

No. 654,702.

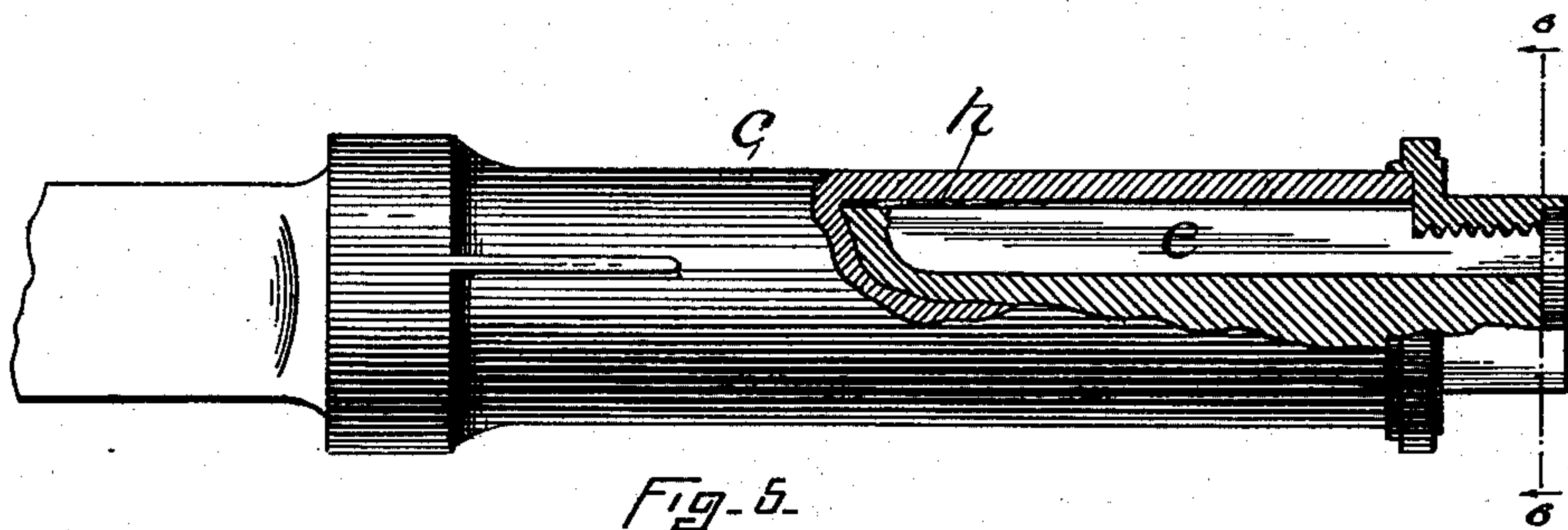
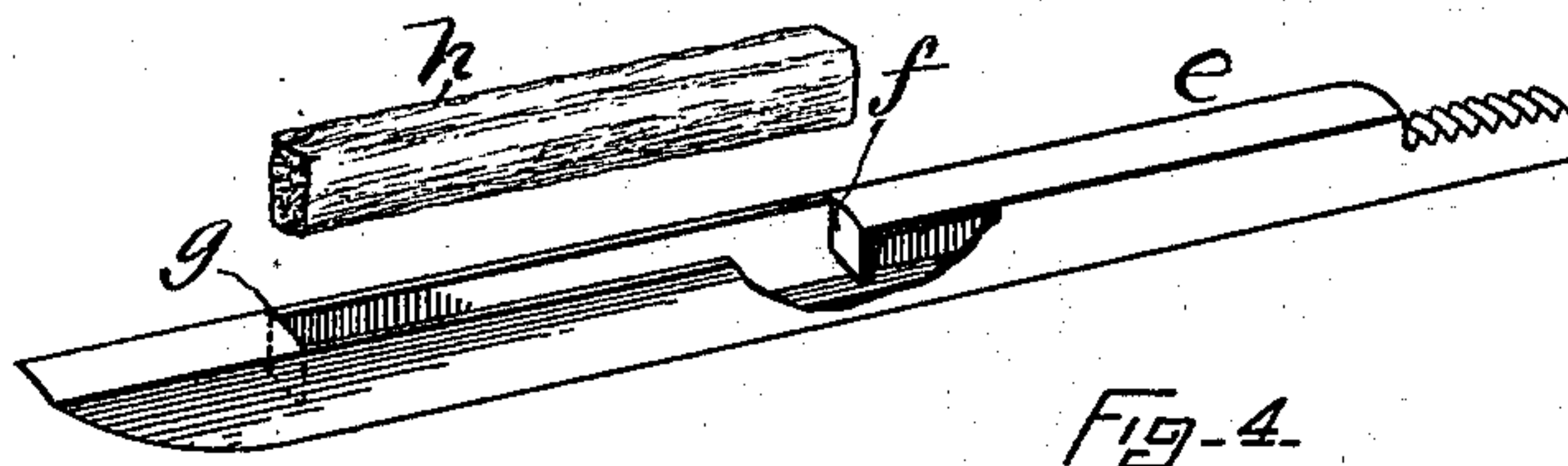
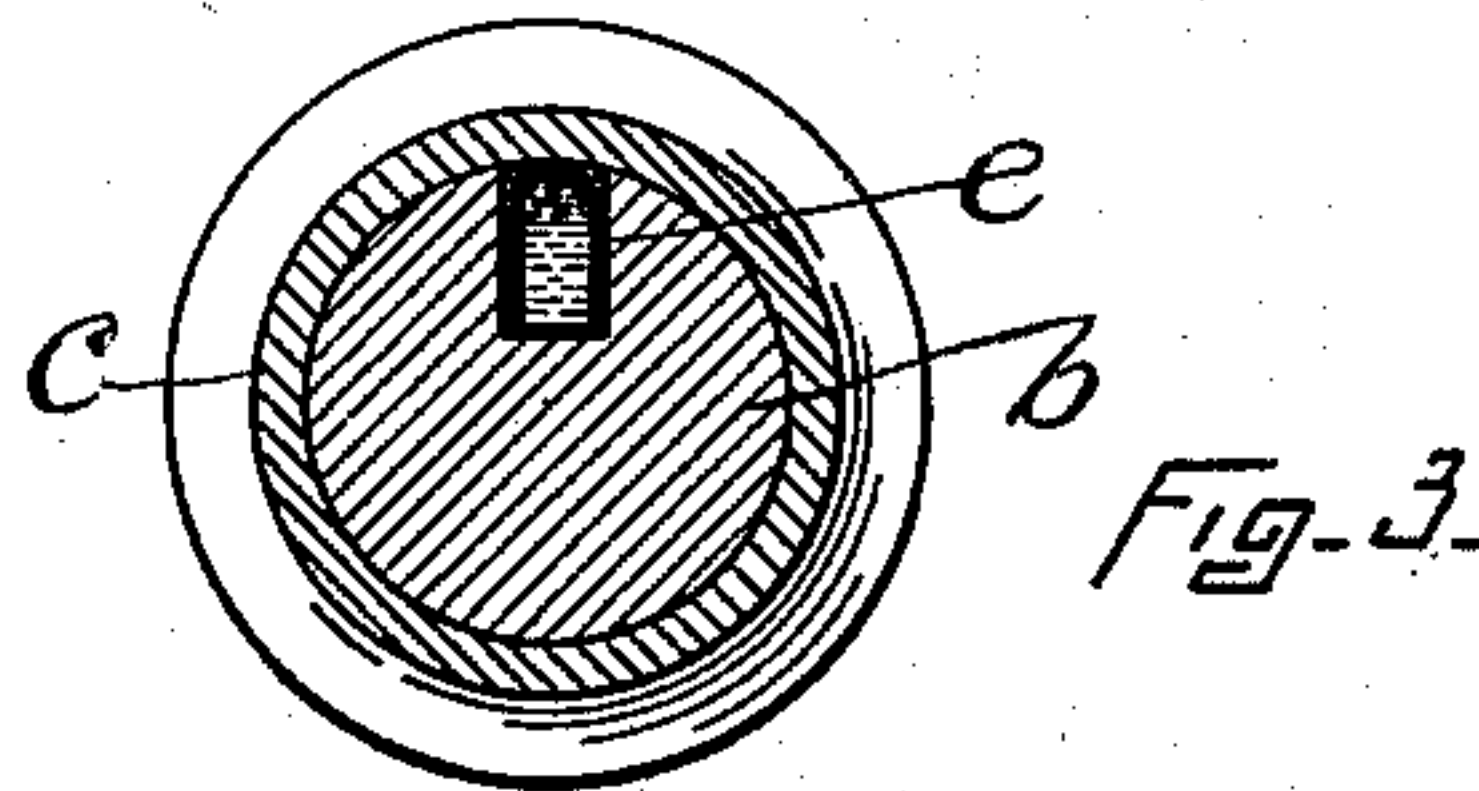
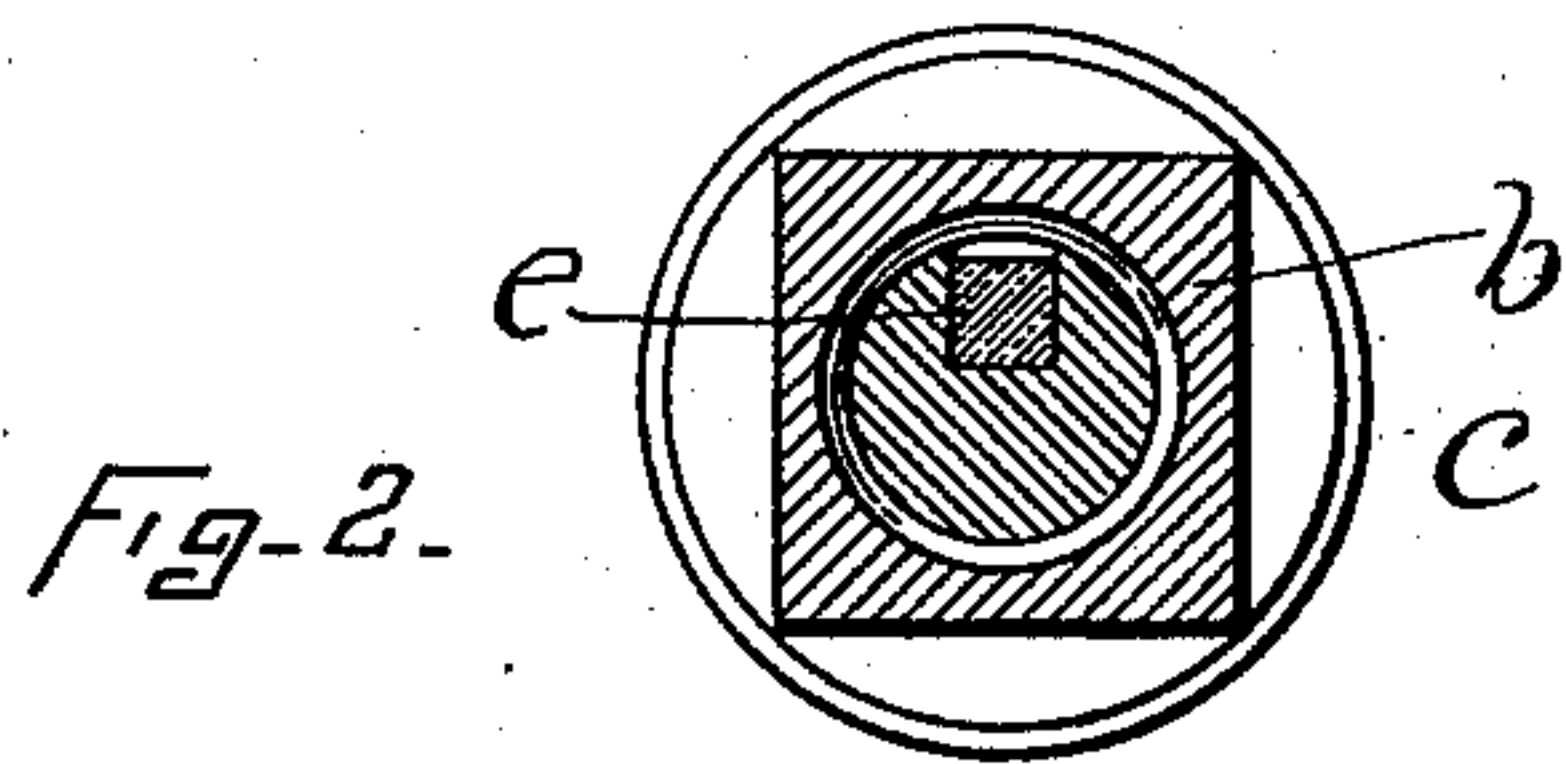
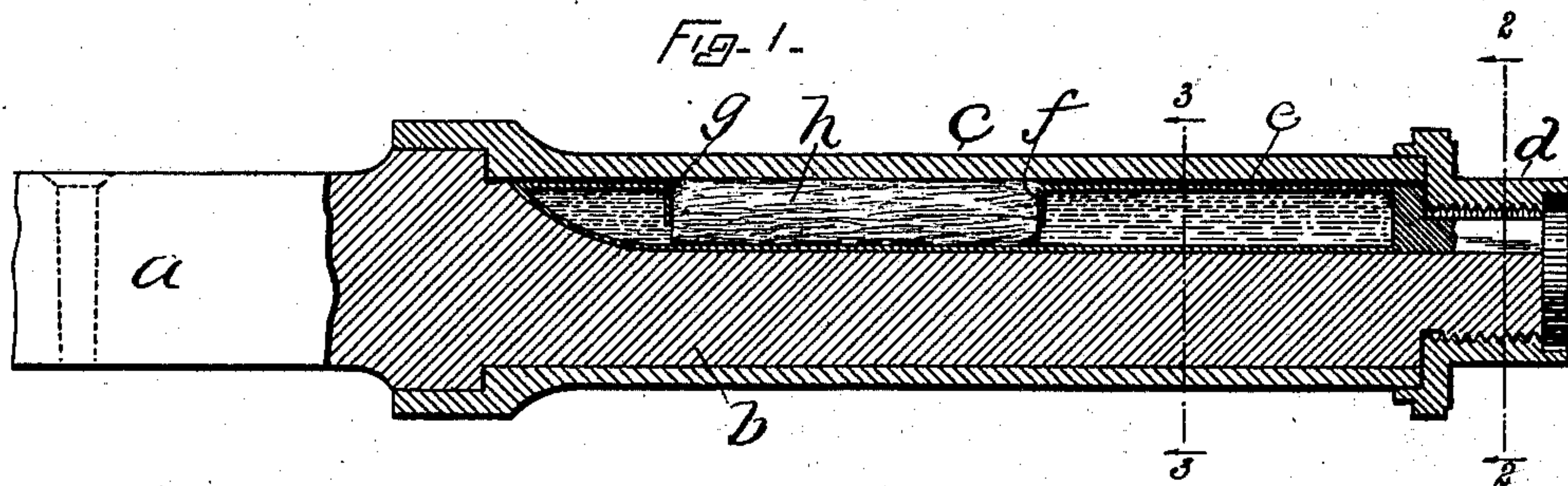
Patented July 31, 1900.

E. E. BAKER.

SELF LUBRICATING AXLE SPINDLE.

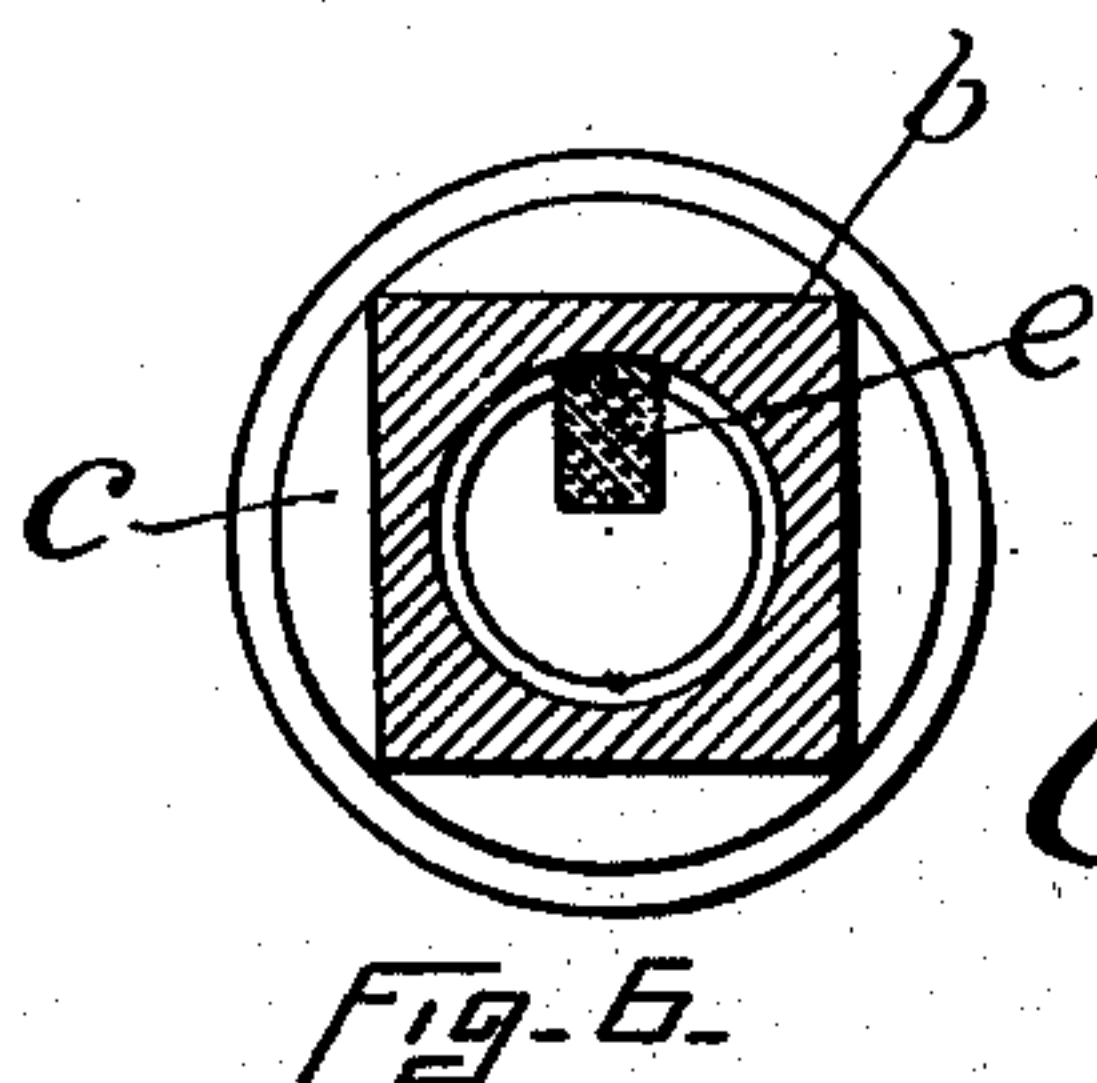
(Application filed May 20, 1899. Renewed June 21, 1900.)

(No Model.)



WITNESSES.

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UNITED STATES PATENT OFFICE.

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SELF-LUBRICATING AXLE-SPINDLE.

SPECIFICATION forming part of Letters Patent No. 654,702, dated July 31, 1900.

Application filed May 20, 1899. Renewed June 21, 1900. Serial No. 21,083. (No model.)

To all whom it may concern:

Be it known that I, ELIJAH E. BAKER, of Hyde Park, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Self-Lubricating Axle-Spindles, of which the following is a description sufficiently full, clear, and exact to enable those skilled in the art to which it appertains or with which it is most nearly connected to make and use the same.

This invention has relation to means for supplying the spindles of vehicle-axles with a quantity of lubricating substance in such manner that it may be transferred to the surfaces of the spindle and box of the wheel-hub as required, which contrivances are commonly known as "self-oiling axles."

It is the object of this invention to provide improvements whereby any ordinary axle-spindle can be readily rendered self-lubricating without weakening its construction to an appreciable extent and without interfering with its prime functions.

It is also the object of the invention to provide a self-lubricating device for axle-spindles which can be supplied with a large quantity of lubricating substance, so as to make the "oiling" of the spindle quite infrequent, the construction of the said device being such that the lubricant is supplied to the surfaces in such quantity only as is essential.

It is also the object of the invention to provide a lubricating-reservoir for the spindle which may be removed and filled and put in proper condition while separated from the spindle and then put into place without leakage or any dripping of the lubricant from the reservoir.

To the foregoing ends the invention consists of the improvements which I will now proceed to describe in detail, and particularly point out in the claims.

Reference is to be had to the annexed drawings, and to the letters marked thereon, forming a part of this specification, the same letters designating the same parts or features, as the case may be, wherever they occur.

Of the drawings, Figure 1 is a longitudinal central sectional view of a vehicle-axle spindle and wheel-hub box, showing the invention applied thereto. Fig. 2 is a cross-sectional view taken on the line 2 2 of Fig. 1.

Fig. 3 is a view similar to that of Fig. 2, taken on the line 3 3 of Fig. 1. Fig. 4 is a perspective view of the lubricating-reservoir, showing the wick or felt strip as removed from its chamber in the reservoir. Fig. 5 is a partially-sectional view of a spindle and box in side elevation, showing the invention in a slightly-modified form from that in which it is represented in Fig. 1. Fig. 6 is a cross-sectional view taken on the line 6 6 of Fig. 5.

The nature and scope of the invention will be understood by those skilled in the art from the following explanation.

In the drawings, *a* designates a vehicle-axle terminating with the usual tapering spindle *b*, upon which the wheel-hub (not shown) containing the box *c* is slipped and held in place by the nut *d*, turned on the end of the spindle.

In carrying out the invention a channel is formed in the upper side of the spindle, extending longitudinally thereof from the outer end to or near the inner end. This channel may be of any form desired, though I prefer to make it, as herein shown, with vertical sides and a flat bottom, the inner end of the latter curving upward to the surface.

e designates a lubricating-reservoir formed from suitable material and of a size and form matching the channel made in the spindle. This reservoir is provided with a chamber from the inner side of the nut *d* to its inner end and has a closed bottom and closed sides, so that none of the lubricating substance therein can leak or drip therefrom. The top of the reservoir is also closed or covered excepting for a limited distance, as from *f* to *g*, which forms an opening through which the lubricating substance may be supplied to the reservoir and into which a wick or piece of felting *h* is placed, through the medium of which the lubricating substance is supplied by capillary attraction to the surfaces of the spindle and box. At the ends *f* and *g* of the opening the material may extend from the surface into the chamber, as is shown in Figs. 1 and 4. The outer end of the reservoir may be screw-threaded, as indicated in Figs. 4 and 5, so that the nut *d* may be turned thereon coördinately with the thread on the end of

the spindle, or the end of the reservoir may be made plain and the nut turned up against the shoulder thereof, as is shown in Fig. 1.

The channel in the spindle may be formed by a milling-machine with a milling-tool of suitable construction and capability, and the reservoir may be made of slightly-less depth than the channel, so that it can easily be inserted in the latter when the wheel is on the spindle and be raised by contact of the inclined end with the inclined bottom of the inner end of the channel.

In use when it is proposed to "oil" the spindle all that is necessary is to unscrew the nut *d*, draw the reservoir out, take out the wick or felt piece *h*, fill the chamber with the lubricating substance, insert the reservoir in the channel, and screw on the nut.

The fact that the reservoir has closed sides and a closed bottom renders it practicable to remove it from the spindle and refill it without dripping or spilling the lubricating substance therefrom and without soiling clothing or unduly soiling the hands.

The character of the reservoir is such that it may be supplied with a bountiful quantity of the lubricating substance, so as to make the oiling of the axle an infrequent necessity.

The wick or felt piece *h* can be made of any substance that will supply the lubricant by capillary attraction in requisite quantity to the surfaces of the spindle and box.

Having thus explained the nature of the invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which

it may be made or all of the modes of its use, it is declared that what is claimed is—

1. A self-lubricating axle-spindle provided with a longitudinal channel, in combination with a lubricating-reservoir *e* constructed to fit the channel, the said reservoir having a closed bottom, closed sides, and a close-covered top excepting between the points *f* and *g* where it is provided with a longitudinal opening, and a wick *h* coextensive with the said opening inserted therein, substantially as set forth.

2. A self-lubricating axle-spindle provided with a longitudinal channel, a lubricating-reservoir to match the channel, having a closed bottom and closed sides, and an opening in the top to receive a wick *h*, the end of the reservoir being screw-threaded to correspond with the screw-threaded end of the spindle, substantially as set forth.

3. A lubricating-reservoir for self-lubricating axle-spindles having a closed bottom curved upwardly at its inner end to the top, closed vertical sides, and a close-covered top excepting between the points *f* and *g* where it is provided with a longitudinal opening for the reception of a wick, substantially as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 30th day of March, A. D. 1899.

ELIJAH E. BAKER.

Witnesses:

J. EDWARD BAKER,
STEPHEN L. HUGHES.