S. T. F. STERICK.
Vehicle-Wheel Hub.

No. 203,669. Patented May 14, 1878.

Fig. 1.

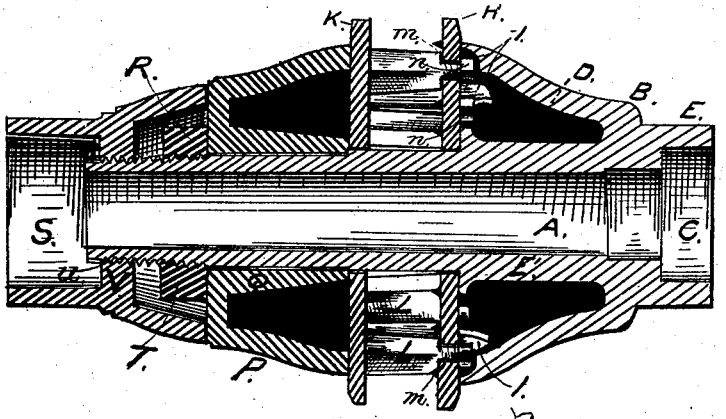



Fig. 2.

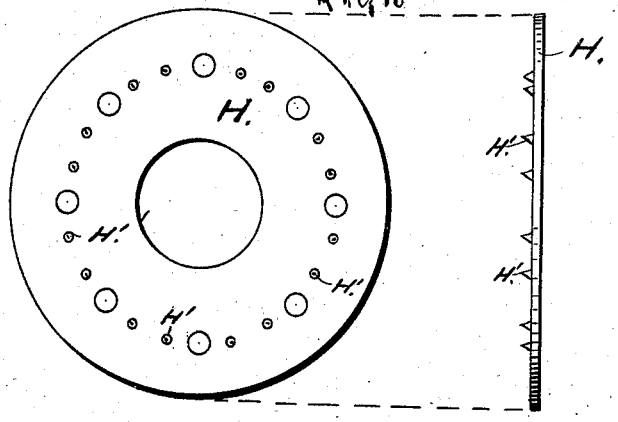



Fig. 5.

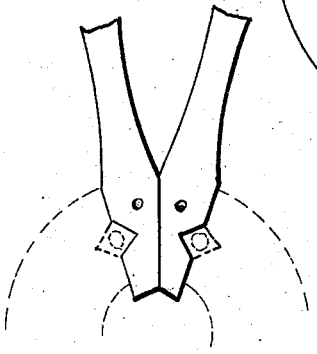


Fig. 3

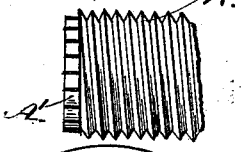
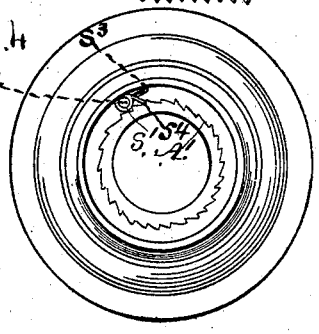



Fig. 4.

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN VEHICLE-WHEEL HUBS.

Specification forming part of Letters Patent No. **203,669,** dated May 14, 1878; application filed April 12, 1878.

*To all whom it may concern:*

Be it known that I, SYLVESTER T. F. STERICK, of Georgetown, in the county of Washington and District of Columbia, have invented certain new and useful Improvements in Vehicle-Wheels; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to certain additional improvements in my improved metallic hub for vehicles for which Letters Patent Nos. 125,095 and 134,945 were granted to me March 26, 1872, and January 14, 1873, respectively.

In the patents referred to the invention relates to improvements in metallic hubs for carriages, wagons, and other vehicles, whereby great strength and simplicity of construction are attained, the fastenings or connections between the several parts concealed from view, and the exterior of the hub rendered capable of a high degree of ornamentation.

The present improvement consists in combining, with the elements of the patents referred to, small pointed projections, cast or otherwise securely formed upon the inner metallic disk, said points intended to be indented into the spokes to render greater security against the wheel dishing, as will hereinafter be more fully specified; and in forming a small ratchet around the outer end of the axle-box; and in having a spring-pawl attached to the outer nut or hub-band, said spring-pawl to catch in the ratchet to render greater security against said nut or hub-band becoming unscrewed or loosened, as will hereinafter be more fully set forth.

In the accompanying drawing, in which similar letters of reference indicate corresponding parts, Figure 1 is a section of my hub. Fig. 2 is a plan and side view of disk K with projections H′. Fig. 3 represents ratchet A′ on axle-box A. Fig. 4 is a top view, showing pawl S′. Fig. 5 shows spokes with the indentations.

A represents an axle-box, screw-threaded at its outer end, and provided at its inner end with the back cap B, securely fastened to the axle-box. The back cap B has an annular recess, C, for the reception of the shoulder on the axle when the latter is inserted in the axle-box. The back cap B has a cavity, D, extending from the outer end of the axle-box A to the flange E′ on the former, on which the inner metallic disk H rests at its center, the outer circumference of the inner disk H resting on the base of the back cap B. I I are lugs attached to the inner side of the disk H, and projecting into the back cap, the object of which will presently be explained. H K are two metallic disks, perforated at their centers for the reception of the axle-box A.

To the outer disk K is cast with or firmly secured thereto the projections L L, which preferably have each alternate one formed at its ends with a screw-threaded bolt, which bolts pass through perforations M M in the inner disk H, and are securely fastened thereto by nuts N N. The projecting pieces L L, connecting the disks H K together, are formed with double-inclined dovetailed or double-mitered faces to receive the spokes, which have corresponding openings made in them. The spokes are driven or slid horizontally into the openings between the projections L L after the nuts N N and the disk H are removed.

The openings between the projections L L are of a wedge-shaped form, being larger at top than at the bottom, in order to render the fastening more secure. The bolt ends of the projection L L may be dispensed with, and headed bolts may be employed to fasten the disks together, having nuts on their ends, which project into the cavity D in the back cap B, though I preferably employ the construction first described.

The spokes are wider than the dovetailed faces on the side of the disk H, so that the nuts may be screwed up should there be any contraction of the spokes. Each alternate projection, also, may be dispensed with, and the inner ends of two of the spokes may be made to bear against each other near their inner ends.

It is obvious that this construction of the dovetailed or double-mitered faces for the projection L L, connecting the disks, with the cor-

responding indentations or openings in the spokes to receive them, together with the wedge-shaped form of the opening between the projections, will, in connection with the disks, firmly secure the spokes in their seats, while compensation can readily be made for contraction or wear of the parts, and at the same time the spokes are readily removed or inserted.

In the rotation of the disk H the nuts N N will be brought in contact with or abut against the lugs I I, thus preventing the turning of the said disk H, while the nuts N N will be concealed from view by reason of their situation in the cavity D in the back cap B. P is a cap, perforated at its center for the reception of the axle-box A. The cap P is preferably made in the form of a frustum of a cone, to have an extended bearing on the outer disk K, on which its base rests. Q is a cylindrical bearing or sleeve for the axle-box, for supporting and strengthening the same, and acting as an auxiliary support for the disk K, as shown. The bearing Q for the axle-box is cylindrical, so as to fit the axle-box, for which it acts as a supporting-sleeve. The inner end of the bearing Q is flush with the base of the cap P, and rests, as does the cap P, on the outer face of the disk K. This construction affords an auxiliary support for the axle-box, and relieves the outer disk K from the strain from the axle-box, which otherwise would be exerted at the perforation in the disk. This construction, in a word, distributes the strain over the face of the disk.

R is a nut, preferably made octagonal in form, which is screwed on the outer end of the axle-box, there being, as before described, a screw-thread cut for that purpose on the exterior of the outer end of the axle-box, by means of which construction the parts may be securely bound together, and compensation readily made for any wear of the parts. S is a combined nut and hub-band, the inner end of which, T, is a cap, formed to cover and embrace the octagonal nut R and prevent it from turning.

The upper vertical sides of the perforations U are screw-threaded, so that the combined nut and hub-band may be screwed on the axle-box to prevent the octagonal nut R from turning. The part V of the combined nut and hub-band is the hub-band proper, into which the outer end of the axle passes.

By my construction of hub great strength and simplicity are attained, and all the fastenings of the several parts are concealed from view, while at the same time the exterior of the hub may, if it be desired, be highly ornamented.

In the present improvements small projections, with sharp points, are cast or otherwise suitably formed upon the inner disk H at a point or points between the periphery of disk H and projections L L, so that when the said disk H is tightened upon the spokes by nuts N N the points H′ will indent themselves into the spokes, and thus secure an important and additional hold to that made by the diamond-shaped projections L upon the spokes, which, as will be seen, will give greater security against the wheel dishing. Also, in the present improvements a rachet, A′, is made around the outer end of axle-box A, and a spring-pawl is secured to the combined nut and hub-band S, as shown. Said pawl is formed of spring-wire, the same being coiled around screw $S^2$, so that end $S^3$ will bear against the inner side of cap S and cause the end $S^4$ to operate into ratchet A′, so that, when the combined nut and hub-band is screwed on, the spring-pawl, operating in the ratchet, affords greater security against said nut or hub-band unscrewing or becoming loose. But it is obvious that said nut may be unscrewed by lifting the pawl out of the ratchet.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a metallic hub for vehicle-wheels, the small pointed projections H′, situated on the face of disk H and between the periphery of said disk and projections or lugs L L, substantially as described, and for the purpose set forth.

2. In a metallic hub for vehicle-wheels, the spring-pawl $S^1$, constructed of spring-wire coiled around screw $S^2$, so that end $S^3$ will bear against the inner side of cap S and cause end $S^4$ to operate in a ratchet, A′, on the end of axle-box A, substantially as described, and for the purpose set forth.

3. In a metallic hub for vehicle-wheels, the small pointed projections H′, situated on the face of disk H and between the periphery of said disk and lugs L L, in combination with disk K and lugs L L, substantially as described, and for the purpose set forth.

4. In a metallic hub for vehicle-wheels, the pointed projections H′, in combination with a disk, H, having small holes to permit the passage of projections or lugs L L, substantially as described, and for the purpose set forth.

5. In a metallic hub for vehicle-wheels, the axle-box A, ratchet A′, cap B, cap P, nut and hub-band S, pawl $S^1$, nut R, disks K and H, and projections H′, all in combination, substantially as specified.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

S. T. F. STERICK.

Witnesses:
T. V. WILLIAMSON,
W. T. JOHNSON.