

J. B. QUIRK.
Car-Springs.

No. 138,433.

Patented April 29, 1873.

Fig. 1.

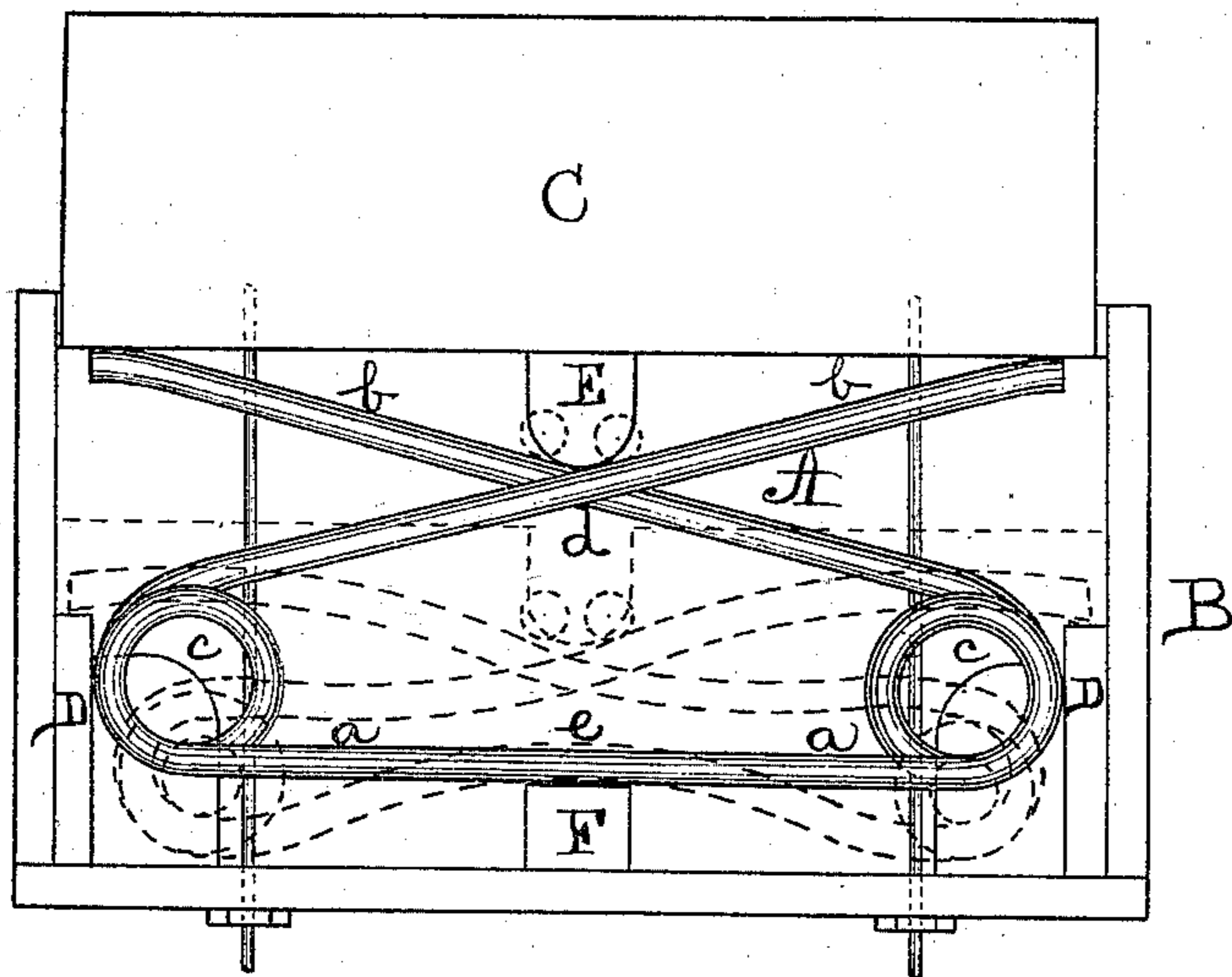
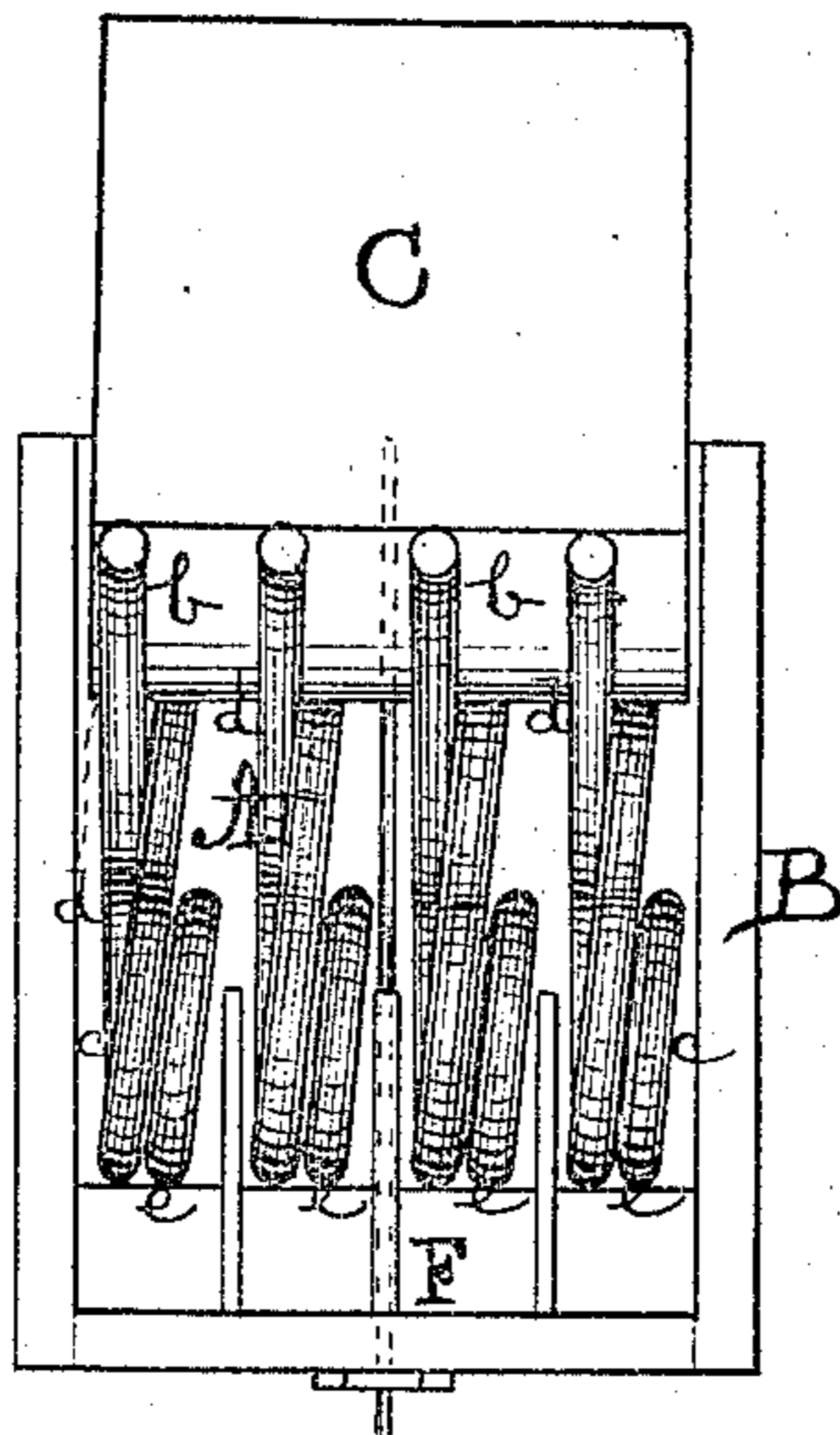


Fig. 2.



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UNITED STATES PATENT OFFICE

JOHN B. QUIRK, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN CAR-SPRINGS.

Specification forming part of Letters Patent No. **138,433**, dated April 29, 1873; application filed March 27, 1873.

To all whom it may concern:

Be it known that I, JOHN B. QUIRK, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Springs; and I do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which my invention appertains, to fully understand and make and use the same, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a face view of the device embodying my invention. Fig. 2 is an end view thereof.

Similar letters of reference indicate corresponding parts in the two figures.

This invention consists, in part, of a spring which is constructed of a continuous piece of metal bent and coiled and having its ends free and crossing each other. It also consists, in part, in shelves in a casing, within which the springs are arranged for staying or supporting the ends of the spring. It also consists, in part, in a stud, which bears against the spring at or about the points of crossing of the ends thereof. It also consists, in part, of a bearing-block for supporting the spring and operating in connection with the stud which bears on the spring. It also consists, in part, in the combination of the case, follower, and one or more springs.

Referring to the drawing, A represents the spring, which is constructed of a continuous piece, bar, strip, or rod of metal; and consists of the central portions *a*, the ends *b b*, and the intermediate coils or bends *c c*. The ends *b b* extend from the coils *c c* in opposite directions, so as to cross each other, as at *d*; and said ends are free and constitute the commencement of the spring. B represents a casing for the spring, and C a follower secured to the truck of a car, or a proper portion of the body of a vehicle, which follower or portion bears against the spring and rests on the free ends thereof. It will be seen that the spring possesses great range of motion or power, owing to the length of spring from the coils to the free ends due to the crossing of the latter. D represents shelves, which are formed on opposite sides of the inner face of

the casing B, and occupy such positions that when the free ends of the spring are compressed to such an extent that they reach the shelves, the latter stay or support the said ends and prevent them from engaging with, crushing, or fracturing the coils *c c*. On the lower side of the follower or portion C I arrange a stud, E, consisting of a transverse block or piece, and bearing on the spring at or about the points of crossing of the free ends thereof.

When the spring is so compressed that the free ends are horizontal or nearly so, or reach the shelves D, the stud presses centrally and solidly on the spring at the crossing of the free ends, thereby curving the same and compounding the motion thereof. The resisting action of the spring is still further increased by a bearing-block, F, which is placed on the bottom of the casing B and supports the central portion of the spring at *e*, so that when the stud E performs its function the block holds the said central portion at *e*, but causes the adjacent parts and the coils to bend or curve, as seen in the dotted lines Fig. 1, whereby the spring, though possessing sufficient elasticity without stiffness, is exceedingly powerful and resistant.

A number or nest of springs may be employed with the casing B, in which event they should be separated by division-plates to preserve the individuality and freedom of each spring.

Friction-rollers may be arranged or mounted on the stud E to move on the ends of the spring or springs for obvious reasons.

The follower or portion C will be guided in its motions in the casing B by means of rods or other suitable appliances.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The spring A, constructed of a continuous piece coiled or bent at *c*, crossed at *d*, and having free ends *b b*, substantially as and for the purpose set forth.

2. The casing B formed with the shelves D, arranged to operate in relation to the free ends of the spring, substantially as and for the purpose set forth.

3. The stud E of the follower or portion C,

in combination with the crossed ends of the spring, substantially as and for the purpose set forth.

4. The bearing-block F supporting the spring, in combination with the stud E, substantially as and for the purpose set forth.

5. The casing B with shelves D and bearing-block F, and the follower or portion C with

stud E, in combination with the spring A having crossed ends, substantially as and for the purpose set forth.

The above signed by me.

JOHN B. QUIRK.

Witnesses:

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