(No Model.)

S. G. COLE.

AXLE SKEIN.

No. 305,794. Patented Sept. 30, 1884.

Fig. 1.

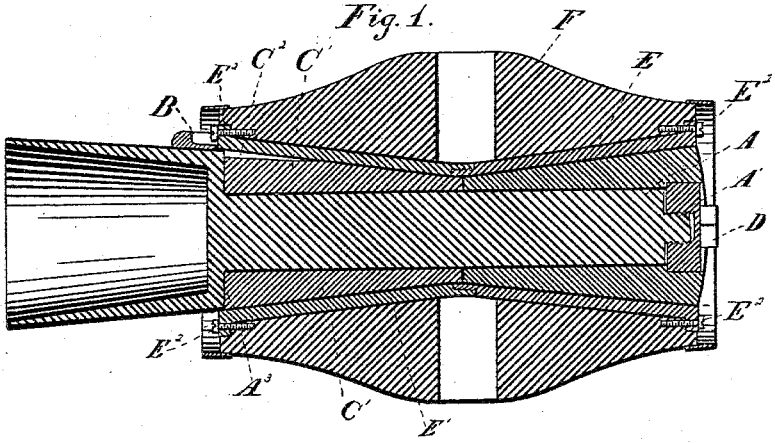


Fig. 2.

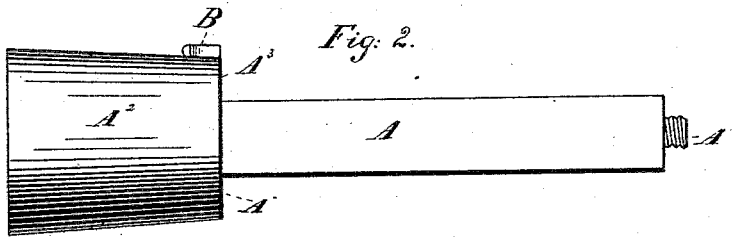


Fig. 3.

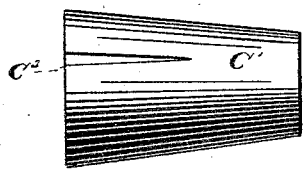


Fig. 4.

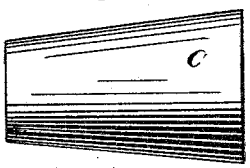


Fig. 5.

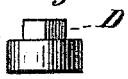
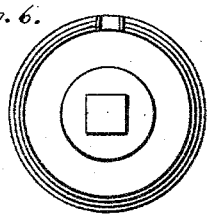


Fig. 6.



Witnesses.
P. B. Inspin.
O. M. Kramer

Inventor.
Samuel G. Cole
By R. S. & A. P. Lacey
Atty's.

UNITED STATES PATENT OFFICE.

SAMUEL GEORGE COLE, OF CARSON, MINNESOTA, ASSIGNOR OF ONE-HALF TO IGNACE LEAHMANN, OF SAME PLACE.

AXLE-SKEIN.

SPECIFICATION forming part of Letters Patent No. 305,794, dated September 30, 1884.

Application filed June 12, 1884. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL G. COLE, a citizen of the United States, residing at Carson, in the county of Becker and State of Minnesota, have invented certain new and useful Improvements in Axle-Skeins; 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.

My invention relates to wheels; and it consists in the novel construction, combination, and arrangement of parts, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a longitudinal section of the hub and spindle of my wheel. Fig. 2 is a detail view of the spindle. Figs. 3 and 4 are detail views of the bearing-cones. Fig. 5 is a detail view of the retaining-nut. Fig. 6 is an end view of the spindle, all of which will be described.

The spindle A is made angular in cross-section, as shown in Fig. 6, and has on its outer end the threaded nipple A′, and has its inner end provided with a socket, A^2, or other suitable construction, whereby it may be secured to the axle; or the spindle may be formed integral with the axle, as desired. A shoulder, A^3, is formed at the inner end of the spindle, and the inner bearing-cone is abutted thereagainst, as shown in Fig. 1. A cup or depression, B, is formed on the upper side of axle or socket A^2, and is open toward the shoulder A^3, and has its open side approximately flush with said shoulder, as shown in Fig. 1. The outer and inner bearing-cones, C C′, are made in the external form of truncated cones, and have openings cut longitudinally through them, fitted to the spindle, so the cones may be slipped thereon, as shown in Fig. 1. The cones C C′ are made of like dimensions, and are placed on the spindle with their smaller ends adjacent and abutted together. The larger end or base of cone C′ is abutted against the shoulders A^3, and has formed in its upper side an oiling-groove, C^2, connecting at one end with the oil cup or depression B, and fitted to convey the oil down into the bearing of the wheel. The outer cone, C, has its central opening enlarged and made circular at its outer end, so as to permit the retaining-nut D to be turned therein. This nut is turned on the nipple or stem A′, and retains the cone C on the spindle. This cone, being held in place, secures the other parts from detachment, as will be seen. The intermediate conical sleeves or boxes, E E′, are made alike, and are conformed on their inner sides to the bearing-cones, and on their outer sides to the inner bore of the hub F. The bore of the hub, it will be seen, is formed with a double taper, inclining inward toward the center. The intermediate cones are formed on their ends with radial flanges E^2, which fit suitable grooves in the ends of the hub, and are secured to the ends of the hub by screws, as shown in Fig. 1. The inner ends of the cones E E′ are screw-threaded one in the other, as shown in Fig. 1. The screw-thread joint prevents the oil from getting to the ends of the spokes. The outer cone, E, is held in place by the outer bearing-cone, and the inner cone, E′, is held in place by the inner bearing-cone, as will be noticed.

By the described construction an easy secure bearing is provided, and being made in the parts, as shown, the part on which the greatest wear comes may be readily and economically replaced when worn, as will be appreciated. It will be noticed that the spindle being angular, and the cone-bearing keyed thereon, the said cones do not revolve. Therefore there is no rotary action against the retaining-nut, such as would cause the same to turn off.

By means of the cones E E′, it will be seen, I am able to form the spoke-sockets entirely through the hub, rendering the construction of said sockets easier, and providing a deeper socket, and consequently a firmer connection for the spokes.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is—

1. The combination, with the angular spindle, and the cone-boxes keyed on said spindle, and having their apexes abutted together at

the center of same, of the hub having its bore tapered inward from its opposite ends, and the boxes E E′, secured in the hub, and having their inner ends lapped one upon the other, substantially as described, whereby the oil is excluded from contact with the body of the hub, substantially as set forth.

2. The combination of a spindle provided with a bearing-face tapered inward from both ends, of the hub having a correspondingly-formed bore, and the boxes E E′, inserted in said bore and screw-threaded together at their inner ends, and having their outer ends formed with radial flanges extended outward along and secured to the heads of the hub, substantially as set forth.

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

SAMUEL GEORGE COLE.

Witnesses:

H. F. WITTER,

D. WITTER.