No. 743,621. PATENTED NOV. 10, 1903.

J. CUMMINGS.

SHIFTING RAIL FOR CARRIAGE SEATS.

APPLICATION FILED MAR. 5, 1903.

NO MODEL.

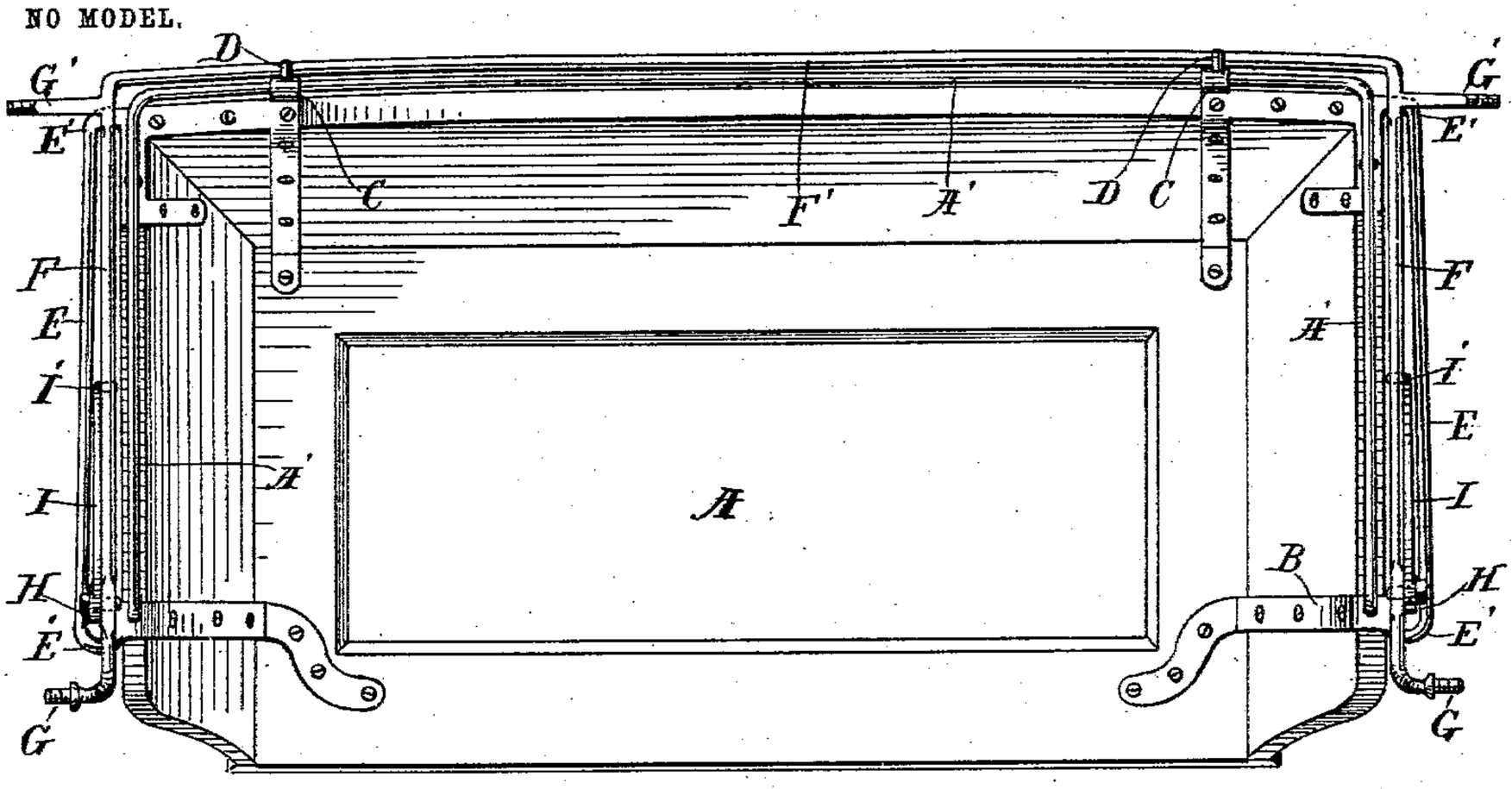

Fig. 1.

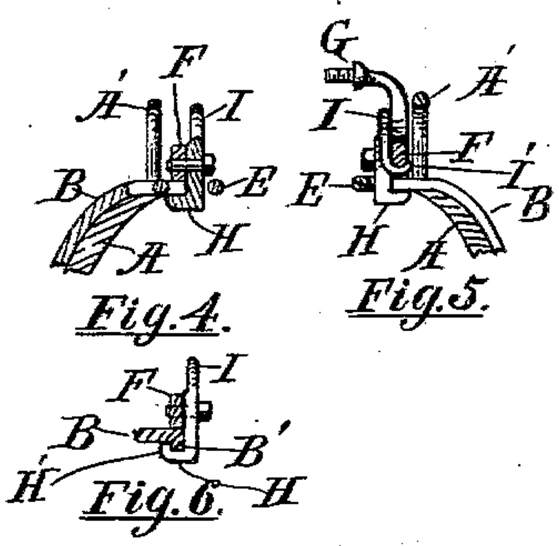

Fig. 4.

Fig. 5.

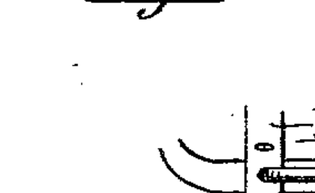

Fig. 6.

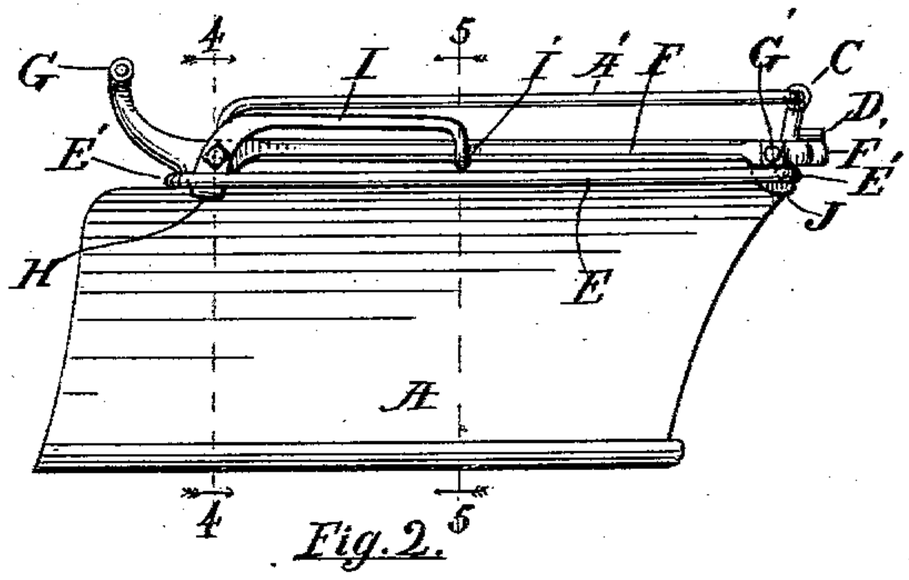

Fig. 2.

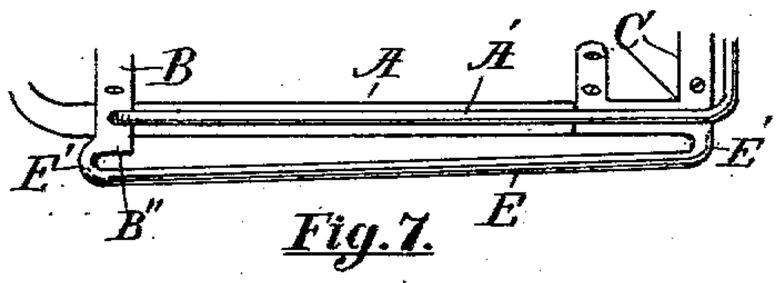

Fig. 7.

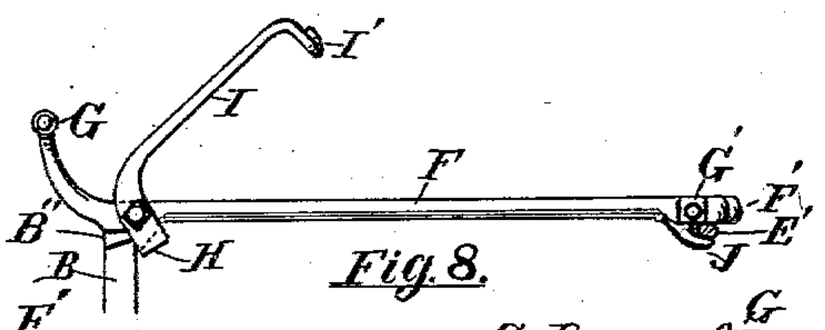

Fig. 8.

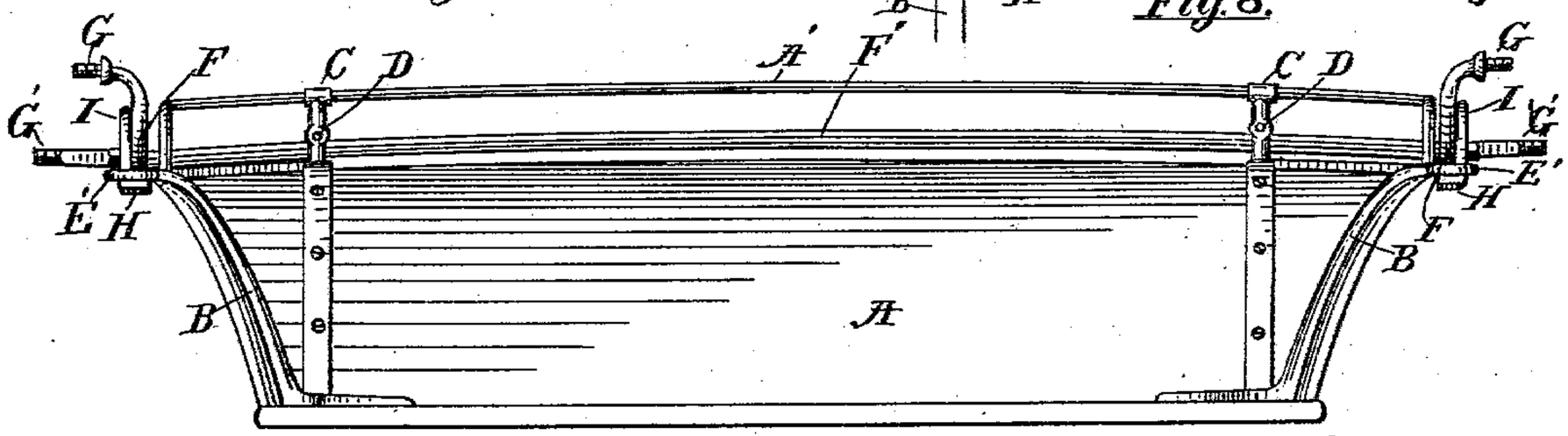

Fig. 3.

Witnesses
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No. 743,621. Patented November 10, 1903.

UNITED STATES PATENT OFFICE.

JOHN CUMMINGS, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR OF ONE-HALF TO ALFRED D. RATHBONE, JR., OF GRAND RAPIDS, MICHIGAN.

SHIFTING RAIL FOR CARRIAGE-SEATS.

SPECIFICATION forming part of Letters Patent No. 743,621, dated November 10, 1903.

Application filed March 5, 1903. Serial No. 146,359. (No model.)

To all whom it may concern:

Be it known that I, JOHN CUMMINGS, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Shifting Rails for Carriage-Seats; 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 shifting rails for carriage-seats; and its object is to provide the same with means whereby it may be quickly attached or detached; to provide the same with fastening means that will not become loosened by use; to provide a simple, strong, and durable device, and to provide the same with certain new and useful features hereinafter more fully described, and particularly pointed out in the claims.

My invention consists, essentially, in a shifting rail to which the carriage-top is attached and provided with fixed hooks to engage suitable projections on the seat and also having pivoted hooks to engage other projections on the seat, said pivoted hooks having flexible levers to operate the same and means for securing these levers under tension, whereby the pivoted hooks tend to take up all wear and slack in the device and are readily released as occasion requires, and in the combination and arrangement of parts, as will more fully appear by reference to the accompanying drawings, in which—

Figure 1 is a plan view of a carriage-seat with my device attached; Fig. 2, an end elevation of the same; Fig. 3, a front elevation of the same; Fig. 4, a detail in section on the line 4 4 of Fig. 2; Fig. 5, the same on the line 5 5 of Fig. 2; Fig. 6, a detail of a modified construction corresponding to Fig. 4; Fig. 7, a detail in plan view of one end of the seat with the shifting rail detached, and Fig. 8 an end elevation of the shifting rail detached.

Like letters refer to like parts in all of the figures.

A represents a carriage-seat of any suitable construction and having end irons B projecting over the ends of the seat a short distance, as shown in Fig. 7, and back irons having rearwardly-projecting pins or lugs G to engage and hold the back part of the shifting rail. The seat is also provided at each end with a suitable rod E, arranged substantially parallel with the upper edge of the seat and turned inward at each end, as at E′, and connected to the respective irons B and C.

The shifting rail proper consists of a suitable bar bent twice substantially at right angles and adapted to extend along each side of the seat, as at F, and across the rear of the seat, as at F′, and provided with upwardly and outwardly turned forward ends G, to which the carriage-bows are pivoted in the usual way, and outwardly-projecting studs G′ near the rear angles, to which the top props are attached and upon which the bows rest when the top is lowered. This carriage-top being of the usual construction is not herein shown and forms no part of my present invention.

To detachably secure this rail in place, it is provided with hooks J to engage suitable projections formed by the inwardly-turned rear ends of the bars E and pivoted hooks H to engage the outwardly-projecting ends of the irons B. These pivoted hooks and the end B′ of the bar B are made inclined, as shown in Fig. 8, and the hooks J are also inclined to the bar E, so that the projection E′ is wedged between this hook and the bar, and contacting inclined surfaces of the pivoted hook H and projections B′ tend to force the rail backward, whereby any slack in the fastenings is constantly taken up and all loosening or rattling thereof is prevented. To operate the hooks H, they are each provided with a lever I, which is made flexible and provided with a hook I′ at its free end to pass beneath and engage the rail F, and the parts are so proportioned that when the rail is attached in place and the said hook is thus engaged the lever will be flexed and under tension, and thus constantly tend to force the hook H against the inclined under surface B″ of the iron B. The forward end of the rod E serves to prevent the forward end of the rail F from moving outward and becoming detached. This rod may, however, be dispensed with and a downward extension B′ of the end of the iron B and an upward

extension H′ of the hook added, as shown in Fig. 6, to provide interlocking parts to accomplish the same results. I prefer, however, to use the rod E, as it affords a stronger construction and serves, together with the fixed rail A′, to prevent anything from coming in contact with the lever I and accidentally detaching the same.

This rail is well supported at the rear angle by the projection E′, and the pins D serve also to hold the rear of the rail down where they engage the same, whereby a strong and reliable support for the studs G′ is provided to enable them to properly sustain the top.

In addition to providing fastenings that will not rattle and will not become loose by wear it is obvious that these fastenings are also detached by merely releasing the hooks I′ and raising the levers I. This shifting rail and the carriage-top can thus be instantly removed or replaced without recourse to any tools and has no loose parts to become loosened, detached, or lost.

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

1. As an article of manufacture, the combination of a shifting rail adapted to support a carriage-top, fixed hooks and pivoted hooks on the rail and adapted to engage projections on the respective ends of a carriage-seat and secure the rail in place, flexible levers attached to the pivoted hooks, and hooks on the ends of said levers adapted to engage the rail and hold the lever in tension.

2. The combination of a shifting rail adapted to support a carriage-top, a carriage-seat having projections, fixed hooks and pivoted hooks on the rail to engage the projections, flexible levers to operate the pivoted hooks and hooks on the lever to engage the rail and hold the levers under tension.

3. The combination of a shifting rail adapted to support a carriage-top, a carriage-seat, fixed hooks on the rail, projections on the seat to engage said hooks, pivoted hooks on the rail, projections on the seat and having inclined surfaces to engage the pivoted hooks, and flexible means for holding the pivoted hooks in engagement with the said inclined surfaces.

4. The combination of a carriage-seat having outwardly-projecting end irons, and upwardly-projecting rear irons, a shifting rail extending across the back and at each side of the seat, pins in the rear irons engaging the rail, pivoted hooks on the rail engaging the end irons, flexible levers to operate the hooks, and means for holding the levers under tension.

5. The combination of a carriage-seat, end irons attached thereto and projecting outward therefrom, rear irons attached to the seat, rods at each side of the seat and turned inward and connected to the end and rear irons at its respective ends, a shifting rail adapted to support a carriage-top, fixed hooks on the shifting rail and engaging the inwardly-turned ends of the rods, pivoted hooks on the shifting rail and engaging the projecting ends of the end irons, and means for turning and holding the pivoted hooks.

6. In combination with a carriage-seat, end irons attached thereto and projecting outward therefrom and having inclined under surfaces, outward projections at the rear of the seat and rearward projections at the back of the seat, a shifting rail adapted to support a carriage-top and extending at the sides and rear of the seat and engaged by said rear projections, fixed hooks having inclined surfaces engaging the end projections, pivoted hooks engaging the inclined surfaces of the end irons, flexible levers on the hooks, and hooks on the end of the levers to engage the rail and hold the pivoted hooks in engagement.

7. The combination of a carriage-seat having outwardly-projecting end irons and upwardly-projecting rear irons, rods having inwardly-turned ends connected to the end irons and rear irons, studs in the rear irons, a shifting rail adapted to support a carriage-top and extending at the sides and across the back of the seat and engaged by studs in the rear irons, hooks on the rail and engaging the inwardly-turned ends of the rods, pivoted hooks on the rail engaging the end of the end irons, flexible levers on said hooks, hooks on the levers and engaging the rail, and a fixed rail supported by the end and rear irons.

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

JOHN CUMMINGS.

Witnesses:
LUTHER V. MOULTON,
GEORGIANA CHACE.