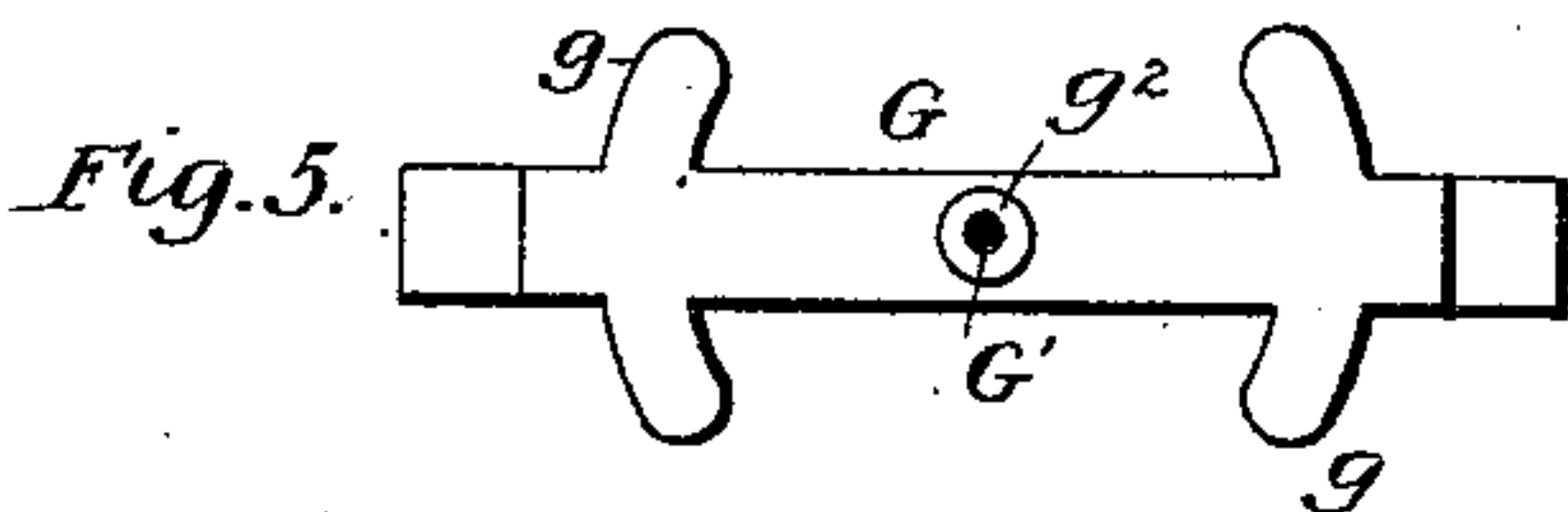
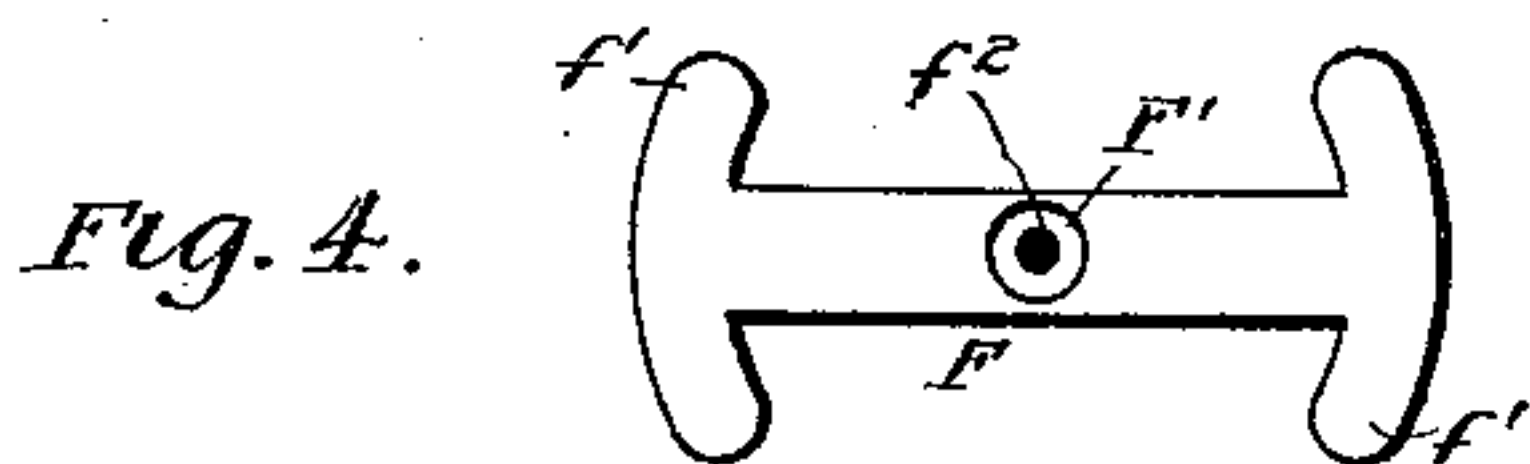
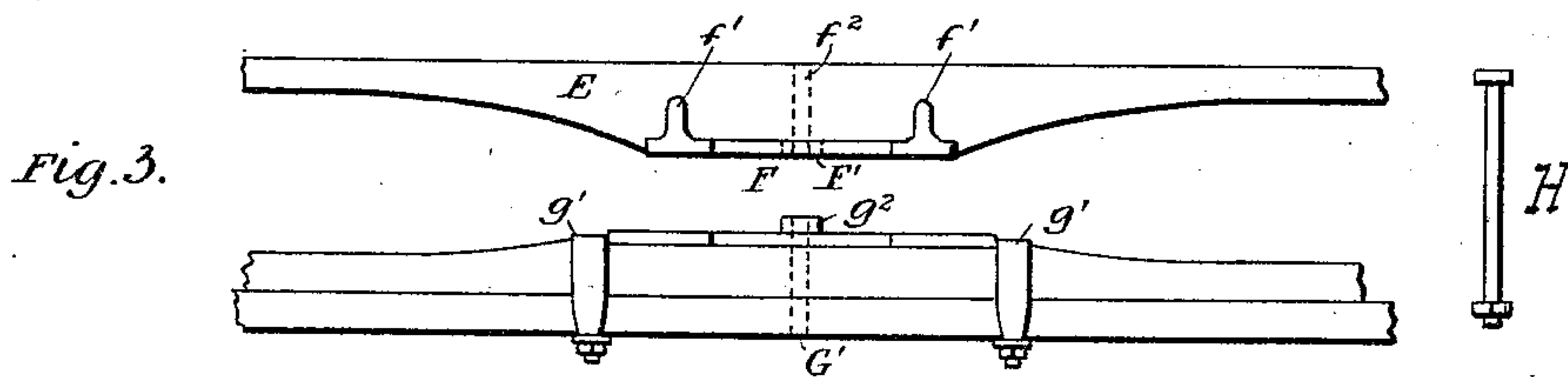
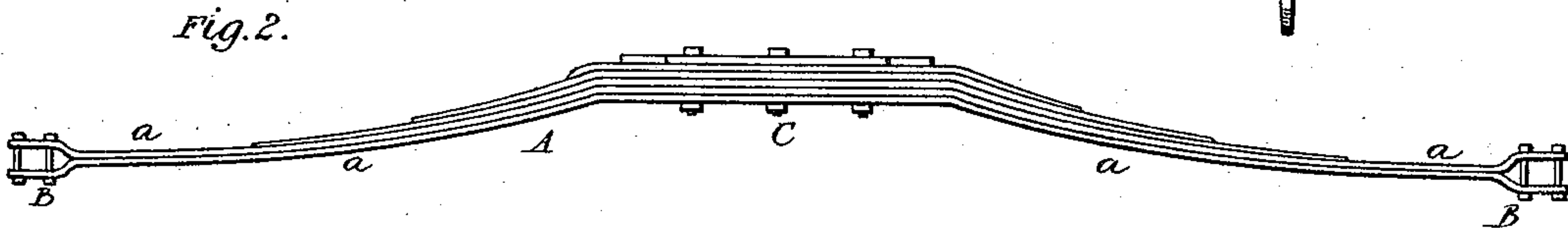
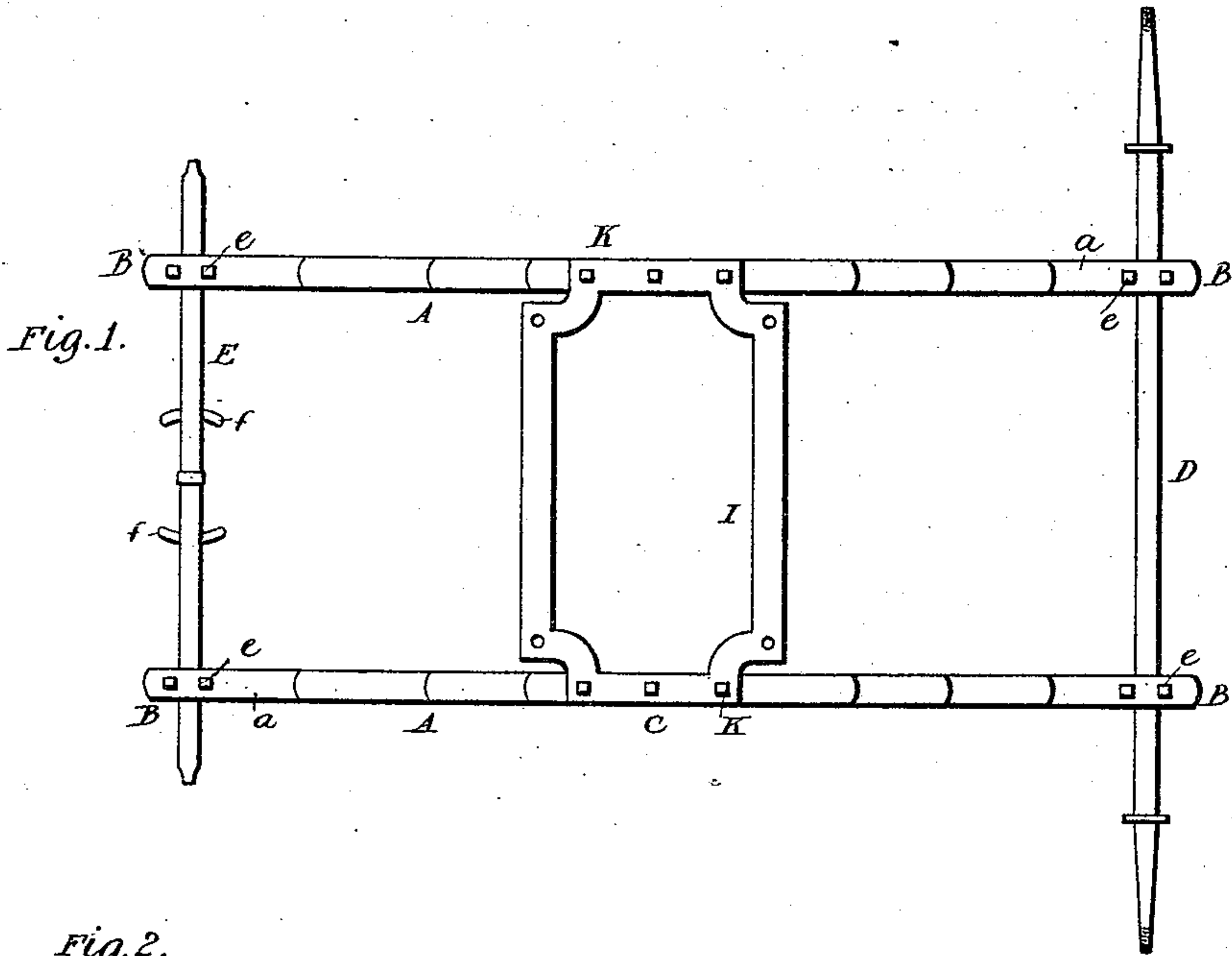


(No Model.)

J. A. RODMAN.
SPRING FOR VEHICLES.

No. 437,405.

Patented Sept. 30, 1890.



Witnesses

Will. Norton
Harry S. Rohrer.

9
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UNITED STATES PATENT OFFICE.

JAMES A. RODMAN, OF HICKMAN MILLS, MISSOURI.

SPRING FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 437,405, dated September 30, 1890.

Application filed March 17, 1890. Serial No. 344,213. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. RODMAN, a citizen of the United States, residing at Hickman Mills, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Springs and Running-Gear for Vehicles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in the springs and running-gear of vehicles, particularly to that class of vehicles known as "no perch," in which side springs are employed.

My said invention consists in certain novelty in the construction, arrangement, and combination of the various parts of the same, all of which I will now proceed to point out and describe, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of the running-gear and springs, the body being removed, showing particularly the means employed for attaching said body to the running-gear. Fig. 2 is a side elevation of the same; Fig. 3, a forward end elevation, and Figs. 4 and 5 are details of parts of the same.

Referring to said drawings, A represents longitudinal side springs arranged on each side of the body of the vehicle, said springs being composed of two lower leaves *a*, extending the full length of the springs and having their ends bent or curved out to form the clip portions B, adapted to be secured to the rear axle and to the head-block or front axle, the upper sections or leaves of the springs extending farther toward the rear than to the front of said springs, so as to strengthen the same back of the center, on which portion of the same the greatest weight is supported. Said springs have a flat central portion C, and are bent downwardly on each side of said flat portion. The clips formed on the ends of the lower leaves of the springs are attached to the rear axle D and head-block E by means of suitable bolts *e*. The head-block is provided on its under side with a flat plate F, having projections *f* and lugs *f'* engaging the sides of said head-block. Said plate is attached in any suitable manner to the head-

block. F' is a circular recess formed in the face of the head-block plate, having communicating therewith an aperture or hole *f*². (Shown in dotted lines, Fig. 3.) G is a similarly constructed plate secured to the upper side of the forward axle, having projections *g* and lugs *g'* and a circular central stud or projection *g*², adapted to engage with the circular aperture in the face of the head-block plate, the faces of said plates engaging with each other.

G' is an aperture extending through the circular stud, plate, and front axle.

H is a king-bolt mounted in the apertures *f*² G'. By means of the circular stud and circular recess described the strain upon the king-bolt is greatly relieved.

To the upper side of the flat portion of the springs is secured a substantially rectangular frame or brace I, formed preferably of metal, but which may be formed of wood, the corners of said frame being preferably inwardly curved. This brace is attached to the springs by means of bolts K, which extend through the same and through the leaves of the springs, serving to hold the leaves of the springs together. I preferably use three or more bolts to connect the frame to the springs. Said frame or brace connects the two side springs and not only serves to hold the same in position but also forms a support for the body of the vehicle, which is attached to the same in any desired manner. I preferably term this frame a "truss-brace."

Running-gear and springs constructed in accordance with my invention are found to be very strong and serviceable. By means of the frame or device connecting the springs the body of the vehicle may be readily and easily attached to or removed from said springs. At the same time, when in operation there is little if any lateral movement or vibration of the body. In case of breakage of either of the springs or any part of the running-gear it may be removed and replaced without procuring an entirely new set of springs.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the head-block and rear axle, of the side leaf-springs A, having the ends of the lower leaves of said springs

outwardly bent, forming clip portions B, adapted to be secured to the head-block and rear axle, and the frame or brace I, secured to and connecting said springs and adapted
5 to have the body of the vehicle attached thereto, substantially as shown and described.

2. The combination, with the head-block and rear axle, of the side leaf-springs A, bent to form the flat central portion C and having
10 the ends of the lower leaves of said springs outwardly bent, forming clip portions B,

adapted to be secured to the head-block and rear axle, and the frame or brace I, secured to the flat central portion of the springs and adapted to receive the body of the vehicle, 15 substantially as shown and described.

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

JAMES A. RODMAN.

Witnesses:

W. K. WILLIAMSON,
DAVID ROBINSON.