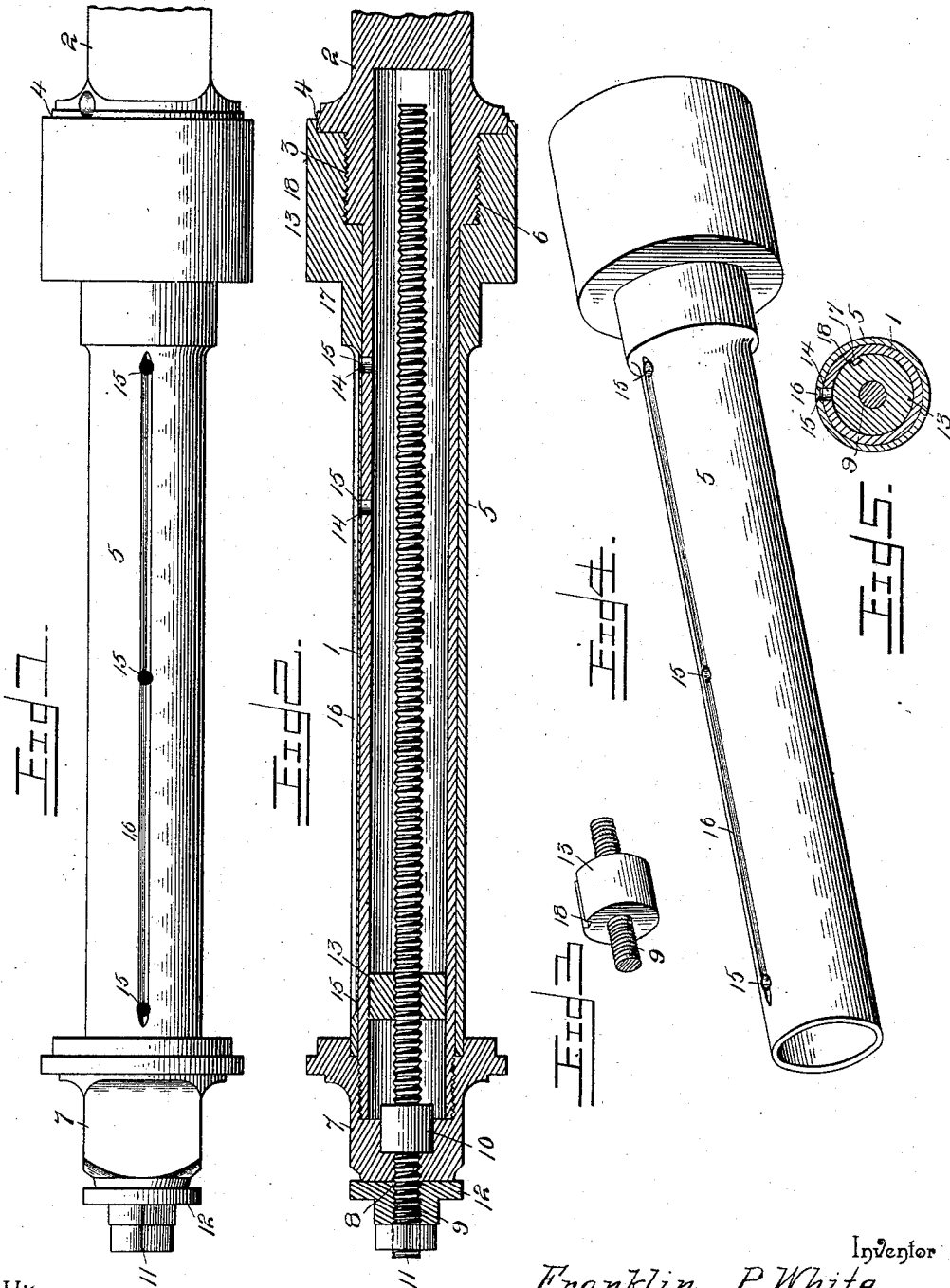


(No Model.)

F. P. WHITE.
AXLE SPINDLE.

No. 580,813.

Patented Apr. 13, 1897.



Witnesses

A. J. L. L. L.

[Signature]

By his Attorneys,

Inventor
Franklin P. White

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

FRANKLIN P. WHITE, OF SHALLOTTE, NORTH CAROLINA.

AXLE-SPINDLE.

SPECIFICATION forming part of Letters Patent No. 580,813, dated April 13, 1897.

Application filed May 19, 1896. Serial No. 592,153. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN P. WHITE, a citizen of the United States, residing at Shallotte, in the county of Brunswick and State of North Carolina, have invented a new and useful Axle-Spindle, of which the following is a specification.

My invention relates to axle-spindles, and particularly to lubricating devices for use in connection therewith; and the object in view is to provide improved means whereby a lubricating material, such as grease, may be stored and forced, as required, by mechanical means to the bearing-surfaces, and, furthermore, to provide a removable wear-sleeve for use in connection with the spindle of an axle, said sleeve being removable when worn for replacement.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a side view of an axle-spindle constructed in accordance with my invention. Fig. 2 is a longitudinal section of the same. Fig. 3 is a detail view of the plunger and the contiguous portion of the feed-screw detached. Fig. 4 is a detail view in perspective of the wear-sleeve detached. Fig. 5 is a transverse section of the axle-spindle.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a spindle which is tubular in construction and is preferably formed integral with the body portion 2 of an axle, a threaded enlargement 3 being formed at the inner end of the spindle, said enlargement terminating at its inner end in a shoulder 4. Removably fitted upon the spindle is a tubular wear-sleeve 5, provided at its inner end with an interiorly-threaded collar 6 for engagement with the threaded enlargement at the inner end of the spindle, said collar being limited in its inward movement by the shoulder at the inner end of said enlargement. The spindle exceeds the wear-sleeve in length and is provided at its projecting extremity with a threaded portion, upon which is fitted the axle-nut 7, constructed substantially as

in the ordinary practice. Through a perforation 8 in the outer closed end of the axle-nut extends a feed-screw 9, provided within the axle-nut with a collar 10 to prevent outward displacement of the feed-screw and thereby swivel the feed-screw in the axle-nut and beyond or outside of the axle-nut with a feed-nut 12, which is adapted to be forced into frictional contact with the outer surface of the axle-nut to lock the feed-screw against rotation. In connection with the feed-nut and also threaded upon the feed-screw is a jam-nut 11.

Arranged within the bore of the tubular spindle is a plunger 13, fitting snugly therein and adapted to be advanced toward the inner end of the spindle to compress grease stored in said bore and force it through feed-perforations 14, formed in the wall of the spindle, corresponding registering feed-openings 15 being formed in the wear-sleeve and being connected in series by a longitudinal feed-groove 16, formed in the outer surface of the wear-sleeve. The plunger is prevented from rotation with the feed-screw by means of a feather or guide-rib 17, arranged longitudinally upon the wall of the bore of the spindle for engagement by a groove 18 in the periphery of the plunger.

In operation the bore of the spindle is stored with grease sufficient for a considerable length of time and the plunger is introduced with the feed-screw to cause the interlocking engagement thereof with the spindle, such interlocking engagement being secured by means of the above-described groove in the plunger and feather on the wall of the bore of the spindle. The axle-nut is then threaded upon the extended threaded portion of the spindle, as clearly shown in Fig. 2. When it is desired to force the grease or other lubricant through the feed-perforations to the exterior surface of the wear-sleeve, which, it will be understood, is fixed against rotation upon the spindle, the jam-nut and feed-nut are loosened to remove the latter from frictional contact with the exterior surface of the axle-nut and release the feed-screw for rotation. The jam-nut is then turned toward the feed-nut to lock the latter to the feed-screw, whereupon the feed-screw may be turned to cause the movement of the plunger toward the in-

ner end of the reservoir formed by the bore of the spindle. When the desired adjustment of the plunger has been attained by the rotation of the feed-screw, the jam-nut is
5 turned to loosen the feed-nut, the feed-nut is threaded inwardly upon the feed-screw to bear frictionally against the exterior surface of the axle-nut, and the jam-nut is again
10 tightened to secure the parts in operative position. The feed-nut is preferably circumferentially milled to facilitate the rotation thereof to turn the feed-screw.

It will be understood that the wear-sleeve may be replaced when worn to provide a new
15 bearing-surface for the axle-spindle without replacing either the axle or the spindle and obviously at a less cost than either the axle or the spindle could be supplied.

Various changes in the form, proportion,
20 and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I
25 claim is—

1. The combination with a hollow spindle having lateral feed-openings, an axle-nut engaging and closing the outer end of the spindle, and a plunger fitted to slide in the bore
30 of the spindle, of a feed-screw swiveled in the

axle-nut and engaging the plunger to impart motion thereto, and locking devices for securing the feed-screw in its adjusted positions, said devices including a feed-nut and means for locking the same upon the feed- 35 screw to prevent movement independently thereof, whereby the feed-nut may be locked to the feed-screw out of contact with the axle-nut to form manually-operated means for turning the feed-screw, substantially as specified. 40

2. The combination with a hollow spindle having lateral feed-openings, and an axle-nut engaging and closing the outer end of the spindle, of a plunger fitted to slide without 45 rotation in the bore of the spindle, a feed-screw swiveled in the axle-nut and provided with a collar to bear against the inner surface of the axle-nut, a feed-nut threaded upon the exposed extremity of the feed-screw to bear 50 against the axle-nut, and a jam-nut threaded upon the feed-screw to engage the feed-nut, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in 55 the presence of two witnesses.

FRANKLIN P. WHITE.

Witnesses:

JOHN W. BROOKS,
EDGAR TAYLOR.