

H. K. PORTER.
Shifting-Tops for Vehicles.

No. 144,790.

Patented Nov. 18, 1873.

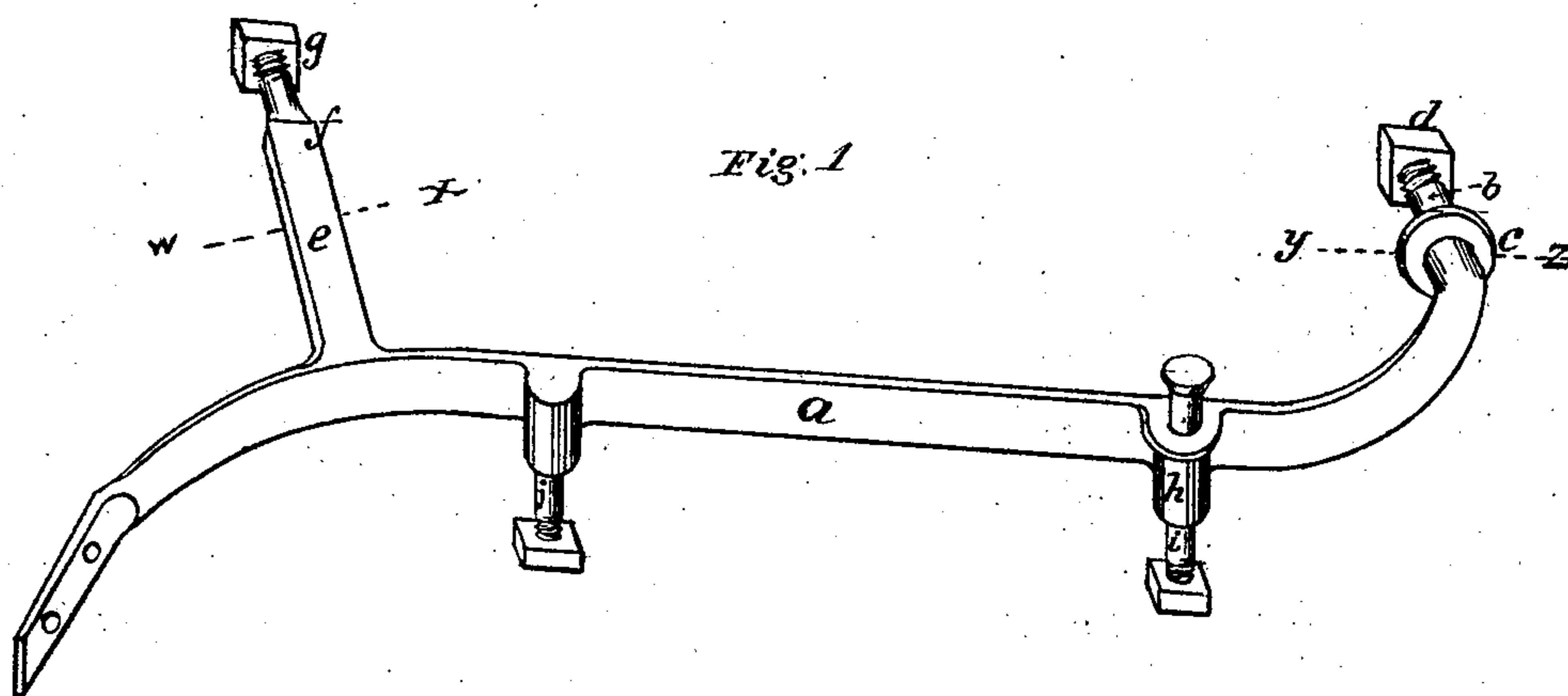


Fig. 2

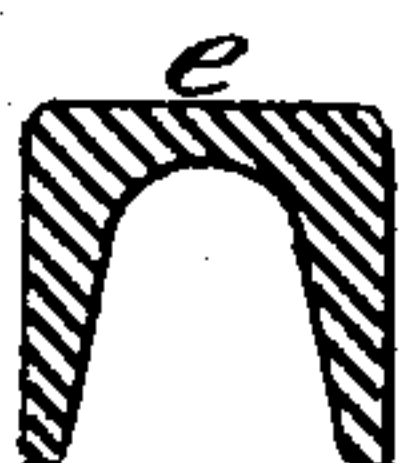
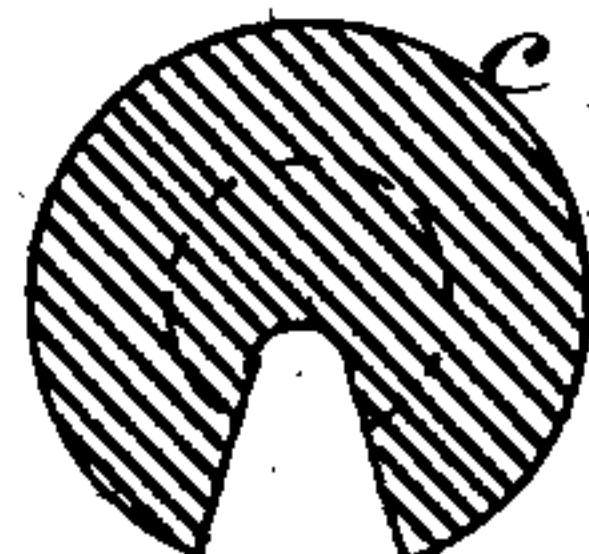


Fig. 3



Witnesses.

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HENRY K. PORTER, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN SHIFTING TOPS FOR VEHICLES.

Specification forming part of Letters Patent No. **144,790**, dated November 18, 1873; application filed January 29, 1872.

To all whom it may concern:

Be it known, that I, HENRY K. PORTER, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful or Improved Shifting-Top Carriage-Seat Rail, of which the following is a specification:

This invention relates to side seat-rails of shifting-top carriages, upon which rails the top-irons are pivoted; and the invention consists in a cast-metal shifting-top seat-rail; also, in cutting through or severing the circumferential line of the shoulder near the front end of the rail; also, in a hollow or angle-shaped cross-section of the top-prop stud; and also in so constructing the rail that vertical wrought-iron pivots or bolts may be combined with a malleable-iron rail, for the purpose of securing the rail to the seat.

In the drawing, Figure 1 is a perspective view of the rail, and showing the wrought-iron bolts. Fig. 2 is a vertical section taken on line *w x*, Fig. 1; and Fig. 3 is also a vertical section taken on line *y z*, Fig. 1.

Similar letters of reference indicate like parts in the several figures.

The method of constructing these seat-rails, as heretofore practiced, has been to either weld the projections to the main bar, or else to make use of a series of short thick pieces, and by splitting, and turning off, and drawing out the projections, and then welding the several sections together to complete the rail. Either of these processes was open to very serious objections: First, the expense was large; and, second, the liability to defective welding, which is always great in working small irons, rendered these rails exceedingly liable to fail from such defects.

By my invention I produce the rail at less than one-fourth the cost of the above processes, and of much greater strength and reliability, for the reason that the metal is homogeneous throughout, and free from defects or flaws, and that malleable iron is of much greater stiffness than wrought-iron; besides the vertical studs which attach the rail to the seat can be made removable, and therefore are readily replaced if injured.

In the drawings, *a* is the rail, which is made of malleable iron. *b* is the front end, upon which the bow-irons are pivoted, the shoulder *c* and nut *d* serving as the means of keeping the bow-irons in place between them. *e* is the stud, which receives and serves as the pivot and support of the lower end of the back top-joints, this stud having a shoulder, *f*, between which and the nut *g* the joint is held in place. The rear end of the rail may be flattened, as shown, to be secured to the back-board of the seat, or it may be formed to unite with a rail extending across the back of the seat. For the purpose of securing this rail to the seat-side, either the hollow boss *h* is formed upon the rail, and through this boss the wrought-iron bolt *i* passes, as also through the seat-arm or flange, and is secured by the screw-nut beneath; or the stem *j* is cast upon the rail, and is secured by a screw-nut. Instead of the bolt *i*, a wrought-iron stem may be secured in the rail by a screw-thread, or by casting the metal around it.

In Fig. 2 the shoulder *c* is shown in section, with a portion cut away beneath, for the purpose of preventing what is technically termed a "shrink," which otherwise would occur at the shoulder, while, by thus cutting a portion away, or a slot through the shoulder, it is sound and strong.

In Fig. 3 the stud *e* is represented as having the interior cut away, leaving a three-sided angle-iron in section. This is done to relieve the rail of weight, and also to prevent shrinks and weakness in the casting.

By combining the wrought-iron bolts *i* with a malleable-iron or other cast-metal rail, many advantages are gained, among which are these: First, cheapness; second, in case these bolts are broken they are easily replaced, but if a part of the casting, the entire rail would be lost; besides, by thus inserting the bolts, a customary brace leading from the top of the seat back to near the front end of the rail may be secured to the front bolt.

What I claim as new, and desire to secure by Letters Patent, is—

1. A cast-metal shifting-top seat-rail having the hollow bosses *h h*, for the reception of

the wrought-iron bolts, or equivalent wrought-iron pivots, substantially as described and shown.

2. The hollow or angular stud *e*, formed upon rail *a*, substantially as and for the purposes specified.

3. The shoulder or head *c*, formed upon rail

a, and cut through at a right angle with its circumferential line, substantially as described and shown.

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Witnesses:

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