No. 697,455. Patented Apr. 15, 1902.

T. DE LA MARE.

AXLE SPINDLE.

(Application filed Aug. 30, 1901.)

(No Model.)

Fig. 1.

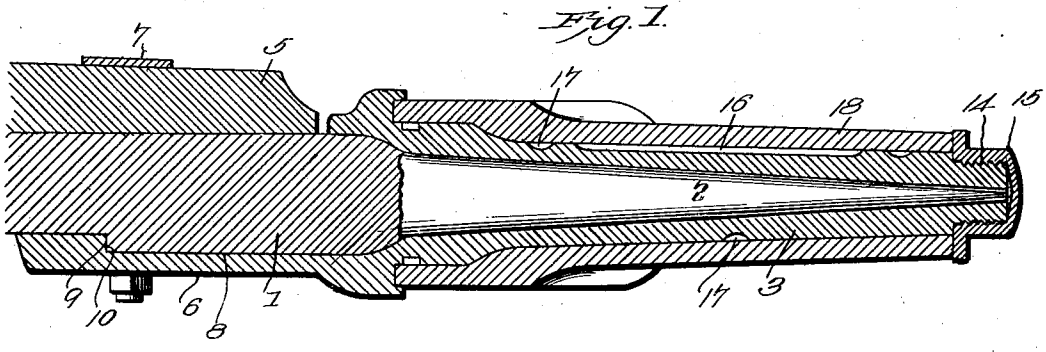


Fig. 4.

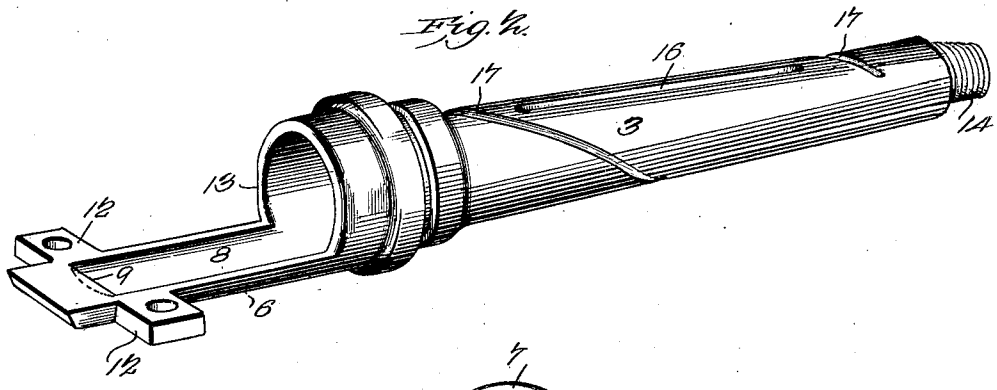
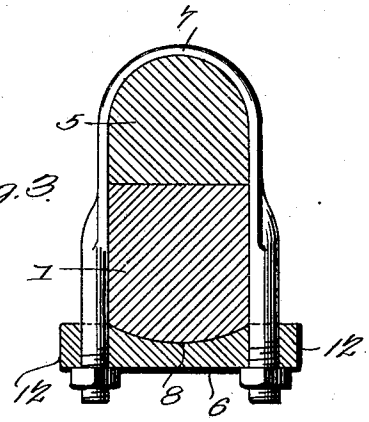


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

THOMAS DE LA MARE, OF TOOELE, UTAH.

AXLE-SPINDLE.

SPECIFICATION forming part of Letters Patent No. 697,455, dated April 15, 1902.

Application filed August 30, 1901. Serial No. 73,862. (No model.)

To all whom it may concern:

Be it known that I, THOMAS DE LA MARE, a citizen of the United States, residing at Tooele, in the county of Tooele and State of Utah, have invented a new and useful Axle-Spindle, of which the following is a specification.

The invention relates to improvements in axle-spindles.

The object of the present invention is to improve the construction of axles, more especially the construction of the spindles thereof, and to enable the spindles of an axle when worn to be readily removed and replaced by a new set without cutting and welding or any other operation requiring the services of a skilled mechanic.

A further object of the invention is to provide an axle of this character in which the spindles may be advantageously constructed of brass or some other metal softer than iron or steel to provide a bearing which will not require the use of leather washers.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claim hereto appended.

In the drawings, Figure 1 is a longitudinal sectional view of a portion of an axle constructed in accordance with this invention. Fig. 2 is a detail perspective view of one of the removable sleeves or skeins which form the spindles. Fig. 3 is a vertical sectional view on the line 3 3 of Fig. 1.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a metal axle designed for use on carriages, wagons, and other vehicles and provided at each end with a tapering arm 2, adapted to receive a removable spindle sleeve or skein 3, which has a tapering bore or opening extending longitudinally through it and conforming to the configuration of the axle-arm 2. The axle 1 is designed to receive an ordinary wooden axle-bed 5, and the sleeve 3, which may be of any desired exterior configuration, is provided at its inner end with a lower arm or extension 6, located beneath the axle and extending longitudinally thereof, as clearly shown in Fig. 1, and secured to the body portion of the axle by means of an axle-clip 7. The arm is provided with a longitudinal recess 8, extending from the bottom of the bore or opening 4 of the sleeve 3 and terminating short of the end of the arm to form a shoulder 9 for engaging a corresponding shoulder 10 of an enlargement 11 of the body portion of the axle. The enlargement 10, which is arranged at the bottom of the body portion of the axle, is segmental in cross-section, being provided with a curved lower face, and the recess 8 is curved in cross-section to conform to the configuration of the enlargement. The arm is engaged with and disengaged from the enlargement of the bottom of the axle. When the arm is in engagement with the enlargement of the bottom of the axle, the shoulders 9 and 10 abut, and the sleeve is securely locked against longitudinal displacement. The arm is provided at opposite sides with projecting ears 12, through which pass the sides of the axle-clip 7. The perforated ears extend laterally from the arm, and project beyond the side faces of the axle, and the axle-clip holds the spindle against accidental rotation, and the arm serves as a clip-plate for the said axle-clip. When it is desired to remove the sleeve, it is only necessary to remove the clip 7 and partially rotate the sleeve. The other axle-clips do not have to be removed, and the operation does not require the services of a blacksmith or other skilled mechanic. The inner end of the sleeve is preferably provided at opposite sides with wrench-receiving faces 13 to enable it to be readily engaged by a wrench or other tool. The outer end of the sleeve is provided with a reduced threaded portion 14, adapted to receive an axle-nut 15 of the ordinary construction. The sleeve may be provided with any desired exterior configuration, and it is preferably provided at its top with a longitudinal oil-groove 16, and it has a spiral groove 17 extending longitudinally of it. These grooves may be omitted or arranged in any other desired manner. An axle-box 18 of a hub (not shown) is arranged on the spindle sleeve or skein, as clearly shown in Fig. 1, and the said sleeve may be constructed of brass or other material softer than steel or iron, and by constructing the sleeve in this manner it is unnecessary to use leather washers to prevent the wheels from rattling.

It will be seen that the removable spindle-sleeves are exceedingly simple and inexpensive in construction, that they are adapted to be readily removed when worn without removing the body portion of the axle and the intermediate clips thereof and without necessitating cutting and welding the axle. It will also be clear that the removable spindles or sleeves are securely held in place on the tapered arms of the axle and that they may be advantageously constructed of brass or other material softer than steel or iron.

What I claim is—

The combination of an axle provided with an enlargement forming a shoulder at its inner end and having a curved outer face, and a sleeve arranged on the axle and provided with an arm or extension having a curved recess to receive the enlargement, said sleeve being adapted to be partially rotated to engage the arm or extension with the enlargement and to disengage it therefrom, substantially as described.

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

THOMAS DE LA MARE.

Witnesses:

WM. S. MARKS,

J. W. WHITEHOUSE.