(No Model.)

# L. F. YANS.

## AXLE LUBRICATOR.

No. 370,030. Patented Sept. 13, 1887.

Fig. 1.

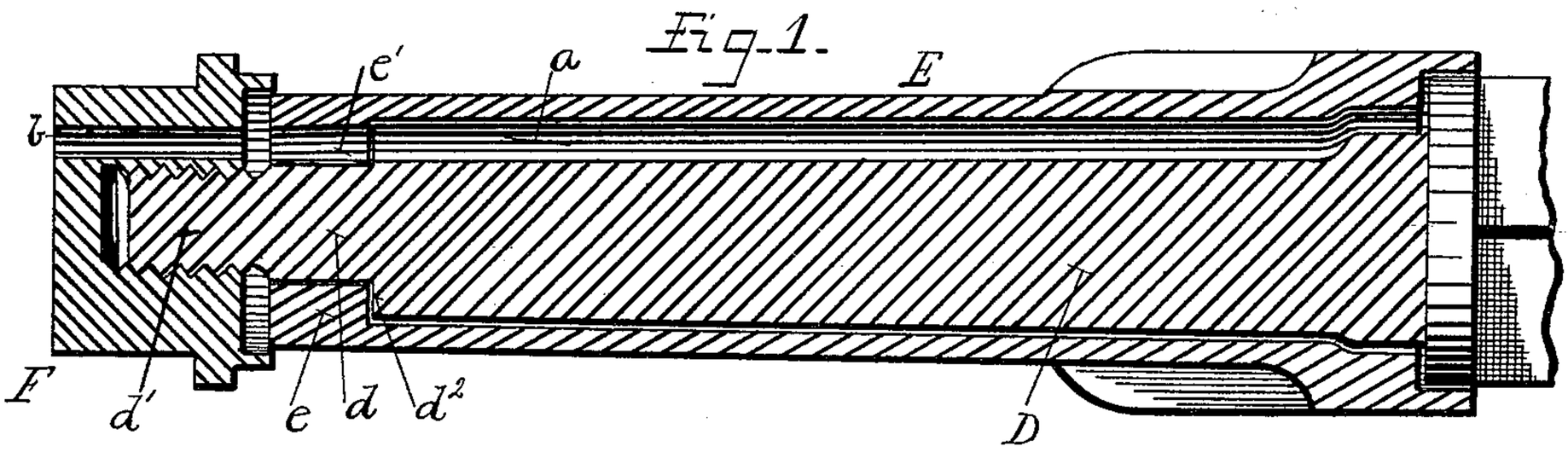



Fig. 2.

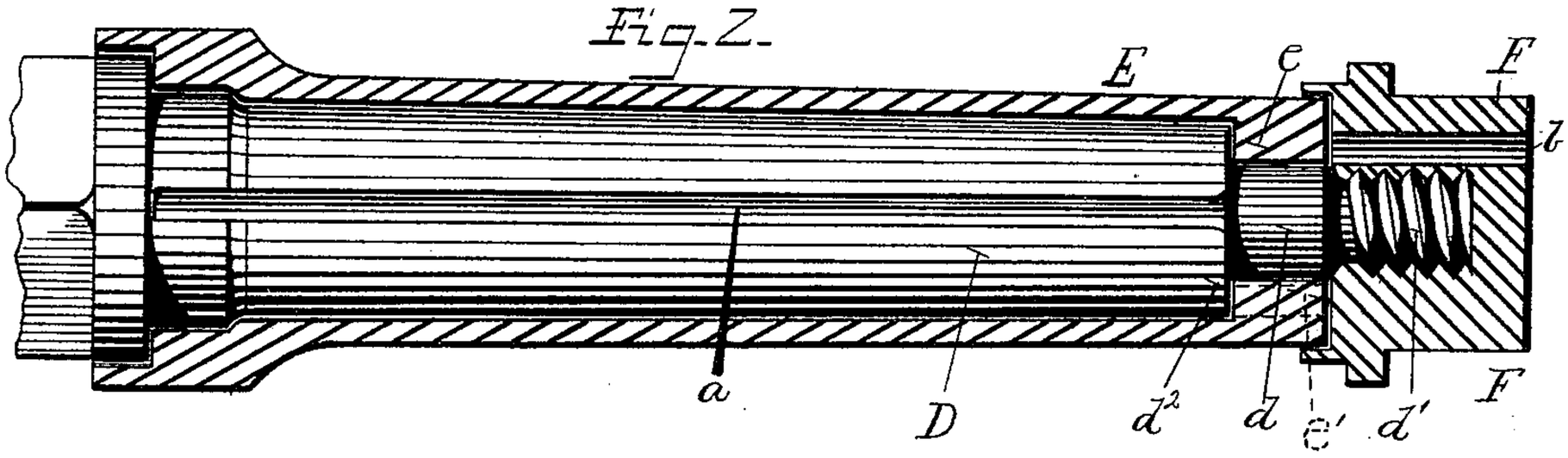



Fig. 4.

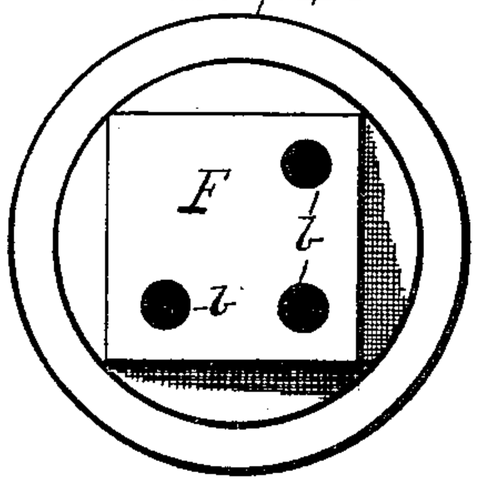



Fig. 3.

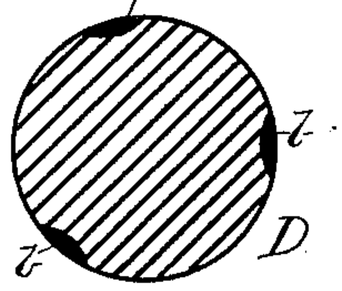
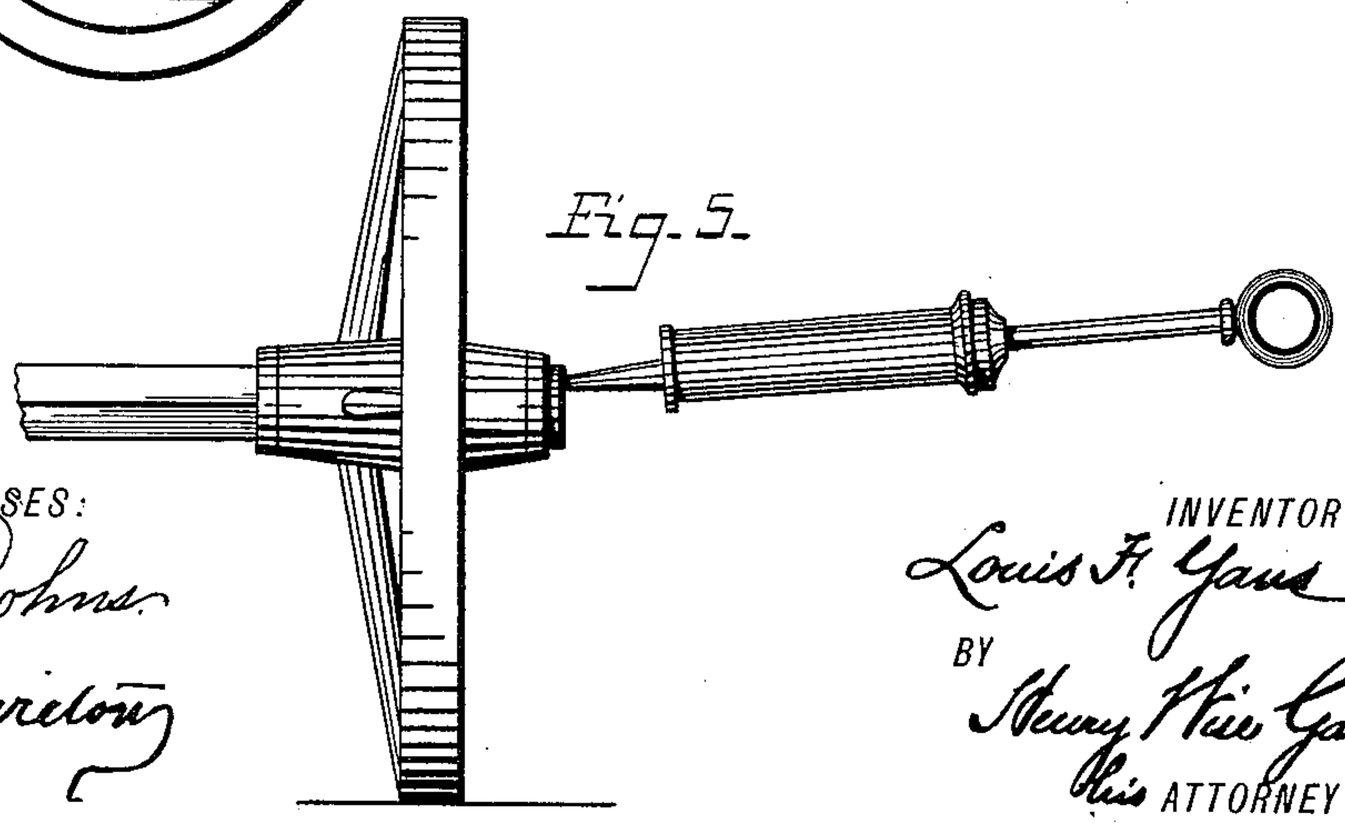



Fig. 5.



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# UNITED STATES PATENT OFFICE.

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## AXLE-LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 370,030, dated September 13, 1887.

Application filed March 14, 1887. Serial No. 230,788. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS FRANCIES YANS, a citizen of the United States, residing at Sharpsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Axles; and I do hereby 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.

My invention is an improvement in vehicle-axles and boxes therefor; and my said invention consists in certain details of construction and arrangement of the parts composing a vehicle-axle, its box, and tap, whereby to accomplish the desired result—viz., lubricating the axle without removing the tap and preventing the escape of the lubricant—as will be hereinafter more fully described and claimed.

In the drawings, Figure 1 represents a vertical longitudinal sectional elevation of a vehicle-axle, its tap, and box constructed according to my invention, the tap in this instance being shown as not quite screwed up tight against its seat, so that the oil-passage therein will be in direct line with the channel in the axle and box. Fig. 2 is a similar view to Fig. 1, except that the tap is shown as screwed up tight and as out of line with the oil-channel in the axle, Fig. 1 illustrating the position when lubricating and Fig. 2 when the axle is in use. Fig. 3 represents a transverse section, and Fig. 4 an end view, of a modification in the form of the chamber for the lubricating-oil, in which, instead of being in the form of a groove extending longitudinally along the entire length of the axle, as in Figs. 1 and 2, the oil is received into two or more (preferably three) countersunk holes made near the outer end of the axle and communicating with the outside through an equal number of holes through the tap, as in Fig. 4. Fig. 5 is a view illustrating the position of the syringe when in the act of injecting a charge of oil into the axle-box.

The letter D designates the axle, E the box, and F the tap. The outer interior end of the box E is formed with a reduced portion, *e*, which closely fits upon a cylindrical portion, *d*, formed between the threaded end *d'* and the shoulder $d^2$ of the axle D. Through this shouldered end *e* of the box is a channel, *e'*, which communicates or forms the continuation of the oil-recess *a* of the axle, and *b* is the hole or passage through the tap.

By reason of this construction of axle and box the pressure of the tap is not exerted directly against the end of the axle, as is usually the case; but said tap presses against the end of the box, which brings the end of the reduced portion *e* thereof tight against the shoulder $d^2$ of the axle D, and thereby prevents the escape of oil from the oil-groove in said axle.

To prevent the entrance of grit within the box through the hole in the tap or nut, said hole is made through said tap just before the same is screwed up tight against its seat, so that when supplying oil the tap is first turned back—say a quarter or eighth revolution—which brings the hole therein opposite to the channel in the axle. Then, upon inserting the nozzle of a syringe in said hole, the lubricant may be injected into the hole, after which, by again screwing the tap up tight against its seat, the hole therein is brought away from the opening in the axle, which is thereby effectually closed against the entrance of grit, &c., therein.

To insure that the opening in the box and nut be in line with each other and with the groove or channel in the axle, a score or mark is made in the top of the box and axle, so that these parts will all correctly register when to be filled.

To clean the groove in the axle without removing the tap or wheel, a long shallow metal half tube or scoop is used, which, upon being introduced through the hole in the tap and run back to the end of the groove in the axle, collects the dried oil, &c., therein from said channel, which is removed upon the withdrawal of said instrument.

I claim—

The combination, in a vehicle-axle, with the axle formed with a cylindrical shouldered portion at its tap end and an oil-groove or recess, of the box formed with the reduced shouldered portion with hole therein communicating with the oil-channel of the axle and tap, also with hole through the same communicating with the hole in the shouldered end of the box, substantially as shown, for the purposes specified.

LOUIS FRANCIES YANS.

In presence of—

HENRY STEIN,

W. S. COLLIER.