(No Model.) 2 Sheets—Sheet 1.

J. A. BILZ.

TWO WHEELED VEHICLE.

No. 262,273. Patented Aug. 8, 1882.

Fig. 1.

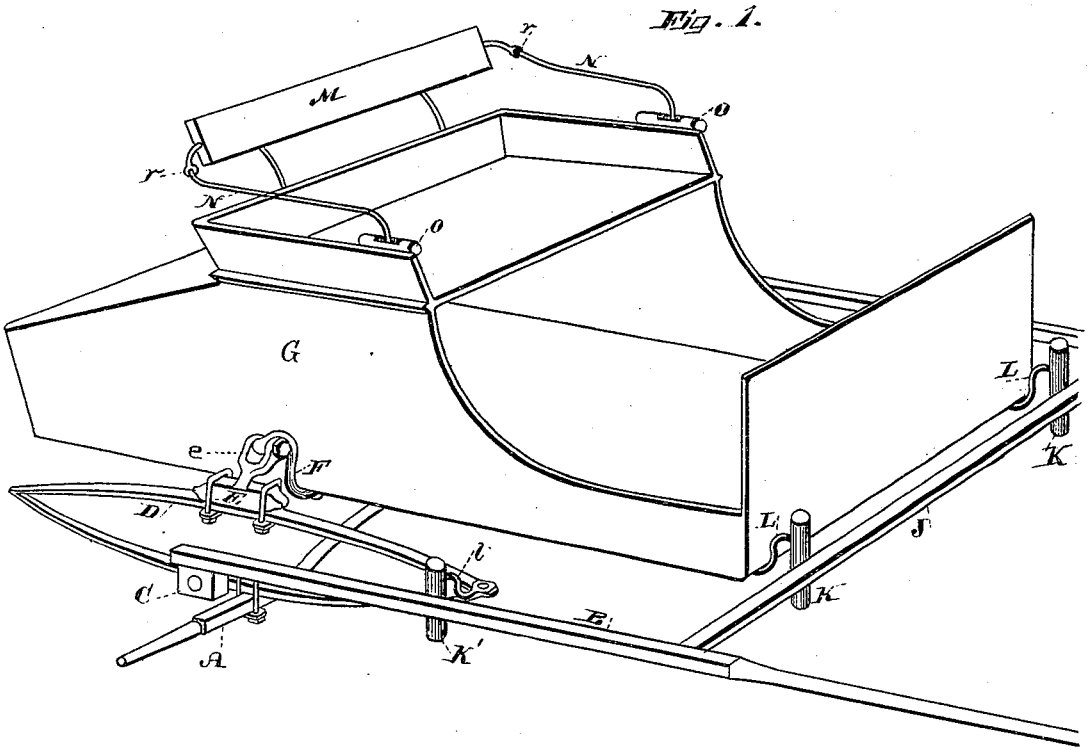


Fig. 2

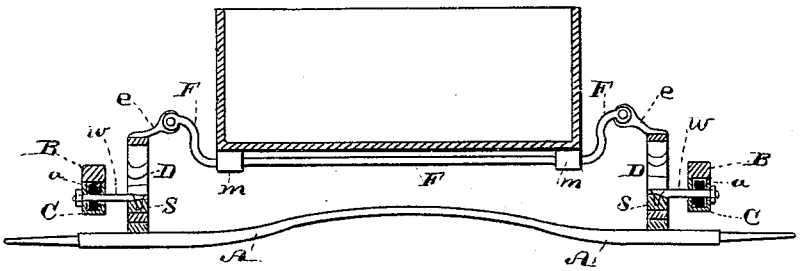


Fig. 3.

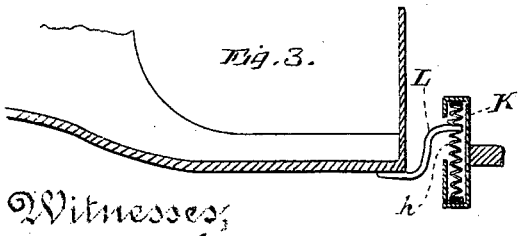
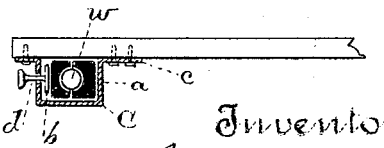


Fig. 4.



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(No Model.) 2 Sheets—Sheet 2.

J. A. BILZ.

TWO WHEELED VEHICLE.

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Fig. 5.

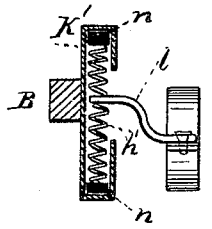
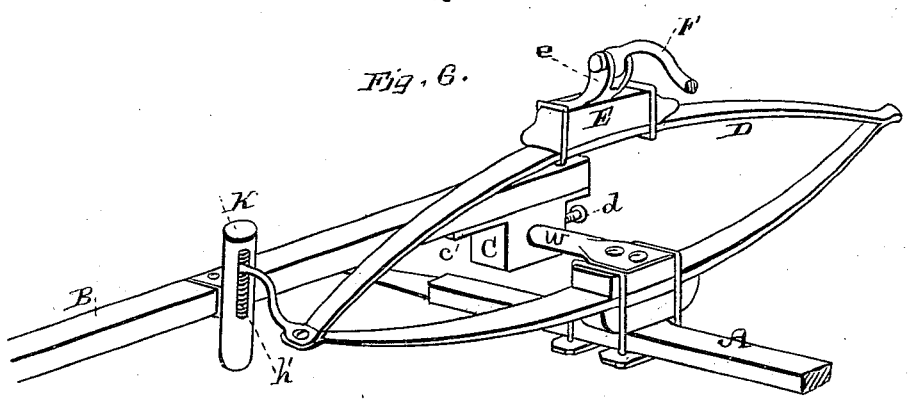


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN A. BILZ, OF PLEASANTON, CALIFORNIA.

TWO-WHEELED VEHICLE.

SPECIFICATION forming part of Letters Patent No. 262,273, dated August 8, 1882.

Application filed April 21, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. BILZ, of Pleasanton, county of Alameda, State of California, have invented an Improved Two-Wheel Vehicle; and I do hereby declare the following to be a full, clear, and exact description thereof.

The object of my invention is to overcome the particular disadvantage attending vehicles of this class—namely, the communication of the jogging motion of the horse to the seat—and to render the vehicle, by suitable construction, an easy and pleasant mode of conveyance.

My invention consists of certain details of construction, as hereinafter fully described and specifically claimed.

Referring to the accompanying drawings, Figure 1 is a perspective view of my invention. Fig. 2 is a transverse section. Figs. 3, 4, 5, and 6 are details of construction.

Let A represent the axle, and B the shafts. Upon the axle, inside of the shafts, are firmly clipped the springs D, upon each of which is bolted a plate or bar, *s*, from which extends outwardly a bolt or pin, *w*. The shafts are secured to these bolts by means of a boxing. This consists of a box, C, with top pieces, *c*, to which the shaft is bolted. In the box are rubber cushions *a* and a metal plate, *b*, against which a set-screw, *d*, impinges to tighten the cushions around the bolts *w*, which passes into the box and between the cushions. The box is inclosed so that no dust can enter. By this construction I form a connection between the shafts and springs, and through the latter with the axle, which, because it is not rigid, will not allow the motion of the former to be communicated to the latter, and at the same time I prevent the jarring of the shafts when the vehicle is passing over rough ground.

To the tops of the springs D are clipped blocks E, having projecting pieces *e*. To these pieces are pivoted or hinged the cross-rod, F, curved downward, as shown, and passing under the body G, which is supported thereon. The rod F is not rigidly secured to the body, but passes through socket-bearings *m* upon each side of and firmly secured underneath said body, so that the latter may have a play thereon.

To keep the axle from turning and secure it I have the following device:

Secured upon the shafts opposite the forward ends of the springs are upright tubes K′, having a vertical slot upon their inner sides. Their ends are closed, and two heavy spiral springs, *h′*, are placed in each, one above the other. Projecting outwardly from the forward ends of the springs are pins or shafts *l*, the outer ends of which extend through the slots in the tubes K′ and lie between the adjacent ends of springs *h′*. To prevent rattling a rubber cushion, *n*, is inserted between the upper springs and the top of the tubes.

J is a cross-bar between the shafts in front of the body. To this are secured upright tubes K, similar to tubes K′, with slots upon their inner sides and spiral springs *h*.

L are curved arms or rods secured to the front of the body, their outer ends being inserted through the slots of the tubes K, and lie between the adjacent ends of the two springs *h*. This furnishes a spring-support for the forward part of the body. The effect of this construction may thus be described:

It will be observed that the several connections between the shafts and axle, shafts and body, and the body and springs are none of them rigid. An independent movement may be had by each. The consequence is that the shafts which primarily receive the jogging motion of the horse do not communicate it to any extent to the axle, and the latter does not effect the body, neither giving to it whatever motion it might receive from the shafts nor its own jarring motion; nor do the shafts affect the body in front, as the springs within the tubes yield sufficiently to counteract it, this being rendered possible because of the rocking of the body upon the cross-rod between the springs.

The body has not only the advantage of the springs, but also of the hinged connection between its supporting-rod and the springs.

The springs and axle are prevented from turning over and falling down by the pins *l* and spring-tubes K′, which connection does not affect the independence of the body. Thus the whole construction of the vehicle enables the rider, when in the seat, to wholly counteract un-

pleasant motion. To further this object I provide the back-rest M with a spring-connection.

N are the side arms or braces. Their lower ends are inserted between the adjacent ends of spiral springs within tubes O, which lie horizontally, and are secured to the sides of the seat, being similar in construction and operation to the tubes K, with their springs attached to the cross-bar J of the shafts. The upper ends of the arms have a hook-and-eye connection, *r*, with the back-rest. Thus the back-rest will yield when, by reason of a sudden start of the horse, the body of the rider is thrown back.

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

1. In a two-wheel vehicle, the axle A and springs D, in combination with the shafts B and the boxes C, bolted to the shafts and having the cushions *a*, receiving between them a bolt or pin, *w*, secured to the springs and set by a screw, *d*, substantially as and for the purpose herein described.

2. In a two-wheel vehicle, the shafts B, with their cross-bar J, having slotted tubes K, with springs *h*, and the hinged cross-rod F, in combination with the body G, loosely journaled upon rod F, and having arms L, extending within the slotted tubes K, substantially as and for the purpose herein described.

In witness whereof I hereto set my hand.

JOHN A. BILZ.

Witnesses:
L. H. NOURSE,
G. W. EMERSON.