(No Model.)

J. HERBRAND, Dec'd.

E. LOUDENSLEGER, administrator.

VEHICLE SPRING.

No. 299,641. Patented June 3, 1884.

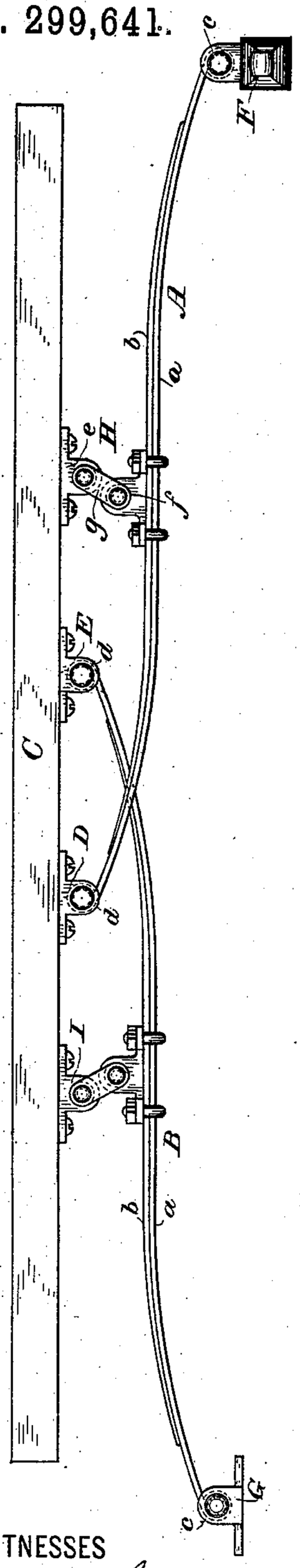

Fig. 1.

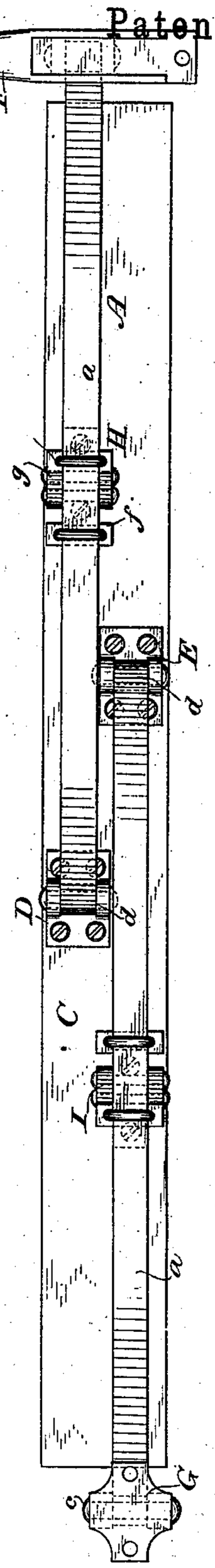

Fig. 2.

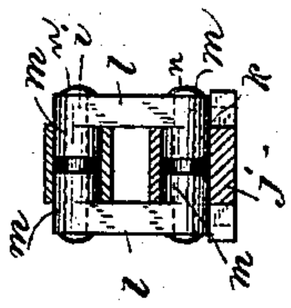

Fig. 5.

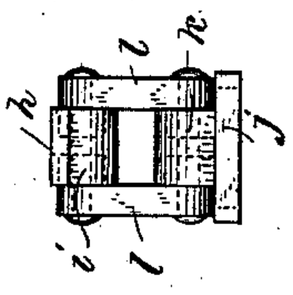

Fig. 4.

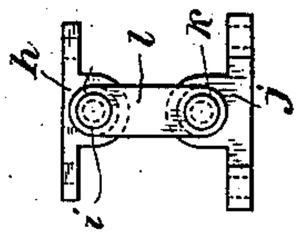

Fig. 3.

WITNESSES

Wm A. Skinkle

Edwin A. Newman,

INVENTOR

Jacob Herbrand

By his Attorneys

Baldwin Hopkins & Peyton

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JACOB HERBRAND, OF FREMONT, OHIO; E. LOUDENSLEGER ADMINISTRATOR OF SAID HERBRAND, DECEASED.

VEHICLE-SPRING.

SPECIFICATION forming part of Letters Patent No. 299,641, dated June 3, 1884.

Application filed June 16, 1883. (No model.)

To all whom it may concern:

Be it known that I, JACOB HERBRAND, of Fremont, in the county of Sandusky and State of Ohio, have invented certain new and useful Improvements in Vehicle-Springs, of which the following is a specification.

My invention relates to the class of vehicle-springs known as "side springs;" and it consists in certain improvements in the form of the springs and in the manner of applying them to a vehicle.

In the accompanying drawings, illustrating my invention, Figure 1 is a side elevation of a pair of my improved springs applied to the sill of a vehicle; Fig. 2, a bottom view thereof; and Figs. 3, 4, and 5 are views of my improved spring-supporting hangers.

To each side of the vehicle I apply a pair of springs, A and B, which are similar in form, and which cross or overlap each other slightly at their upper ends, as illustrated. The spring A (which is similar to the spring B) consists of a single leaf, *a*, and a somewhat shorter re-enforcing leaf, *b*. The middle portion of the spring is straight, or nearly so, and the top end is bent up and the bottom end down. The ends of the leaf *a* extend out beyond the ends of the leaf *b*, and are formed with eyes *c d*. The springs A and B are hinged to the sill C and the front and back axles by means of brackets D E F G, which are provided with pintles that extend through the eyes on the ends of the springs. The bracket G is located on the top and near the end of the back axle, (not illustrated,) and the brackets D and E are secured to the under side of the sill at equal distances from its ends, and a short distance apart on opposite sides of the sill, so that the springs may cross. The bracket F is preferably formed integral with the metallic scroll or end piece of the bolster of the front axle, and consists of two upwardly-projecting lugs, between which the end of the spring A is pintled. The springs are supported about midway between their ends by means of hinged hangers H and I, each consisting of a bracket, *e*, a clip, *f*, and a pair of links, *g*, which are hinged to the clip and to the bracket. The brackets are secured to the under side of the sill C, and the clips are secured to the springs by means of the clip-straps, which also serve to hold together the leaves *a* and *b*.

The preferred form of hanger is shown in Figs. 3, 4, and 5. It consists of a bracket, *h*, with a sleeve-bearing, *i*, a clip, *j*, with a sleeve-bearing, *k*, and a pair of links, *l*, with hollow bearing-studs *m* on each end. The links are secured in position by means of bolts *n*, and are free to rotate in their bearings.

The advantages of this construction are obvious. For instance, the strain and wear is taken from the bolts or pintles, and the hangers are not so liable to bend laterally as in the other form illustrated.

It will be understood that the above description applies to the springs on one side of a vehicle, the springs on the other side being arranged in substantially the same manner.

By the peculiar form of springs employed, and the particular manner of mounting them, the vehicle-body is securely and evenly mounted, and the axles are relieved from undue thrust strain and unequal downward pressure. When the vehicle is weighted down, the ends of the springs straighten out and the links of the hangers turn, so as to compensate for the movements in the springs.

The springs A and B need not necessarily cross or overlap each other; but I prefer this construction, especially in short vehicles.

I claim as my invention—

1. The combination of the sills, the axles, the springs hinged at their ends directly to the sills and the axles, and the hinged hangers for supporting the springs about at their middle, substantially as described.

2. The combination of the sills, the axles, the re-enforced overlapping springs hinged to the sills and the axles, and the hinged hangers, which hold together the leaves of the springs and support them, substantially as described.

3. The spring-supporting hanger consisting of the bracket, the clip, and the links hinged

to the bracket and the clip, substantially as set forth.

4. The spring-supporting hanger herein described, composed of the bracket, the sleeve-bearing therein, the clip, the sleeve-bearing therein, the links with hollow bearing-studs, and the bolts for holding the links in position, substantially as set forth.

In testimony whereof I have hereunto subscribed my name this 14th day of June, A. D. 1883.

JACOB HERBRAND.

Witnesses.
JOHN W. FRANKS,
B. R. DUCHOW.