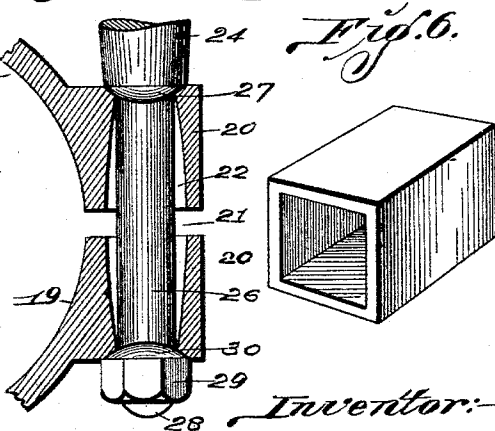
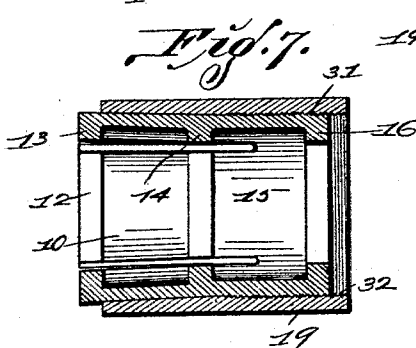
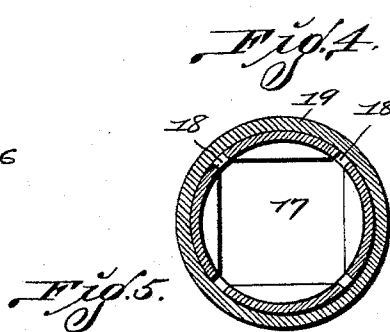
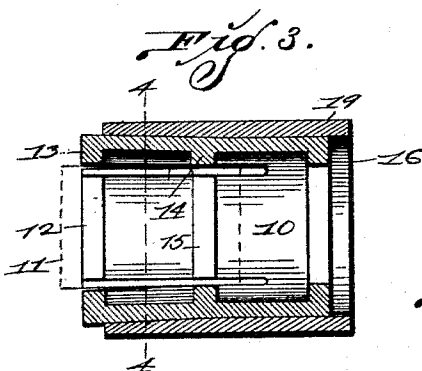
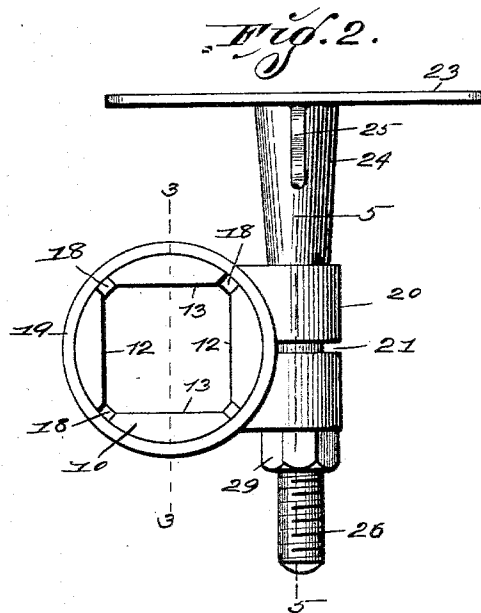
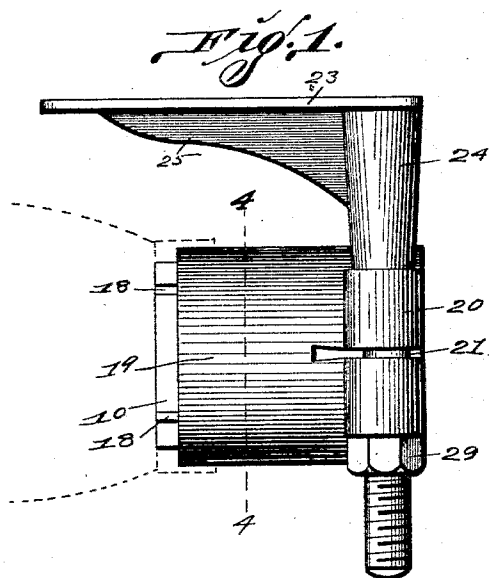


(No Model.)

S. S. MOHRMAN.
VEHICLE STEP.

No. 583,919.

Patented June 8, 1897.



attest
W. R. Smith
S. G. Wells.

Inventor:
S. S. Mohrman;
By Higdon, Longan Higdon

UNITED STATES PATENT OFFICE.

SYLVESTER S. MOHRMAN, OF ST. LOUIS, MISSOURI.

VEHICLE-STEP.

SPECIFICATION forming part of Letters Patent No. 583,919, dated June 8, 1897.

Application filed August 24, 1896. Serial No. 603,767. (No model.)

To all whom it may concern:

Be it known that I, SYLVESTER S. MOHRMAN, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Vehicle-Steps, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to vehicle-steps; and it consists in the novel construction, combination, and arrangement of parts hereinafter shown, described, and claimed.

Figure 1 is a front elevation of my improved step for vehicles, the hub of the vehicle to which the step is attached being shown in dotted lines. Fig. 2 is a view in elevation of the inner end of the step shown in Fig. 1. Fig. 3 is a vertical sectional view on the line 3 3 of Fig. 2. Fig. 4 is a sectional view on the line 4 4 of Figs. 1 and 3. Fig. 5 is a sectional view on the line 5 5 of Fig. 2. Fig. 6 is a view in perspective of the tool for removing the step from the vehicle. Fig. 7 is a sectional view of a modified form of the construction shown in Fig. 3.

My improved step is designed to be attached to the axle-nut, as shown in Fig. 1, and in its construction I employ the casing 10, designed to receive the axle-nut 11 in its inner end. (Shown in dotted lines in Fig. 2.) The casing 10 is a cylindrical shell having the inwardly-projecting lugs 12, 13, 14, 15, and 16. The inner faces of the lugs 12 are parallel and the inner faces of the lugs 13 are parallel with each other and at right angles to the faces of the lugs 12, thus forming a square opening 17 between said lugs 12 and 13. The lugs 14 are identical with the lugs 12 and the lugs 15 are identical with the lugs 13, and the opening 17, formed by said lugs 12, 13, 14, and 15, is designed to receive the axle-nut. The lug 16 extends entirely around the inner face of the shell 10 and forms a square opening in the outer end of said shell 10. Slits 18 are formed from the inner end of the shell 10 and extend inwardly past the lugs 14 and 15 and near to the lug 16. The slits 18 are formed at the corners of the square opening 17. The shell 10 is slightly larger at its inner end than at its outer end and is designed to receive the annular casing 19 from its outer end. The circular opening in the casing 19 is slightly

larger at its inner end than at its outer end, and when said casing 19 is driven upon the shell 10 it will contract the inner end of said shell 10 and cause the lugs 12, 13, 14, and 15 to firmly engage the nut 11.

Projecting from the outer end of the casing 19 is a lug 20, through which is formed a horizontal slot 21, which slot also extends through the casing 19 at the base of said lug 20 and a short distance inwardly from said base, as shown in Fig. 1. A vertical aperture 22 is formed through the lug 20 and the ends of said aperture are countersunk. The plate 23 is attached to and formed integral with the upper end of the post 24, and a strengthening-rib 25, in the form of a bracket, projects downwardly from the under side of the plate 23 and outwardly from the post 24. The lower end 26 of the post 24 is designed to be inserted in the vertical aperture 22 of the lug 20, and the shoulder 27 of said post rests in the countersunk end of said aperture 22, as shown in Fig. 5. The extreme lower end 28 of the post is screw-threaded, and the nut 29 is inserted upon said screw-threaded end 28, and the upper face 30 of said nut 29 is conical and is designed to engage in the lower countersunk end of the aperture 22. By tightening the nut 29 the casing 19 is contracted at its outer end and pinches the outer end of the shell 10, thus holding said shell rigidly in position relative to said casing. By loosening the nut 29 the plate 23, forming the step proper, may be turned and adjusted to any desired position within its plane.

After the parts have been assembled in position as described, when it is desired to remove the axle-nut the tool shown in Fig. 6, which is a square casing, may be inserted in the outer end of the casing 19 and a wrench applied to said square casing. After the axle-nut has been removed in this way, if it is desired to remove the axle-nut from the shell 10 the square casing may be used as a punch to drive said nut out of its position.

In the modification shown in Fig. 7 the outer end of the shell 10 is exteriorly screw-threaded, as indicated by 31, and the outer end of the casing 19 is interiorly screw-threaded, as indicated by 32, and instead of driving said casing 19 in position upon the shell 10 it may be screwed into position. In

other respects the construction is the same as that described.

The construction herein shown and described may be varied to a considerable extent without departing from the spirit of my invention, the essential feature of the invention being the application of a step to any suitable construction of an axle-nut of a vehicle.

I claim—

10 1. The combination with an axle-nut, of a cylindrical shell having an opening to receive said nut, means of holding said shell in position relative to said nut, a casing adjustably positioned upon said shell and a step adjustably connected to said casing, substantially as specified.

20 2. The combination with an axle-nut, of a cylindrical split shell having an opening to receive said nut, means of contracting said shell and holding it securely in position upon said nut and a step adjustably and detachably connected to said shell, substantially as specified.

25 3. The combination with an axle-nut, of a cylindrical split shell having an opening to receive said nut, a casing to receive said shell, the interior opening in said casing and the

exterior of said shell being tapered so that the casing will contract the shell and hold it securely in position upon the nut, and a step attached to said casing, substantially as specified.

4. The combination with an axle-nut, of a cylindrical split shell having an opening to receive said nut, a casing to receive said shell, the interior opening in said casing and the exterior of said shell being tapered so that the casing will contract the shell and hold it securely in position upon the nut, and one end of said casing being split, lugs projecting from said casing upon opposite sides of the slit in said casing, a post pivotally mounted in apertures through said lugs, a step carried by said post and a nut upon the lower end of said post for holding said post in position and contracting said casing to hold it in position relative to said shell, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

SYLVESTER S. MOHRMAN.

Witnesses:

S. G. WELLS,

MAUD GRIFFIN.