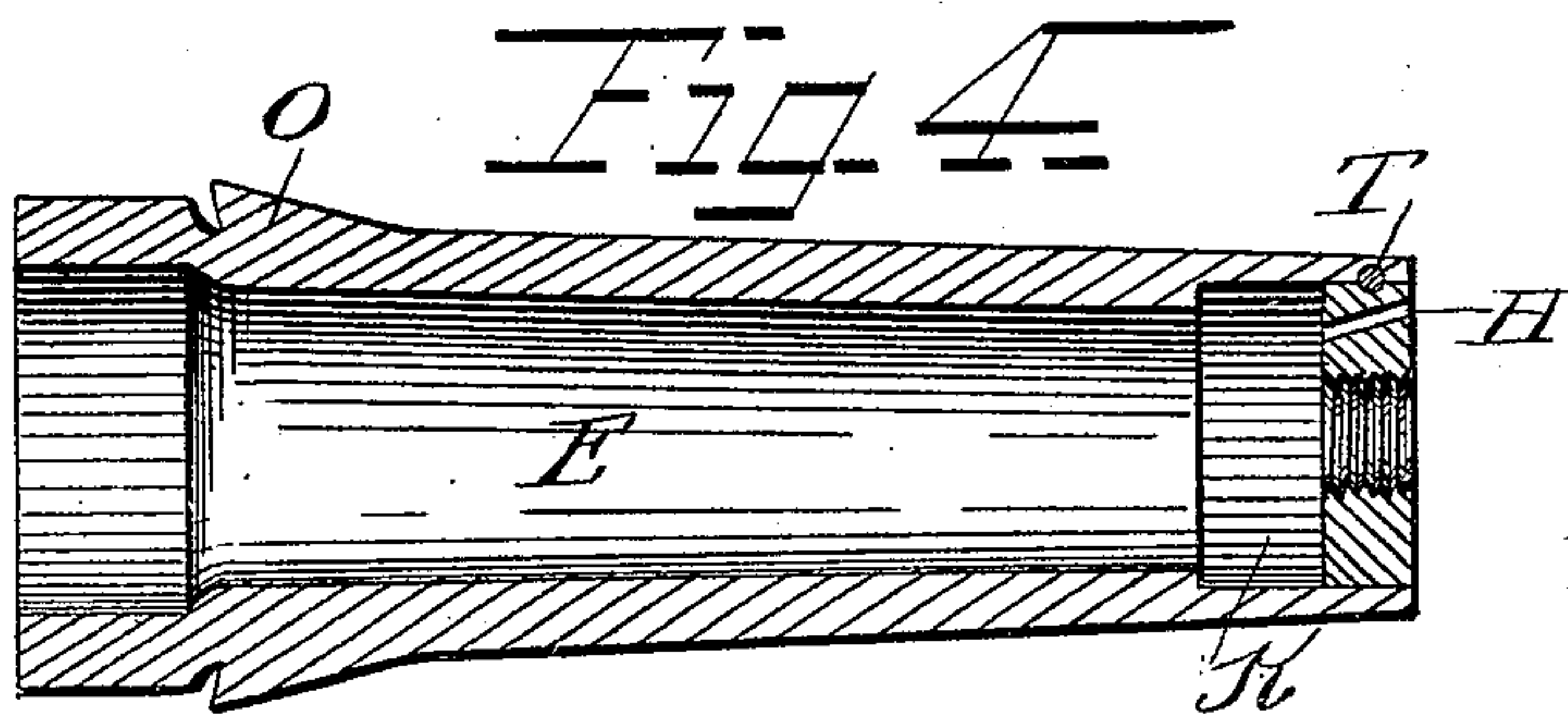
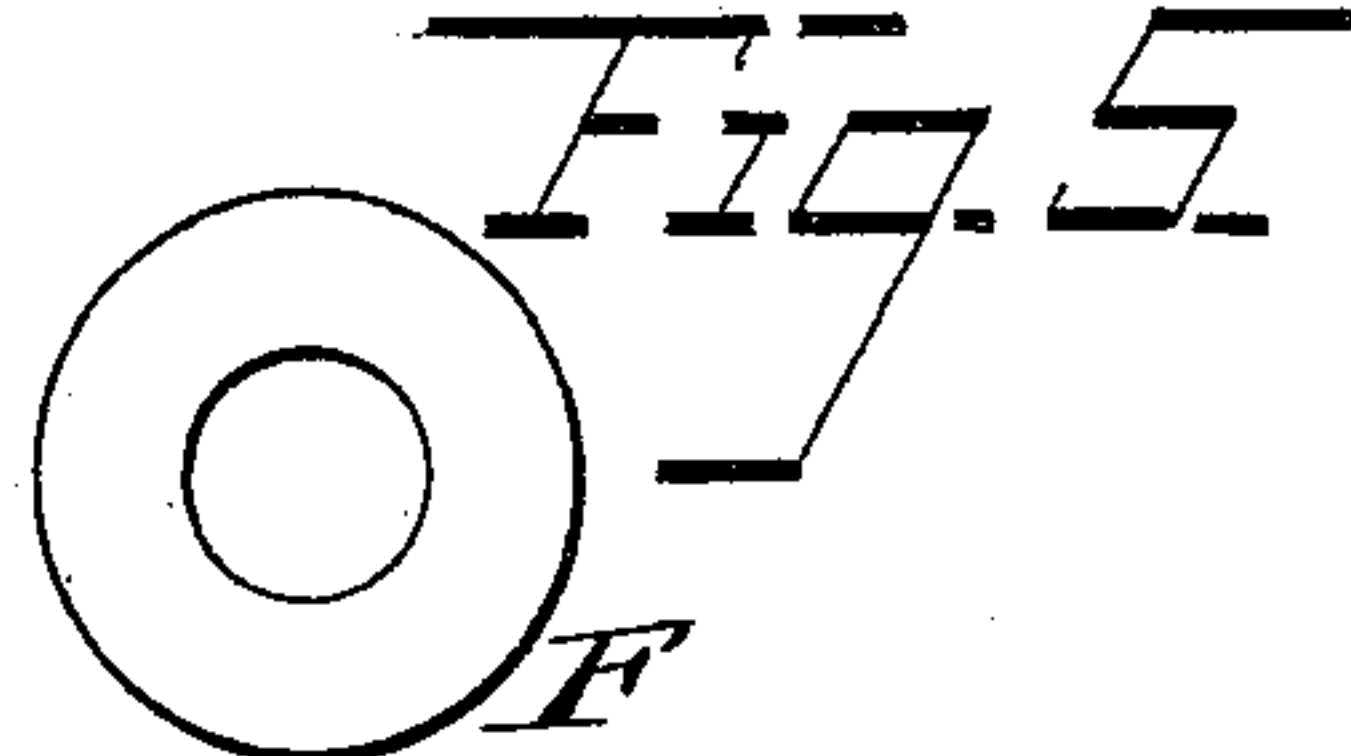
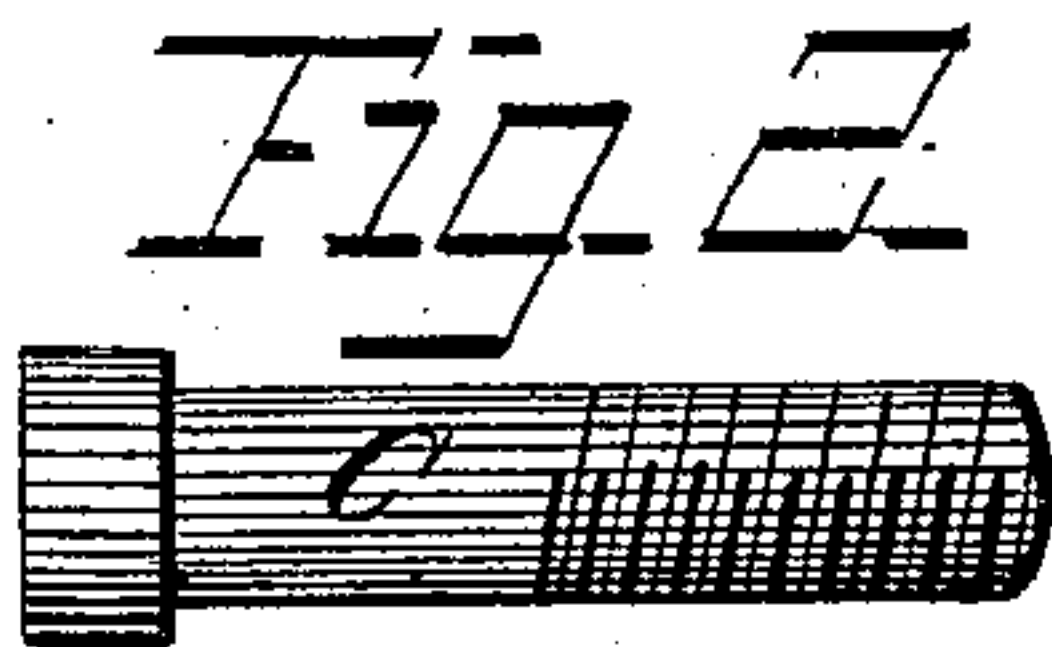
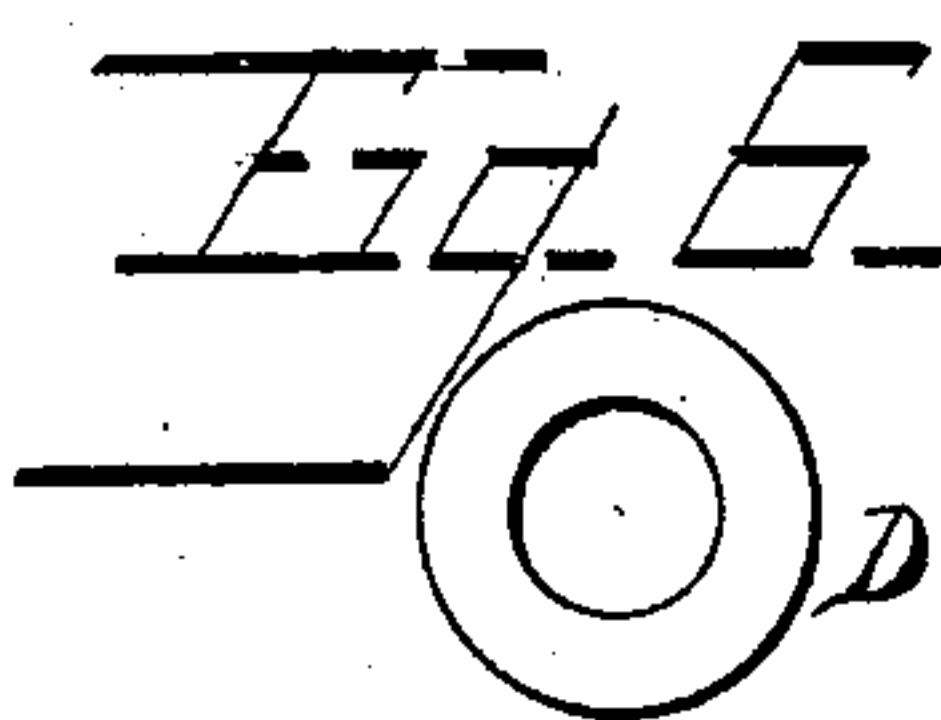
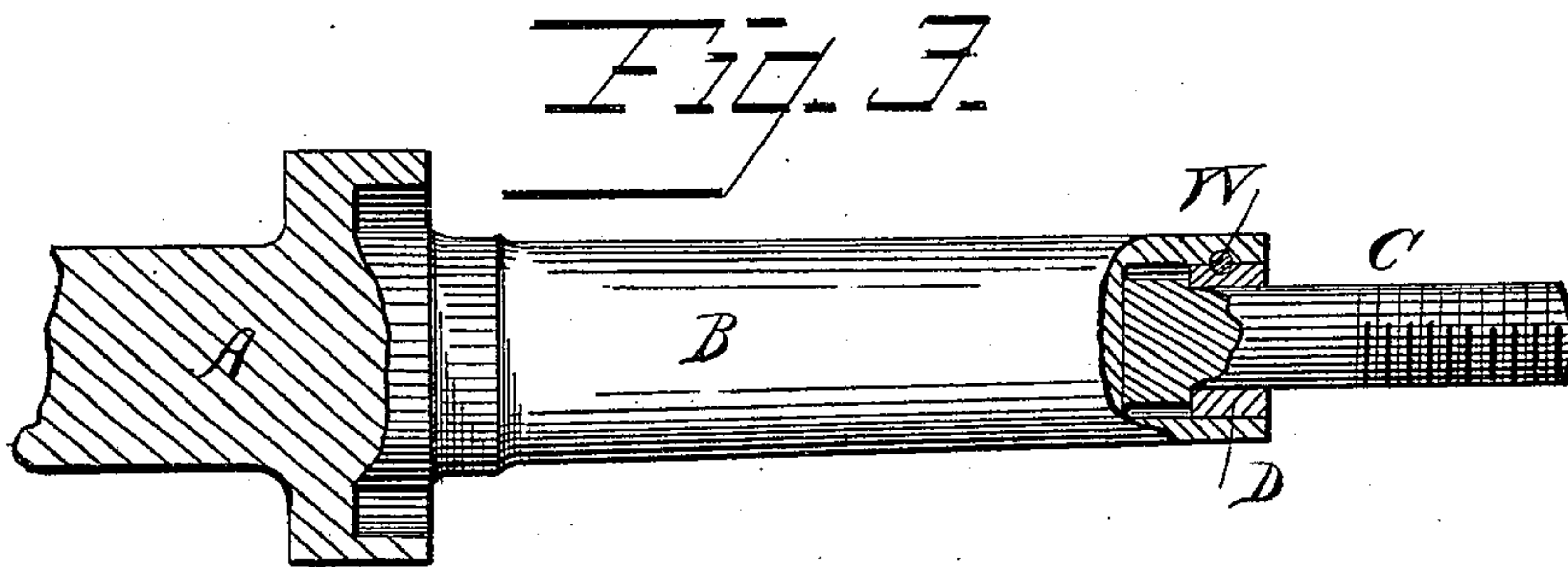
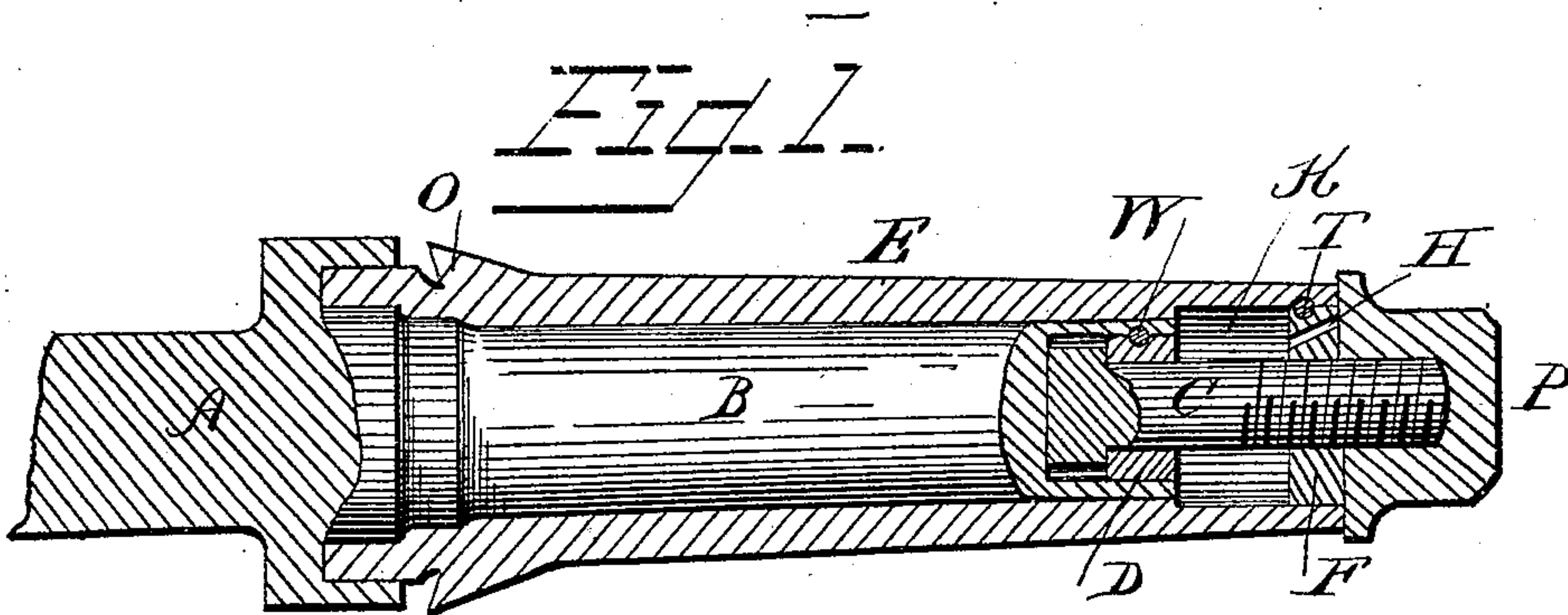


(No Model.)

E. FIRTH.  
VEHICLE AXLE.

No. 267,413.

Patented Nov. 14, 1882.



WITNESSES  
F. L. Curand  
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# UNITED STATES PATENT OFFICE.

EDWIN FIRTH, OF AUBURN, NEW YORK.

## VEHICLE-AXLE.

SPECIFICATION forming part of Letters Patent No. 267,413, dated November 14, 1882.

Application filed June 24, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, EDWIN FIRTH, of Auburn, in the county of Cayuga and State of New York, have invented certain new and useful Improvements in Lubricators; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Figure 1 is a longitudinal sectional view. Fig. 2 is a sectional view of the stud or pin detached. Fig. 3 is a longitudinal sectional view of the spindle. Fig. 4 is a longitudinal sectional view of the axle-box detached. Fig. 5 is an end view of the ring or collar detached from axle-box, Fig. 4. Fig. 6 is an end view of the ring or collar detached from axle-spindle of Fig. 3.

Corresponding parts in the several figures are denoted by like letters of reference.

This invention relates to lubricating devices for vehicle-wheels; and it consists in certain improvements in the construction of the same, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, A represents the axle, and B the spindle, in the end of which is bored a hole to receive a pin or stud, C, as shown in Fig. 2. A ring or collar (end view in Fig. 6) is fitted tightly in end of spindle B, and a pin, W, is driven transversely through the said ring or collar D and spindle B, which is firmly attached, yet capable of letting the pin or stud C revolve freely.

The shell or axle-box E, as shown in Fig. 4, is provided with wings or feathers O, in the usual manner, to keep it from turning in the hub, in which it is adjusted.

It will be seen that I bore the hole at the end of axle-box E a little larger than the diameter of the end of spindle B, and firmly attach at its end the ring or collar, Fig. 5, with

a pin, T, driven transversely through the said axle-box and ring or collar. In this manner the ring or collar is firmly attached. It will also be seen that an oil-chamber, K, is formed at the end of the said axle-box E. The said ring or collar F is provided with a screw-thread to receive the pin or stud C. The said ring or collar F answers as an adjusting-ring.

It will also be seen that I drill a hole, H, in the ring F to receive oil into the oil-chamber K, and a cap or lock-nut, P, is screwed tightly against the ring or collar F, which holds the oil from coming out of the oil-chamber K, and also holds the wheel on the axle-spindle.

It will be observed that the pin or stud C, the ring or collar F, and axle-box E, and cap or lock-nut P all revolve with the wheel, and yet the above-said cap or lock-nut P holds the wheel on the axle-spindle, thus dispensing with the friction between the hub of the wheel and the nut that holds the wheel on the axle-spindle.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The herein-described axle-spindle, provided at its outer end with a recess, in combination with the pin or stud C, the sleeve or ring D, and the transverse pin W, securing said sleeve permanently in position, as set forth.

2. The axle-spindle, provided at its end with a revolving screw-threaded pin or stud, in combination with the axle-box E, having recess K, and ring F, secured by a pin, T, and having perforation H, and the revolving cap or lock-nut P, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

EDWIN FIRTH.

Witnesses:

F. M. SMITH,  
JOHN VAN DEUSEN.