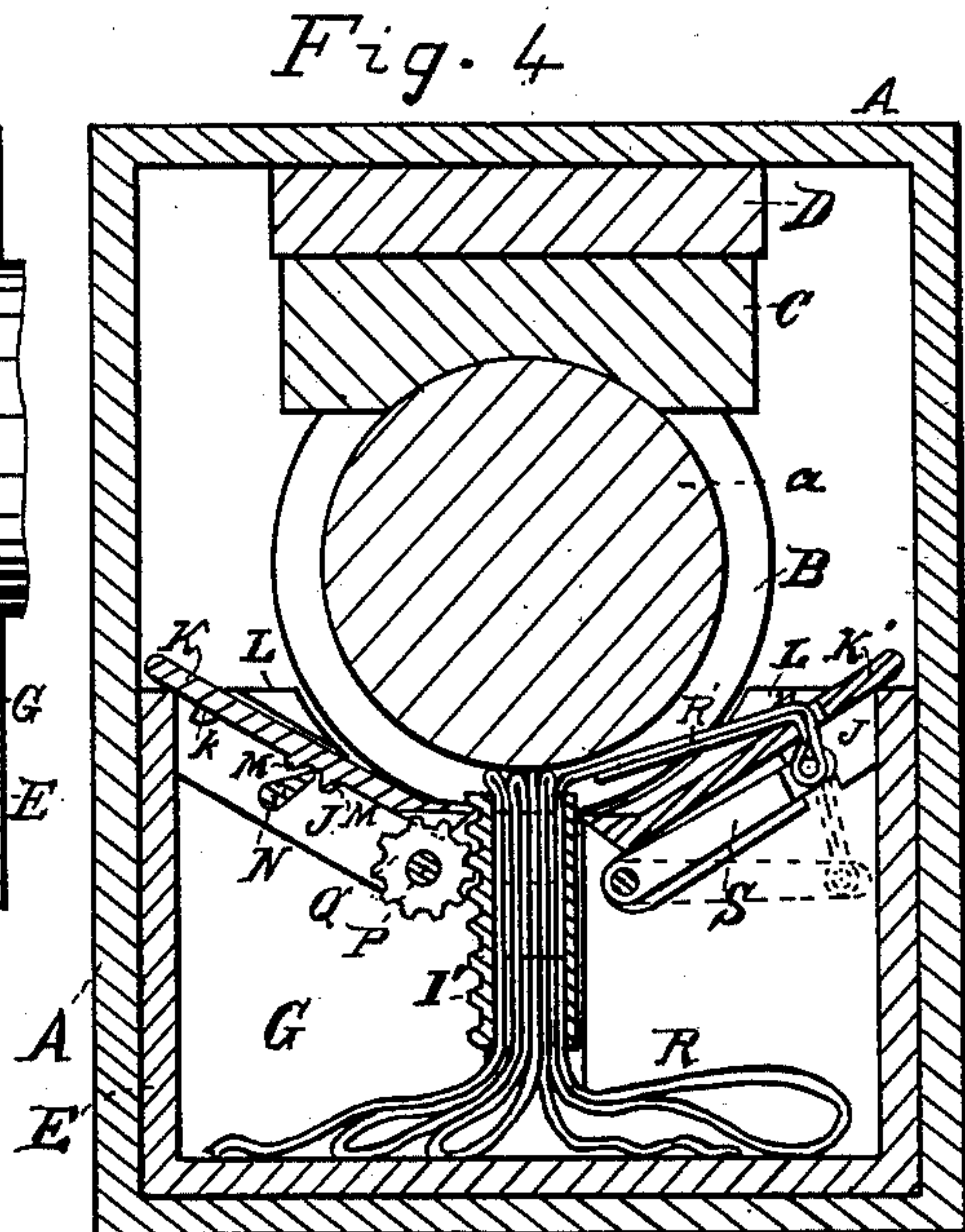
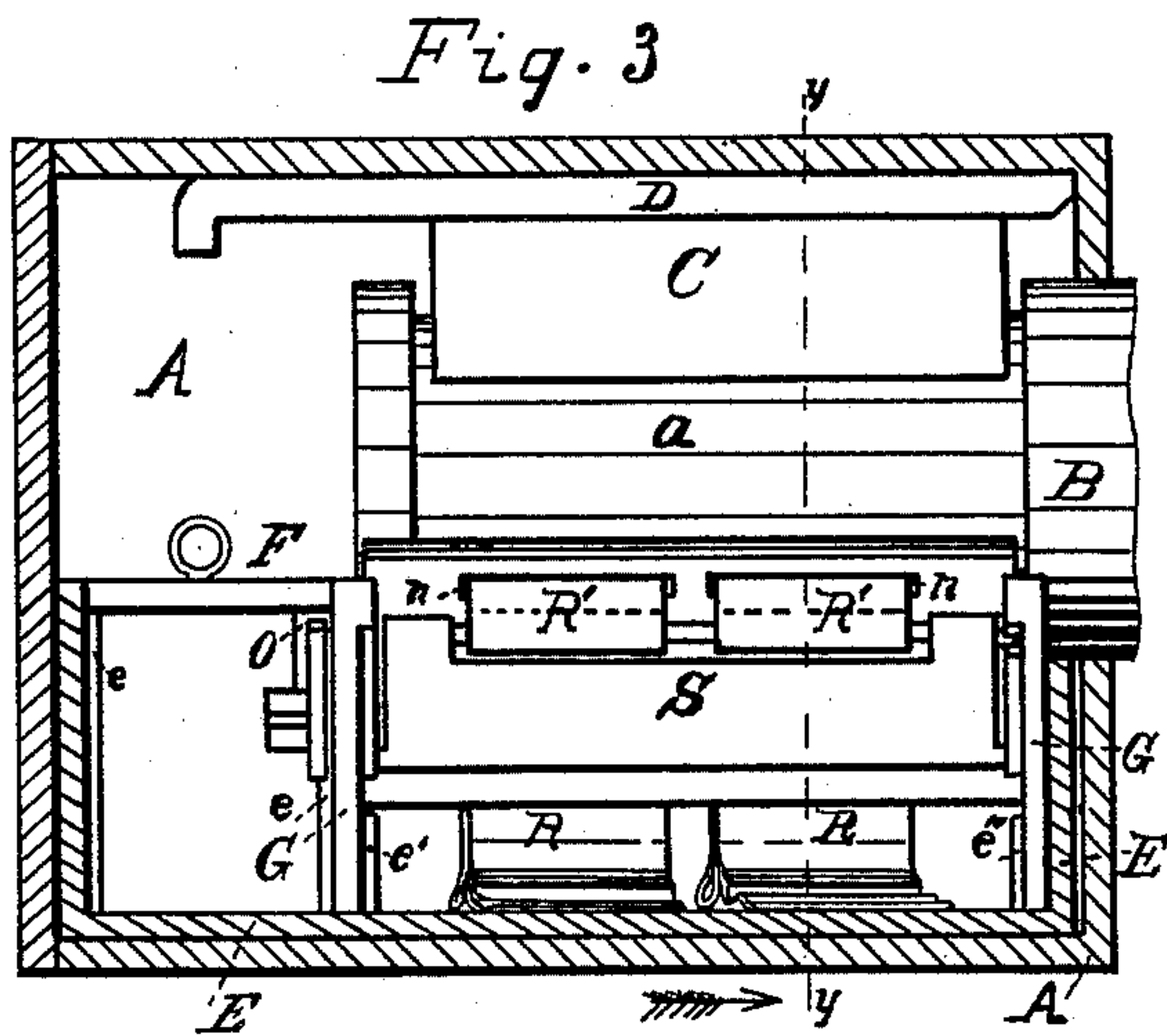
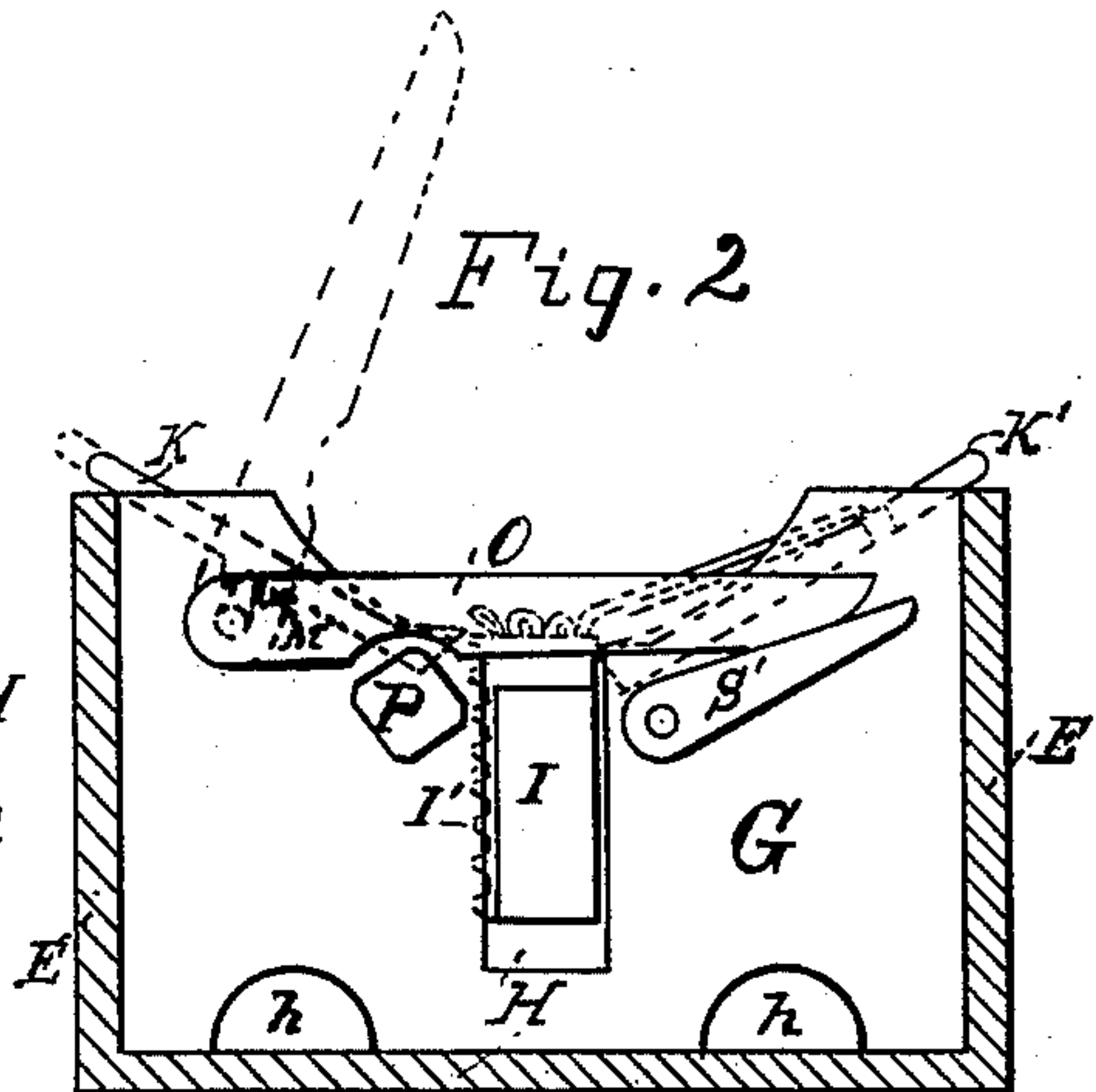
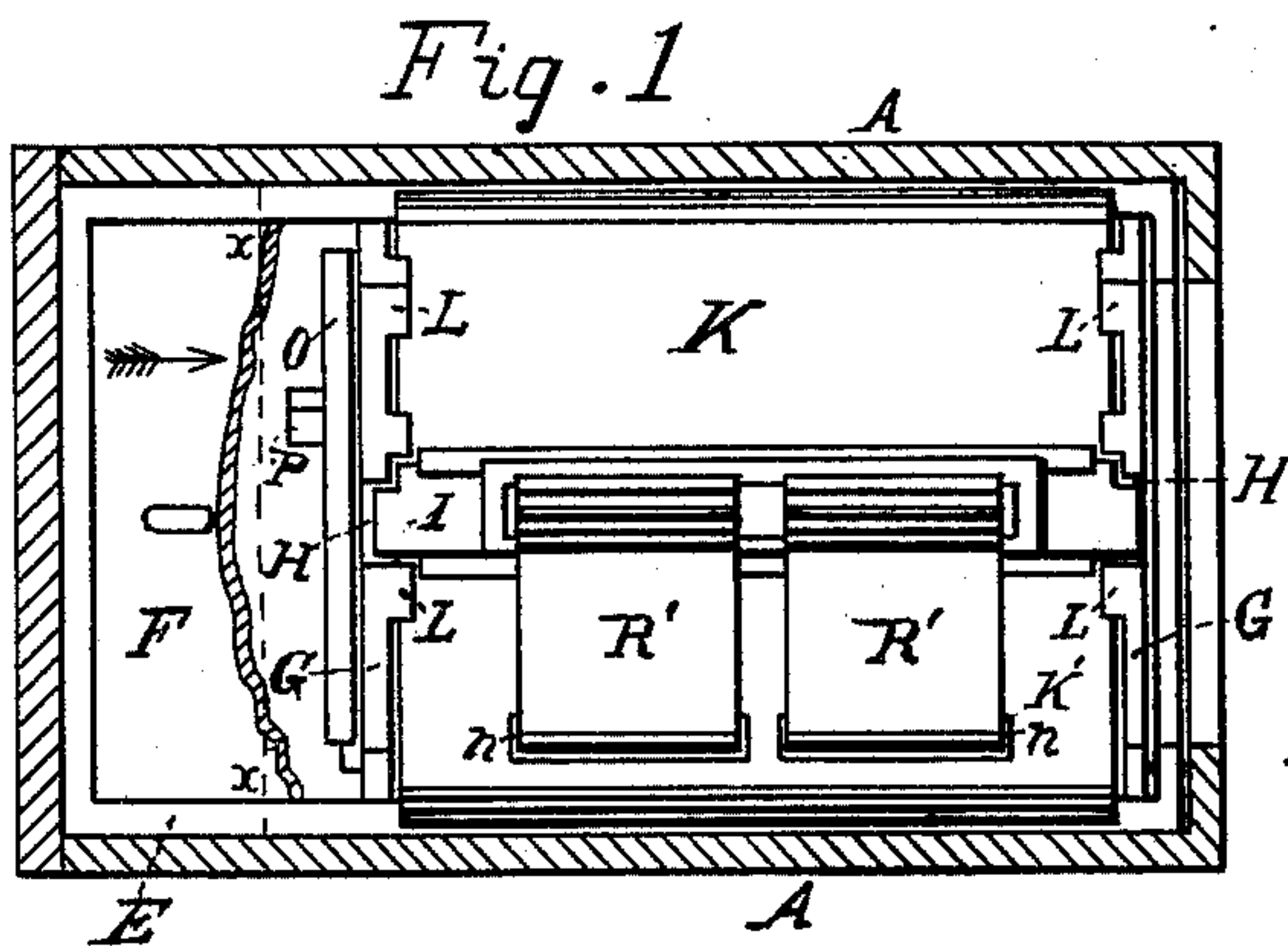


P. HABEL.  
Axle-Lubricator.

No. 223,285.

Patented Jan. 6, 1880.



WITNESSES

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# UNITED STATES PATENT OFFICE.

PETER HABEL, OF CHICAGO, ILLINOIS.

## AXLE-LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 223,285, dated January 6, 1880.

Application filed September 29, 1879.

*To all whom it may concern:*

Be it known that I, PETER HABEL, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Axle-Lubricators, of which the following, in connection with the accompanying drawings, is a specification.

In the drawings, Figure 1 is a horizontal section of a part representing a car-axle box, showing those parts of an axle-lubricator which embody my invention as the said parts are arranged together for use. Fig. 2 is a cross-section in the plane of the line  $xx$  of Fig. 1. Fig. 3 is a vertical central horizontal section of a box or drawer, showing a side view of the parts within; and Fig. 4 is a cross-section in the plane of the line  $yy$  of Fig. 3.

Like letters of reference indicate like parts.

My invention relates to that class of axle-lubricators wherein wicking is used as a vehicle for feeding the lubricant to the axle arm or spindle; and it consists in the means which I employ for adjusting the wicking, and also for holding it continually to the spindle, as well as in certain other features of construction relating to the lubricating device, all substantially as hereinafter specifically set forth in my several claims.

A represents a car-axle box; but as this invention does not relate particularly to the construction of such boxes, I have not here attempted either to show or describe such construction fully, as the mode of construction may be varied and is well known, and as the parts to which my invention relates may embody it without special reference to the construction of the axle-box proper, excepting in such particulars as will be obvious after considering what I shall hereinafter set forth in relation to my improvements.

B is the axle, and  $a$  is the axle arm or spindle. C is the brass or locker, and D is the wedge or key. All of these parts may be made and arranged in the usual manner.

E is an interior box or drawer, having an open top and cut on its inner end to receive the axle.  $e e$  are studs near one end of the drawer E, and F is a cover or lid resting thereon and covering that end of the said drawer.

The studs  $e e$  are short enough to allow the lid F to lie flush, or nearly so, with the upper

edges of the drawer, so that the cover, when applied, will remain in place; but it may be secured in place removably in any suitable way, and is not absolutely essential, although I deem it best to employ it for the purpose of keeping the oil from splashing out.

$e'$  and  $e''$  are short studs, arranged, respectively, near the inner studs,  $e e$ , and the inner end of the drawer E, in which position the said short studs perform the function of guides or cleats, as will be hereinafter more fully explained.

The drawer or box E is intended and adapted to hold the lubricant, and I use any good lubricant which is sufficiently fluid to rise in wicking.

G G are removable transverse walls or supports, arranged between the inner end of the box or drawer E and the studs  $e''$ , and the studs  $e'$  and the innermost studs,  $e e$ , respectively, as indicated in Fig. 3. These walls are vertical, and are cut on their upper edges to receive the axle.

H H are deep vertical cuts or ways, extending downward from the central part of the upper edges of the supports G G, and  $h h$  are ports to allow the lubricant to flow freely between the said supports, it being understood that the lubricant may be poured into the drawer E by raising the lid F.

I is the wick-holder, arranged in the openings H H, and shouldered near its ends, so that it may be moved freely either up or down therein without being moved endward. I' I' are longitudinal grooves in one of the outer faces of the holder I. J J are cleats on the inner faces of the parts G G. These cleats are inclined, as shown in Fig. 4, and extend from, or nearly from, the upper outer corners of the parts G G downward to, or nearly to, the openings H H.

K and K' are sliding plates arranged on the cleats or supports J J, and L L are lugs to hold the said plates down upon their supports, and thus keep the oil from splashing upon the spindle during the movements of the car, and to aid in keeping the lubricant clean. The inner or lower edges of the plates K and K' meet the holder I, and the plate K, by entering the grooved or serrated face of the said holder, supports the latter at any elevation



desired, it being understood that the holder I is to be adjusted to a proper height before the plate K is allowed to engage it.

To facilitate the raising and lowering the plate K or the moving it to or from the holder I, small finger-pieces *k k* may be arranged on its lower or undermost face.

M M are lugs or longitudinal ribs on the under face of the plate K, and N is a rocking bar, the inner edge of which extends between the lugs M M, and on one end of which is the crank or lever O.

The bar or rocker N locks the plate K to its engagement with the holder H; but the plate may be drawn easily from this engagement by raising the lever or crank O.

P is a shaft extending through the outer support, G, and Q Q are pinions on the said shaft. These pinions are arranged to engage the grooved or serrated face of the holder I; and it is obvious, therefore, that the said holder may be easily adjusted vertically by turning the said shaft, it being understood that the plate K is first released from its engagement with the holder in the manner already described, and then allowed or caused to engage the holder in its new position. The holder may thus be adjusted as the brass is worn off.

R R is the wicking. This wicking consists of ordinary lamp-wicking; or any soft, flexible fibrous material into which the lubricant will rise may be used.

I prefer to make the wicks of long strips folded together somewhat in the manner indicated in Fig. 4, fastening the upper ends together and leaving the lower ends loose, so that a sufficiently large wick-surface will be presented quite compactly to the spindle of the axle, and so that the lubricant will be easily absorbed, care being taken not to make the wicks too thick for their holder. I extend one end of the wick much beyond the parts to be presented to the spindle, which extended part is shown at R'.

A tension applied to the part R' will have the effect of holding the wicks continually against the spindle, and thus take up or compensate for the wear, which, however, will be comparatively slight. As the part R' is not directly underneath the center of the spindle, but constitutes one side of the wick, it will, under ordinary circumstances, be worn away more slowly than the part next thereto, and the stitches between these parts will be worn away fully as soon as the body of the wicking is a little worn; hence a tension on the part R' in a lateral direction will draw this part from the body of the wick as the latter is worn, and as the part R' is thus drawn off laterally it not only raises the body of the wick to supply wear, but before being worn through at any part a new wearing-surface is presented to the spindle, and the part R' is therefore never detached from the body of the wick, or at least not until the body thereof is greatly worn down and unfit for further use. To pro-

duce this lateral tension or strain automatically and continuously upon the part R' for the purpose set forth, I carry it through slots *n n* in the plate K' and connect it to a gravitating part, S, sufficiently heavy to produce the desired tension or strain, it being understood that the tension must be great enough to draw the wicking up through its holder as fast as the upper part of the wicking is worn away.

The part S, by preference, consists of a broad leaf journaled at its lower corners in the parts G G, and carrying on one of its spindles an indicator-arm, S', arranged where it may be seen conveniently. As the free end of the arm S' falls the amount worn from the wicking will be indicated with sufficient accuracy for all practicable purposes. The leaf S may also be either held or moved by means of the arm S'.

It will be perceived, from reference to the foregoing description and to the drawings, that the parts now fully described, when constructed and arranged together substantially as specified, render the lubricator self-acting or self-feeding continually until the wick is worn out or down to such an extent as to be of no further service, and that the wick-holder, as well as the wick itself, may be adjusted vertically, and that the compensation for wear is made automatically.

It will also be perceived that many details of construction which I have fully described are not absolutely essential to my invention, and that many minor features may be varied without exceeding its just scope.

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

1. The combination, substantially as described, in an axle-lubricator, of the vertically-movable wick-holder I, having therein the grooves or serrations I' I', the sliding plate K, arranged for engagement with the said grooves or serrations, and the rotary shaft or adjuster P, carrying a pinion also engaging the said serrations, for the purposes set forth.
2. The combination, substantially as described, in an axle-lubricator, of a serrated vertically-movable wick-holder, a rotary shaft carrying a pinion engaging the said serrated holder, the sliding plate K, arranged to engage the said holder, and carrying the lugs M M, and the rocking bar or locker N and its crank or handle, for the purposes set forth.
3. The combination, substantially as described, in an axle-lubricator, of a wick, R, having an extension, R', and a gravitating bar or tightener, for the purposes set forth.
4. The combination, substantially as described, in an axle-lubricator, of the wick R R', the slotted plate K', the gravitating part S, and the index-arm S', for the purposes set forth.
5. The combination, substantially as specified, of the box or drawer E, the supports G

G, the sliding plates K and K', the vertically-adjustable and serrated wick-holder I, the shaft P and its pinion, the rocker N and its crank, the wick R R', and the gravitating  
5 part S and its index-arm, substantially as and for the purposes specified.

6. The combination, substantially as described, in an axle-lubricator, of a serrated

vertically-movable wick-holder and an adjusting pinion or wheel engaging the same, for the purposes set forth.

PETER HABEL.

Witnesses:

F. F. WARNER,

CHAS. H. TALLMADGE.