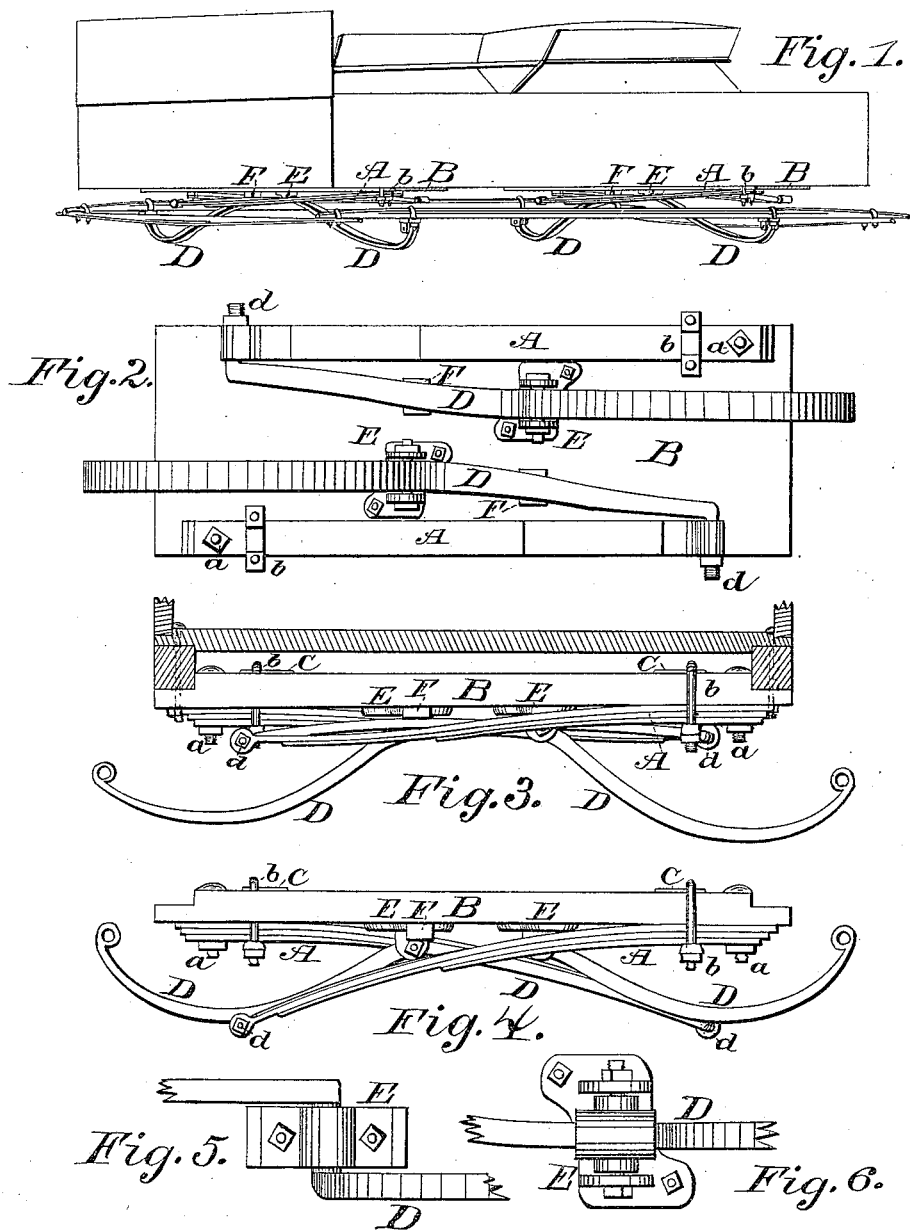


(No Model.)

L. PENTZ.
VEHICLE SPRING.

No. 306,770.

Patented Oct. 21, 1884.



Witnesses:
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Att

UNITED STATES PATENT OFFICE.

LEVI PENTZ, OF CANTON, OHIO.

VEHICLE-SPRING.

SPECIFICATION forming part of Letters Patent No. 306,770, dated October 21, 1884.

Application filed June 2, 1884. (No model.)

To all whom it may concern:

Be it known that I, LEVI PENTZ, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have
5 invented certain new and useful Improvements in Vehicle-Springs; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a
10 part of this specification, and to the letters and figures of reference marked thereon, in which—

Figure 1 shows the general construction and arrangement of my invention. Fig. 2 is an under side view. Fig. 3 is a side view.
15 Fig. 4 is a side view showing the position of the different parts when sprung. Fig. 5 is a detached view of a different form of lever. Fig. 6 is a detached view of a different form
20 of jack or bearing for levers.

This invention has relation to that class of vehicle-springs known as "side-bar" springs; and the objects thereof are to construct the springs and connect them to the side bars of
25 the vehicle in such a manner that the friction is greatly reduced, and the springs allowed to operate without strain on the bars, and at the same time will have an elliptic motion.

To such ends the invention consists in the combination of devices hereinafter described and claimed.

In the accompanying drawings, A represents the springs, which are substantially of the form shown in the drawings, and may be
35 composed of any desired number of leaves, the leaves being held together by the clamping-bolt *a*. Two or more bolts may be used, if desired. Said bolt or bolts *a* pass through the cross bars or frames, as shown in Fig. 3.
40 The springs A are rigidly held to the cross bars or frames B by means of the clips *b*, which embrace the springs at their outer ends and a portion of the cross bars or frames. A metallic plate, C, is provided for the purpose of
45 protecting the cross bars or frames B. The springs A are formed so that their inner ends will come a short distance below the cross bars or frames, as seen Figs. 1 and 2.

To the inner ends of the springs A are attached the levers D, by means of the arms *d*,

and are attached so as to form a hinge or joint. These levers D are attached to the cross bars or frames B by means of suitable shackle-jacks, E, which are located as shown
55 in Figs. 2, 3, and 4. The form of said shackle-jacks may be varied, as shown in Fig. 6, the levers D being attached so as to form a hinge for the movements of said levers. These levers D may, if desired, be formed as shown in
60 Fig. 5, and attached to the cross bars or frames B by a bearing, as seen in said Fig. 5.

To the bottom or under side of the cross bars or frames B are attached the cushions F, which may be made of rubber or any other
65 suitable elastic material, and are for the purpose of preventing the levers D from striking violently against the cross bars or frames B. The outer ends of the levers D are attached to the side bars of the vehicle by means of suitable clips in the ordinary manner.
70

It will be seen that by attaching the springs A as shown in the drawings I am enabled to produce a spring that will have what is known as an "elliptic motion," and at the same time
75 am enabled to provide a spring which will be strong and well adapted for the purpose designed. It will also be seen that by attaching the levers D to the cross bars or frames B, as shown in Fig. 2, I am enabled to provide a compound leverage for the movements of the
80 springs proper.

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

The combination of the cross bar or frame
85 B, the springs A, secured at one end thereto, the lever D, hinged at one end to the free ends of springs A, and extended toward the opposite ends of said springs, and secured at a point intermediate of its ends to said cross
90 bar or frame, and the cushions F, interposed between the cross bar or frame and the levers, substantially as described.

In testimony that I claim the above I have hereunto subscribed my name in the presence
95 of two witnesses.

LEVI PENTZ.

In presence of—

ROBERT D. KUHN,
E. S. ECKIS.