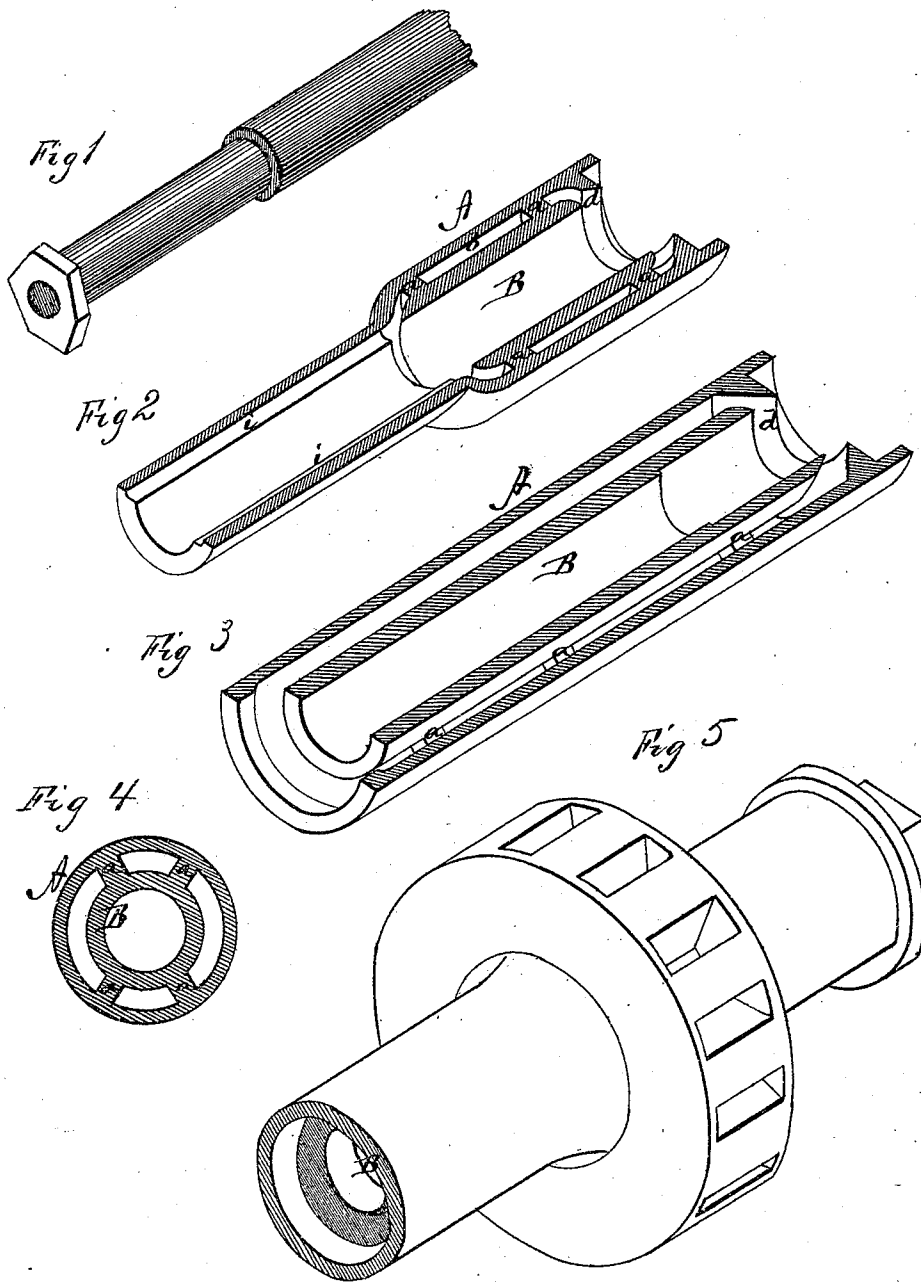


W. W. CRANE.

Lubricating Axle-Boxes for Carriages and Wagons.

No. 133,417.

Patented Nov. 26, 1872.



Witness:
Francis D. Curran
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per [Signature]

Attorneys.

UNITED STATES PATENT OFFICE.

WELLSLY W. CRANE, OF AUBURN, NEW YORK.

IMPROVEMENT IN LUBRICATING AXLE-BOXES FOR CARRIAGES AND WAGONS.

Specification forming part of Letters Patent No. 133,417, dated November 26, 1872.

To all whom it may concern:

Be it known that I, WELLSLY W. CRANE, of Auburn, in the county of Cayuga and in the State of New York, have invented certain new and useful Improvements in Self-Lubricating Axle-Box; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The nature of my invention consists in the construction and arrangement of a self-lubricating axle-box, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a perspective view of the wheel-spindle; Fig. 2 is a perspective longitudinal section of the axle-box; Fig. 3 is a similar view, showing a modification; Fig. 4 is a transverse section of the box; and Fig. 5 is a perspective of an entire wheel-hub with my box.

A represents the box proper, constructed in any suitable form. In the main part of the box—that is, the hub part—is an interior box, B, connected with the exterior box by arms *a a*, and the whole is cast in one piece. Between the interior and the exterior box is formed a chamber, *b*, to contain oil for lubricating the wheel-spindle, the oil being admitted into said chamber through one or more suitable openings, which openings should be closed oil-tight, so that no oil can escape through the same in any way. The oil from the chamber *b* passes through one or more apertures in the internal box B to the spindle, and also along grooves or channels *i i* formed in the remaining part of the box A. At or near the inner end of the box A is an internal circumferential flange *d*, against the outer side

of which the collar on the axle is to bear. The inner edge of this flange, as well as the ends of the interior box B, are feathered or beveled around the axle, as shown in Fig. 2, so as to prevent the oil from escaping around the axle. The outer end is closed by the usual cap, as shown in Fig. 5.

The interior box B may be extended the entire length of the box A, as represented in Fig. 3, in which case the grooves or channels *i i* are of course dispensed with. In either case it will be seen, that whenever the wheel is standing, the oil will settle down into the lower portion of the chamber *b*, but when in motion the oil will be uniformly distributed entirely around said chamber. This operation of stopping and starting has the effect to keep the external surface of the internal box covered with oil, and this is constantly working its way through the internal box to the axle.

In metallic hubs, where no axle-boxes are used, a similar oil-chamber may be formed by an interior hub, arranged and constructed in precisely the same manner as above described for the axle-box.

With this device no oiling is required oftener than once or twice a year, as when once filled it will run from six to twelve months before the oil is exhausted.

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

The combination of the external box A and the internal box B, cast together, with an oil-chamber and arms *a a* between, as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 30th day of October, 1872.

WELLSLY W. CRANE.

Witnesses:

A. N. MARR,
EDM. F. BROWN.