

I. & W. G. PETTIS.  
Attachable Vehicle-Runner.

No. 169,116.

Patented Oct. 26, 1875.

Fig 1.

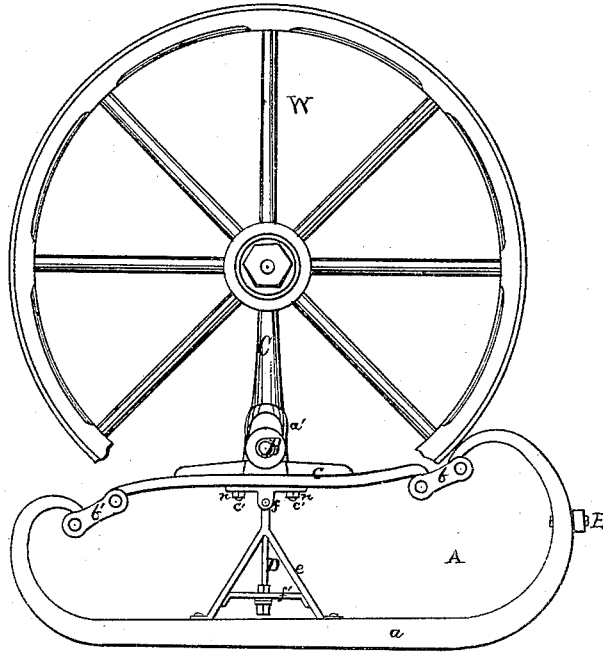


Fig 2.

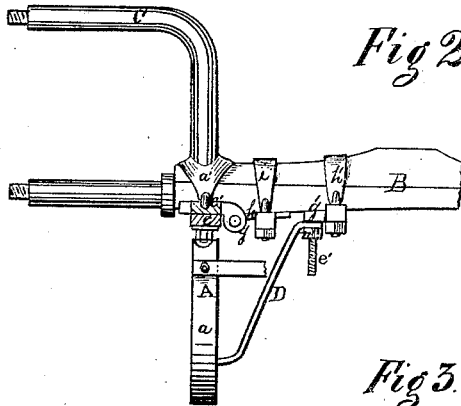
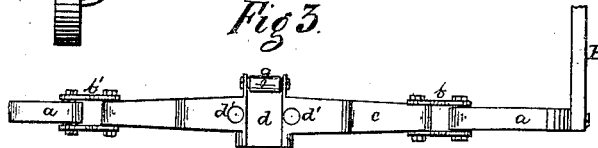


Fig 3.



Witnesses.

*W. M. Edwards*

*B. E. Clark*

Inventor

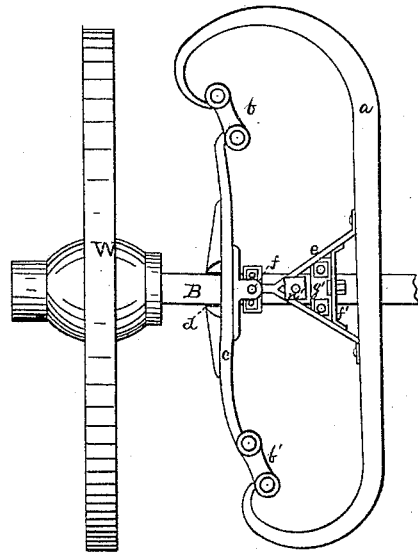
*Isaac Pettis &  
William G. Pettis*

*per [Signature]  
[Signature]*

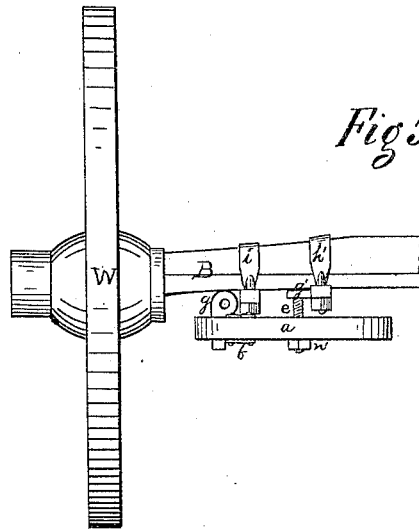
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*Fig. 4.*



*Fig. 5.*

*Witnesses.*

*W. M. Edwards.*

*Ben. S. Clark*

*Inventor:*

*Isaac Pettis +  
William G. Pettis*

*per Fitch & Fitch  
Attys.*

# UNITED STATES PATENT OFFICE.

ISAAC PETTIS AND WILLIAM G. PETTIS, OF PUTNAM, CONNECTICUT.

## IMPROVEMENT IN ATTACHABLE VEHICLE-RUNNERS.

Specification forming part of Letters Patent No. **169,116**, dated October 26, 1875; application filed March 22, 1875.

*To all whom it may concern:*

Be it known that we, ISAAC PETTIS and WILLIAM G. PETTIS, both of Putnam, county of Windham and State of Connecticut, have invented an Improved Wagon - Runner, of which the following is a specification, reference being had to the accompanying drawings forming part hereof.

Our invention relates to the combination, with the axle of a wagon, of a sleigh-runner and a clip axle-arm; and consists in a sleigh-runner having a curved runner-piece jointed to a leaf-top piece, across which is a channel or groove to receive and fit upon the under side of the axle, and having a central triangular brace bolted upon the runner-piece, and hinged to the top piece, the sleigh-runner being hung upon a hinge-joint on a plate clamped to the under side of the axle, and held in position as a runner by bolts on the lower ends of a clip axle-arm, which secure the said clip axle-arm in position upon the upper side of the axle at its end, just back of the hub, extending on either side of the axle down through openings, one on either side of the channel in the top piece of the runner, and fastened on the under side thereof by nuts and a brace-rod, extending from a bolt clamped upon the under side of the axle to and bolted upon the cross-tie of the central triangular brace-piece of the runner, whereby, when the runner is used, the wagon-wheel may be hung clear of the ground upon the clip axle-arm, and when the runner is not in use the clip axle-arm may be removed, and the runner carried folded up against the under side of the axle.

Figure 1 is a side elevation of our invention, showing the runner braced in position and the wheel hung upon the clip axle-arm. Fig. 2 is a front elevation of the same, the wheel being removed. Fig. 3 is a plan view of the sleigh-runner detached from the axle. Fig. 4 is a plan view of the under side of the axle with the runner folded up and the wheel in position upon the axle. Fig. 5 is a front elevation of the same parts in similar position, showing the clip axle-arm removed.

A is the sleigh-runner, constructed with the curved runner-piece *a*, jointed at *b b'* to the leaf-spring top piece *c*, across which top piece is formed the channel or groove *d*, arranged

to receive and fit upon the under side of the axle B, and with a central triangular brace, *e*, bolted upon the runner-piece *a*, as shown, and jointed to the under side of the top piece at *f*, and is hung upon the hinge-joint *g* to the plate *h*, which is clamped upon the axle B by the clamp *i*, as shown. C is the clip axle-arm, constructed with the concave base-piece *a'*, which fits upon the upper side of the axle B, just behind the hub of the wheel W, and having the bolts *c'* extending one on either side of the axle, down through the openings *d'* in the top piece *c* of the sleigh-runner, and fastened on the under side thereof by the nuts *n*, which bolts, thus fastened, operate to secure the clip axle-arm in position upon the upper side of the axle, as shown, and to hold the runner A in its place under the axle. D is a brace-rod, extending from the bolt *e'*, to which it is secured by the nut *n'*, to and is bolted upon the transverse piece or cross-tie *f'* of the triangular brace *e* on the runner A, and operates to hold the runner A in its proper position during use. The bolt *e'* is fixed upon a piece, *g'*, which is clamped upon the axle at *h'*, as shown. E is a wooden brace-piece, bolted loosely upon the front of the runner-piece *a*, and extending to and similarly secured upon the front of the runner-piece on the opposite end of the axle, and operates to prevent the runners from spreading while traveling.

Now, it is evident that when the runner A is secured in the position shown in Figs. 1 and 2 for use in traveling over snow roads the wagon-wheel W may be hung and held in place upon the clip axle-arm C, and will thus be carried clear of the surface of the road. It is also evident that when the runner is not in use the wheel may be restored to its place upon the axle, and the clip axle-arm C and brace-rod D removed, and the runner A, by the operation of the hinge-joint *g*, be folded up against the under side of the axle B, as shown in Figs. 4 and 5, and may be conveniently secured in that position by means of the bolt *e'* and nut *n'*, as shown in Fig. 5, the bolt *e* being somewhat lengthened for that purpose, if desired. It is also evident that the draft will be low down, the runners being set under the axle, and not high as when the runners are secured upon the rim of the wheel, as is the case in

some wagon-runners; and it is evident that, by means of the leaf-spring top piece *c*, and the joints *b* and *b'*, and the joint *f* of the brace *e*, the runner A is rendered elastic, and will adapt itself when traveling to an uneven surface of road without jarring or jolting the wagon.

What we claim as our invention, and desire to secure by Letters Patent, is—

The combination, with the axle B, of the sleigh-runner A, consisting of the curved runner-piece *a*, jointed at *b* and *b'* to the leaf-spring

top piece *c*, which is provided with the channel *d*, and has the openings *d'*, the triangular brace *e*, having the joint *f* and the cross-tie *f'*, the hinge-joint *g*, the clip axle-arm C, with its concave base-piece *a'*, and provided with the bolts *e'*, the brace-rod D, and the bolt *e'*, as described.

ISAAC PETTIS.  
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Witnesses:

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