

No. 639,968.

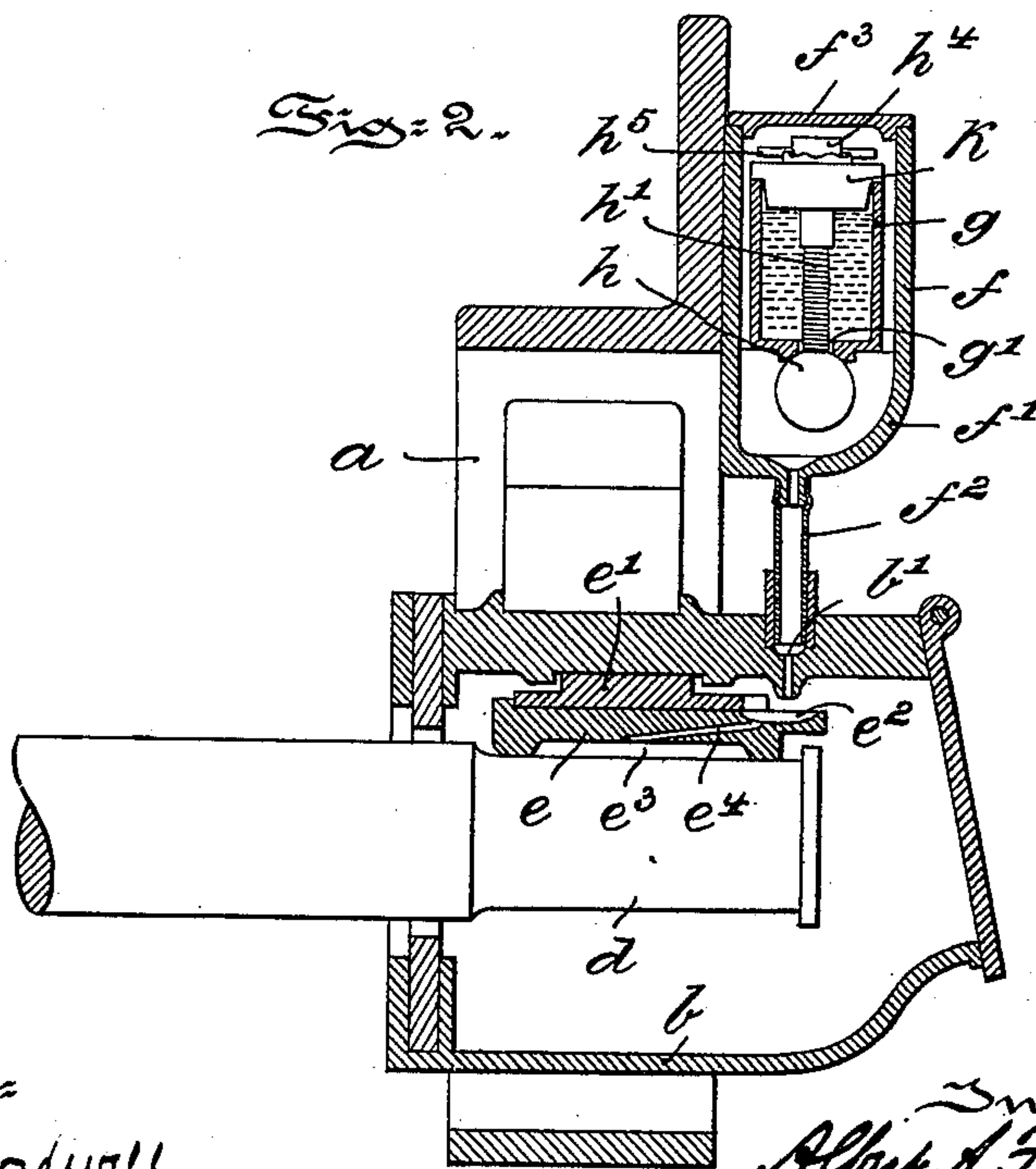
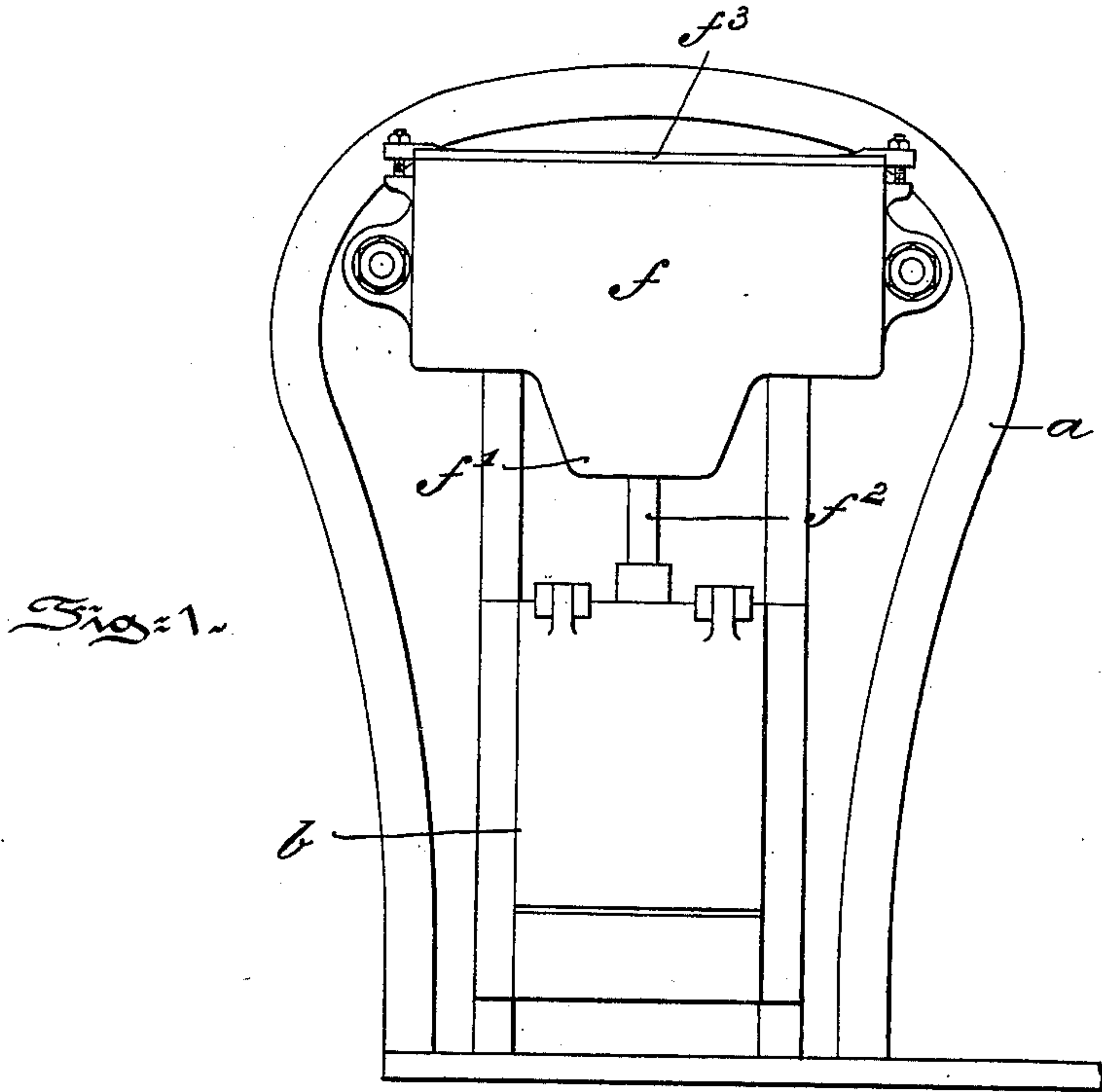
Patented Dec. 26, 1899.

A. A. FREEMAN & O. ARMSTRONG.
CAR AXLE LUBRICATOR.

(Application filed June 17, 1899.)

(No Model.)

4 Sheets—Sheet 1.



Witnesses:
Richard C. Mapwell.
Thomas M. Smith.

Inventors:
Albert A. Freeman and
Ogden Armstrong
By J. Walter Douglas
Attorney.

No. 639,968.

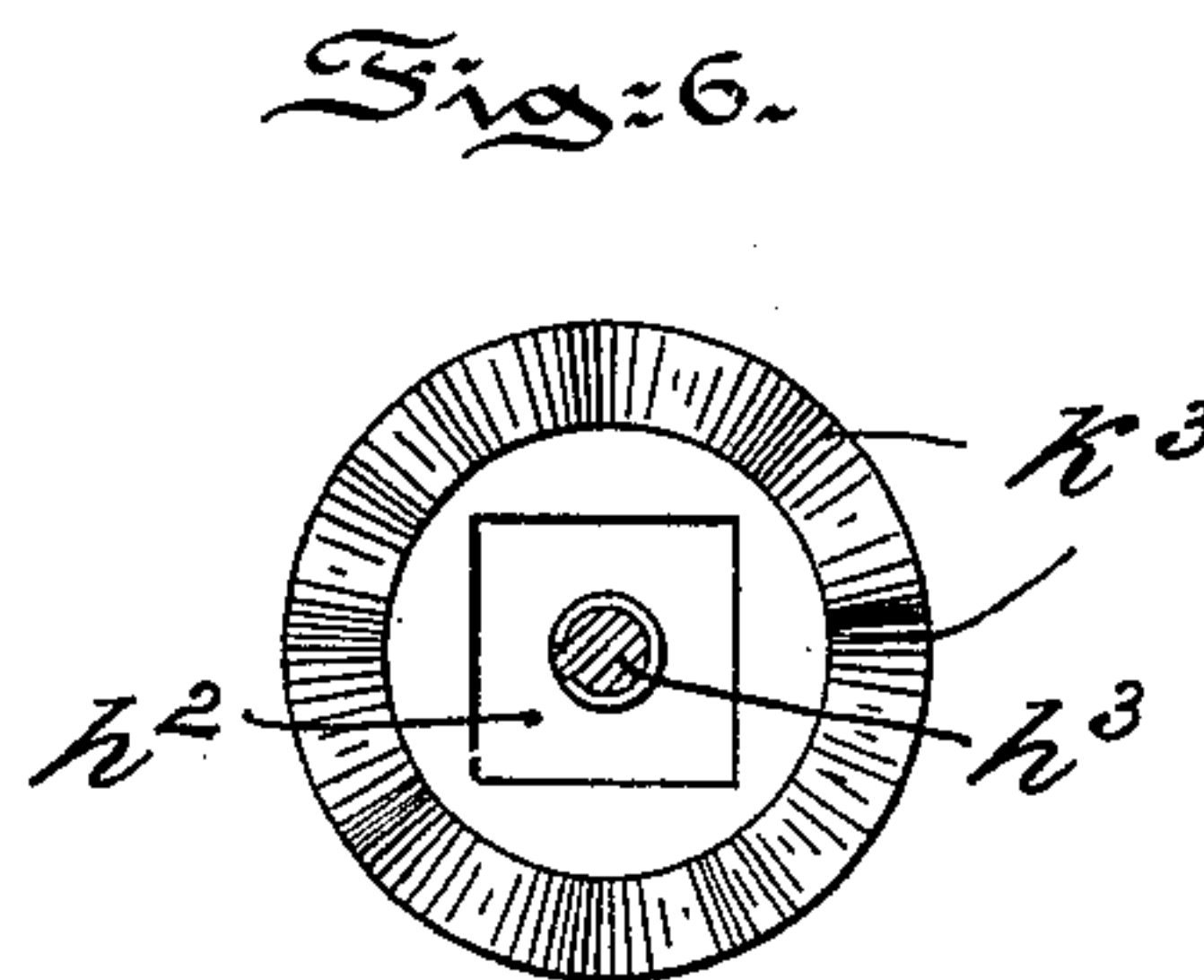
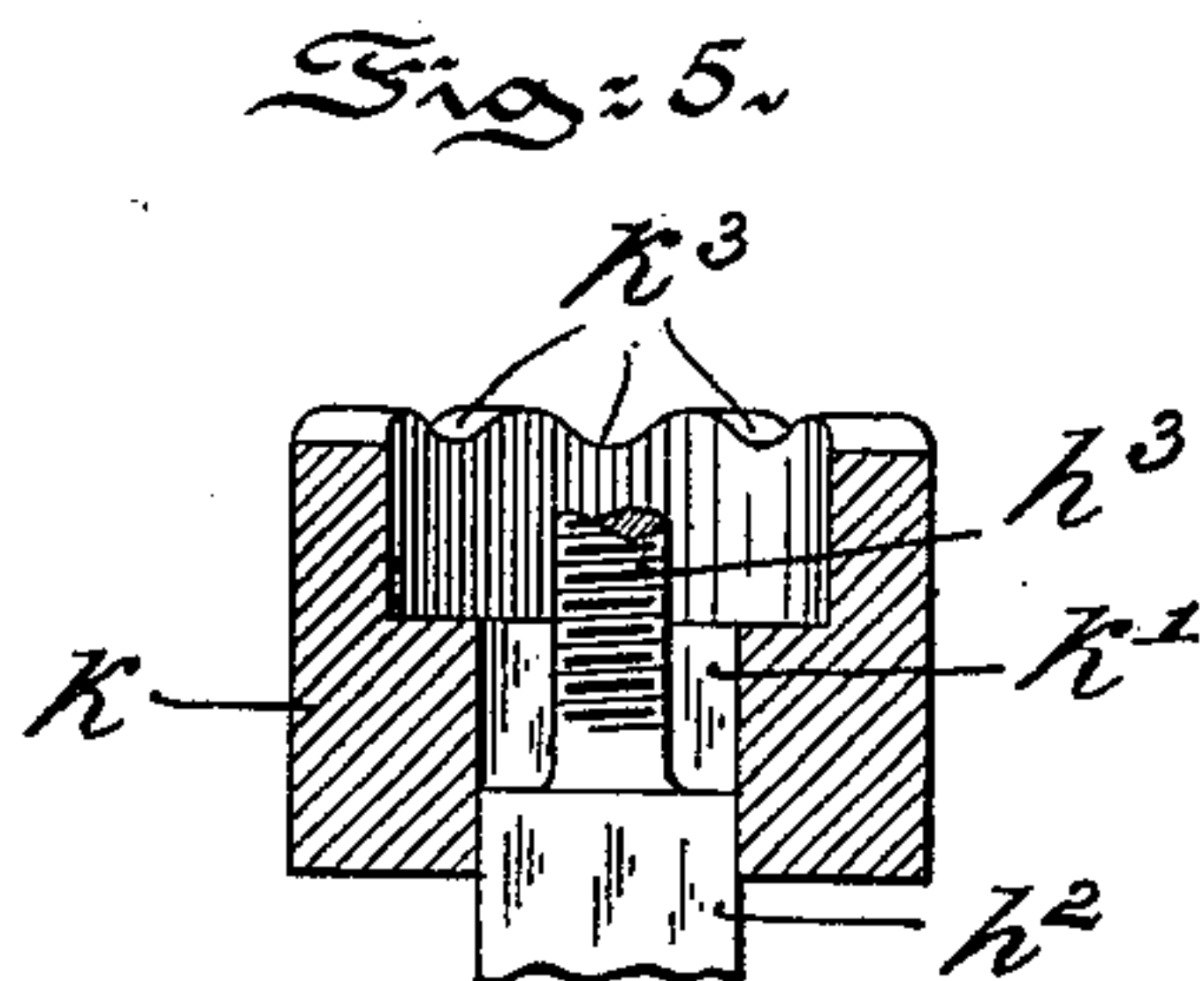
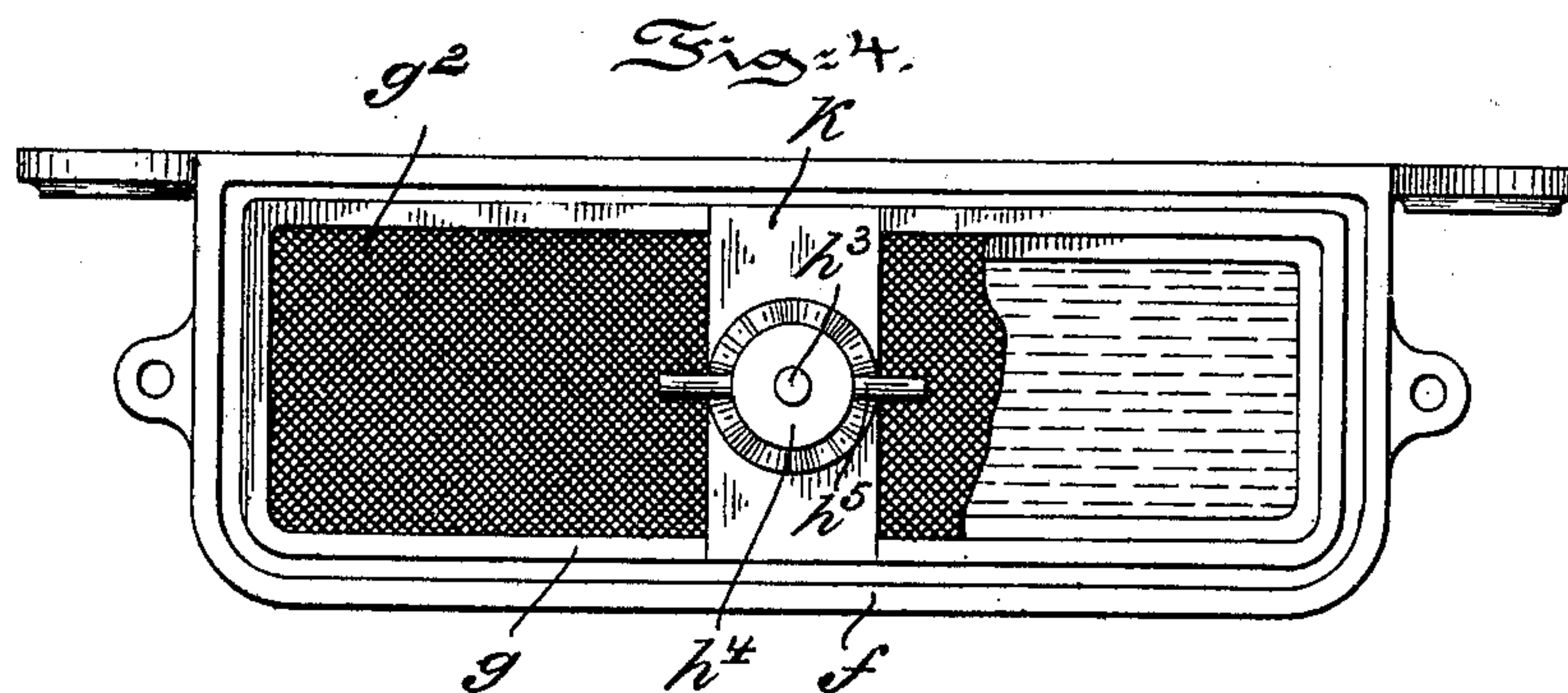
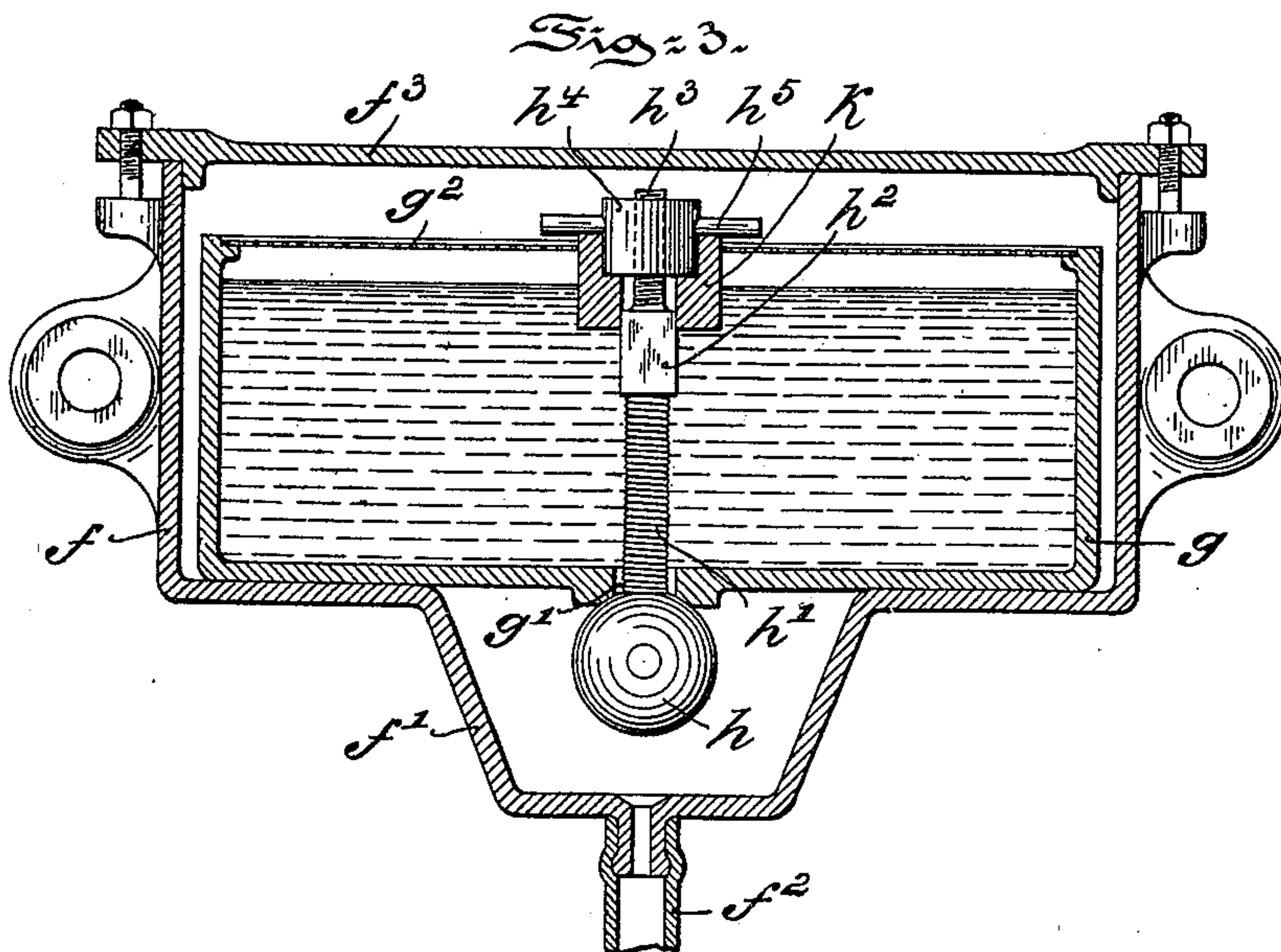
Patented Dec. 26, 1899.

A. A. FREEMAN & O. ARMSTRONG.
CAR AXLE LUBRICATOR.

(No Model.)

(Application filed June 17, 1899.)

4 Sheets—Sheet 2.



Witnesses:
Richard C. Mapell,
Thomas M. Smith.

Inventors:
Albert A. Freeman
Ogden Armstrong
By Walter Douglas
Attorneys.

No. 639,968.

Patented Dec. 26, 1899.

A. A. FREEMAN & O. ARMSTRONG.
CAR AXLE LUBRICATOR.

(No Model.)

(Application filed June 17, 1899.)

4 Sheets—Sheet 3.

Fig: 7.

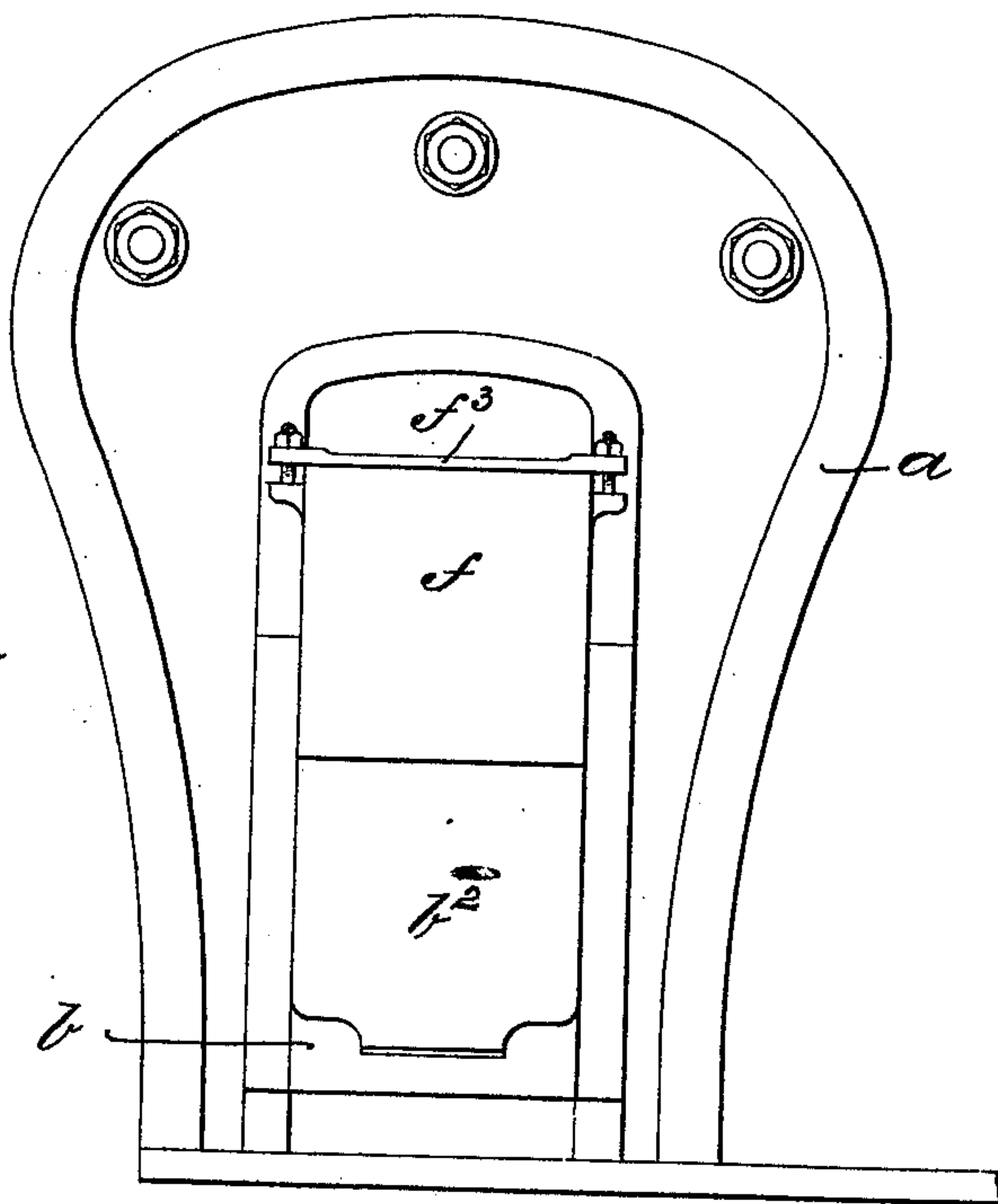
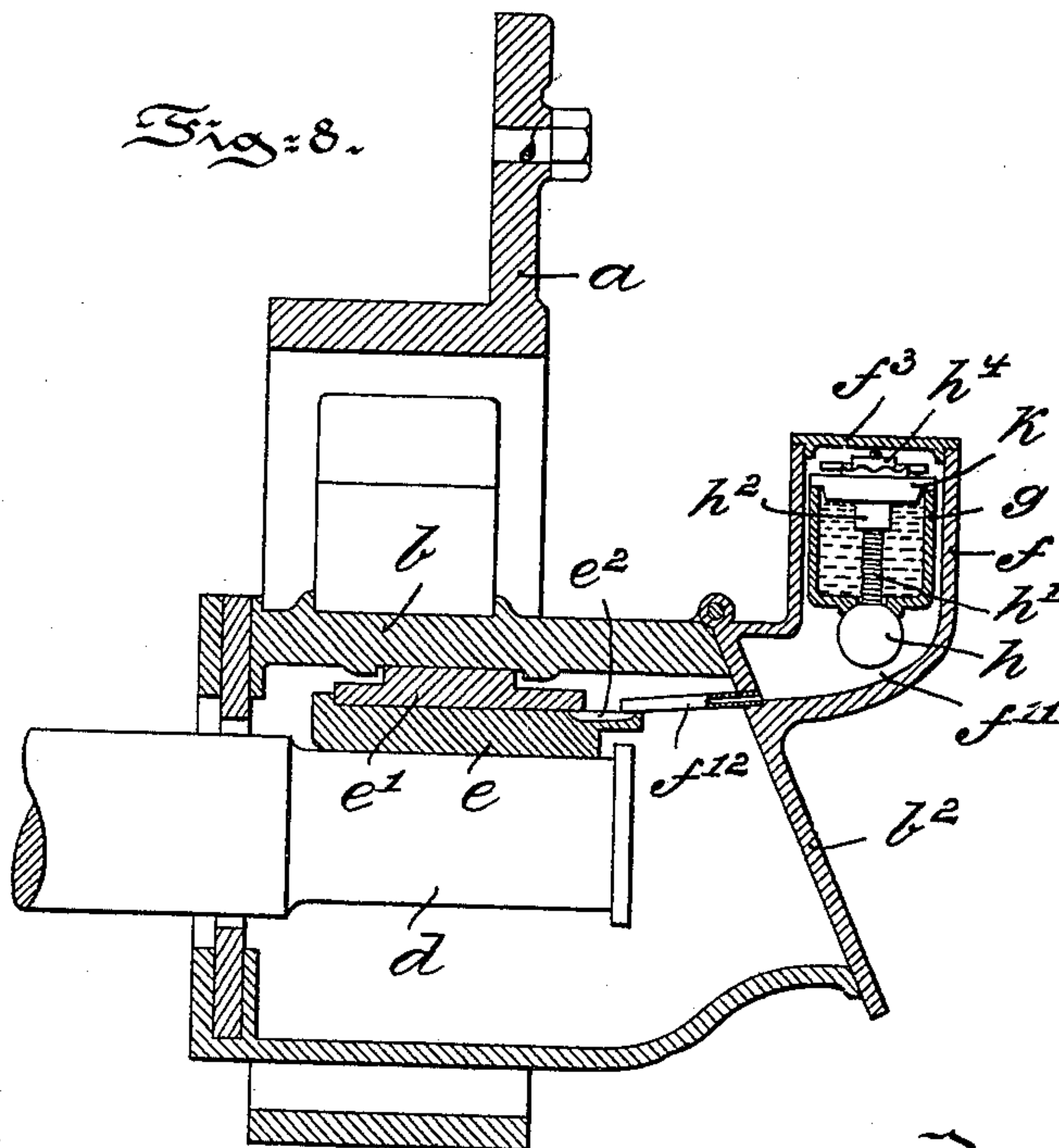


Fig: 8.



Witnesses:
Richard C. Mapwell
Thomas M. Smith.

Inventors:
Albert A. Freeman and
Ogden Armstrong.
J. W. Alden
Attorneys.

No. 639,968.

Patented Dec. 26, 1899.

A. A. FREEMAN & O. ARMSTRONG.

CAR AXLE LUBRICATOR.

(No Model.)

(Application filed June 17, 1899.)

4 Sheets—Sheet 4.

Fig. 9.

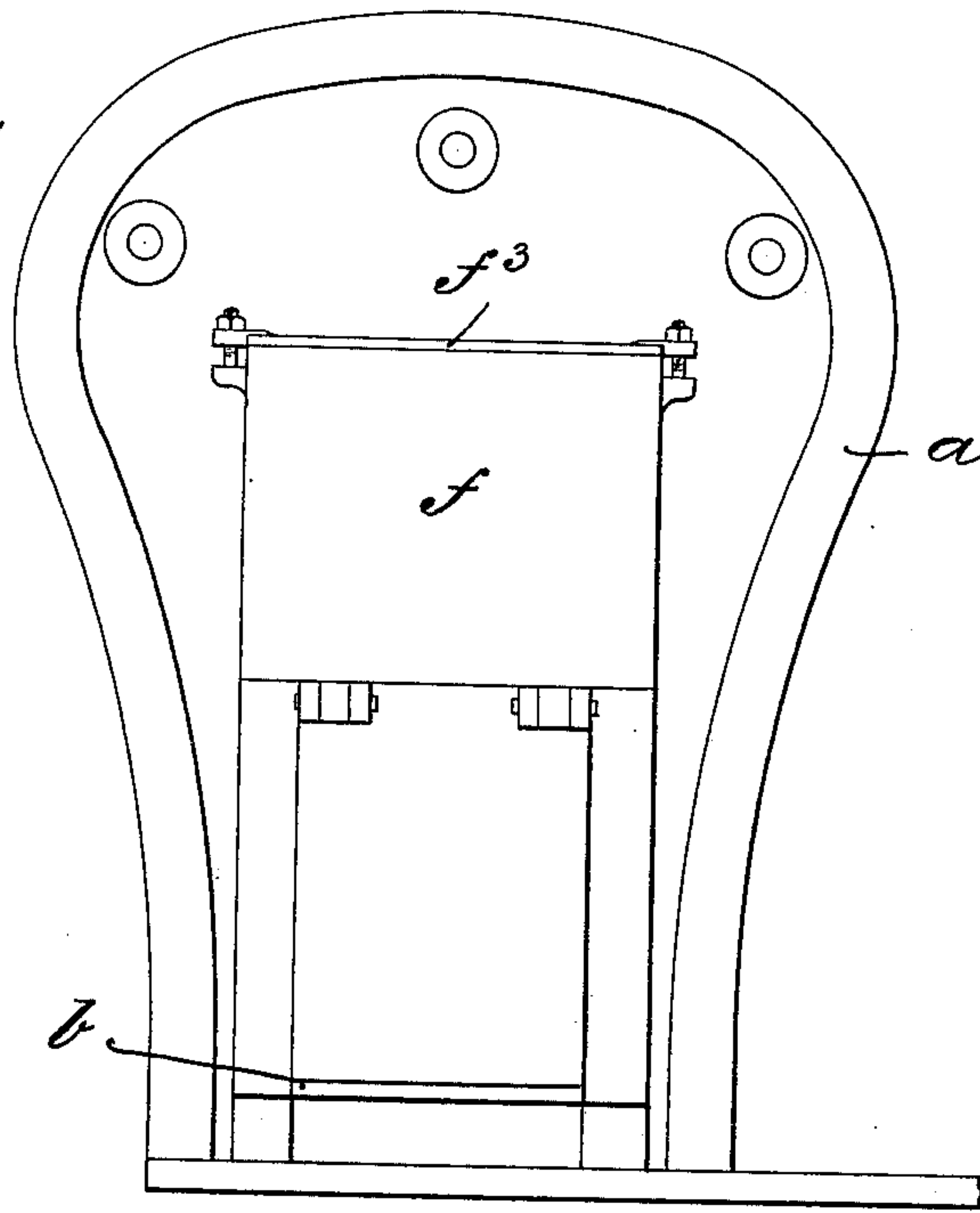


Fig. 11.

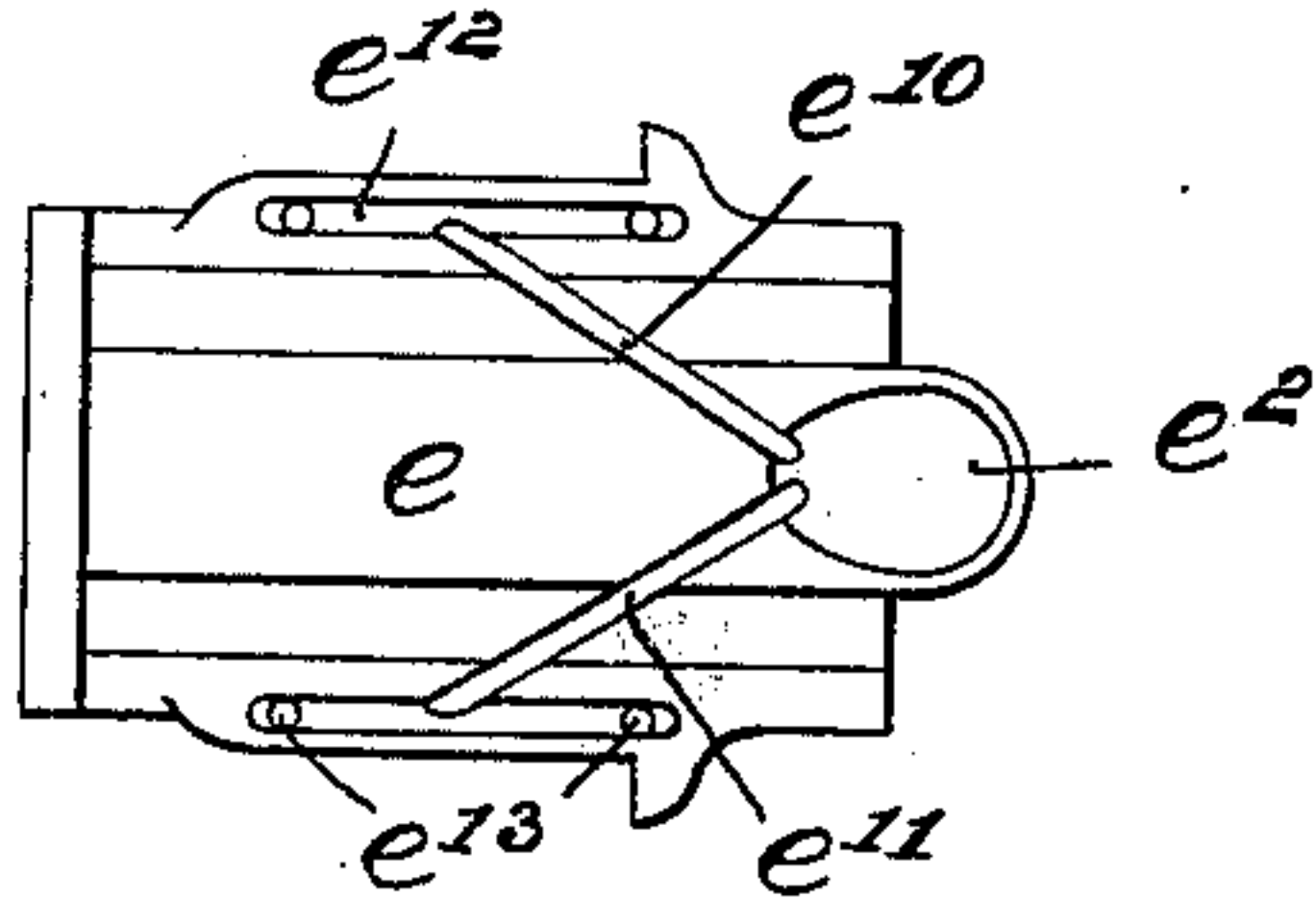


Fig. 12.

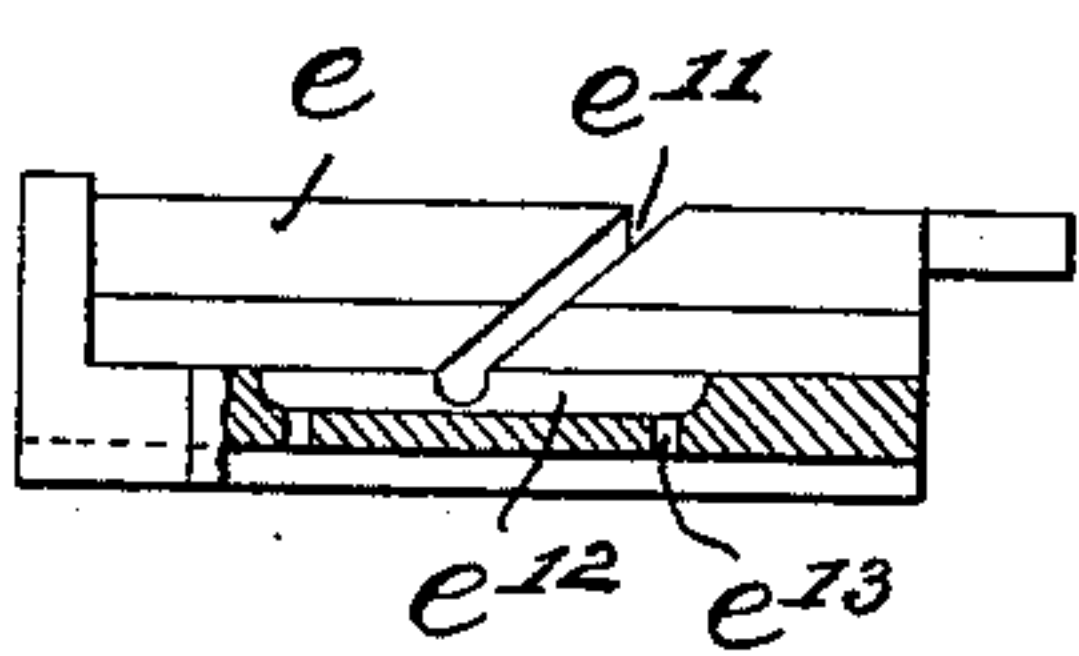
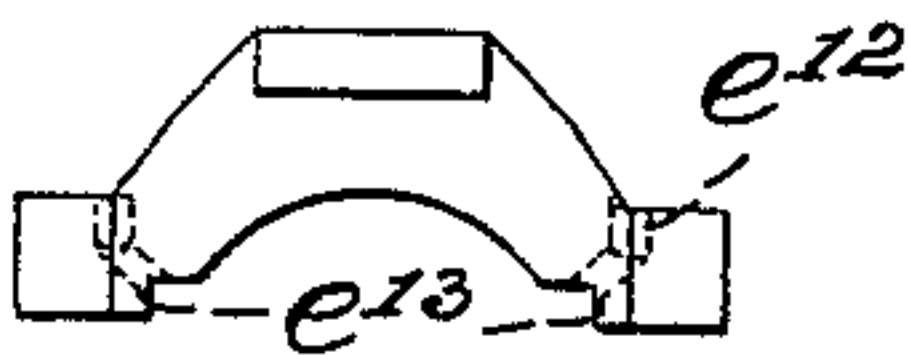


Fig. 13.



Witnesses:

Richard C. Maxwell
Thomas M. Smith.

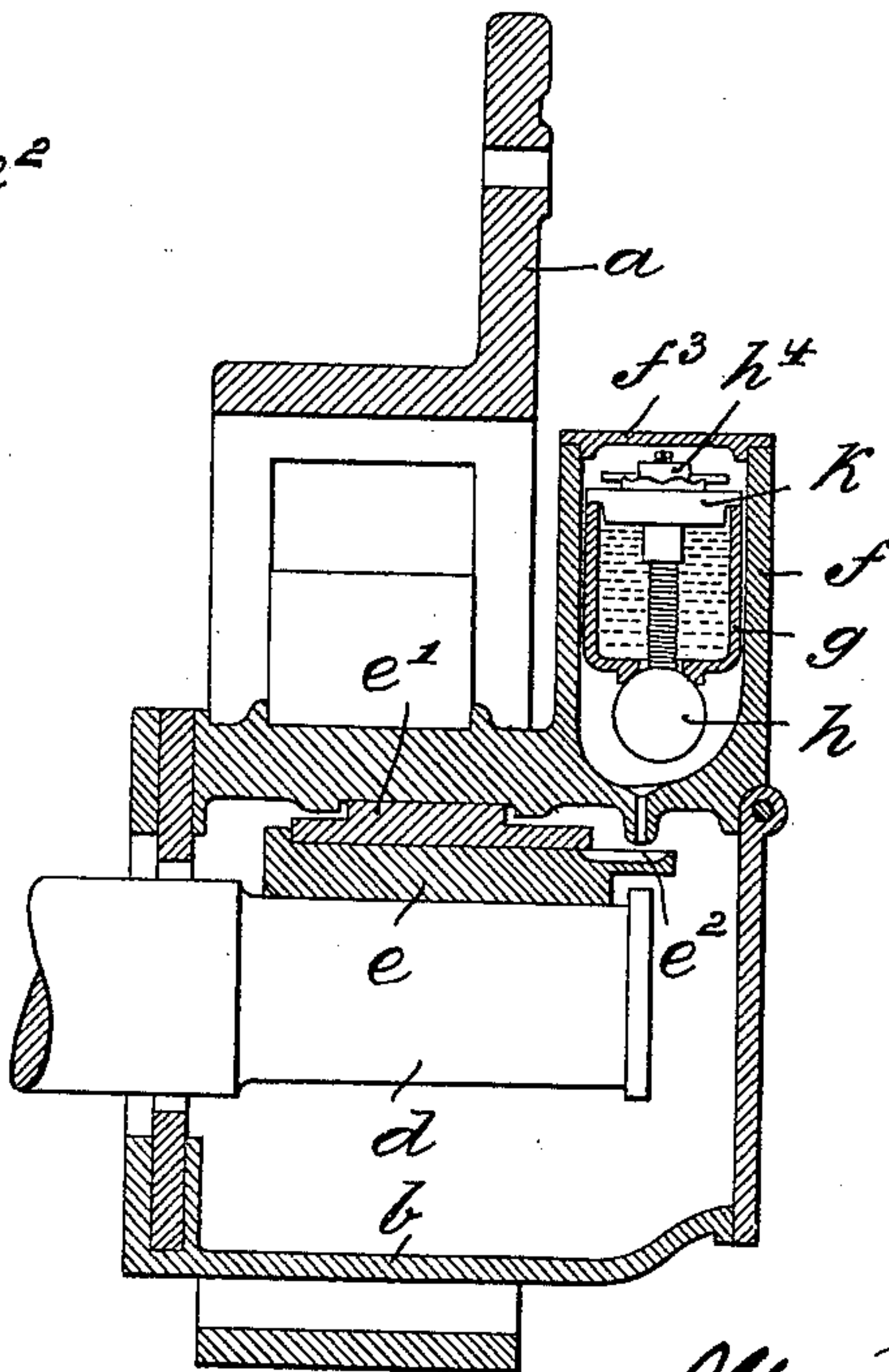


Fig. 10.

Inventors:
A. A. Freeman and
O. Armstrong.
J. Walter DeLam
Attorneys.

UNITED STATES PATENT OFFICE.

ALBERT A. FREEMAN AND OGDEN ARMSTRONG, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNORS TO THE AUTOMATIC LUBRICATOR COMPANY, OF SAME PLACE AND WHEELING, WEST VIRGINIA.

CAR-AXLE LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 639,968, dated December 26, 1899.

Application filed June 17, 1899. Serial No. 720,929. (No model.)

To all whom it may concern:

Be it known that we, ALBERT A. FREEMAN and OGDEN ARMSTRONG, citizens of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Car-Axle Lubricators, of which the following is a specification.

Our invention has relation to a lubricating device for car-axes, and in such connection it relates more particularly to the construction and arrangement of such a device.

The principal object of our invention is to provide a lubricating device for car-axes which is simple and comparatively inexpensive in construction and adapted to automatically feed or discharge the lubricant to the bearing-block for the axle.

Our invention, stated in general terms, consists of a lubricating device for car-axes when constructed and arranged in substantially the manner hereinafter described and claimed.

The nature and scope of our invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, in which—

Figure 1 is a front elevational view of a car-axle box and pedestal, together with the lubricator chamber or reservoir and connections, embodying main features of our invention. Fig. 2 is a cross-sectional view of Fig. 1. Fig. 3 is a longitudinal sectional view, enlarged, of the lubricator chamber or reservoir detached from the pedestal. Fig. 4 is a top or plan view of Fig. 3 with the cover of the chamber or reservoir removed and certain parts broken away to more clearly illustrate the interior of said chamber or reservoir. Fig. 5 is a vertical sectional view, still further enlarged, illustrating the locking device for the means for adjusting the feed of the lubricant. Fig. 6 is a top or plan view of Fig. 5. Fig. 7 is a front elevational view of a car-axle box, pedestal, and a modified form of lubricating device in which the chamber of the device is supported by the lid of the axle-box. Fig. 8 is a cross-sectional view of Fig. 7. Figs. 9 and 10 are respectively front elevational and cross-sectional views of a still further modified

form of device in which the chamber of the lubricating device is supported by the roof of the axle-box, and Figs. 11, 12, and 13 are respectively top or plan side-elevational and end-elevational views of a preferred form of bearing-block for the axle adapted to conduct or feed the lubricant from the lubricator to the axle.

Referring to the drawings, *a* represents the pedestal, and *b* the car-axle box adapted to ride up and down in said pedestal. The car-axle *d* rests beneath a bearing-block *e* within the box *b*, and this block *e* is secured in the box in the usual manner by a removable key *e'*.

Referring now to Figs. 1 to 6, inclusive, upon the pedestal *a* and directly above the box *b* is secured a box or casing *f*, having at its base a hopper-like extension *f'*, communicating by a flexible tube *f²* with a duct or opening *b'* in the roof of the axle-box *b*. Resting upon the base of the box or casing *f* and above the hopper *f'* is a tank or reservoir *g*, having an outlet *g'*, arranged, preferably, in alinement with the tube *f²*, leading from the hopper *f*. The tank or reservoir *g* is adapted to be placed in or removed from the casing *f*, and for this purpose the casing is provided with a removable cover or lid *f⁸*, fitted tightly down upon the casing *f* and adapted to be secured thereto in any suitable manner. The reservoir *g* is provided with a cover *g²*, consisting, preferably, of a screen or perforated plate, which serves to screen the oil or lubricant prior to its entrance through the cover *g²* into the reservoir and also serves to confine the lubricant within the reservoir and to prevent its splashing or slopping over into the casing *f*. The outlet *g'* from the tank or reservoir *g* is controlled by a ball-valve *h*, fitted to the under face of the outlet and held thereto under the tension of a spring *h'*, which traverses the outlet *g'*, and the tank is connected at its upper end to a shaft *h²*, substantially square in cross-section, and is also connected at its lower end directly to the ball-valve *h*. The reservoir *g* supports a bracket or block *k*, having a square-shaped opening *k'*, adapted to receive the square shaft *h²*, and the upper surface of the bracket *k* is notched or indented, as at *k³*. The shaft

h^2 terminates in a threaded end h^3 , extending through the bracket k and adapted to receive a nut h^4 , provided with pins h^5 , resting normally in the notches k^3 of the bracket k .

5 As the nut h^4 is turned in either direction the tension of the spring h' is increased or decreased, and the pins h^5 , by entering the notches k^3 , serve to lock the nut h^4 in any position to which it may be turned. By making the shaft h^2 square and causing the same to traverse a square opening in the bracket k the spring, shaft, and ball are prevented from turning or twisting either in the tank or reservoir g , its bracket k , or the outlet g' .

15 In the form of apparatus illustrated in Figs. 1 and 2 the opening b' in the roof of the axle-box b registers with a dish-shaped recess e^2 in the upper face of the bearing-block e . In the block e and on its under face, adjacent to the axle d , is formed a channel e^3 , communicating, by means of a duct e^4 , with the recess e^2 . It necessarily follows that as the oil or lubricant drips from the tube f^2 through the opening b' into the recess e^2 it will be fed through the duct e^4 and channel e^3 to the axle d .

In Figs. 7 and 8 a modification of the apparatus is illustrated, wherein the casing f is formed directly upon the lid b^2 of the axle-box, and the hopper is replaced by a downwardly-curved extension f^{11} , communicating with a tube f^{12} , carried by the lid b^2 and extending when the lid is closed to the dish-shaped recess e^2 in the bearing-block e .

35 In Figs. 9 and 10 a still further modified form of apparatus is illustrated, in which the casing f is formed directly upon the roof of the axle-box b . In this form the base of the hopper f' is formed by the roof of the axle-box b and communicates directly with the opening in the roof.

In Figs. 11, 12, and 13 a preferred form of bearing-block to be used with the lubricating device is illustrated. In this form the dish-shaped recess e^2 communicates by means of the channels e^{10} and e^{11} , formed in the upper face of the block, with grooves e^{12} , formed at the sides of the block. From either end of each groove the oil or lubricant is adapted to drop through the openings or holes e^{13} .

Having thus described the nature and object of our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A lubricator for car-axles, comprising a casing located directly above the axle-box, a tank or reservoir located within said casing, a valve-controlled outlet leading from said reservoir to the axle-box, and a bearing-block for the axle adapted to receive the lubricant from the reservoir and distribute it to the axle, substantially as and for the purposes described.

2. In a device of the character described, a tank or reservoir for the lubricant, an outlet

65 formed at the base of said reservoir, a ball-valve controlling said outlet, a spiral spring traversing the outlet and extending through the reservoir, said spring carrying the ball-valve, a shaft from which said spring is suspended, a bracket supported by the reservoir and traversed by the shaft, and means for advancing and retracting the shaft in said bracket to increase or decrease the tension of said spring, substantially as and for the purposes described.

75 3. In a device of the character described, a tank or reservoir having an outlet in its base, a ball-valve normally resting against the under surface of said outlet, a spiral spring from which said ball-valve is suspended, a square shaft having a threaded end from which said spring is suspended, a bracket having an opening adapted to be traversed by said square shaft and having a notched upper face, a nut adapted to be advanced or retracted on the threaded end of said shaft, and pins carried by said nut and adapted to engage the notched face of the bracket, substantially as and for the purposes described.

90 4. In a device of the character described, a casing, a cover removably secured to said casing, a tank or reservoir adapted to be mounted in or removed from said casing, and a perforated cover secured to said reservoir, substantially as and for the purposes described.

95 5. In a device of the character described, a casing located adjacent to an axle-box, a cover removably secured to said casing, a tank or reservoir adapted to be mounted in or removed from said casing, a valve-controlled outlet leading from said reservoir to said axle-box, a bearing-block for the axle adapted to receive the lubricant from said tank or reservoir and to distribute the same to the axle, and a perforated cover secured to said reservoir, substantially as and for the purposes described.

110 6. In a device of the character described, a casing located adjacent to an axle-box, a cover removably attached to said casing, a reservoir adapted to be mounted in and removed from said casing, a valve-controlled outlet leading from said reservoir to said axle-box, a bearing-block for the axle provided in the upper face with a recess and ducts or channels to uniformly distribute the lubricant over said axle and a perforated cover secured to said reservoir to screen the lubricant prior to its passage through said reservoir, substantially as and for the purposes described.

120 In testimony whereof we have hereunto set our signatures in the presence of two subscribing witnesses.

ALBERT A. FREEMAN.
OGDEN ARMSTRONG.

Witnesses:

J. WALTER DOUGLASS,
RICHARD C. MAXWELL.