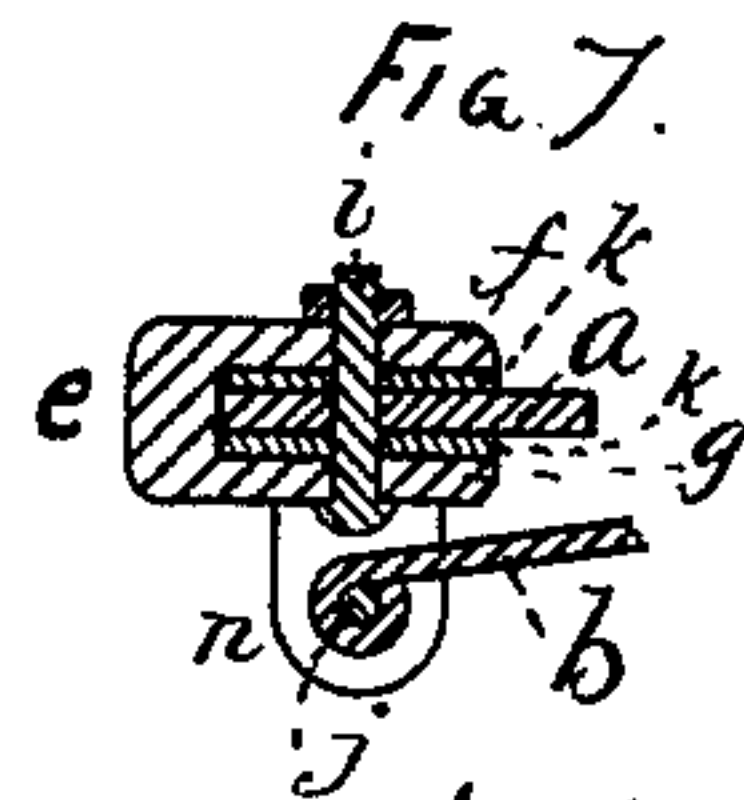
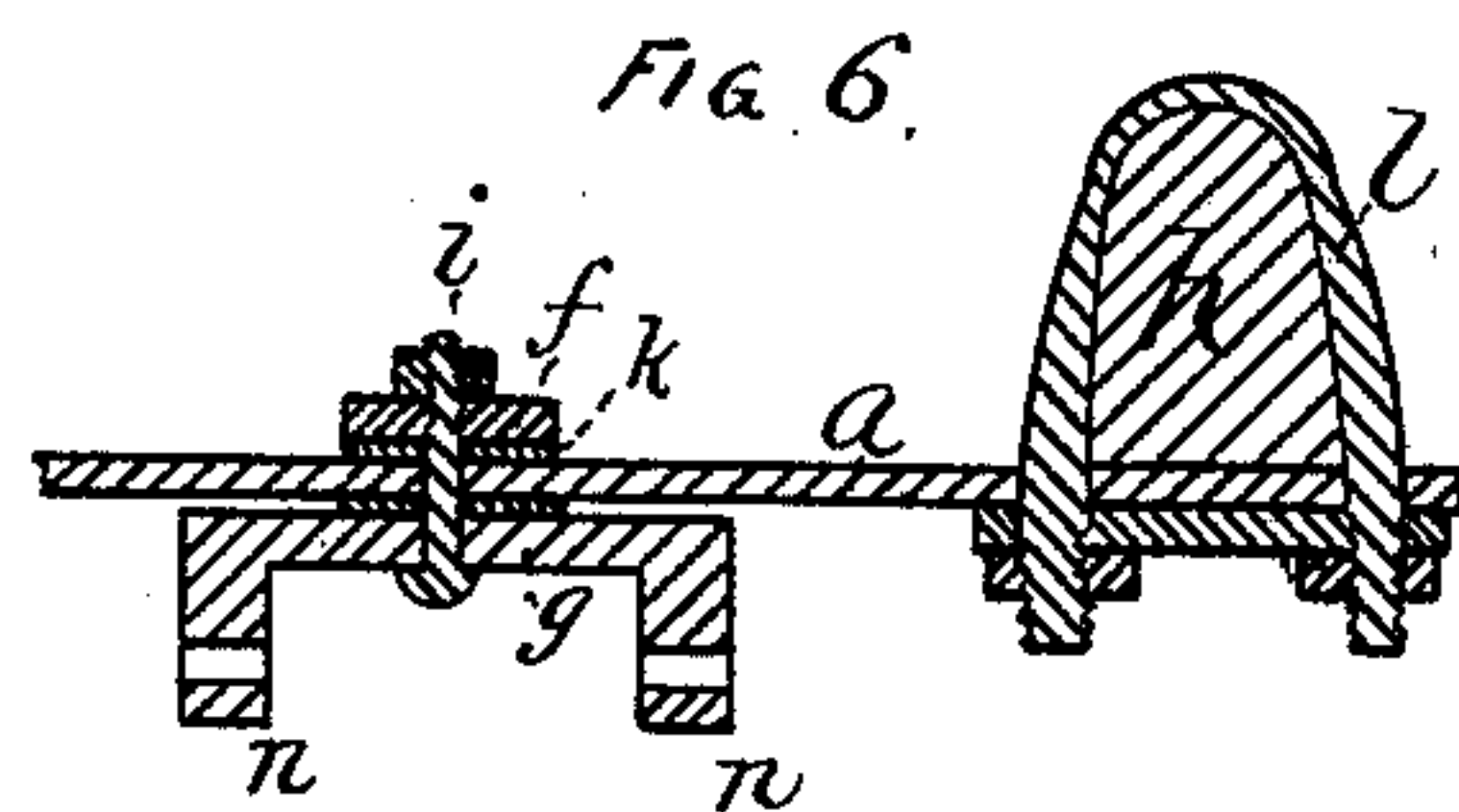
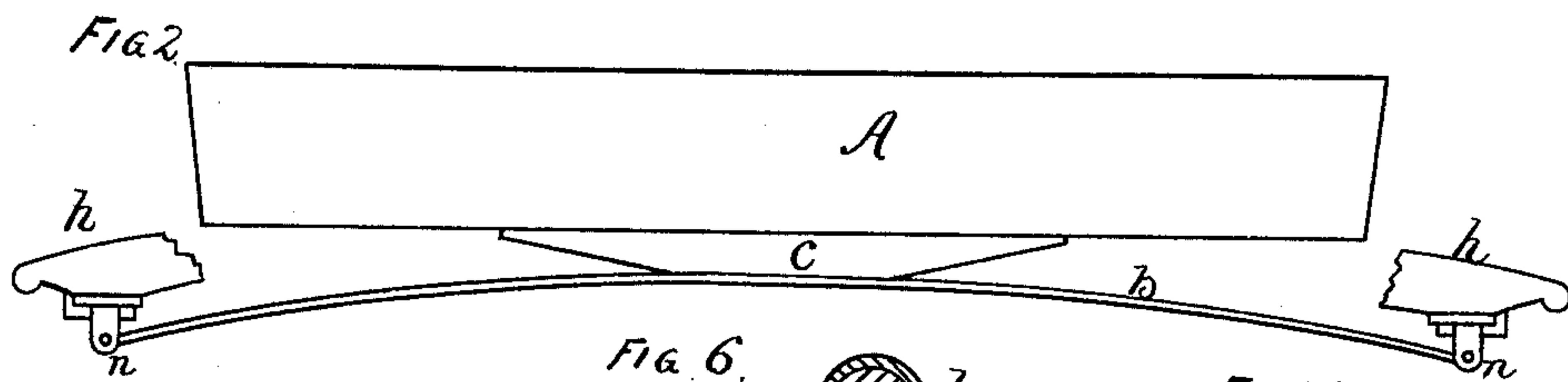
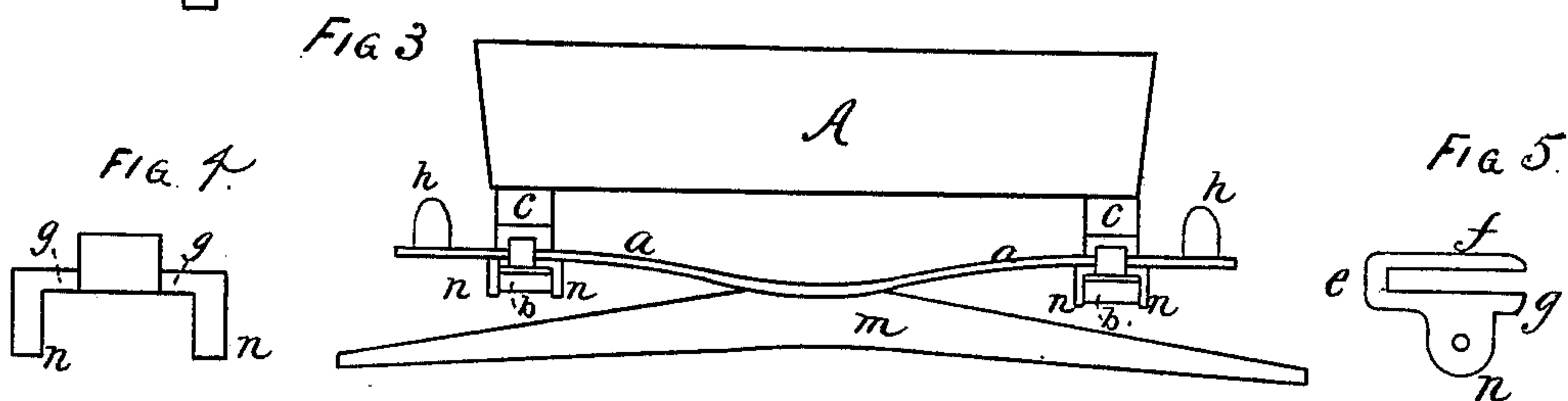
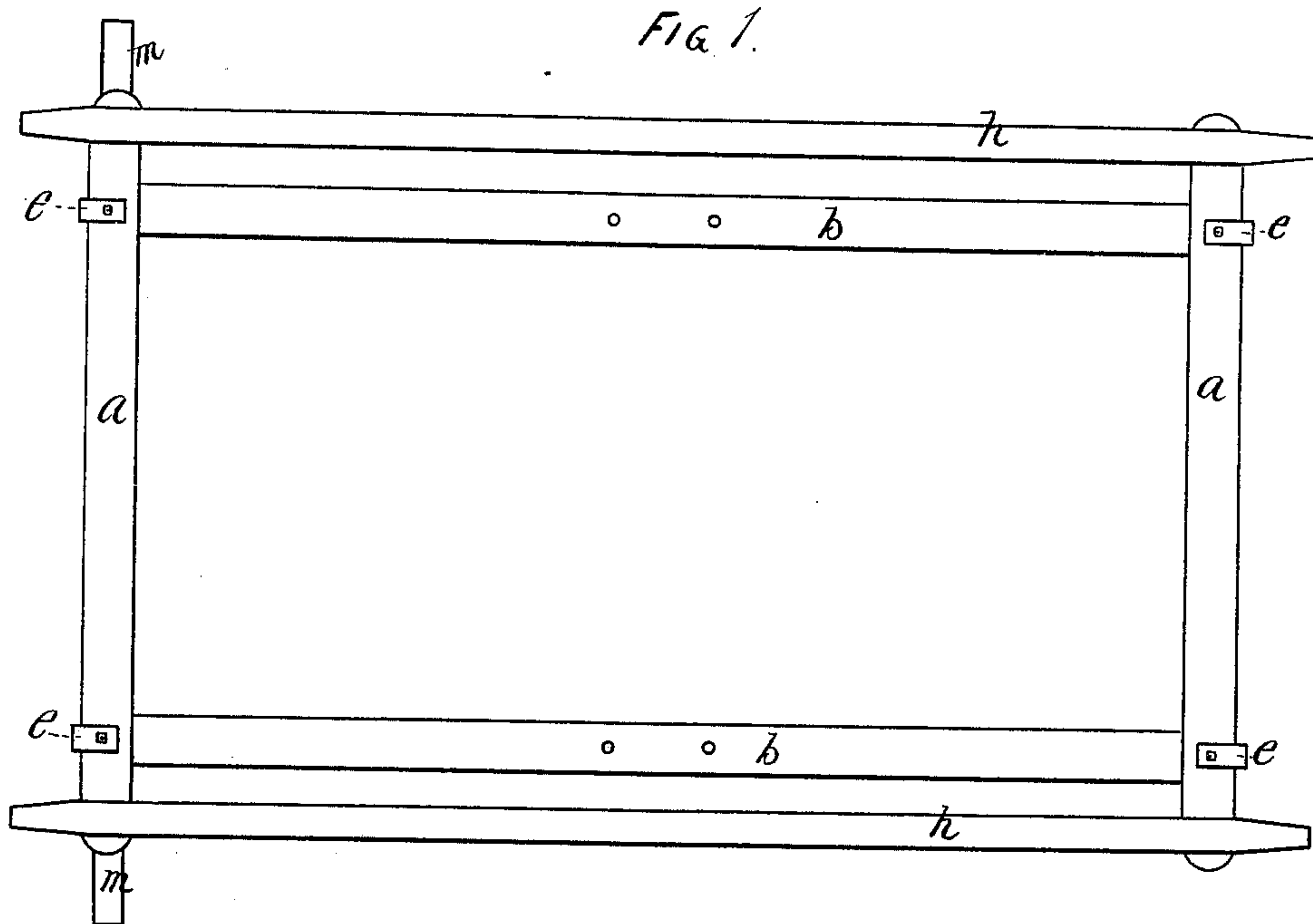


C. W. PATTEN.
Vehicle-Spring Clip.

No. 220,546.

Patented Oct. 14, 1879.



WITNESSES.
Samuel D. Kelley.
Eugene Humphrey

INVENTOR.
Charles W. Patten
By Porter & Hutchinson
Atty.

UNITED STATES PATENT OFFICE.

CHARLES W. PATTEN, OF SALISBURY, MASSACHUSETTS.

IMPROVEMENT IN VEHICLE-SPRING CLIPS.

Specification forming part of Letters Patent No. **220,546**, dated October 14, 1879; application filed July 5, 1878.

To all whom it may concern:

Be it known that I, CHARLES W. PATTEN, of Salisbury, State of Massachusetts, have invented Improvements in Carriages, of which the following is a specification.

This invention relates to that class or kind of carriages in which one set of springs are arranged at right angles to another set, the two being coupled together at the point or angle of intersection; and the invention consists in a shackle formed with two parallel plates or lips, with an intermediate slot or space for the reception of one of such intersecting springs, and with a pair of projecting perforated ears to receive the eye of the other spring and the pivotal bolt thereof, such ears being formed upon one of said plates or lips, with their plane coincident with the edge-lines of such lips, but transversely to the axial line of the spring inserted in such slot, and said lips also projecting at right angles to the plane of such lips and slot, all as will, by the aid of the accompanying drawings, be fully described.

Figure 1 shows my invention as applied to side and cross springs of a spar-wagon, shown in plan view, the body being omitted. Fig. 2 is a side elevation of Fig. 1 with the body in place. Fig. 3 is an end view of Fig. 2. Fig. 4 is an enlarged view of the shackle, as shown in Fig. 3. Fig. 5 is an enlarged view of the shackle shown as in Fig. 2. Fig. 6 is an enlarged detached vertical section as taken in the longitudinal line of the end spring and through the axial line of the ear-bolt on which the side springs are pivoted. Fig. 7 is a detached vertical section taken transversely to the end spring and in the longitudinal line of the side spring.

In these views, *a a* represent the cross-springs, and *b b* the side springs, such cross-springs being supported, respectively, upon the hind axle and head-block in the usual manner, the side springs being at their ends shackled to the cross-springs, and at or near their center supporting the body.

My shackle (shown at *e*, Fig. 1) is formed with an upper lip or plate, *f*, and lower lip or plate, *g*, with a slot or space between them to receive the cross-spring *a* and a packing, *k*, if desired, these lips being perforated to receive the bolt *i*, which passes centrally through spring *a* and secures the shackle in place.

Two ears, *n n*, are formed upon lip *g* to receive the eye of spring *b*, as is plainly shown in Fig. 7, these ears being perforated to receive the pivot-bolt *j*, which passes through the eye of spring *b*.

The slot for the end spring may be made an inclosed slot by uniting the now free ends of lips *f g* in the same manner as they are now united at the opposite end.

I claim as my invention—

A spring-shackle formed with connected upper and lower plates, *f g*, and a slot or space between such plates to receive a steel spring, and with perforated ears *n n* formed upon one of said plates, and projecting at right angles to the plane of said plates and slot, and with the plane of said ears in the direction of the edge-lines of such plates, substantially as specified.

CHARLES W. PATTEN.

Witnesses:

T. W. PORTER,
EUGENE HUMPHREY.