J. D. ATON.

SPINDLE FOR WHEELED VEHICLES.

APPLICATION FILED APR. 25, 1910.

983,855. Patented Feb. 7, 1911.

Fig. 1.

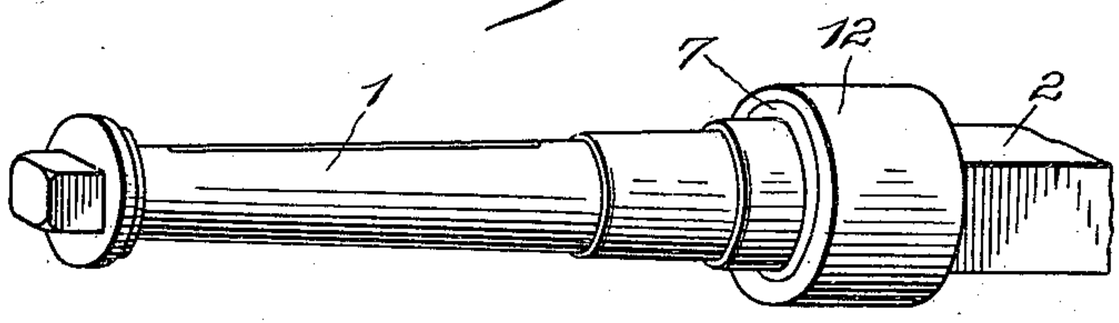


Fig. 2.

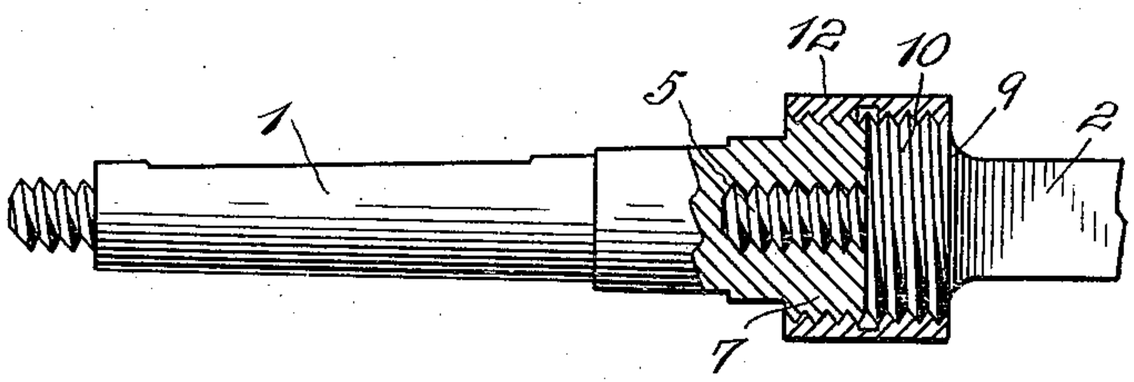


Fig. 3.

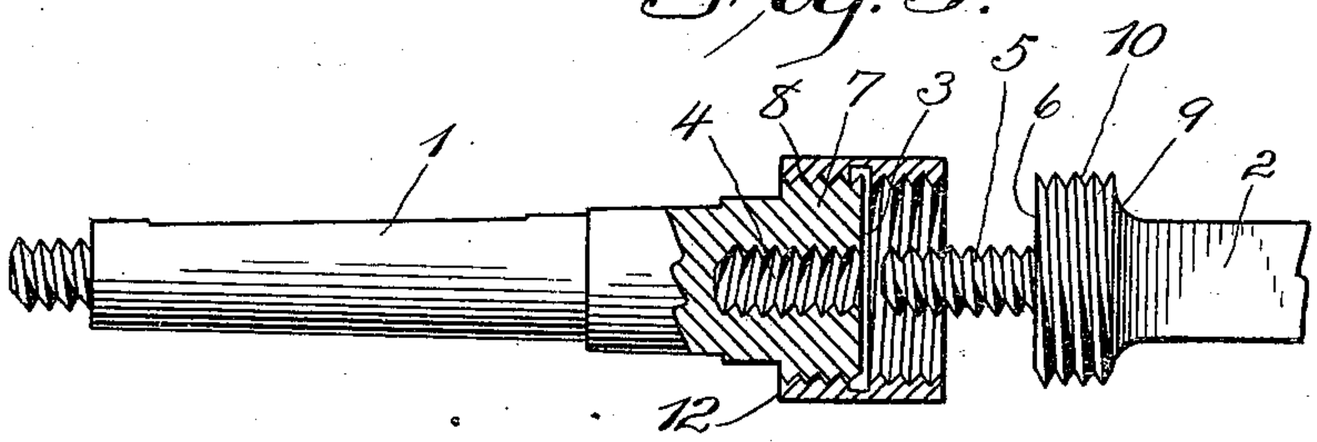


Fig. 4.

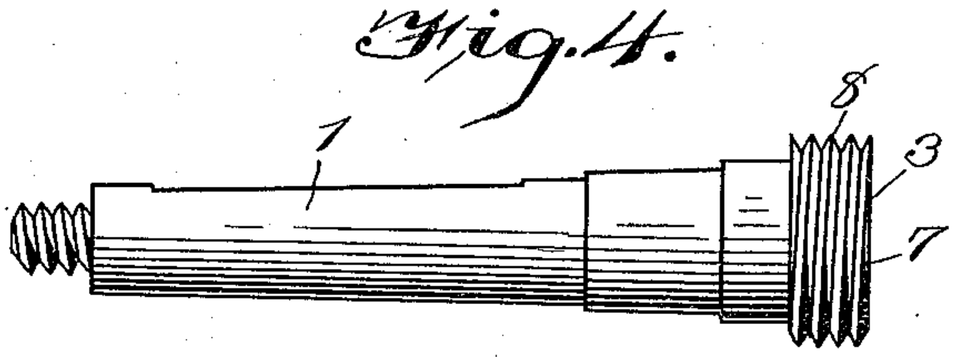
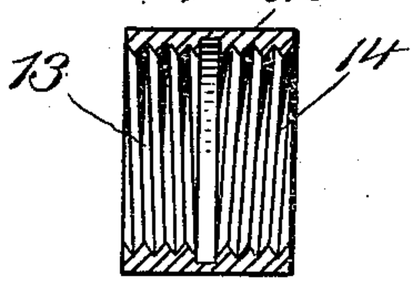


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

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SPINDLE FOR WHEELED VEHICLES.

983,855. Specification of Letters Patent. **Patented Feb. 7, 1911.**

Application filed April 25, 1910. Serial No. 557,549.

To all whom it may concern:

Be it known that I, JEFFERSON DOUGLAS ATON, a citizen of the United States, residing at Henderson, in the county of Henderson and State of Kentucky, have invented certain new and useful Improvements in Spindles for Wheeled Vehicles; and I do declare the following to be a full, clear, and exact description of the invention, such as 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 the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to a removable spindle for wheeled vehicles and has for its object to provide a spindle which can be removed when worn and replaced by a new one thus saving the balance of the axle.

A further object of this invention is to provide a novel means for attaching and locking the spindle to the axle in such manner that all probability of accidental detachment of the spindle is eliminated.

With these objects in view this invention consists in the novel construction of the spindle and axle, and also in the construction and arrangement of the locking means all of which will be first fully described and afterward specifically pointed out in the appended claims.

Referring to the accompanying drawing. Figure 1 is a perspective view of the spindle attached to its axle. Fig. 2 is an elevation partly in vertical section. Fig. 3 is a similar view partly in vertical section showing the spindle detached. Fig. 4 is an elevation of the spindle, and Fig. 5 is a vertical section through the locking sleeve.

Like numerals of reference indicate the same parts throughout the several figures in which;

1 indicates the spindle and 2 the axle. As will appear from the drawing the spindle 1 is provided with a flat inner end 3 and a central threaded recess 4 in said flat face 3 which accommodates the threaded stud 5 on the axle 2, the outer end of the axle 2 being provided with a flat face 6 which engages the flat face 3 on the inner end of the spindle 1, the stud 5 and the recess 4 being provided with right hand threads as clearly shown in the drawing. The enlarged inner portion 7 of the spindle 1 is externally threaded at 8, said threads being left hand as clearly shown in Fig. 4, while the outer enlarged end 9 of the axle 2 is externally threaded at 10, said threads being right hand as clearly shown in Figs. 2 and 3.

12 indicates the locking sleeve which is internally threaded, one portion of the bore being left hand threaded at 13 and the other portion being right hand threaded at 14 as shown in Fig. 5.

Having thus described the several parts of this invention its operation is as follows: The locking sleeve 12 is threaded on the enlarged inner portion 7 of the spindle 1, the threads on said spindle and on said sleeve being left hand. When the sleeve is in position shown in Fig. 3 the spindle is threaded on the stud 5 and as the stud 5 enters the threaded recess 4 in the spindle 1 the right hand threads 14 of the sleeve 12 passes on the right hand threaded portion 10 of the axle 2. When the device is in position shown in Fig. 2 and the spindle has been threaded up as tight as possible against the flat face 6 of the axle 2 the sleeve 12 is then rotated in such manner as to thread the same on the axle 2. This rotation of the sleeve 12 to the right by reason of the left hand threads on the spindle 1 causes the faces 3 and 6 of the spindle 1 and axle 2 to be drawn snugly together and causes the sleeve 12 to jam in the right hand threads on the axle 2 and the left hand threads on the spindle 1, thus intimately locking the spindle and the axle together in such manner that all tendency for accidental detachment of the spindle from the axle is obviated. It is at once apparent from the drawing that when the sleeve 12 jams the threads on the axle and spindle as just described that it is impossible to rotate the spindle 1 in either direction without first rotating the sleeve 12, for the reason that any rotation to the left of the said spindle 1 to unthread the same from the stud 5 will thread the spindle 1 into the sleeve 12 for the reason that the central recess 4 of the spindle 1 is right hand threaded while the exterior threads 8 are left hand threaded; thus any rotation in either direction will cause the spindle 1 to jam or bind on one or the other set of threads. The consequence of this construction is that the spindle is as strong and rigid as if it were integral with the axle and if anything stronger on account of the sleeve

12 which greatly strengthens the structure at the point of connection of the spindle 1 with the axle 2.

Having thus fully described the invention what I claim as new and desire to secure by Letters Patent of the United States, is;—

1. A device of the character described comprising a spindle having a central threaded recess in its inner end, the inner external portion of the spindle being threaded oppositely to the said central threaded recess, an axle, a threaded stud on the same to enter the said central threaded recess in the spindle, the outer portion of said axle adjacent the spindle being threaded oppositely to the external threaded portion of the spindle, a sleeve having its bore oppositely threaded to conform to the opposite threads on the said spindle and on the said axle, the whole arranged in such manner that rotation of the spindle in the direction to unthread same from the said stud will thread the said spindle into the said sleeve.

2. A device of the character described comprising a spindle and an axle, the external portions of said spindle and of said axle being oppositely threaded, a sleeve having its bore oppositely threaded to conform to the oppositely threaded portions of the said spindle and of the said axle, and a further threaded connection between the said spindle and the said axle for connecting the said spindle and said axle together.

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

JEFFERSON DOUGLAS ATON.

Witnesses:
L. E. Clark,
G. T. Fowler.