# J. SHACKLETON & W. SHACKLETON.

## Lubricating Axle-Boxes for Vehicles.

No. 133,895. Patented Dec. 10, 1872.

*Fig. 1*

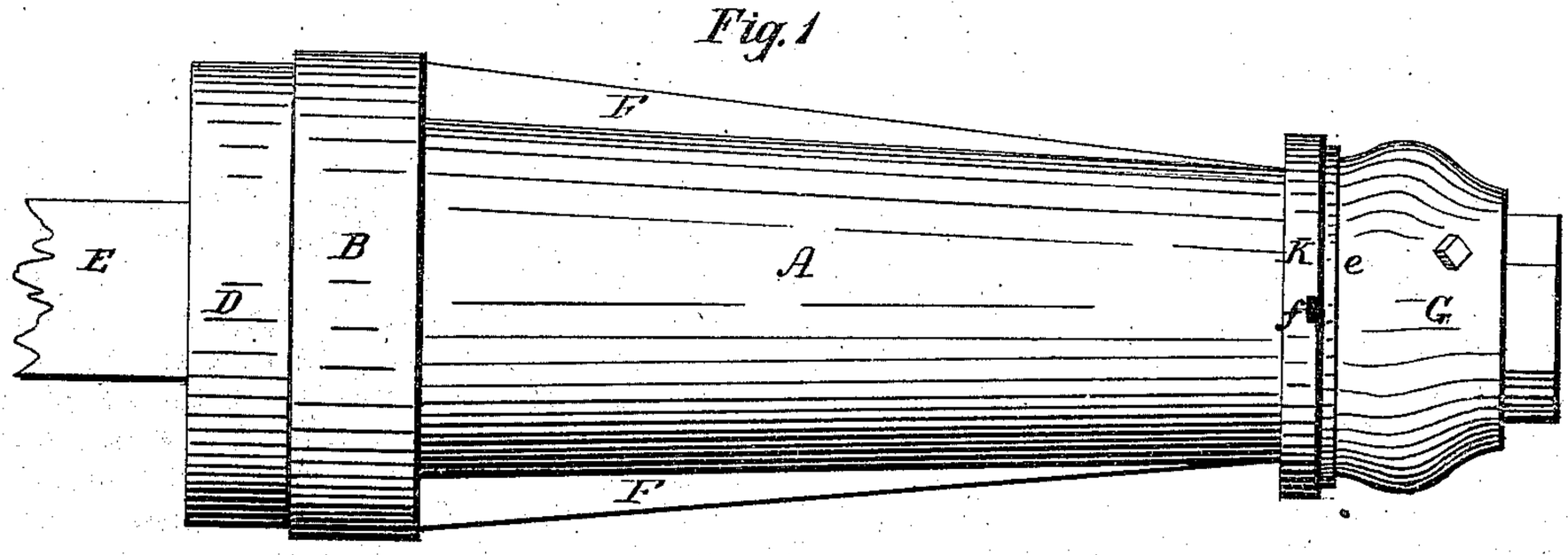



*Fig. 2.*

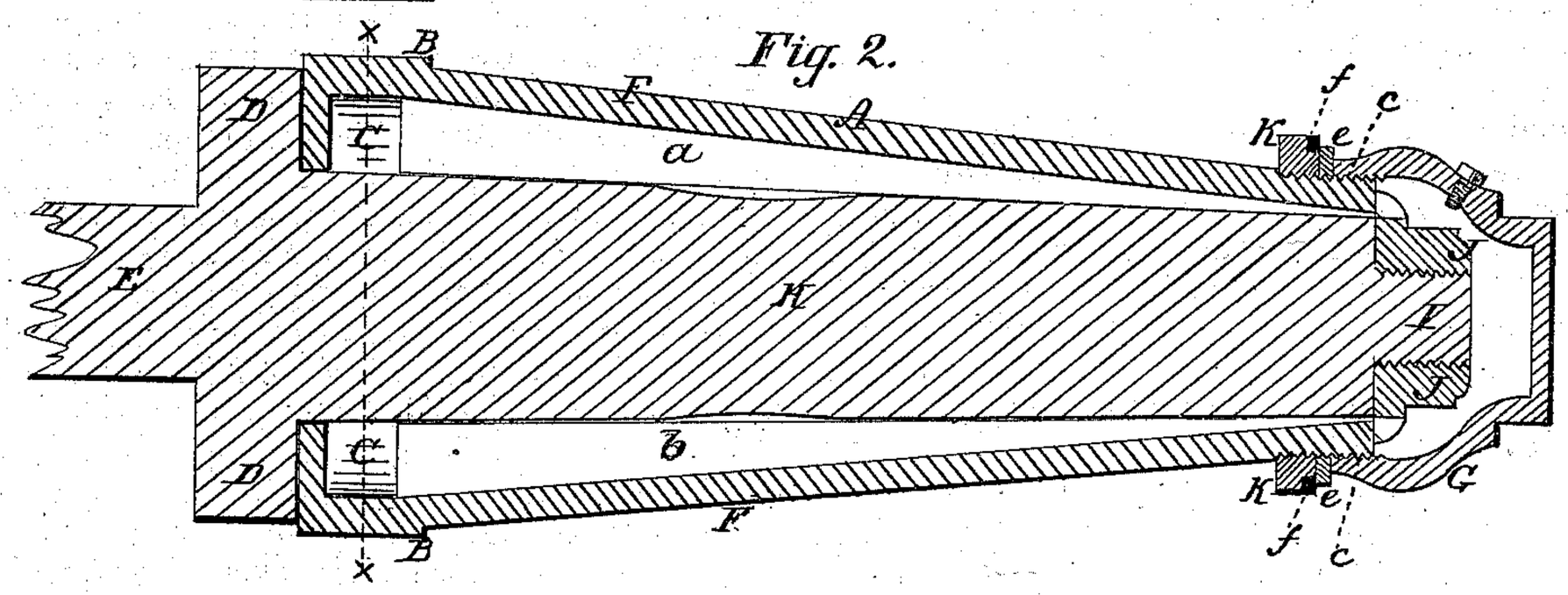



*Fig. 3.*

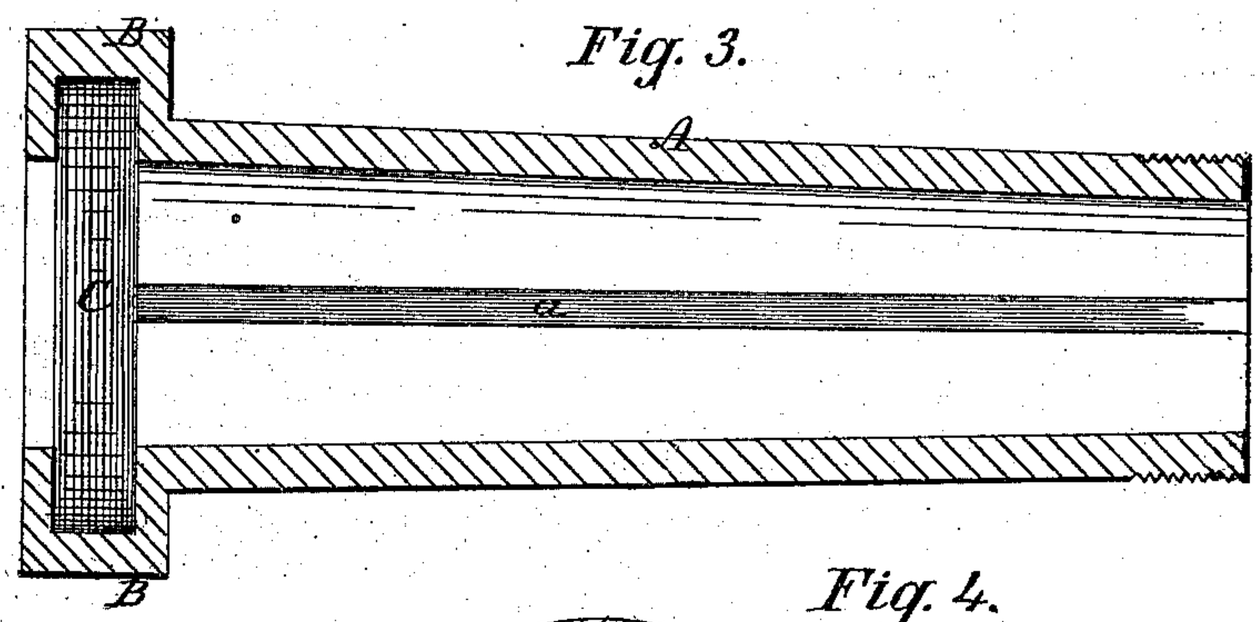
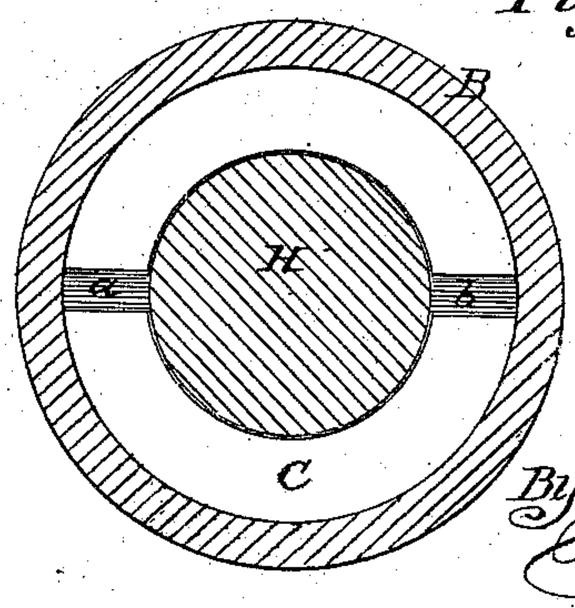



*Fig. 4.*




*Witnesses:*

*J. W. Wagner.*

*Aug. A. Girard.*

*Inventors:*

*James Shackleton*

*William Shackleton*

*By Johnson, Klaucke & Co*

*his Attorneys.*

# UNITED STATES PATENT OFFICE.

JAMES SHACKLETON AND WILLIAM SHACKLETON, OF CLEVELAND, OHIO.

## IMPROVEMENT IN LUBRICATING AXLE-BOXES FOR VEHICLES.

Specification forming part of Letters Patent No. **133,895**, dated December 10, 1872.

*To all whom it may concern:*

Be it known that we, JAMES SHACKLETON and WILLIAM SHACKLETON, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Self-Oiling Boxes for Carriage and other Wheels, of which the following is a specification:

Our improvements relate to lubricating devices for carriage and other wheels; and the said improvements consist of an axle-box having at its inner end an annular drop-chamber formed in an external projection, and tapering channels formed in the longitudinally-projecting ribs of the box, in combination with the oil-cup at the front end of the axle, with which said tapering rib-channels communicate, as will be more fully hereinafter described.

In the accompanying drawing, Figure 1 represents an elevation of a hub-box embracing our improvements and a portion of a carriage-axle to which it is applied; Fig. 2 represents a longitudinal section thereof; Fig. 3 represents an interior view of the hub-box, showing its annular oil drop or chamber and the channels which connect it with the front oil-cup; and Fig. 4, a transverse section of the same at the line *x x* of Fig. 2.

The box A is provided with an annular projection, B, on its rear end, within which an annular drop-chamber, C, for the oil is formed, so as to be outside of the inner diameter of the box A, as shown in Figs. 3 and 4. This hollow annular projection B fits against the shoulder D on the axle E, and the oil-drop C communicates, by two channels, *a b*, with the front end of the box. These channels *a b* are formed within the outside ribs F of the box A, and taper gradually from the oil-drop chamber C to the end of the box A, the object of which is to form a communication of the oil-supply cup G at the front with the oil-drop or receiving chamber C at the rear of the box, the latter forming a reservoir for the waste oil not only around the axle-bearing H, but for the shoulder D of the axle E, against which the enlarged end B of the box revolves, so that the waste or drop chamber C holds the oil from the box and gives it out over the axle-shoulder.

An additional advantage of the drop-chamber is that its projecting case B forms a shoulder outside of the box, against which the hub is secured.

The end of the axle-bearing H is provided with a screw-stem, I, to receive the screw-nut J, which holds the wheel upon the axle. The outer end of the box is provided with a screw-thread, *c*, for two purposes—first, to receive a screw-collar, K, which is screwed firmly against the end of the hub; and, second, to receive the screw oil-cup G, which is screwed firmly against the separate collar K, a leather or rubber washer, *e*, being placed between them to make the joint tight. The separate collar K has notches *f* by which to screw it against the hub, and it is thus arranged separately from the oil-cup G to relieve the latter of strain and to receive the strain from the hub, which would otherwise be upon the wedges which secure the hub to the box. This separate collar K, screwing directly upon the projecting end of the box, gives the advantage of being tightened from time to time so as to keep the hub always tight, while the box-ribs F prevent it from turning thereon. The oil-cup G screws over the holding-nut J, and, in connection with the waste or drop chamber C, will hold oil enough to last from one to two months, according to the size and character of the vehicle. The holding-nut J for the wheel should be clamped against the end of the axle-bearing H, so as to leave the box-channels *a b* always in communication with the cup-chamber. The oil-cup G is supplied, without removing it from the box, through an opening therein closed by a screw.

Having described our improvements, we claim—

The axle-box A, having the annular drop-chamber C and the tapering channels *a b* formed, respectively, in the collar B and the ribs F, in combination with the oil-cup G and the axle H, as described.

In testimony whereof we have hereunto set our hands this 16th day of September, A. D. 1872.

JAMES SHACKLETON.
WILLIAM SHACKLETON.

Witnesses:
GEORGE T. CHAPMAN,
ANNA B. CHAPMAN.