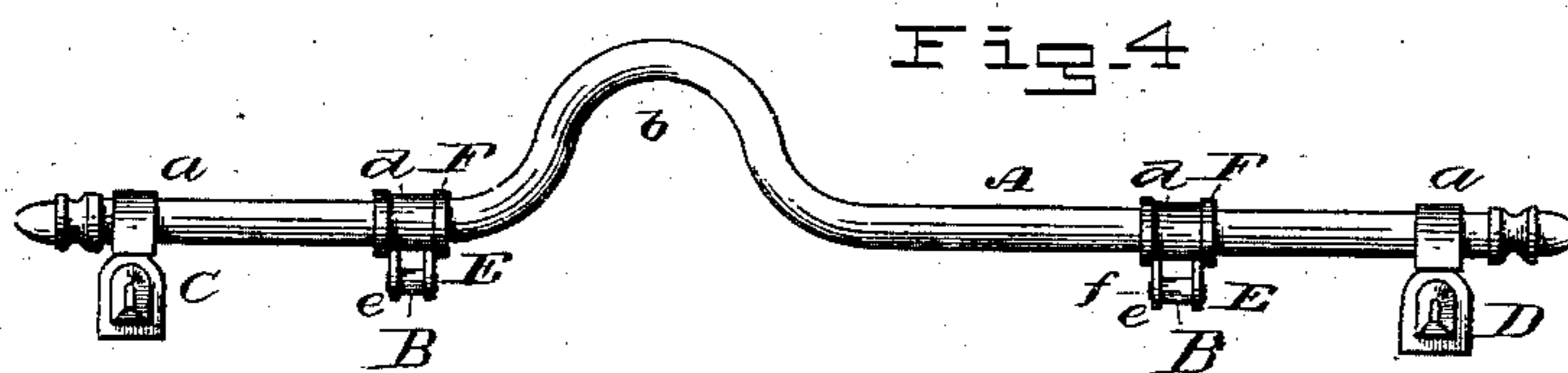
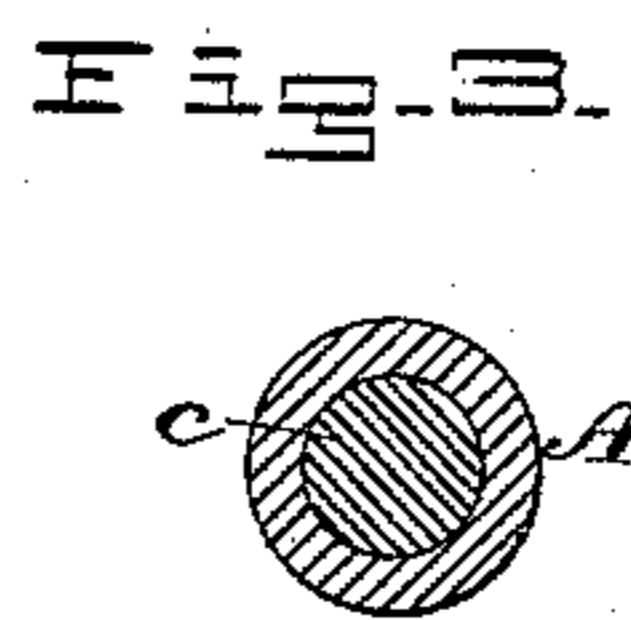
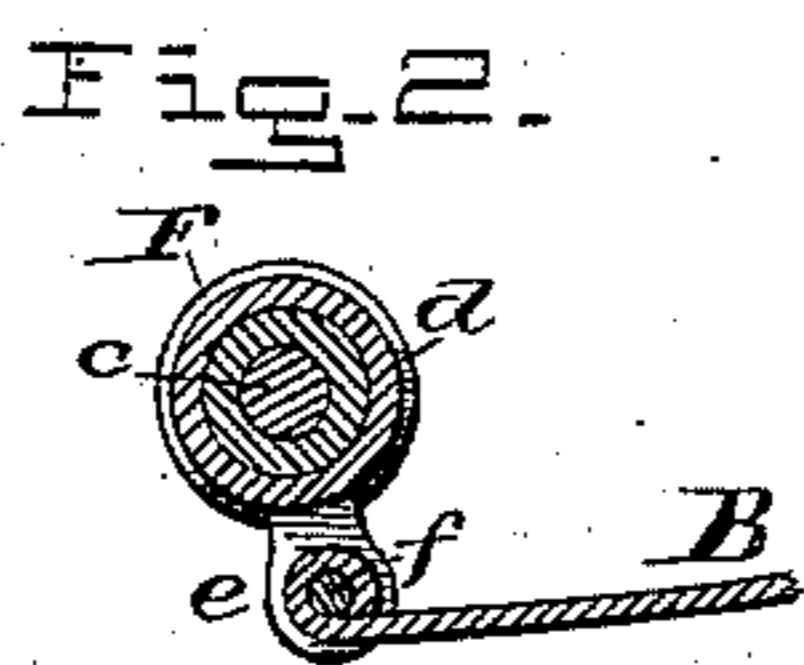
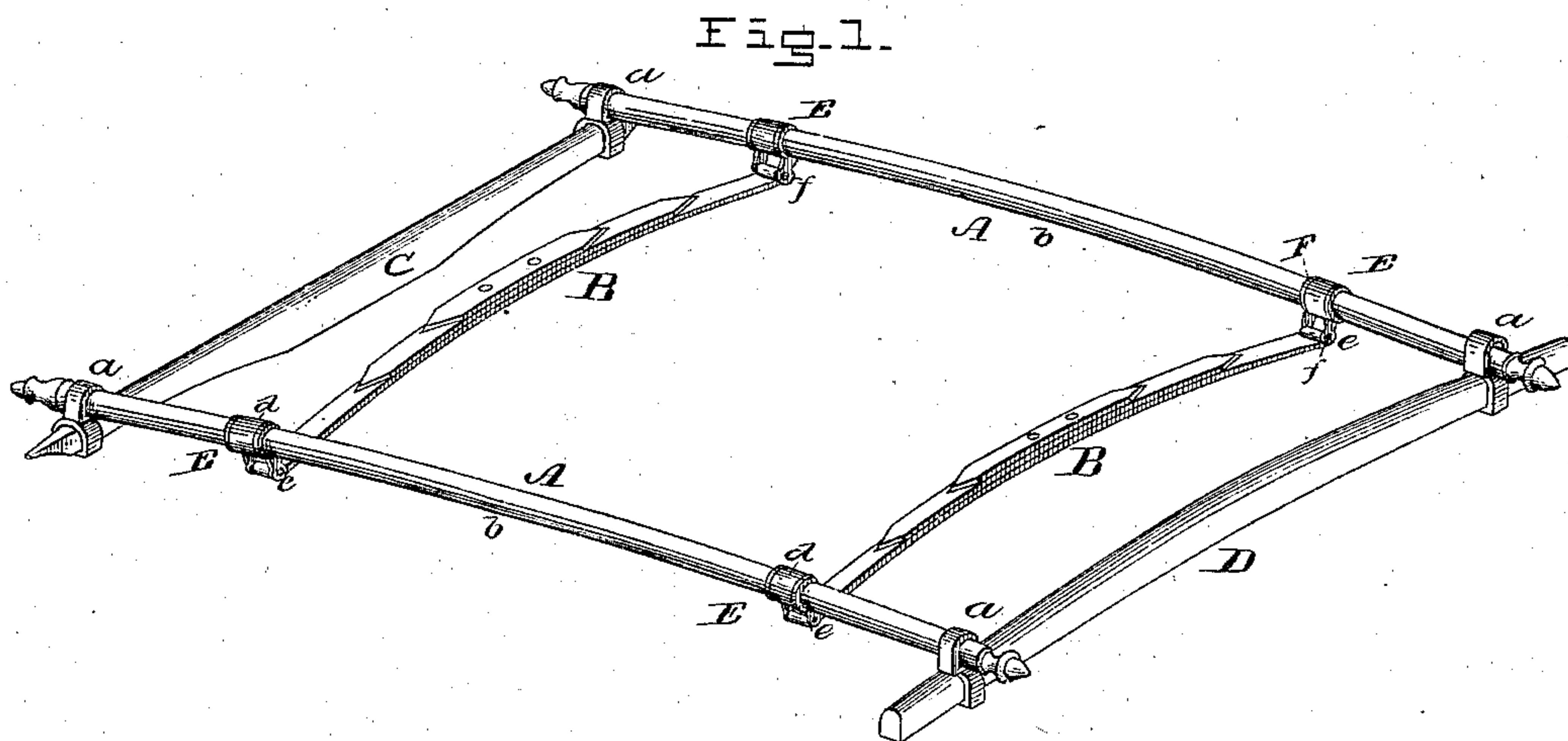


(No Model.)

N. NILSON.
SIDE BAR VEHICLE.

No. 262,974.

Patented Aug. 22, 1882.



WITNESSES:

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UNITED STATES PATENT OFFICE.

NILS NILSON, OF MAPLE PLAIN, MINNESOTA.

SIDE-BAR VEHICLE.

SPECIFICATION forming part of Letters Patent No. 262,974, dated August 22, 1882.

Application filed May 12, 1882. (No model.)

To all whom it may concern:

Be it known that I, NILS NILSON, of Maple Plain, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Side-Bar Vehicles, of which the following is a specification.

My invention relates to "side-bar" vehicles; and it consists in forming the side bars of metal and bending or curving them to permit the wheels of the vehicle to run under, and in attaching the springs to the side bars by swinging clips or stirrups, whereby they are permitted to lengthen or straighten under the weight of the load without forcing the side bars apart or twisting or turning the same.

In the drawings, Figure 1 represents a perspective view of a pair of side bars and springs constructed in accordance with my invention, but without the bend or curve; Fig. 2, a cross-section showing the attachment of the springs; Fig. 3, an enlarged sectional view of the side bar in a preferred form; Fig. 4, a side elevation.

As heretofore constructed side-bar buggies and vehicles have been objectionable because of the impossibility of making short turns, while in other respects they are generally preferred to other styles. To overcome this objection I form the side bars of metal, preferably of tubular form, and with or without a filling of wood or other material, and I so bend or curve said side bars that the wheels may pass under them a considerable distance or entirely without coming in contact therewith. The metal side bar, whether solid or hollow, will ordinarily be of circular form in cross-section. Hence the stirrups or hangers by which the springs are attached or connected can be made to encircle and swing about the side bar as an axis, suitable stops being provided to prevent the movement of the hangers from their proper positions.

In the drawings, A A represent my improved side bars; B B, the springs applied thereto; C, the front bolster or cross-bar, and D the rear axle. The side bars are firmly secured to the bolster or cross-bar and the rear axle, as usual, by clips *a* or other fastening devices, and are curved or bent upward at a point between their ends, as shown at *b*, the curve or bend being either one continuous curve or arch from end to end or a shorter curve at

the point where the front wheels are to pass under the side bar. In practice I prefer to form the side bars of metal tubing, and to fill the interior with a tough wood core or filling, *c*, as shown in Fig. 3, though I do not limit myself to such construction. The springs B B are attached to or connected with the side bars by hangers or stirrups E, consisting of a tubular sleeve or body, *d*, encircling the side bar, and provided with depending arms or ears *e*, between which the end of the spring is placed, a bolt, *f*, being passed through said arms or ears and through the eye formed in the end of the spring, as indicated, thereby forming a loose joint, which permits the necessary play of the spring and the hanger. The hangers or stirrups are kept in position upon the side bars by collars F, which may be shrunk upon the side bars, or fastened and held in place by set-screws, pins, or equivalent means. The side bar, being of cylindrical form, serves as a journal or axle for the hangers, which swing or turn freely thereon. It will be seen therefore that when the springs B, which are arched or raised in the middle, are straightened or lengthened by the weight of the load above them, the stirrups or hangers will be pressed outward, swinging or turning freely upon the side bars, which are therefore not pressed outward or forced apart or twisted and wrenched, as under the ordinary construction. By this arrangement I not only avoid the severe strain upon the side bars, but I secure a much freer and more sensitive action of the spring, and I overcome much of the side play of the vehicle-body.

It is apparent that the curve or bend *b* may be made in a horizontal direction or at any angle between that and a vertical position, the bend being inward toward the body, though the vertical arrangement is preferred.

The side bars may be made of cylindrical form between the collar F to accommodate the hangers, and of different form at other points in their length.

I am aware that links have been applied to springs to afford free play, and make no broad claim thereto.

I am also aware that it is not broadly new to arch a side bar or raise it between its ends, and that various parts of vehicles have been made of metal tubing.

So far as I am aware, however, a tubular metallic side bar has never been proposed.

Having thus described my invention, what I claim is—

- 5 1. As a new article of manufacture, a cylindrical metal side bar for vehicles, provided with a curve or bend, whereby it is adapted to clear the wheels of the vehicle to which it is applied.
- 10 2. As a new article of manufacture, a tubular metallic side bar for vehicles, formed with a curve or bend, *b*, at a point between the ends, as and for the purpose set forth.
- 15 3. In combination with cylindrical side bars, *A*, hangers *E*, each consisting of a sleeve, *d*, and arms *e*, applied to the bar, as shown, and a spring, *B*, jointed at its ends to the arms *e*, substantially as shown and described.

4. The combination of side bars, *A A*, springs *B B*, hangers *E*, bolster *C*, and axle *D*, all arranged and operating substantially as set forth. 20

5. In combination with a side bar provided with collars *F*, and made of cylindrical form between said collars, a hanger, *E*, substantially such as shown, applied to the side bar between the collars. 25

6. The side bar, *A*, provided with collars *F*, and with a cylindrical portion between said collars, as shown and described.

NILS NILSON.

Witnesses:

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