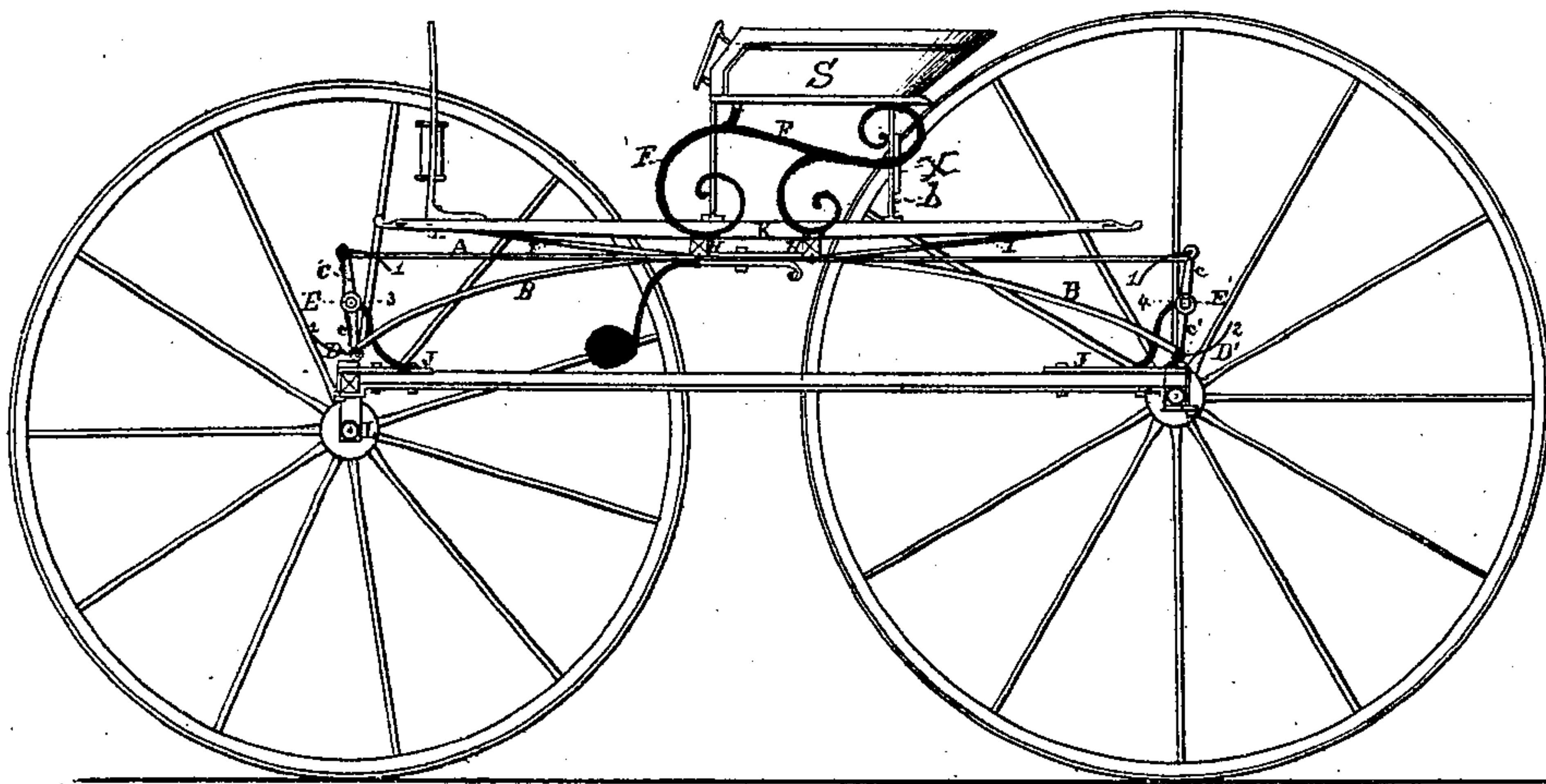
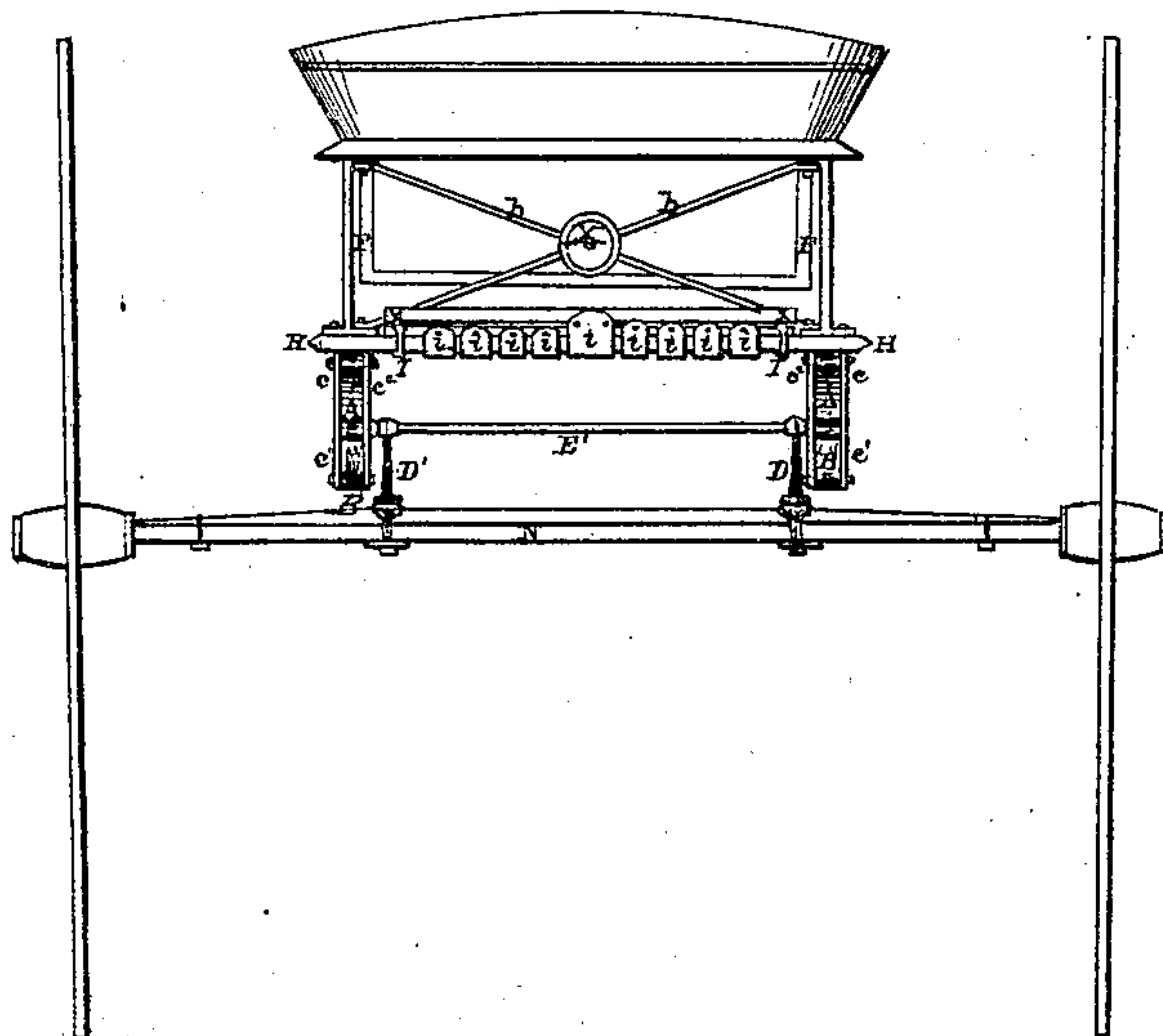


Fig. 2.



Witnesses

F. A. Lehmann

T. C. Brecht

Inventor.

C. W. Saladee

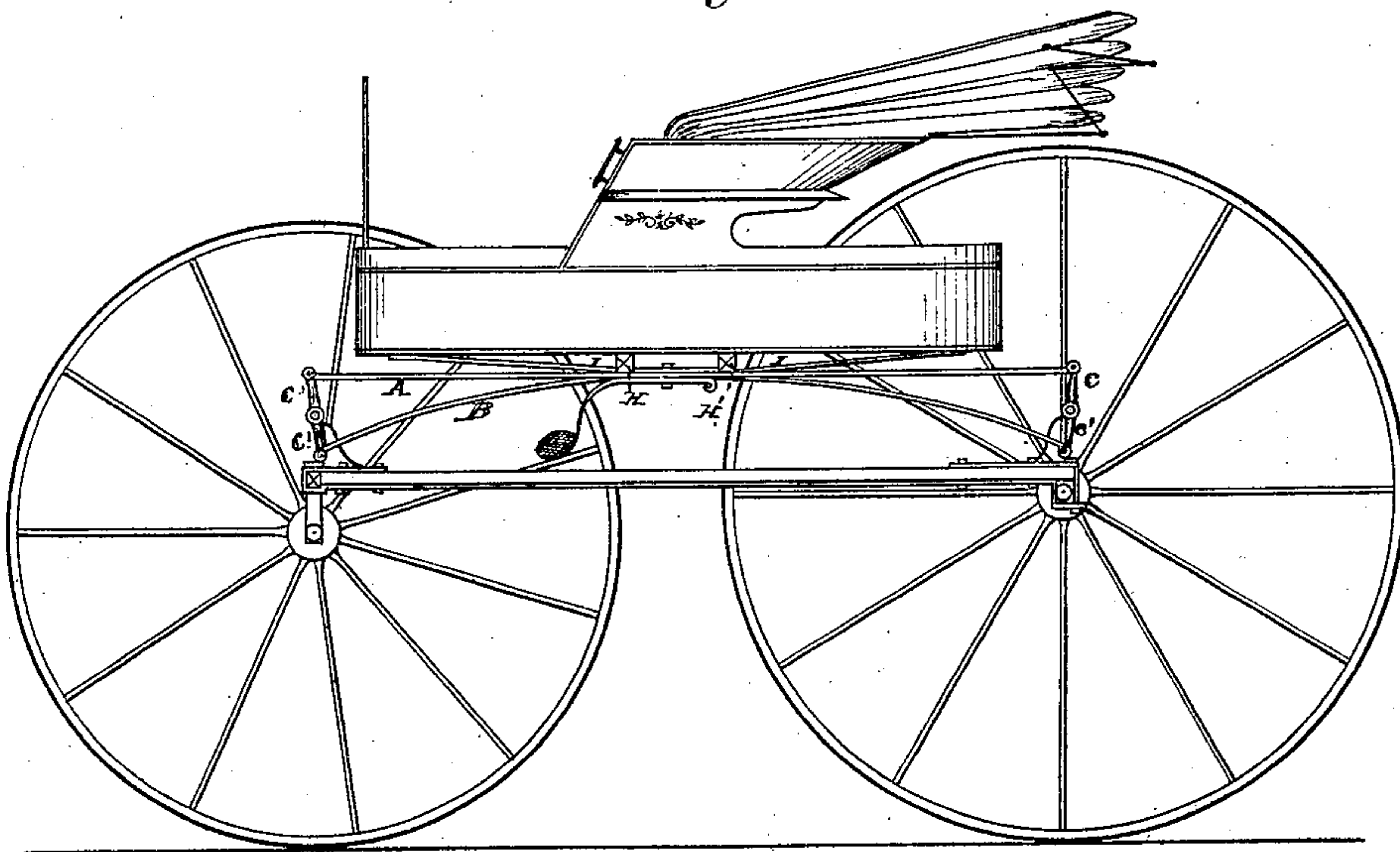
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Fig. 3.



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UNITED STATES PATENT OFFICE.

CYRUS W. SALADEE, OF ST. CATHARINES, CANADA.

IMPROVEMENT IN SPRINGS FOR VEHICLES.

Specification forming part of Letters Patent No. 132,694, dated October 29, 1872.

To all whom it may concern:

Be it known that I, CYRUS W. SALADEE, of St. Catharines, in the Dominion of Canada, have invented certain Improvements in the Construction and Arrangement of Springs for Vehicles, of which the following is a specification descriptive of the same.

Nature and Object.

My invention, when applied to what is known as "side-spring buggies," has for its object the perfect equalization and distribution of the weight imposed upon the springs, and so as to prevent either side or end of the body from being depressed without a corresponding action of the opposite side or end; and, when substituted and applied in place and manner of the ordinary elliptic springs, to prevent "side-motion" of the body, as well as to admit of the construction of a light road-wagon by substituting for the body, and combining with the peculiar arrangement of the springs, a slatted or close-bottomed frame, having a single seat for two persons mounted thereupon; and, in either modification, to secure a greater degree of vibrating motion to a given weight of steel than can be effected upon any of the present methods known to me of securing springs to vehicles, and with a corresponding increase of strength and security against liability to accident by fracturing the same.

It is a well-known fact in mechanics that springs to vehicles, when properly made and applied, are broken or fractured only from one of two causes, viz, by direct pressure or by sudden reaction. To effectually prevent the fracture of springs from either of these causes is the main feature of my present invention, while at the same time it affords the other important advantages hereinbefore recited, as well as to admit of unlimited application to the various different classes of pleasure and business vehicles now in general use; and I desire it to be clearly understood that I do not limit the invention herein described and claimed to any special class of vehicle, as the same is equally applicable and valuable to many different styles now in vogue, as well as for other purposes.

The Drawing.

Figure 1 is a side elevation of a light road-wagon, without body, embodying my improve-

ments; Fig. 2 is a rear view of the same; and Fig. 3, Sheet 2, is a side elevation embodying the same improvements of springs and gearing shown in Fig. 1, but with a body attached.

I employ two springs or single plates of steel, of the requisite proportion and of equal length, and rigidly secure them together at or near their centers between the outer ends, while the ends of the same are spread apart and secured to and operated upon the opposite ends of the double cranks C C', the center of said cranks being secured to and operating upon the standard-bearings D and D', the latter being secured at the opposite ends of the springs upon the hind axle and front bolster of the gearing, whether the springs are employed for "side springs" or substituted for the ordinary elliptic springs, and when used for "side springs" these double cranks are connected together by being rigidly secured upon the outer ends of the connecting-rods E and E', as clearly shown in the rear view of the gearing, Fig. 2, and the rod rotating freely in the head of the standard-bearings D and D', as may be required by the vibrating action of the springs. In all cases where a body is used in connection with these springs, as in Fig. 3, it is secured to the central cross-bars H H, seen in Figs. 1 and 3, by means of the iron braces I I, or in any other approved and appropriate manner; but when a "road-wagon" is to be made with this arrangement of springs the body is omitted.

The Operation.

The operation of my invention is substantially as follows, viz: As before stated, the springs are of equal lengths; so, likewise, the double cranks, from their centers 3 and 4, Fig. 1, to their outer ends (or to the center of the bearings of the ends of the springs) are of equal lengths. These cranks C C', whether or not connected together upon the ends of the connecting-rods E and E', as seen upon the rear rod E', Fig. 2, are pivoted to the standard-bearings D or D' at their centers 3 and 4 so as to oscillate upon their centers, as required by the action of the springs. It will therefore be seen that as pressure is applied upon the central cross-bars H H the straight spring A (see Fig. 1) will begin to curve downward, while the curved spring B will be correspondingly straightened, and that this action is freely accommodated by the oscillating double

cranks, the upper ends of which follow the curved lines 1 and 1 and the lower ends the curved lines 2 and 2; and it will further be seen that it is impossible to force the curved spring down further than to a straight line from the ends, while the straight spring A cannot be strained into a greater curve than that now assumed by B in Fig. 1, no matter how much weight may be applied, (unless, indeed, enough to tear the standard-bearings from their positions.) So, likewise, in reacting the springs they cannot rise above the position of the straight spring shown in Fig. 1. The principle involved is simply this, that the one spring serves as a support for the other—the one preventing the other from overstrain—whether up or down in its action, and thus prevents the fracture of either; also, neither end of the springs can be moved without a corresponding movement being transmitted to the opposite ends, by reason of their connection to the double cranks shown and described, so that when they are used as “side springs” both ends of the body secured to the central cross-bars H H are depressed alike, or very nearly

so, and when used as “end springs”—as a substitute for the elliptic springs—both sides of the body will be depressed together and thus prevent “side motion.” In the “side-spring” modification “side motion” is prevented by the interposition of the connecting-rods E E', while the “end motion” is prevented by the action of the springs themselves, as already described.

Claims.

I claim—

1. The two separate springs A and B, secured together at or near their centers, and their outer ends supported and operated upon the opposite ends of the double cranks C C' and bearings D D', substantially as and for the purpose specified.

2. The connecting-rods E E', in combination with the double cranks C C', springs A and B, as and for the purpose set forth.

CYRUS W. SALADEE.

Witnesses:

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