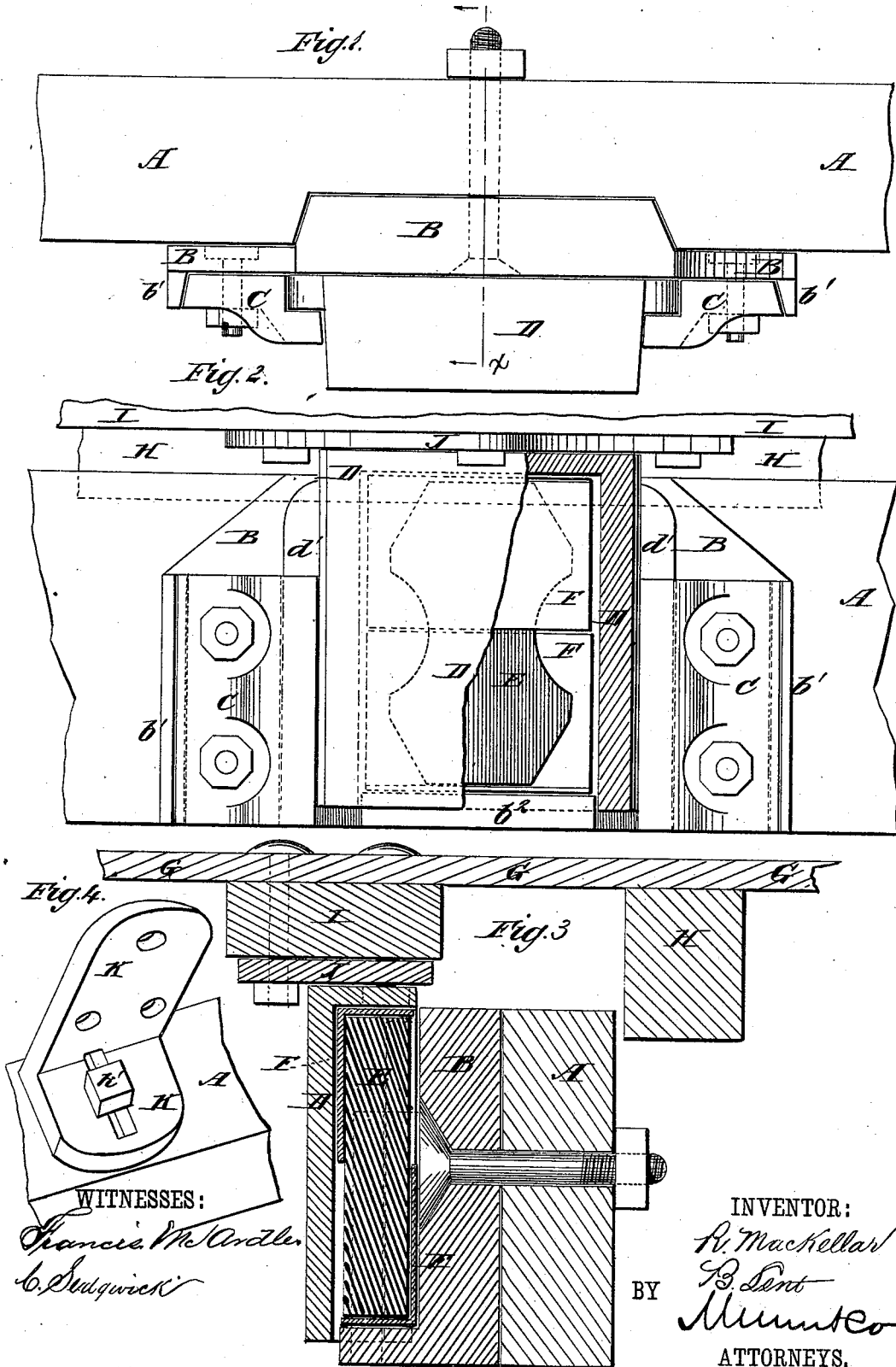


R. MACKELLAR & B. LENT.
Vehicle-Spring.

No. 211,754.

Patented Jan. 28, 1879.



UNITED STATES PATENT OFFICE.

ROBERT MACKELLAR AND BENSON LENT, OF PEEKSKILL, NEW YORK.

IMPROVEMENT IN VEHICLE-SPRINGS.

Specification forming part of Letters Patent No. **211,754**, dated January 28, 1879; application filed November 5, 1878.

To all whom it may concern:

Be it known that we, ROBERT MACKELLAR and BENSON LENT, of Peekskill, in the county of Westchester and State of New York, have invented a new and useful Improvement in Wagon-Springs, of which the following is a specification:

Figure 1 is a top view of one of our improved springs, shown as applied to the bolster of a wagon. Fig. 2 is a front view of the same, partly in section to show the construction. Fig. 3 is a vertical section of the same, taken through the line *x x*, Fig. 1, and showing the bottom of the wagon-body in place upon it. Fig. 4 is a perspective view of an attachment to be used with light wagons.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish improved springs for wagons, which shall be simple and neat in construction, easily applied, and reliable in use, not being liable to break, get out of order, or be in the way.

The invention consists in the combination of the plate provided with the side flanges and the bottom flange, the side plates rabbeted upon the inner sides of their inner edges, the box open upon its inner side and lower end, and provided with the side flanges, and the spring or springs with each other, to adapt them to be attached to a bolster of a wagon to give an elastic support to the body of the said wagon, as hereinafter fully described.

A represents the bolster of a wagon, to the side of which is bolted an iron plate, B, having flanges *b¹* along the outer sides of its side edges, for the outer edges of the side plates, C, to abut against. The side plates, C, have the inner sides of their inner edges rabbeted to receive the side flanges, *d'*, of the box D, and are bolted to the side parts of the plate B.

The box D is made with its inner side and lower end open to form a cavity to receive the rubber or other spring, E, the lower end of which rests upon a flange, *b²*, formed upon the lower part of the plate B.

The friction between the spring E and the plate and box B D may be lessened by plates F interposed between them, as shown in Figs. 2 and 3.

If desired, a lighter spring may be used in connection with the main spring E, to make the spring more elastic when carrying a light load.

G is the bottom of the wagon-body, to which is attached a cross-bar, H, which passes along the opposite side of the bolster A from the spring, to keep the wagon-body in place. To the bottom G is also attached a thin cross-bar, I, to rest upon the upper end of the box D, and which is protected from wear by an iron plate, J, attached to it.

In the case of light wagons the upper flange of an angle-iron, K, may be bolted to the bottom G, or to the cross-bar I, attached to it. The lower part or flange of the angle-iron K is slotted to receive the bolt *k'*, by which it is secured to the bolster A, to give it the necessary play as the spring E is compressed and expands. Two or more of the springs should be connected with each bolster of the wagon.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

The combination of the plate B, provided with the side flanges, *b¹*, and the bottom flange, *b²*, the side plates, C, rabbeted upon the inner sides of their inner edges, the box D, open upon its inner side and lower end, and provided with the side flanges, *d'*, and the spring or springs E with each other, to adapt them to be attached to a bolster, A, of a wagon, to give an elastic support to the body of the said wagon, substantially as herein shown and described.

ROBERT MACKELLAR.
BENSON LENT.

Witnesses:

FRANKLIN COUCH,
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