C. H. PALMER, Jr.
Carriage

No. 212,397. Patented Feb. 18, 1879.

Fig. 1.

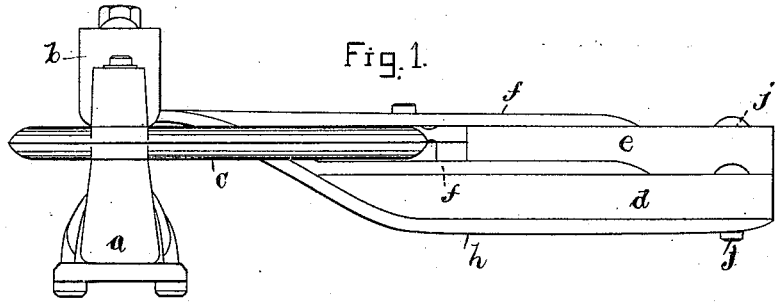


Fig. 2.

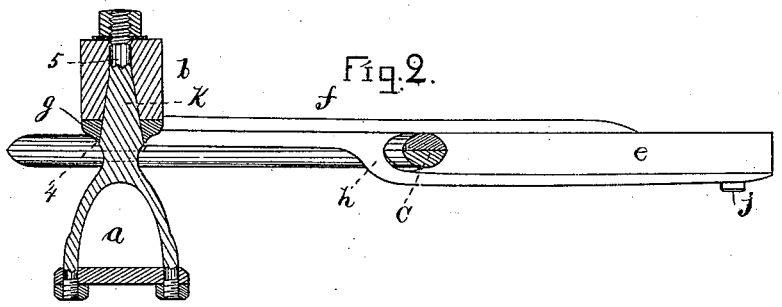


Fig. 3.

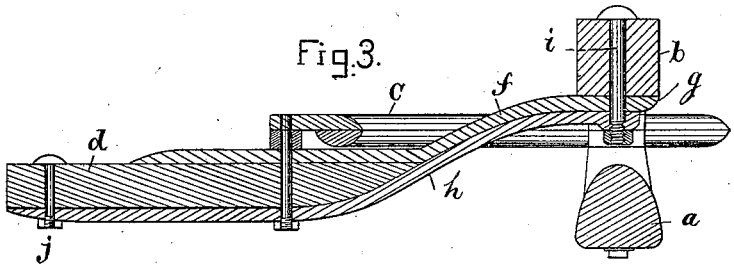
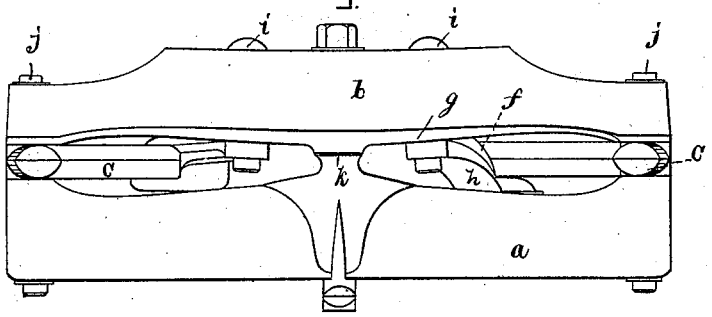


Fig. 4.



Witnesses.
L. F. Connor.
N. E. Whitney.

Inventor.
Charles H. Palmer Jr.
by Crosby & Gregory.
Attys

UNITED STATES PATENT OFFICE.

CHARLES H. PALMER, JR., OF MERRIMAC, MASSACHUSETTS.

IMPROVEMENT IN CARRIAGES.

Specification forming part of Letters Patent No. **212,397**, dated February 18, 1879; application filed December 14, 1878.

To all whom it may concern:

Be it known that I, CHARLES H. PALMER, Jr., of Merrimac, county of Essex, State of Massachusetts, have invented an Improvement in Carriages, of which the following description, in connection with the accompanying drawings, is a specification.

This invention relates to carriages, and has special reference to the manner of connecting the front ends of the perches with a two-part perch-iron and the head-block, to thereby give more space between the bottom of the carriage-box and the top of the perch for the play of the box on its springs; also, to a king-bolt for the head-block, the bolt being tapered, as herein shown and described, to permit the head-block iron to follow along down upon it as the parts become worn, yet always remain tight.

Figure 1 represents, in side elevation, a sufficient portion of a carriage to illustrate this invention, the said figure showing two forms of perch-irons, one being a modification of the other. Fig. 2 is a section showing more fully the rear and uppermost perch-iron of Fig. 1, and illustrating the form of the king-bolt. Fig. 3 is a section showing the front and lowermost perch-iron of Fig. 1, and Fig. 4 is a front-end view of the head-block and axle cross-bar.

The axle cross-bar *a*, head-block *b*, and fifth-wheel *c* are, and may be, of usual construction.

Instead of extending the wooden perches *d e* over and beyond the fifth-wheel, and mortising their ends into the head-block *b*, as most commonly practiced in carriages and light road-wagons, I terminate the said perches at or near the rear and under side of the fifth-wheel.

My improved perch-irons are made double and separable; or, for instance, the upper member, *f*, of the perch-iron is connected with, and extends back from, the head-block iron *g*, and is fitted to the upper side of the end of the perch, located substantially at the level of or below the fifth-wheel, as in Figs. 2 and 3; and the lower member, *h*, of the said perch-iron is connected with the upper member, *f*, by means of a bolt, *i*, and nut, and extended backward for a short distance in contact with member *f*, as shown in the drawings, and it is bent down to receive between itself and the said member *f* the end of the perch, suitable bolts *j* connecting the ends of the said member and the perch.

Making the perch-irons double, or in two pieces in this way, rather than in one piece with its end bifurcated, makes a stronger perch-iron, one more cheaply made, and one more readily applied.

The fifth-wheel is preferably secured between the two irons *f h*, as shown in Figs. 1 and 2.

The king-bolt *k*, instead of tapering from the top of the axle *a*, as usual, with a long taper, is started somewhat above the axle, as at 4, and the taper is made rather abrupt until it meets the cylindrical portion 5 of the bolt.

The head-block iron is tapered to fit the taper of the king-bolt, as in Fig. 2, and as the said iron and bolt wear, the iron and head-block are free to descend upon and remain in close contact with the king-bolt without touching the axle-arm.

It is customary to provide a tapered king-bolt with a collar just above the axle-arm; but such plan does not possess the advantages of my king-bolt without a collar at the lower end of its taper, for with the collar the head-block iron comes to a bearing thereon, and further wearing of the head-block and bolt, the head-block not being free to descend, soon causes the head-block and its iron to fit the king-bolt loosely and rattle.

I claim—

1. The perch *e*, terminating short of the head-block, in combination with said head-block, the irons *f h*, and fifth-wheel *c*, the said fifth-wheel being inclosed between the irons *f h* and end of the perch, substantially as shown and described.

2. The collarless king-bolt, as described,

composed of a tapered portion and a cylindrical portion above it, combined with a head-block iron and head-block applied thereto, the lower end of the taper commencing at a point above the level of the axle-arm *a*, as described, to permit the head-block and its iron to descend freely as they and the king-bolt become worn, to compensate for wear and always remain in close contact.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHAS. H. PALMER, JR.

Witnesses:
G. W. GREGORY,
N. E. WHITNEY.