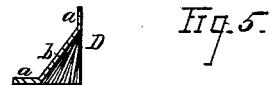
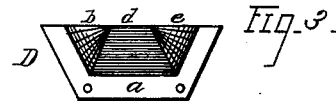
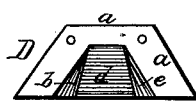
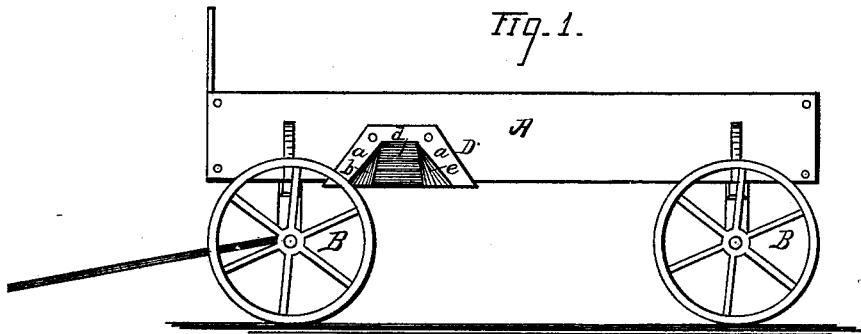


A. PALM.
Rub-Iron for Vehicles.

No. 218,562.

Patented Aug. 12, 1879.



WITNESSES -

Chas. C. Gill
H. M. Reilly

INVENTOR -

Andrew Palm
By his Atty,
Cox and Cox

UNITED STATES PATENT OFFICE.

ANDREW PALM, OF LAWRENCE, KANSAS, ASSIGNOR OF ONE-HALF HIS
RIGHT TO JOHN H. WILDER, OF SAME PLACE.

IMPROVEMENT IN RUB-IRONS FOR VEHICLES.

Specification forming part of Letters Patent No. **218,562**, dated August 12, 1879; application filed
April 26, 1879.

To all whom it may concern:

Be it known that I, ANDREW PALM, of Lawrence, in the county of Douglas and State of Kansas, have invented a new and useful Improvement in Rub-Irons for Vehicles, of which the following is a specification, reference being had to the accompanying drawings.

The invention relates to an improvement in rub-irons for vehicles; and consists in the device shown in the annexed drawings, and described hereinafter.

The object of the invention is to provide a rub-iron which will effectually protect the body of the wagon and permit a portion of the wheel to pass beneath the same, thus allowing the vehicle to turn in a small space, and at the same time preventing the wheel from becoming choked.

Figure 1 is a side view of a wagon with the rub-iron forming the subject of this invention attached. Fig. 2 is a face view of the rub-iron. Fig. 3 is a bottom view of same. Fig. 4 is a side view, and Fig. 5 a central section, of the rub-iron.

In the accompanying drawings, A represents an ordinary wagon-body mounted upon wheels B, and furnished at a suitable point on each side with the rub-irons D, which are set in the body of the wagon and secured by any convenient means.

The iron D has upon its edge the rim *a*, which is of angular form, so as to snugly fit the edge of the wagon, and is supplied with suitable apertures, through which bolts or screws may be passed in order to secure the iron in place. The central portion of the iron D consists of the three surfaces *b d e*, all of which connect and incline downward and inward toward the center of the wagon-body, as shown at Figs. 2 and 3.

The portion *d* is a plane surface having the inclination above mentioned, and runs parallel with the side of the wagon, the surfaces *b e* being one on each side of the surface *d*, and while inclining downward and inward also diverging slantingly outward from the said surface, all of the surfaces being narrow at their upper ends, and gradually expanding toward their lower portions.

It is obvious, in view of all the surfaces *b d*

e being plane and of their peculiar inclinations, that the periphery of the wheel B will rub against a flat surface when the wagon is being turned, and that it cannot choke.

It is also obvious that by the construction of the rub-iron D the wagon can be turned short and will not lift the body or otherwise disarrange the same.

Heretofore rub-irons of various kinds have been in use. They have generally consisted of a curved central face and two side faces which have curved to meet the inner end of the central face, as shown in Letters Patent Nos. 110,606 and 158,139. The defect in these is that the lower inner end of the iron is of the same width or narrower than the outer end. Thus at the point where the periphery of the wheel is the clear space is narrower than where it entered. It is well known that when the wheel is moving over rough ground the lateral movement is greater at the periphery than at the hub; hence it is necessary that the rubbing-surface of the iron should be wider at its inner than at its outer end, as it is at the inner end that the periphery of the wheel has its jarring movement. Unless the rub-iron is constructed in this manner the wheel is liable to choke or by its constant knocking to break the rub-iron and injure the carriage-body. Besides the above, the curved central face of the rub-iron occupies more room in the body of the wagon than an inclined plane face does.

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

The angular rub-iron D, secured to the wagon-body by means of the rim *a*, and consisting of the three converging plane surfaces *b d e*, all of which incline downward and inward and are gradually widened from their upper ends downward, substantially as shown and described.

In testimony that I claim the foregoing improvement in rub-irons, as above described, I have hereunto set my hand this 14th day of March, 1879.

ANDREW PALM.

Witnesses:

W. A. HARRIS,
JOSEPH E. RIGGS.