

(No Model.)

R. WESTPHAL.
TWO WHEELED VEHICLE.

No. 394,041.

Patented Dec. 4, 1888.

Fig. 1.

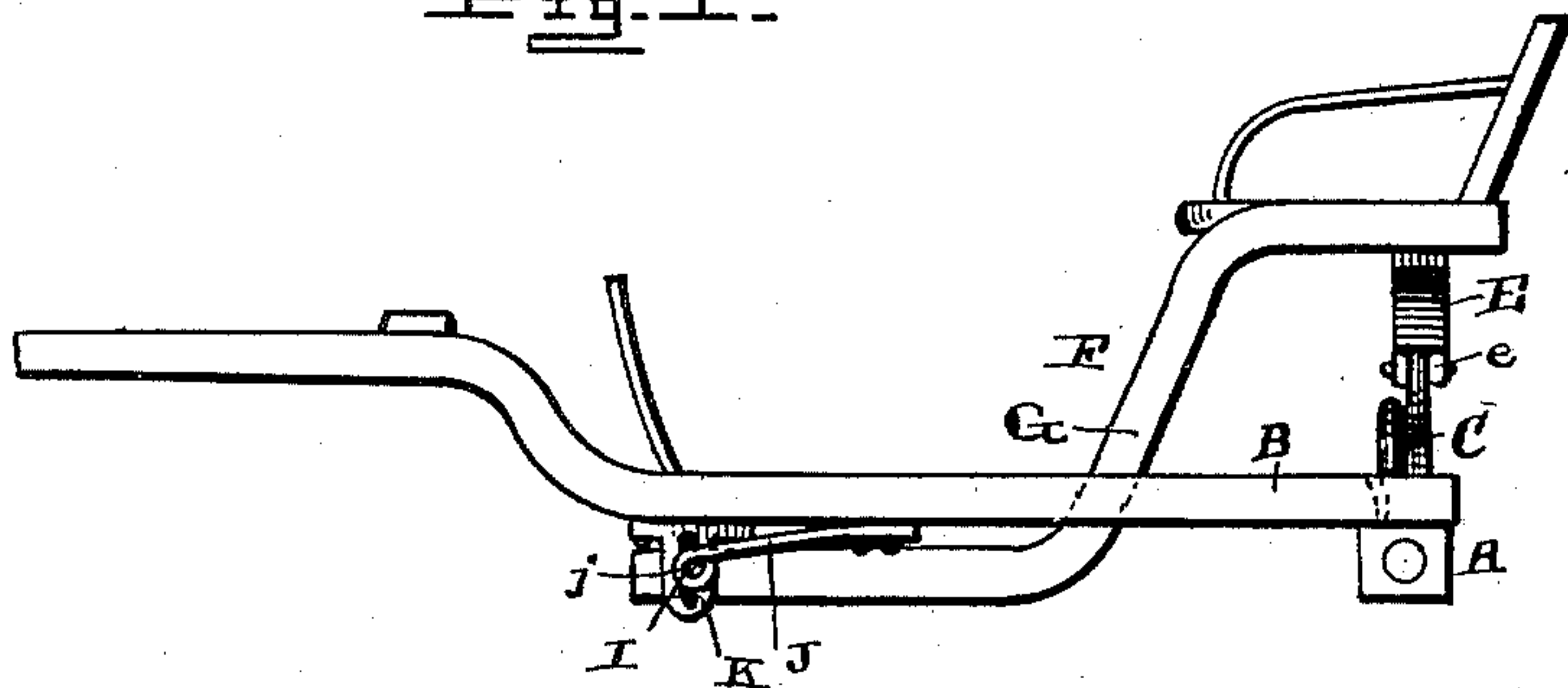


Fig. 2.

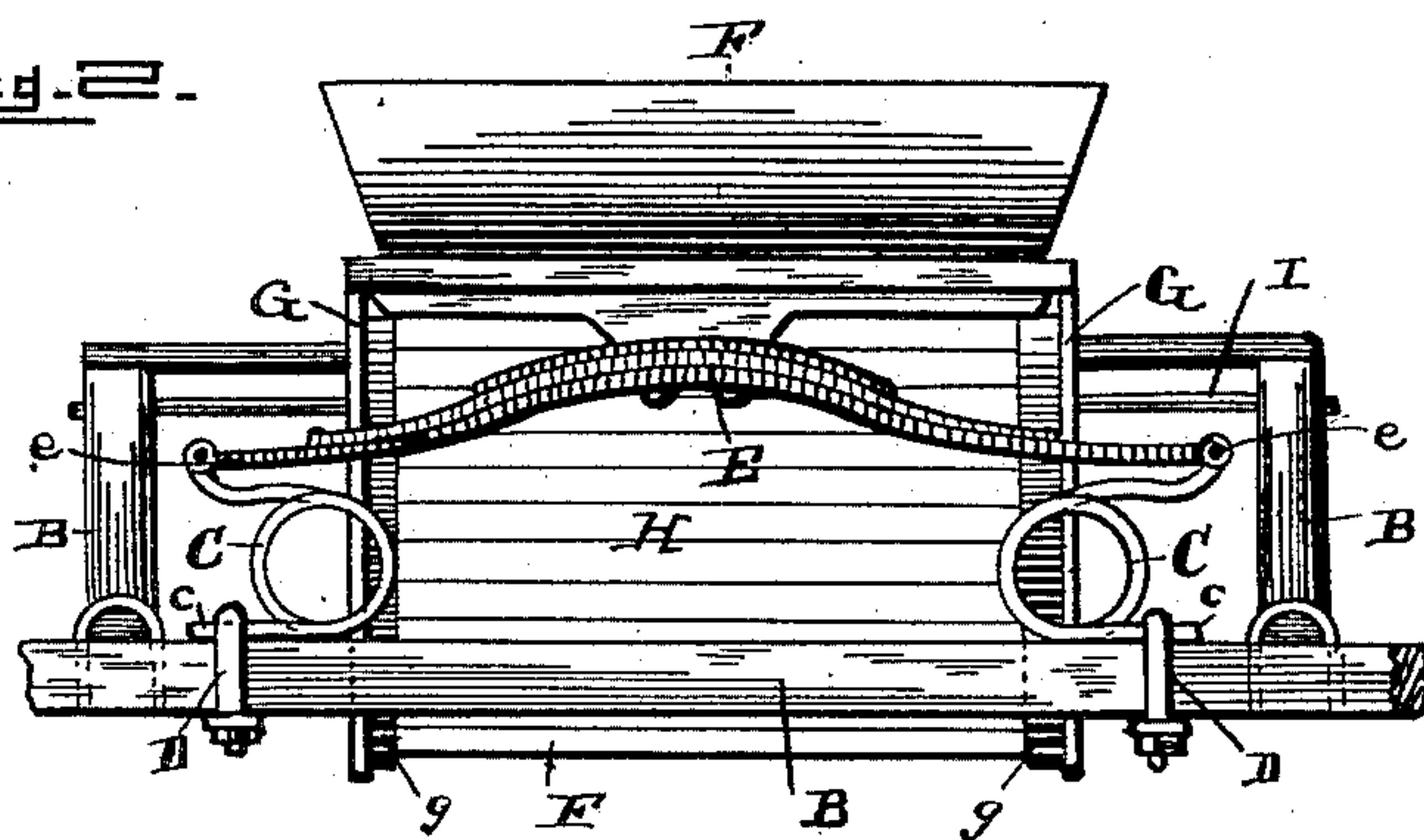


Fig. 3.

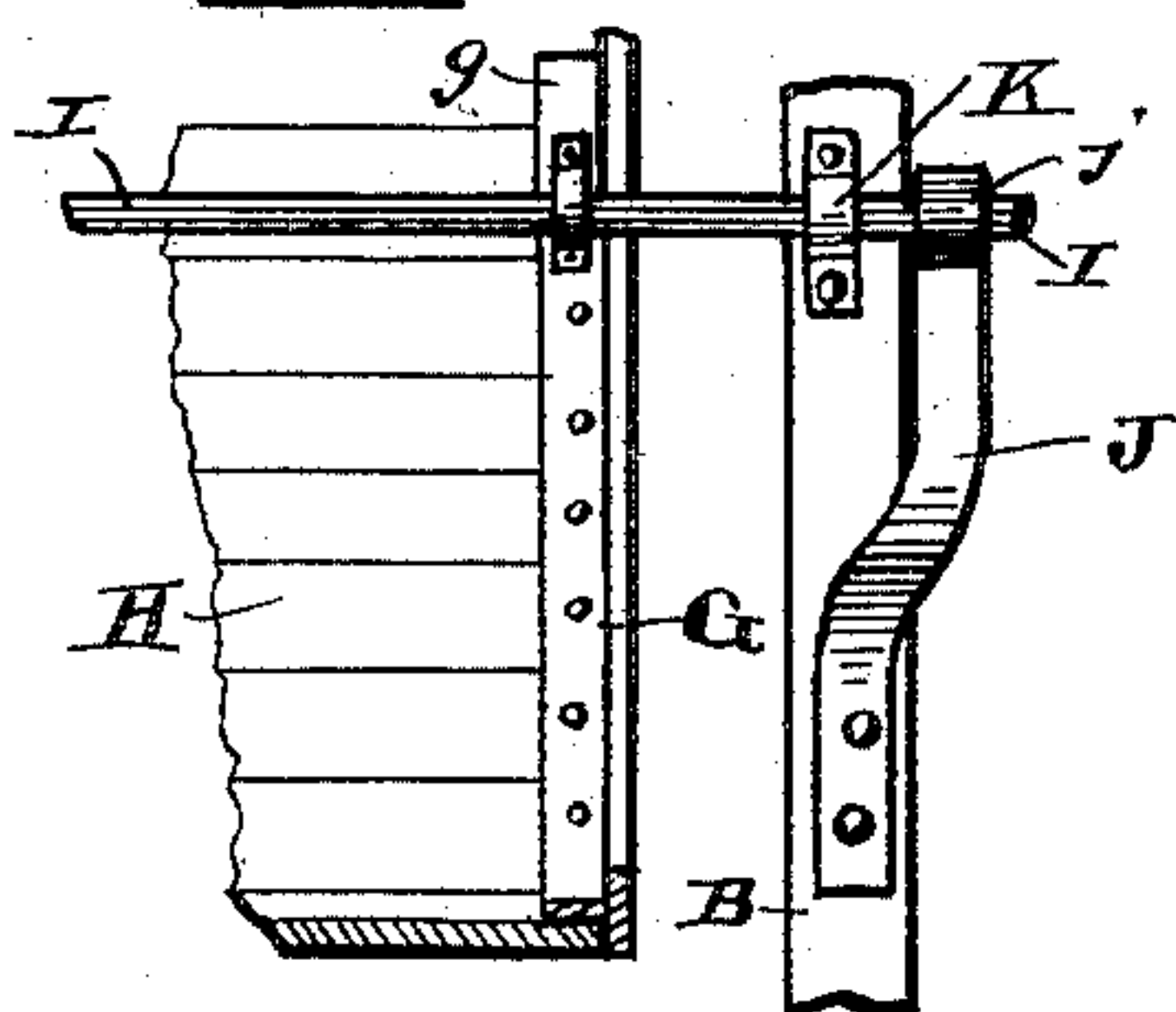
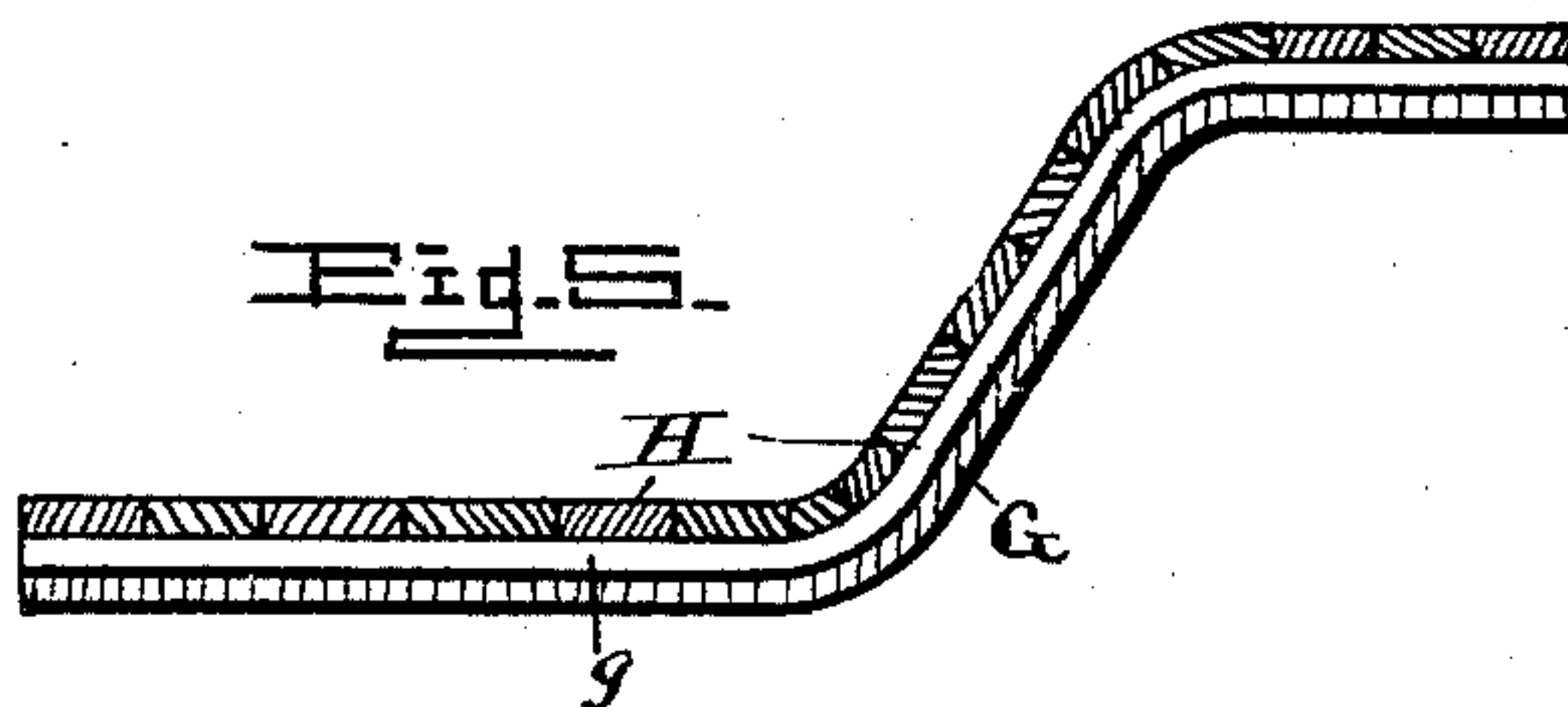


Fig. 4.



Fig. 5.



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UNITED STATES PATENT OFFICE.

ROBERT WESTPHAL, OF SOUTH BEND, INDIANA.

TWO-WHEELED VEHICLE.

SPECIFICATION forming part of Letters Patent No. 394,041, dated December 4, 1888.

Application filed August 18, 1888. Serial No. 283,089. (No model.)

To all whom it may concern:

Be it known that I, ROBERT WESTPHAL, of South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Two-Wheeled Vehicles; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification, in which—

Figure 1 is a side view of my improved sulky. Fig. 2 is a rear view of the same. Fig. 3 is a detail bottom plan view. Figs. 4 and 5 are detail sectional views of parts of the body.

This invention is an improved two-wheeled vehicle, and its objects are to provide novel spring-supports for the body and to produce a substantial light body, as will be fully understood from the description and claims following, in connection with the accompanying drawings.

In the drawings, letter A designates an ordinary vehicle-axle, preferably of metal, to which are connected the thills B B, as usual.

C C are coiled metallic springs, the lower ends of which are straightened, as at *c*, and secured upon the top of the axle near the opposite ends thereof by clips D D, as shown. The coils of springs C, preferably, are arranged to stand in line with the length of the axle, and their free ends are turned upward and outwardly, as shown, and are pivotally connected with the ends *e e* of a semi-elliptic horizontal bar-spring, E, which stands parallel with and directly above axle A.

The rear end of body F is connected centrally to spring E and supported thereupon. The body F is of ordinary form, but of peculiar construction. It is made up of two T-iron side bars, G G, bent to proper shape, with the ribs *g g* of the T-irons extending horizontally and inwardly, as shown. The flooring H of the body is placed upon the ribs *g* and secured thereto in proper manner. By this construction the flooring is afforded a firm bearing, and the outer surface of the side bars is smooth and broad, and the body is much stronger than it would be if the bars were bent with the ribs vertical.

The dash-board and seat are attached to the body, as usual.

The front end of body F is supported upon a transverse rod, I, journaled upon or in the front ends of bars G G. The ends of said rod project beyond and beneath the thills B B and engage in eyes *j*, formed in the front ends of short flat springs J J, which are attached to the under surface of the thills.

K K are slotted brackets attached to the thills in front of the springs J. The ends of rod I play in the slots thereof. These brackets will catch and support the rod should the springs J break or be unduly loaded. The brackets also prevent too great forward or backward swaying of body F without interfering with the spring-supports thereof.

From the foregoing it will be seen that the principal weight of the body and seat is transferred vertically through the springs E and C C to the axle, and the spreading or shortening of spring E under load causes the partial coiling or uncoiling of springs C C, so that instead of the entire strain of load being transmitted laterally through spring E, part of it is transmitted longitudinally to the coils C C, as is evident.

Having described my invention, I claim—

1. The combination of the axle and the coiled springs C C, having straight ends clipped to the axle, and having their upper ends bent upwardly and outwardly from their coils, with the body and the horizontal spring F, united centrally to the body and pivotally connected at its ends to the upper ends of springs C, and the supports for the front end of the body, all substantially as and for the purpose specified.

2. The combination, with the axle, thills, and body, of the coiled springs mounted on the axle and having their upper ends turned outwardly and upwardly, the horizontal spring-bar connecting the ends thereof and supporting the rear end of the body, and the flat springs attached to the thills, and the transverse rod carried by said springs and supporting the front end of the body, substantially as set forth.

3. The combination of the axle and coiled springs C and horizontal spring E with the body F, composed of two oppositely-facing

T-irons, G G, bent with the ribs thereof horizontal, so that the flooring can rest upon the ribs, and the springs and rod supporting the front end of the body, all substantially as described.

4. The combination of the axle, thills, and body with the coiled springs mounted upon the axle, the semi-elliptic spring connecting the upper ends of the coiled springs and supporting the rear of the body, the flat springs attached to the thills and engaging a trans-

verse rod on the front of the body, and the slotted brackets engaging said rod, all substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

ROBERT WESTPHAL.

Witnesses:

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