G. F. KIMBALL.

HUB-RUNNERS.

No. 189,362. Patented April 10, 1877.

Fig. 1.

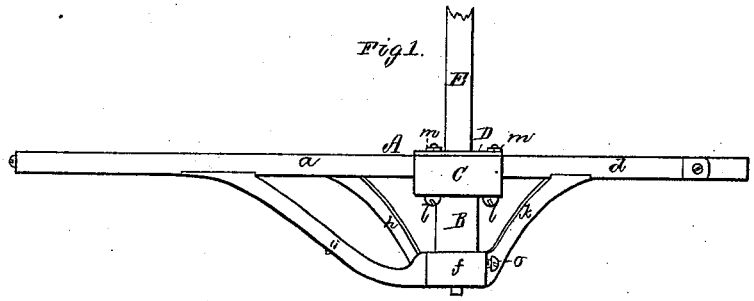


Fig. 2.

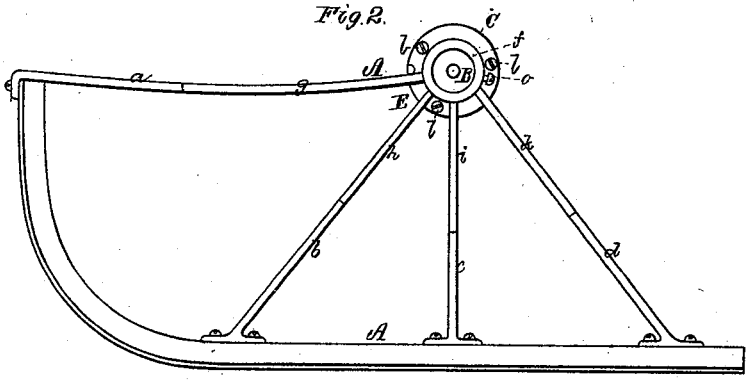
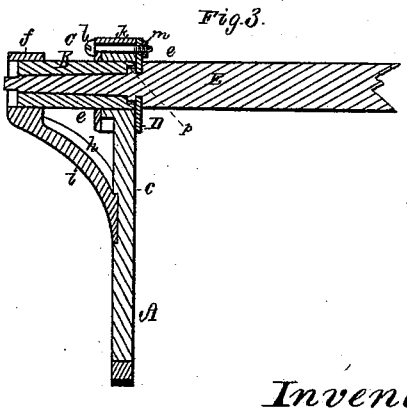


Fig. 3.



Witnesses.

S. W. Piper.

L. W. Müller.

Inventor:

George F. Kimball

by his attorney.

R. H. Eddy.

UNITED STATES PATENT OFFICE.

GEORGE F. KIMBALL, OF NEWTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND EDWIN N. KIMBALL, OF SAME PLACE.

IMPROVEMENT IN HUB-RUNNERS.

Specification forming part of Letters Patent No. **189,362**, dated April 10, 1877; application filed March 6, 1877.

To all whom it may concern:

Be it known that I, GEORGE F. KIMBALL, of Newton, of the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Hub-Runners for Carriages; and do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a top view, Fig. 2 a front elevation, and Fig. 3 a transverse section, of a hub-runner provided with my invention, one object of which is to render hub-runners capable of being adjusted for either wide or narrow tracks; and my said invention consists—

First, in a hub-runner provided with a separate reversible axle-journal box, arranged and applied substantially as hereinafter explained.

Second, in a hub-runner formed with an auxiliary journal-box supporter and guard and oblique braces, all being essentially as set forth.

Third, in a hub-runner provided with an auxiliary journal-box supporter and a cap or flanged disk, all arranged and applied substantially as explained.

Fourth, in a hub-runner provided with the axle-box, its main and auxiliary supporters, and the cap or flanged disk, arranged and having confining-screws as specified.

Fifth, in the combination of an axle and its collar-plate with a hub-runner, a flanged disk, a separate reversible axle-box, and an auxiliary supporter therefor, all being arranged and applied substantially as represented in the accompanying drawings, and hereinafter explained.

In the drawings, A denotes a hub-runner, having at the junction of its spokes *a b c d* a circular head or hub, *e*, to receive and support a separate or movable and reversible axle-journal box, B, arranged within it, as shown. At a suitable distance from the said head or main supporter of the box B is an additional tubular head or auxiliary axle-box supporter, *f*, into the bore of which the axle-box fits and extends in manner as represented. This auxiliary head or supporter *f* is held in position by a series of curved braces, *g h i k*, extended from it to the spokes, the upper of said braces serving not only to sustain the head, but as a deflector or guard to prevent the head from being run against by a wheel or other object while the runner may be in use.

There is also to the main head *e* a cap or flanged disk, C, the flange *k'* of which extends over the head from the first to the last of its spokes.

Through this cap and the axle-collar plate D a series of screws, *l*, are passed, and provided with nuts *m*, as shown, such screws serving, with the nuts and the cap and collar-plate, to confine the axle E in the box and to the runner.

There is upon the outer end of the journal a screw to receive a nut for holding the journal in the box. Such box, confined in place by a clamp-screw, *o*, screwed into the auxiliary head, and against the box, may be reversed end for end, so as to enable the journal-shoulder *p* to be brought next to the auxiliary head, in order to set the runner for wider tracking.

By making the auxiliary head to correspond in size with the inner head, and arranging the braces of the former so that the cap C may fit to them and their head, as to the inner head and the spokes, the runner may be adjusted to either wide or narrow tracking with an axle provided with the shoulder and confining-disk, as represented.

Were it not for the space between the main and auxiliary axle-box supporters the flanged cap could not be applied to the latter of such supporters. By applying thereto the flanged cap much shorter bolts are required for fastening than otherwise would be required.

I claim as of my invention as follows:

1. A hub-runner, A, provided with a separate reversible axle-journal box, B, arranged and confined in it substantially as and for the purpose specified.

2. A hub-runner provided with an auxiliary axle-journal box supporter, *f*, and guard and oblique braces arranged with the main journal-box supporter and the spokes of the runner, substantially as set forth.

3. The hub-runner A, provided with the auxiliary axle-journal box supporter *f* and the

flanged cap C, arranged with the axle-box and its main supporter, essentially as shown and described.

4. The hub-runner provided with the reversible axle-journal box, its two supporters, and the flanged cap, arranged and provided with confining-screws, as set forth.

5. The combination of the axle and its collar-plate D with a hub-runner, A, the flanged disk C, and the separate removable axle-box B, and the auxiliary supporters *f* thereof, all being arranged and connected substantially as set forth.

GEORGE F. KIMBALL.

Witnesses:
R. H. EDDY,
J. R. SNOW.