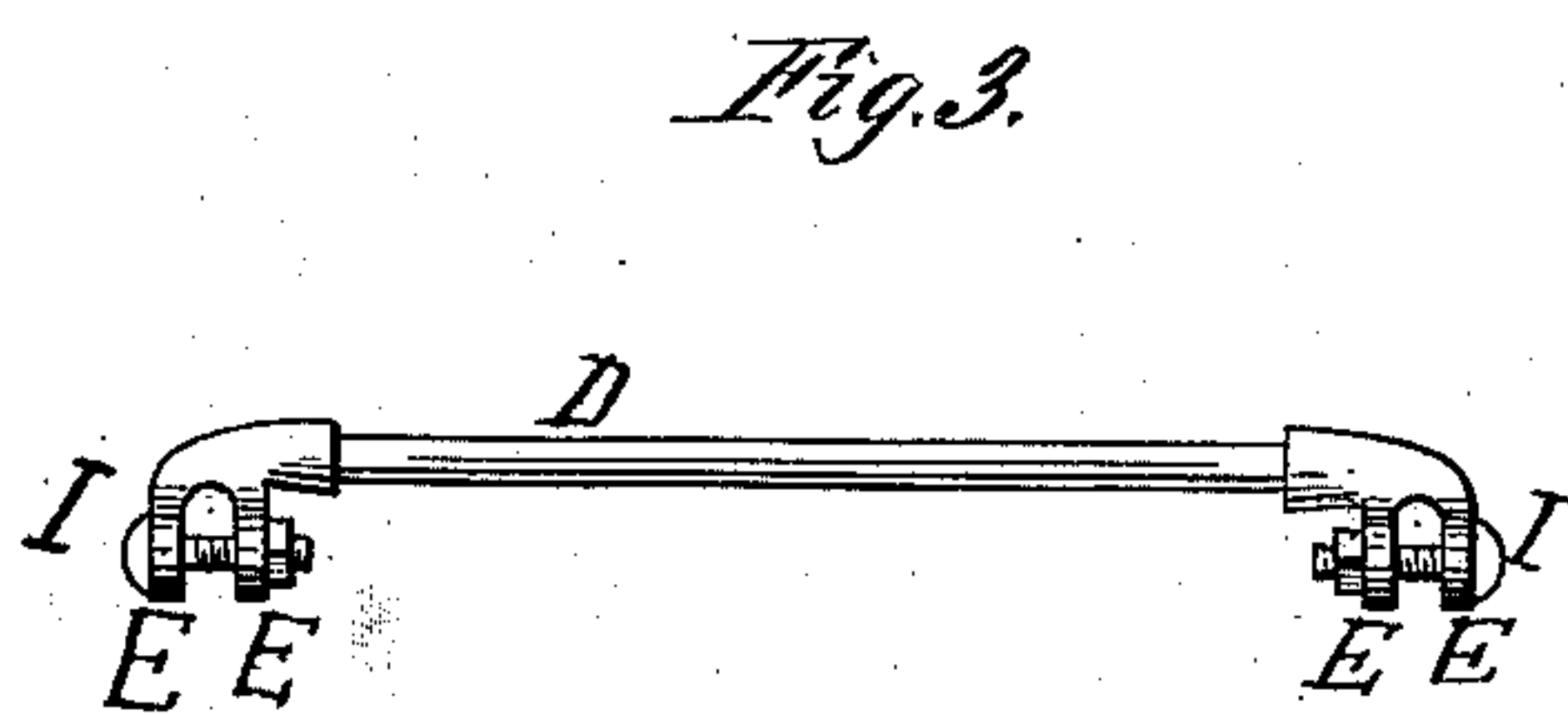
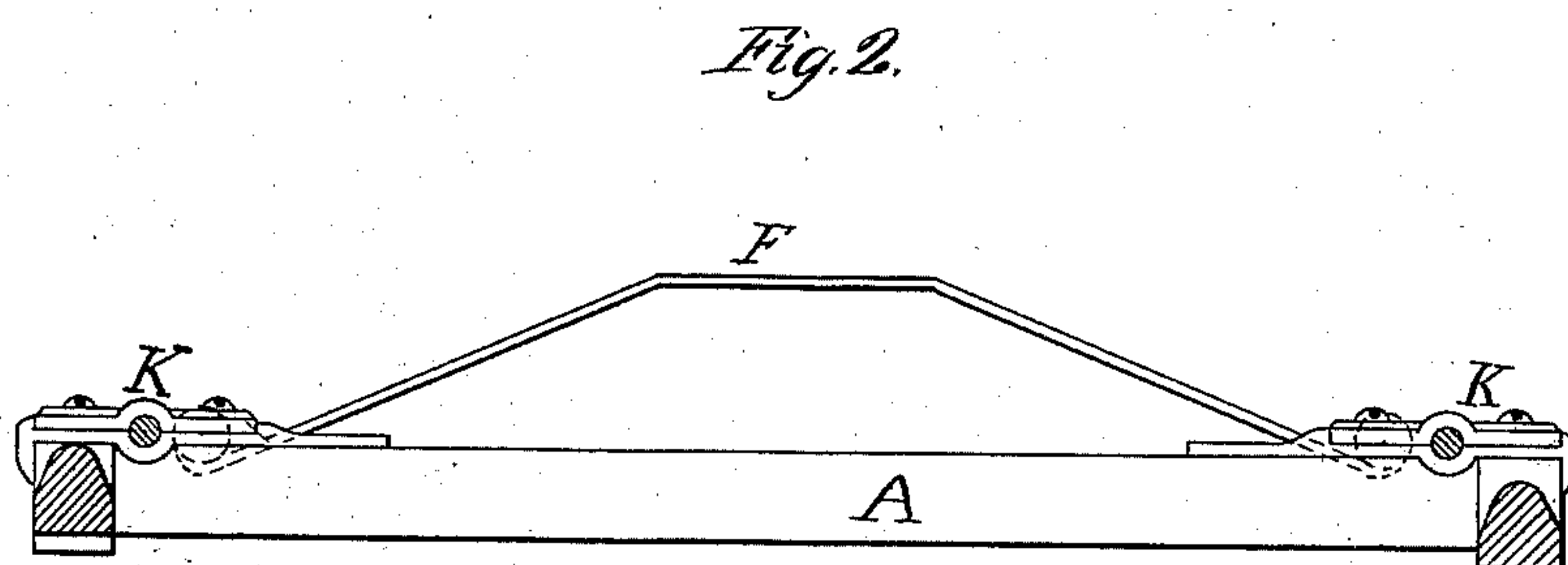
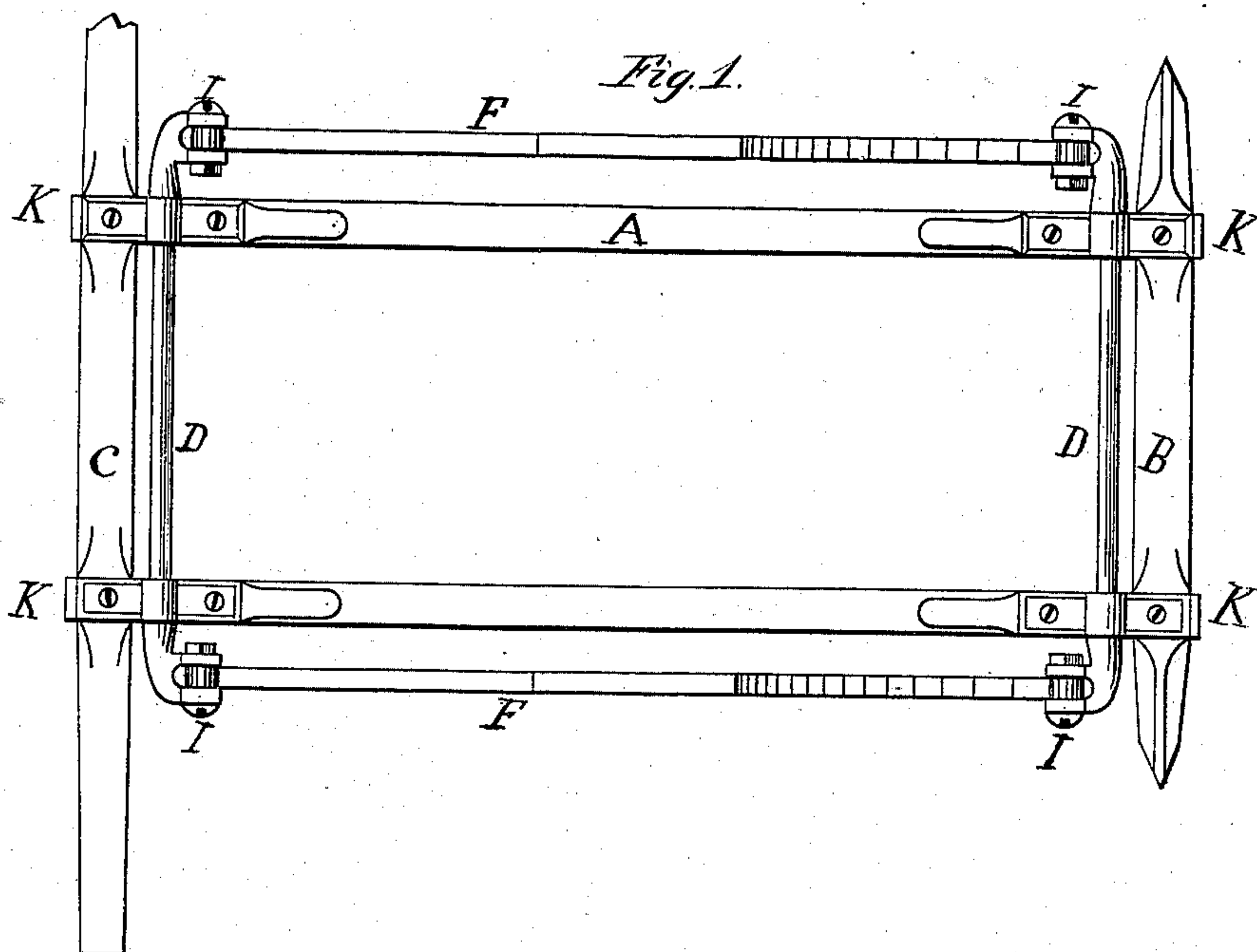


G. PENNOYER.
SIDE SPRING BUGGY.

No. 254,839.

Patented Mar. 14, 1882.



Witnesses:
F. B. Leonard
Frank Sayre Osborne

Inventor:
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Attorney

UNITED STATES PATENT OFFICE.

GEORGE PENNOYER, OF CHICAGO, ILLINOIS.

SIDE-SPRING BUGGIES.

SPECIFICATION forming part of Letters Patent No. 254,839, dated March 14, 1882.

Application filed December 30, 1879.

To all whom it may concern:

Be it known that I, GEORGE PENNOYER, of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Side-Spring Buggies, which improvements are fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a top view. Fig. 2 is a side view. Fig. 3 is a view of one of the equalizing-bars to which the springs are attached.

The nature and object of this invention are to provide a cheap and safe method of constructing and arranging the equalizing-bars with other immediate parts of the buggy, whereby certain defects heretofore existing in side-spring buggies are obviated.

Similar letters of reference refer to similar parts in the different drawings.

A A are side bars or reaches, extending from the rear axle to the head-block B.

DD are equalizing-bars, attached to the front and rear ends of the reaches A A in the manner hereinafter shown. At each end of these equalizing-bars are two arms, E E, made clevis shape and forged from these equalizing-bars. Between these two arms E E the ends of the springs F F are inserted and fastened thereby means of the bolt I. This equalizing-bar D works in boxes K K on the reaches A A. These boxes are located near the ends of the reaches, and are made by utilizing for this purpose the common iron strap that is placed over the ends of the reaches and rear axle and head-block B. This is used for the lower portion of the box. This iron or strap serves the double purpose of the box for the equalizing bar D and the ordinary purposes of ironing the ends of the reaches. A cap-piece is placed over the iron or strap and fastened there by means of bolts. A recess is formed in each piece to receive the journal of the equalizing-bar. Thus the equalizing-bars form journals, and work in their boxes K K. These equalizing-bars have shoulders forged on them near each end, as shown in Fig. 3, and when placed in the boxes these shoulders fit snugly against the outer edges of the boxes, thus preventing any longitudinal movement.

The springs F F are of the ordinary semi-elliptic kind.

I have found by experience that in making

the equalizing-bar as herein shown—that is, with the arms E E forged from and part of the bar and in clevis form or shape—it is stronger and less liable to get out of order, and also by using boxes made as herein shown and located upon the reaches greater economy is accomplished and greater strength secured.

One great difficulty in equalizing-bars hitherto used has been the twisting or winding effect upon the rear axle and head-block, caused by suspending the equalizing-bars from them. The pressure from the springs is thus all thrown to one side of each, and when a heavy weight is in the buggy this twisting or winding strain is very great on both the rear axle and head-block.

I am aware that to accomplish the equalizing of the pressure upon the two springs various devices have been used, and that equalizing-bars have been employed; but none of them include my invention. I will refer to a few of these devices. Joshua Jones, Allen M. Ellis, and Horace Griswold obtained a patent dated July 16, 1833, and No. 842, wherein are shown the equalizing-bars; but one of these bars is hinged to the rear axle and the other to the head-block. Anson C. Stowe, under date of November 24, 1868, and No. 84,316, and December 22, 1868, and No. 85,144, obtained patents for certain improvements in side-spring buggies. In the first one are shown equalizing-bars at front and rear end of the gear. Each rests upon posts set in rear axle and head-block, and controlled by a C-spring. In the second one are shown equalizing-bars of peculiar shape at front and rear ends of the reaches. The equalizing-bars are bent levers of peculiar shape, and are not connected directly with the side springs, and also have a rod connecting them between the reaches. The elliptic springs are connected directly with the rear axle and head-block. This does not include my invention, as it does not do away with the twisting or winding effect of the springs upon the axle and head-block. John A. Topliff and George H. Ely obtained a reissue No. 7,017, dated March 28, 1876, on improvement in connecting springs to vehicles. In this reissue are used two equalizing-bars and side springs; but the bars are suspended directly from the rear axle and head-block, and in a marked degree is presented in this reissue the objectionable fea-

ture of the winding or twisting effect upon the axle and head-block, which in my improvement is entirely obviated. By locating the equalizing-bars on the reaches, as herein shown, no twisting or winding effect is produced upon the axle or head-block.

It is a well-known fact that when force is applied to either wood or iron or any kind of metal in a winding or wrenching direction it produces a separation of the particles with greater ease and facility than when directly applied. This is well illustrated in that class of side-spring buggies that suspend the equalizing-bars from rear axle and head-block, as the weight of the occupants of the buggy is finally exerted on the head-block and rear axle in this form, which very soon destroys both.

I am also aware of the Canada patent granted to John McBride, No. 218,012. In this patent are used yielding reaches, and the side

springs are suspended from the head-block and rear axle, and the half-clip referred to is not constructed nor is it used in the manner herein shown; hence this does not include nor does it embrace my invention.

I claim as follows and desire to secure by Letters Patent—

The combination of the rigid reaches A, springs F, and equalizing-bars D, the equalizing-bars D being located in bearings on top of reaches A, said bearings consisting of a strap or tip iron having a recess in its upper face, and a cap-piece similarly recessed and secured upon the strap by bolts or screws, whereby the removal of the equalizer-bar at any time is permitted.

GEO. PENNOYER.

Witnesses:

B. H. WELLER,
F. SAYRE OSBORNE.