N. L. HOLMES.

Skeins and Boxes for Vehicle Wheels.

No. 142,233. Patented August 26, 1873.

Fig. 1.

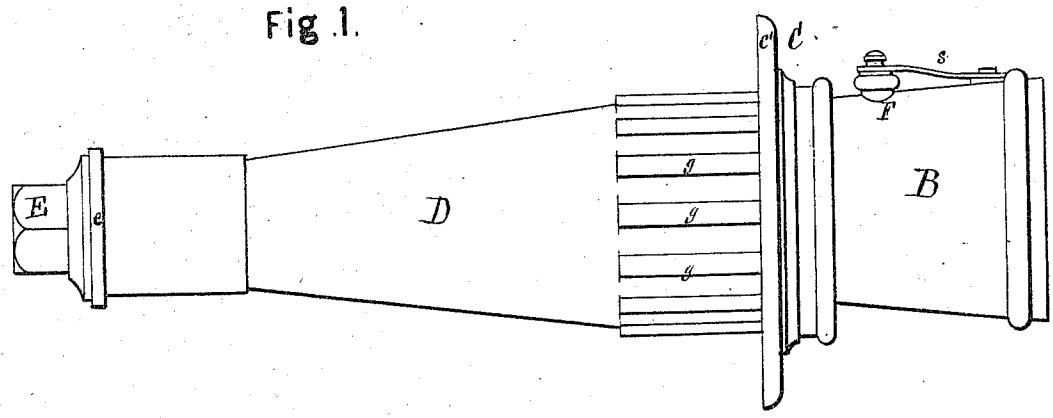


Fig. 2.

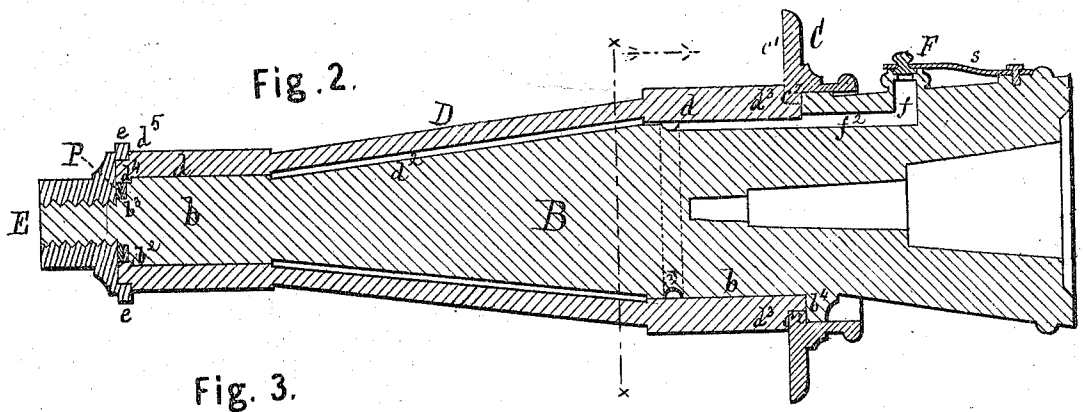


Fig. 3.

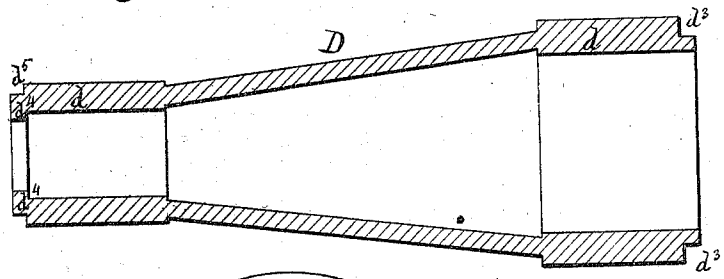


Fig. 4.

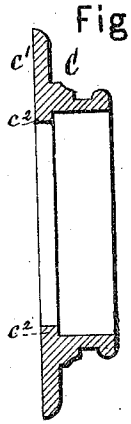
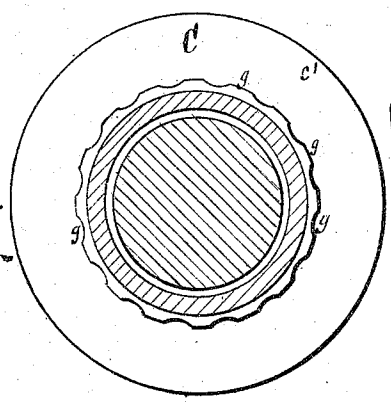


Fig. 5.



WITNESSES.

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UNITED STATES PATENT OFFICE.

NATHAN L. HOLMES, OF FOND DU LAC, WISCONSIN, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO C. H. DE GROAT, OF SAME PLACE.

IMPROVEMENT IN SKEINS AND BOXES FOR VEHICLE-WHEELS.

Specification forming part of Letters Patent No. **142,233**, dated August 26, 1873; application filed May 10, 1872.

To all whom it may concern:

Be it known that I, NATHAN L. HOLMES, of Fond du Lac, in the county of Fond du Lac and State of Wisconsin, have invented certain new and useful Improvements in Thimble Skeins and Boxes for Axles and Hubs; and I do hereby declare that the following is a full, clear, and exact description thereof, sufficient to enable those skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing, in which—

Figure 1 represents the end of an axle provided with my improved skein and box. Fig. 2 is a central vertical longitudinal section of the same. Figs. 3 and 4 are longitudinal sections of the box and sand-band. Fig. 5 is a transverse section taken in line *x x*.

My invention relates to certain improvements in the thimble-skein which surrounds the axle, and the box which lines the hub, and in their connection and co-operation with each other, as hereinafter described and claimed.

The end of the axle is made in the usual tapering form. The skein B is of corresponding form on the inside, so as to fit the axle. On the outside of the skein, instead of a continuous tapering bearing for the entire length, as in the ordinary method, the bearing-surfaces are located at each end of the skein, as shown at *b b*, and are bounded by horizontal parallel lines, so that their form is cylindrical instead of tapering. The width of these cylindrical bearings may vary according to the size and weight of the vehicle. By this construction much friction is avoided, and the draft of the vehicle is reduced. The sand-band C is formed with an outer flange, c^1, which bears against the inner end of the hub, and an inner flange, c^2, which occupies a position between a circular projection, b^4, on the skein B and an annular shoulder, d^3, on the box D, fitting snugly, so as to allow the parts to revolve freely, and at the same time prevent the admission of dirt or sand to the bearings, and also prevent grease or oil from coming in contact with the inner end of the hub. The box D has horizontal or cylindrical bearings *d d* formed on the inside, corresponding with those on the skein, and between them, in the tapering portion, is a shallow recess, d^2, which serves as a chamber or receptacle for sufficient oil to keep the axle skein and box properly lubricated. On the inner end is the annular shoulder d^3, which engages with the sand-band, and on the outer end is a flange, d^4, which fits into an annular shoulder, b^2, formed on the outer end of the skein B, said flange being thicker than the depth of the shoulder, so that a portion of it extends beyond the extreme end of the skein and forms a second shoulder, b^3. Between the extreme end of the skein and box and the inner side of the nut E is a rubber or leather packing, P, which fits closely around the screw-thread on the axle, and is clamped tightly between the nut E and the extreme end of the skein B resting against the shoulder b^3. On the inner side of the nut E is a flange, *e*, which fits over a shoulder, d^5, in the end of the box D.

By means of this construction of the skein and box and the flange *e* on the nut *e*, with the packing P interposed, when the parts are in place they form a tight joint, preventing the admission of dirt or sand and the escape of oil or grease.

The oiling device consists of a cup, F, inserted in the upper side of the skein over an orifice, *f*, from which proceeds a tube, f^2, leading to the bearing-surface *b*. The cover of the cup is held in place by a flat spring, *s*, attached to the skein by a screw or rivet. By this means the box and skein can be oiled without the necessity of removing the wheel. On the inner and larger circumference of the box D ribs or corrugations *g* are formed, to engage with corresponding ribs and depressions on the inside of the hub, whereby it is held firmly and securely in place.

What I claim as new, and desire to secure by Letters Patent, is—

The box D, formed with bearing-surfaces *d d*, inclined or conical recess d^2, and shoulder d^3, in combination with a spindle, B, having corresponding bearings and recess, and lubricating reservoir and channel, and a band, C, having flange c^2, substantially as specified.

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Witnesses:
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