

No. 646,830.

Patented Apr. 3, 1900.

W. H. HOELL.
LUBRICATING AXLE.

(Application filed Oct. 23, 1899.)

(No Model.)

Fig. 1.

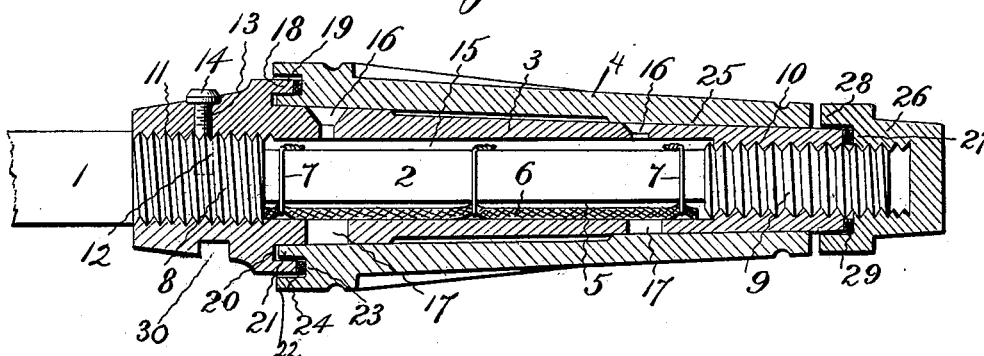


Fig. 2.

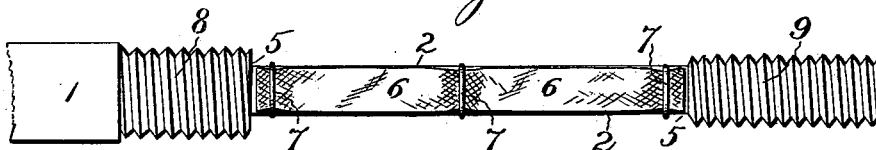
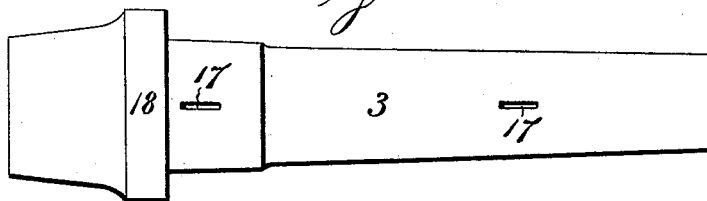


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM H. HOELL, OF GRANDCANE, LOUISIANA.

LUBRICATING-AXLE.

SPECIFICATION forming part of Letters Patent No. 646,830, dated April 3, 1900.

Application filed October 23, 1899. Serial No. 734,507. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. HOELL, a citizen of the United States, residing at Grandcane, in the parish of De Soto and State of Louisiana, have invented new and useful Improvements in Vehicle-Axles, Skeins, and Boxes, of which the following is a specification.

This invention relates to an improved self-lubricating vehicle-axle, skein, and box, and has for its object to provide a device of the character referred to which will be simple, inexpensive, and durable in construction and efficient and economical in operation.

To these ends my invention consists in the features and in the construction, combination, and arrangement of parts hereinafter described, and particularly pointed out in the claims following the description, reference being had to the accompanying drawings, forming a part of this specification, wherein—

Figure 1 is a vertical longitudinal sectional view of my improved axle spindle, skein, and box. Fig. 2 is a bottom plan view of the axle-spindle, and Fig. 3 is a similar view of the axle-skein.

Referring to the drawings, the numeral 1 indicates the axle; 2, the axle-spindle; 3, the axle-skein, and 4 the axle-box. The axle-spindle is turned down or made of reduced diameter between its ends, as indicated at 5, to form a chamber for the reception of an oil-pad 6. The oil-pad 6 may consist of a strip of felt or other suitable fibrous material, and is conveniently attached in place by wire loops or bands 7 twisted about the spindle and pad. The unreduced ends of the spindle are exteriorly screw-threaded, as indicated at 8 and 9, and over said threaded portions is screwed the axle-skein 3, which is interiorly threaded at its ends for the purpose, as indicated at 10 and 11. In order to prevent the axle-skein from accidentally becoming unscrewed from the spindle, I form a threaded hole 12 (shown in dotted lines) in the unreduced end 8 and a corresponding perforation 13 in the end of the axle-skein, said perforation and hole being arranged to register with each other when the skein is fully screwed up in place on the spindle, after which a machine-screw 14 is screwed through the perforation into the threaded hole and effectually

prevents the skein from turning on the spindle. As shown, the oil-pad 6 is secured to the under side of the spindle, so that the oil, which is supplied to the chamber 15 through perforations 16, formed in the upper side of the skein, runs down by gravity to the pad and saturates the latter. Elongated slits or slots 17 are formed in the under side of the skein and operate to feed the oil that escapes from the pad to the exterior of the skein and the interior of the axle-box 4. The pad operates to permit but a small quantity of oil to feed down through the slots at a time, rendering frequent replenishing of the oil unnecessary; but in practice the small quantity of oil thus fed to the skein and axle-box will be found amply sufficient to keep the parts effectively lubricated, owing to the thorough manner in which the parts are protected and dust and the like excluded by the means which I will now describe.

Formed externally on the inner end of the axle-skein is a collar 18, provided with an outwardly-projecting annular flange 19, that is concentric with the skein and the internal diameter of which is slightly greater than the external diameter of the skein, thereby forming an annular groove 20 between the skein and flange for the purpose presently made apparent. The axle-box 4 is rotatably fitted over the skein, and at its inner end is provided with two concentric inwardly-extending flanged collars, respectively numbered 21 and 22 in the drawings, an annular groove 23 being formed between said flanged collars, in the bottom of which is disposed a packing-ring 24, of leather or other suitable material. When the axle-box is in place on the skein, the inner flanged collar 21 fits in the groove 20, and the flanged collar 19 fits in the groove 23, between the flanged collars 21 and 22. The outer end of the axle-box is slightly reduced in diameter internally, as at 25. By the means described oil is prevented from escaping between the axle skein and box and dirt, sand, and the like are effectually excluded.

The threaded end 9 of the axle-spindle is extended beyond the end of the axle-skein, and the latter is extended slightly beyond the end of the axle-box. When the parts have been assembled in place, a carriage-nut 26 is

screwed over the end 9 of the spindle. The nut is provided with an internal annular shoulder 27, that bears against the end of the skein, and with an annular flange 28, that fits over the end of the skein. If preferred, a washer 29 may be fitted against the shoulder 27. In this manner dirt, sand, and the like are prevented from gaining entrance at the outer end of the axle.

The entire device constructed as above described is extremely simple and comprises but few parts, which may be quickly taken apart for cleaning, oiling, or the like and as quickly assembled again. Owing to the improved manner of applying the lubricant, the oil need only be replenished at long intervals, thereby effecting an economy in both time and labor and in the consumption of the lubricant. No wear occurs to the axle-spindle, it being entirely taken up by the axle-skein, and when the latter becomes sufficiently worn to cause the parts to operate loosely the skein can be readily removed and replaced by a new one.

A groove 30, rectangular in cross-section, is preferably formed in the under side of the inner end of the axle-skein. This is for the purpose of receiving a clip-plate that is used in connection with an axle-clip when a wooden cap-piece is fitted to the upper side of the axle, the clip-plate and axle-clip operating to clamp the wooden cap-piece on the axle.

Having described my invention, what I claim is—

1. The combination with a metallic axle-spindle reduced between its ends to form an annular oil-chamber, of an axle-skein fitted over the enlarged ends of the spindle and provided with elongated slits in its under side through which the oil is fed by gravity, an oil-pad disposed in said chamber between the spindle and axle-skein and over said slits, said pad being clamped on the spindle, and

means for locking the axle-skein on the spindle to prevent the former from turning independently of the latter, substantially as described.

2. The combination with a metallic axle-spindle reduced between its ends to form an annular oil-chamber, of an axle-skein fitted over the enlarged ends of the spindle and provided with elongated slits in its under side through which the oil is fed by gravity, and provided on its upper side with oil-feed openings, a fibrous oil-pad disposed longitudinally in the bottom of said chamber between the spindle and axle-skein and over said slits, attaching-bands clamped about the pad and spindle, and means for locking the axle-skein on the spindle to prevent the former from turning independently of the latter, substantially as described.

3. The combination with a metallic axle-spindle reduced between its ends to form an annular oil-chamber, of an axle-skein fitted over the enlarged ends of the spindle and provided with elongated slits in its under side through which the oil is fed by gravity and provided on its upper side with oil-feed openings, an oil-pad disposed longitudinally in the bottom of said chamber between the spindle and axle-skein and over said slits, wires tightly encircling said pad and spindle and secured together at their ends, and a screw passing through the inner end of the axle-skein and engaging a socket at the inner enlarged end of the spindle, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM H. HOELL.

Witnesses:

L. Y. TIDWELL,
E. W. HOELL.