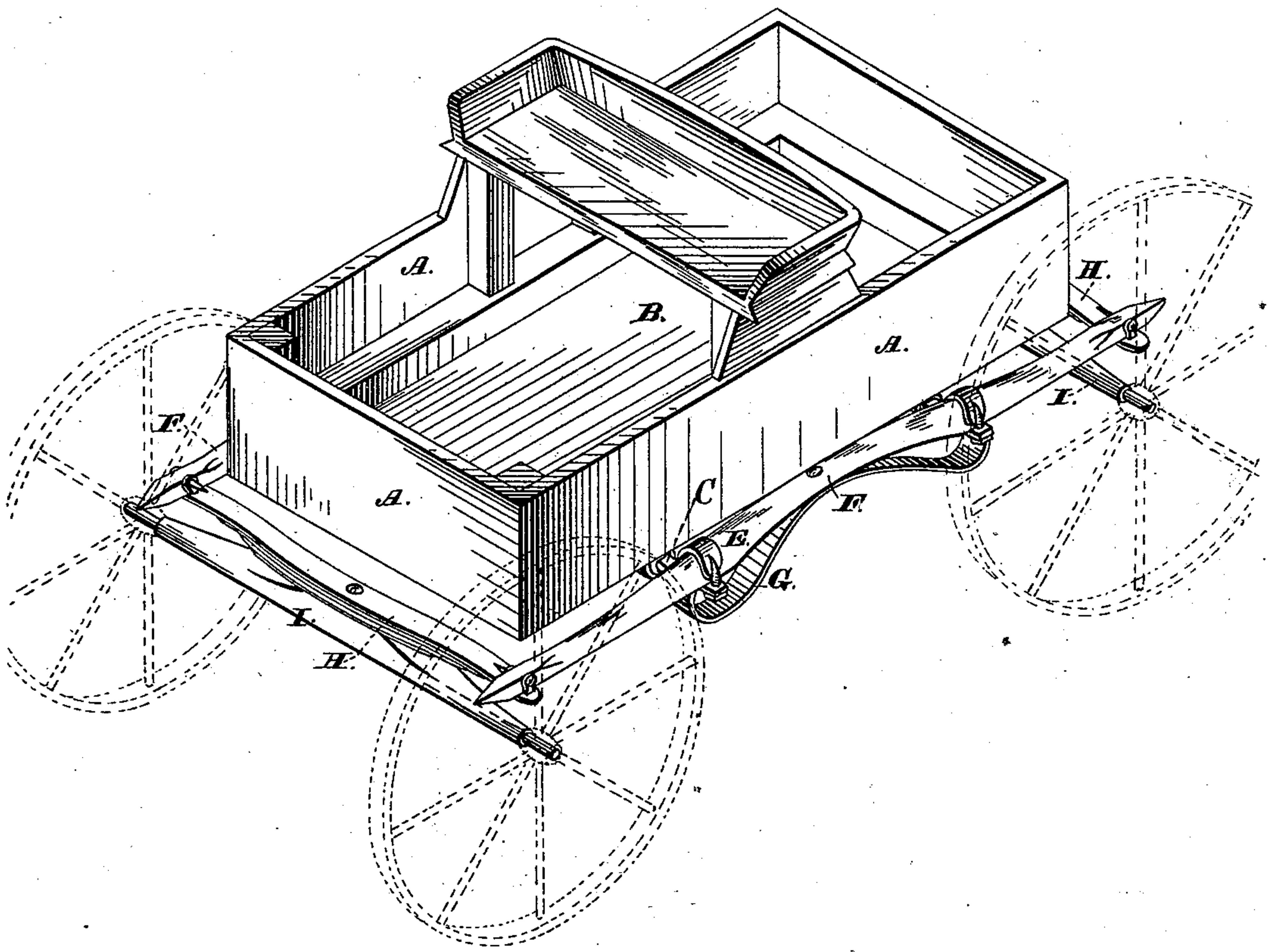


F. J. FLOWERS.
Vehicle-Spring.

No. 227,233.

Patented May 4, 1880.

Fig-1.



WITNESSES=

Geo. E. Hutchinson.
Henry C. Hazard.

INVENTOR.

F. J. Flowers, by
Geo. S. Prindle, his Att'y

F. J. FLOWERS.
Vehicle-Spring.

No. 227,233.

Patented May 4, 1880.

Fig. 2.

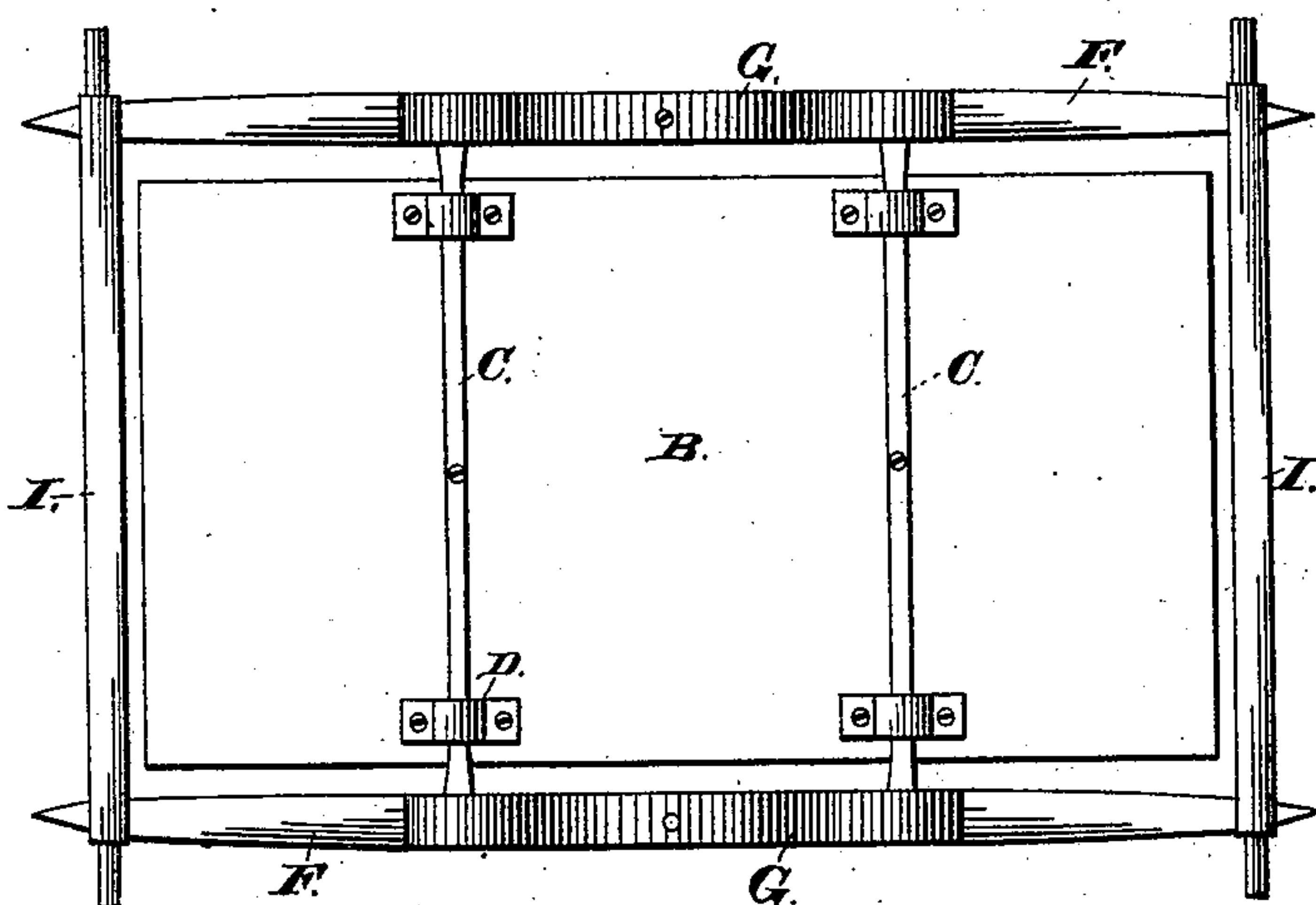


Fig. 3.

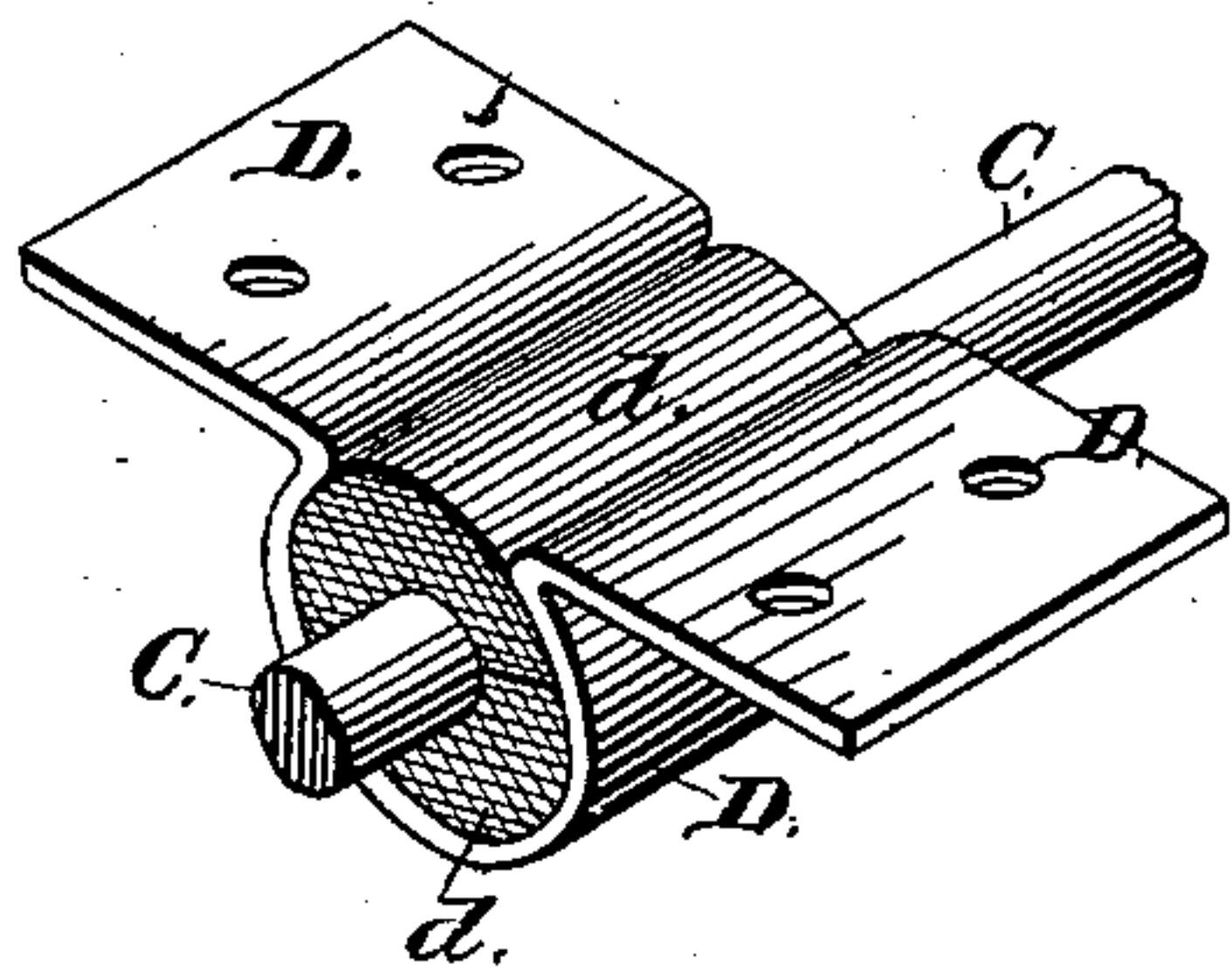
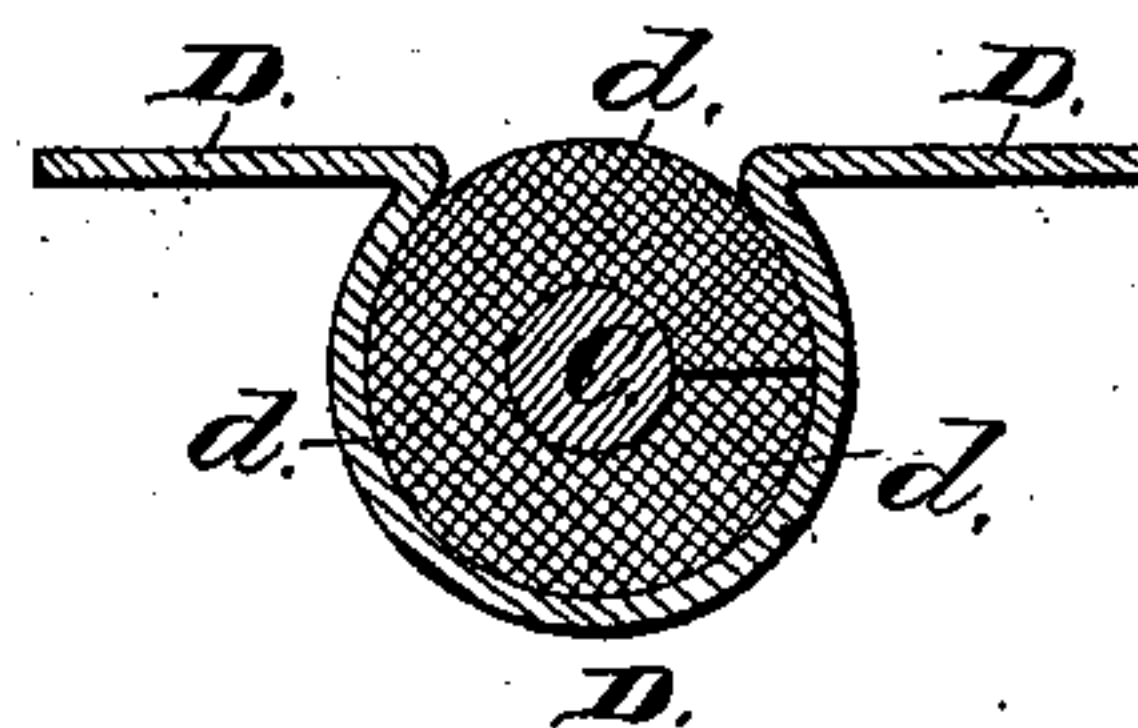


Fig. 4.



WITNESSES=

Jas. E. Hutchinson.
Henry C. Hazard.

INVENTOR.

F. J. Flowers, by
Geo. L. Prindle, his Atty

UNITED STATES PATENT OFFICE.

FRANCIS J. FLOWERS, OF NEW YORK, N. Y.

VEHICLE-SPRING.

SPECIFICATION forming part of Letters Patent No. 227,233, dated May 4, 1880.

Application filed November 12, 1879.

To all whom it may concern:

Be it known that I, FRANCIS J. FLOWERS, of New York, in the county of New York, and in the State of New York, have invented certain new and useful Improvements in Wagons; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of a wagon provided with my improved springs. Fig. 2 is a plan view of the lower side of the same. Fig. 3 is an enlarged perspective view of one of the journals of the cross-bars. Fig. 4 is a longitudinal section of the same.

Letters of like name and kind refer to like parts in each of the figures.

The object of my invention is to produce a comparatively noiseless wagon; and to this end it consists, principally, in the means employed for connecting together the cross-bars and body, substantially as and for the purpose hereinafter set forth.

It consists, further, in the combination of the cross-bars, side bars, and supplemental springs, substantially as and for the purpose hereinafter shown and described.

In the annexed drawings, A represents a wagon-body of usual form, provided with a bottom frame, B, at its inner lower side.

Secured to or upon the lower side of the body, at points about one-third its length from each end, are two cross-bars, C, which are rigidly attached to the bottom B at their centers, and from thence extend laterally outward and slightly downward, and near the side edges of said bottom pass through metal journal-boxes D, that are secured to or upon the latter.

Each box D has interiorly several times the diameter of the cross-bar C, and contains a rubber block, *d*, that closely fills said interior and fits tightly around said cross-bar.

By means of the rubber-blocks or fillings between the cross-bars C and the boxes D the jar and noise of the running-gear are deadened and prevented from being transmitted to the body, the result being a comparatively noiseless vehicle.

The projecting ends of the cross-bars C are each flattened and provided with holes that receive the ends of a clip, E, which clip passes over a wooden side bar, F, and confines the latter firmly upon said cross-bar. Each side bar, F, has a slightly arching form longitudinally, and between the clips E is cut away upon its lower side, as shown in Fig. 1.

At the longitudinal center of each bar is secured a metal spring, G, which from thence extends in opposite directions forward or rearward and downward to or near each of said clips, and thence in a curve upward and inward, and has its end confined between the lower face of said side bar and the upper face of the contiguous end of one of the cross-bars C.

The object sought by the attachment of the metal springs G to the central portions of the side bars, F, is to increase the elasticity of the latter, which result is secured and the appearance of said side bars materially improved.

The ends of the side bars, F, rest upon and are connected to the ends of semi-elliptic springs H, which springs at their centers rest upon bolsters I in the usual manner.

The wagon described is easy to its occupants, and is practically noiseless when driven over ordinary pavements.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. In combination with the bottom B and cross-bars C, the boxes D, provided interiorly with rubber blocks *d*, which closely embrace said bars, substantially as and for the purpose set forth.

2. The cross-bars C, side bars, F, and supplemental springs G, combined by means of the clips E, substantially as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 8th day of November, 1879.

FRANCIS J. FLOWERS. [L. S.]

Witnesses:

DAVID DE LONG,

CHAS. E. DEPPERMAN.