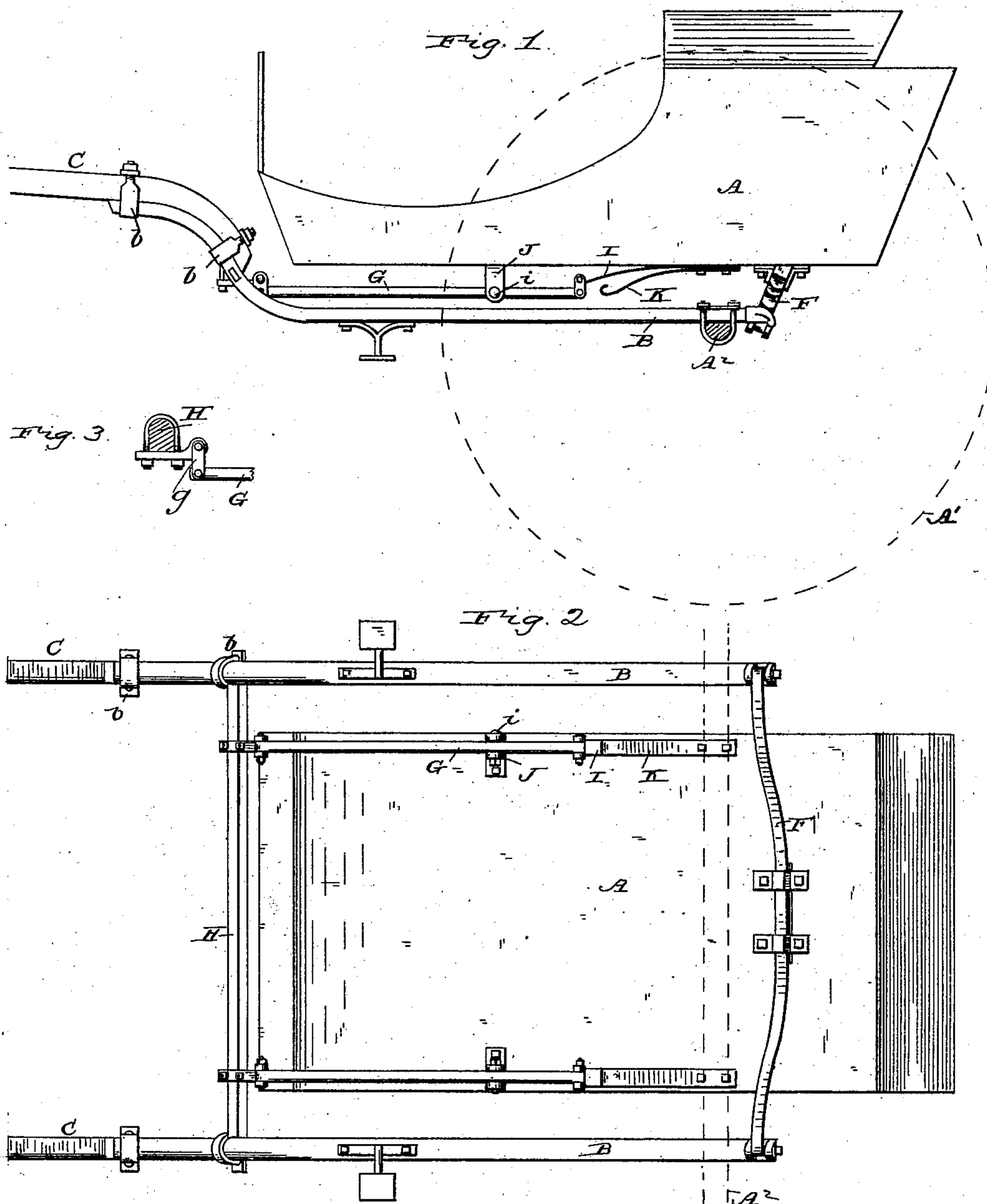


(No Model.)

W. F. HEATH.  
TWO WHEELED VEHICLE.

No. 294,617.

Patented Mar. 4, 1884.



Witnesses

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# UNITED STATES PATENT OFFICE.

WILBUR F. HEATH, OF FORT WAYNE, INDIANA.

## TWO-WHEELED VEHICLE.

SPECIFICATION forming part of Letters Patent No. 294,617, dated March 4, 1884.

Application filed April 14, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, WILBUR F. HEATH, a citizen of the United States, residing at Fort Wayne, in the county of Allen and State of Indiana, have invented certain new and useful Improvements in Two-Wheeled Vehicles, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a side elevation of a vehicle embodying my improvements. Fig. 2 is a bottom plan view. Fig. 3 is a cross-section of the connecting-bar of the draft-frame.

In the drawings, A represents the body; A<sup>2</sup> the axle, the wheels being represented by a dotted line, A', and these parts may be of any preferred character. Upon the axle are fastened, by means of clips, the rear part of the draft-frame, consisting of arms B B, which at their front ends are curved upwardly, preferably, and in about the manner shown—that is to say, so as to extend somewhat above the bottom of the body. The front parts, C C, of the draft-frame, to which the horse is attached, are secured to the rear parts in such way as to be rigid therewith, the rear ends of the front parts being turned or bent downward, as shown. The rear curved ends of the front parts are placed in contact with the upwardly-curved ends of the rear parts and secured together by clips, as at *b b*. When the shaft or draft frame is made in this way, it can, at the rear end, be situated very low relatively to the body, and can at the same time be made much stronger than can the draft devices heretofore used.

F represents the main cross-spring. It is secured to the shaft-bars B, near their rear ends, at a short distance in rear of the axle, the upper or central part of the spring being fastened firmly to the under side of the body by means of a block and clips, or in any suitable way.

It will be seen that the parts thus far described allow a support for the body practically independent of the draft devices—that is to say, the bearing thereof being directly upon the axle—and as a result there is an avoidance of the jogging and jarring experienced with those vehicles having the draft devices connected rigidly and directly with the body. However, a support is necessary at a point

farther forward, and this I provide by the following devices:

G G are bars, preferably made of iron, connected loosely with the cross-bar H of the draft-frame, and connected loosely at their rear ends also with springs I I. Between the body and the bars a support is interposed, this consisting of a connecting bar or bars, J. It may consist of strong lugs, plates, or arms projecting downward, each adapted to be connected with one of the bars G by means of a pivot at *i*. The springs I are preferably of the form shown—that is to say, made of curved spring-plates (one or more) secured at the stronger ends to the bottom of the body, and at their forward ends by means of shackles with the rocking bars G. The shackle-connections should be of such sort as to allow sufficient play of the ends of the bar relative to the ends of the spring I. So, too, the shackles at the front ends of the bars should be such that the ends of the bars can play backward and forward sufficiently.

K represents supplemental springs, formed of one or more curved plates and secured to the body immediately below the springs I I. When the weight in the vehicle-body becomes so great as to overcome the resistance of the springs I I the spring K will be brought into play and prevent too great a downward movement. The cross-spring F and the springs I I are so adjusted relatively to each other and to the weight ordinarily to be carried by the vehicle, that when the body moves downward upon the spring F there will be also a downward movement at the front end, and as a result the bars G G will be rocked downwardly upon the shackle-connection at *g*, the pivots *i* permitting them to rock upon the supports J. This downward swinging of the bars brings into play the springs I I, which tend to resist the downward motion, and which by their elasticity return the body to its normal condition. Springs arranged in this way are much superior to those heretofore used in vehicles of this sort, they being springs of the character of that shown at F herein.

Another advantage incident to my construction is that the springs which resist the downward motion of the front end of the body are independent of each other, and therefore they, in conjunction with the ends, respectively, of



the cross-spring F, insure that any upward or downward motion of either of the shafts will not seriously affect the body—that is to say, will not impart thereto any considerable rocking, as they assist the body to keep itself in a horizontal and proper position.

I am aware of the fact that use has been heretofore made in a two-wheeled vehicle of a draft-frame connected with the axle and made of side bars curved upwardly at the front end, and shafts curved downwardly at their rear ends and united to the side bar; but, although such a construction, broadly considered, has been heretofore used, I am not aware of the fact that a vehicle has been made having a shaft-frame or draft-frame situated as mine is relatively to the other parts, and of the construction which I have shown and devised. In my case the foot-rest or bottom of the body portion is situated above the rear part of the draft-frame, and therefore there is not only an easy access to and egress from the body, but the draft-frame can be brought down so that the rocking bars or supporting devices under the front end of the body can be connected with the draft-frame to the greatest advantage.

What I claim is—

1. The combination of the body A, the draft-frame having the cross-bar H, the bars G G, pivoted to the under side of the body, the shackle-bars which connect said bars G G to the cross-bar H, the flat steel springs I, secured to the body directly above the axle, and the shackle-bars, each pivoted at one end to

one of the bars G and at the other end to a spring, I, the aforesaid parts being arranged substantially as set forth, to permit the flat spring to be secured as aforesaid between the axle and the seat, and whereby a displacing strain upon the spring-fastening is avoided.

2. The combination of the draft-frame having the forward part, C C, with downwardly-curved rear ends, and the rear portion, D D, with upwardly-curved front ends rigidly secured to the downwardly-curved parts of the forward portion, C, whereby there is produced a strong two-part draft-frame, which permits the body to be hung low, the rocking bars G, below the body, pivotally secured at the forward ends to the draft-frame, and the flat steel springs fastened to the bottom of the body and pivotally secured to the rear ends of said rocking bars, substantially as set forth.

3. The combination of the body, the draft-frame secured to the axle, the rocking bars G G, pivotally connected to the draft-frame at their front ends, the flat springs I, connected with the rocking bars at their rear ends, and the supplemental springs K, below the springs I, and arranged to support the body when unusual weight is upon it, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILBUR F. HEATH.

Witnesses:

M. L. ALBRECHT,  
JACOB J. KERN.