

No. 791,888.

PATENTED JUNE 6, 1905.

E. EINFELDT.
LUBRICATOR.
APPLICATION FILED JAN. 6, 1905.

FIG. 1.

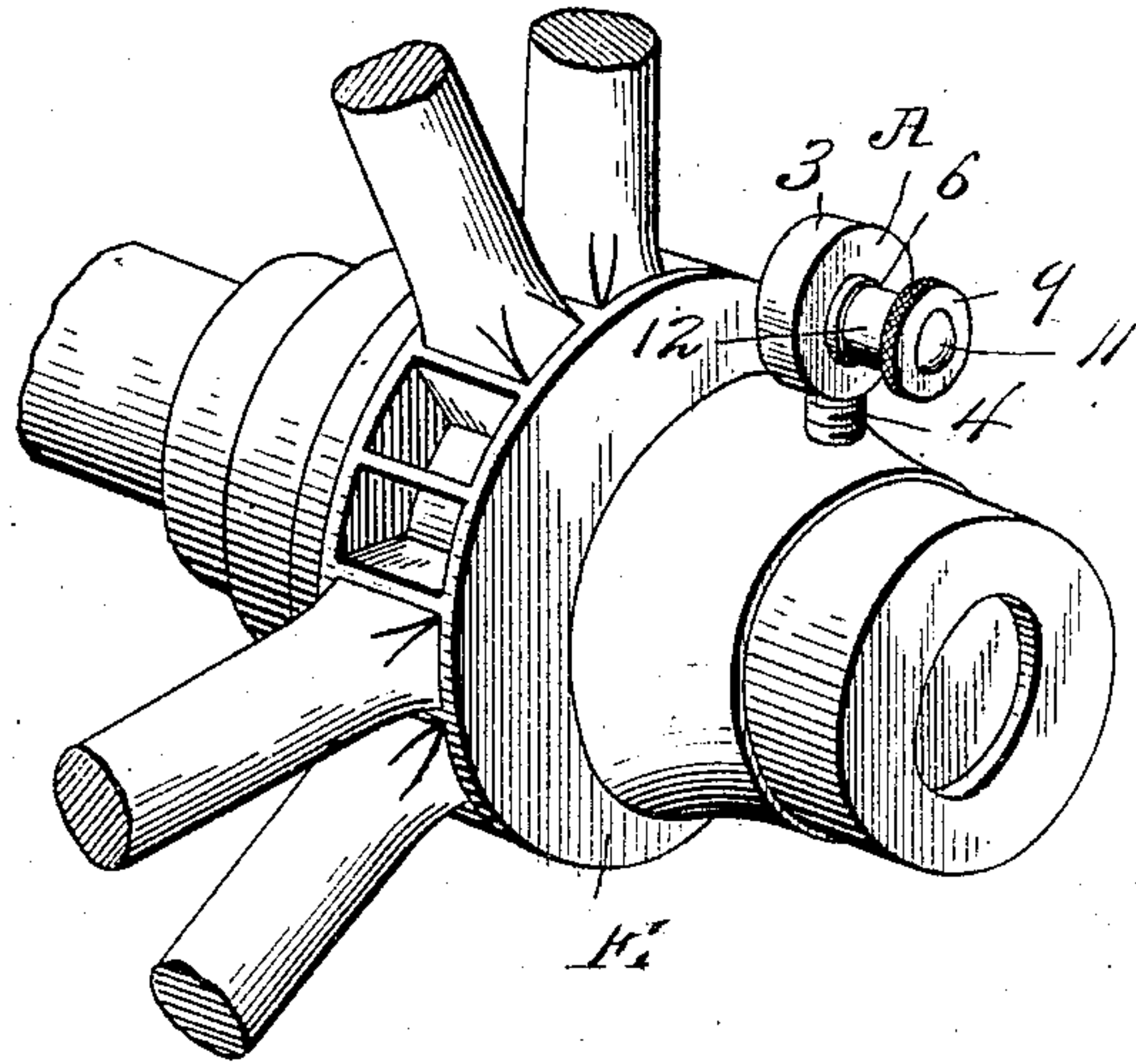


FIG. 2.

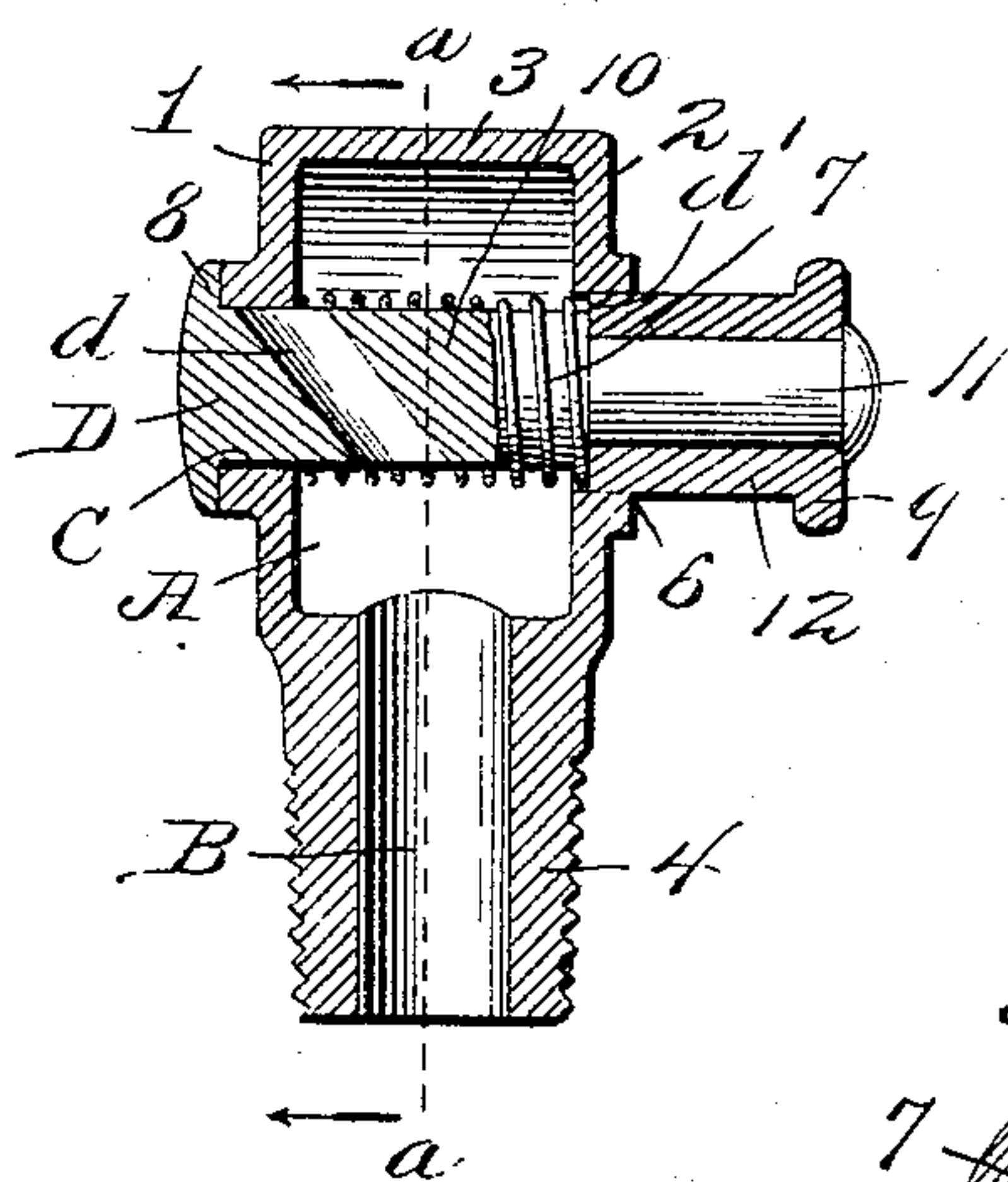


FIG. 3.

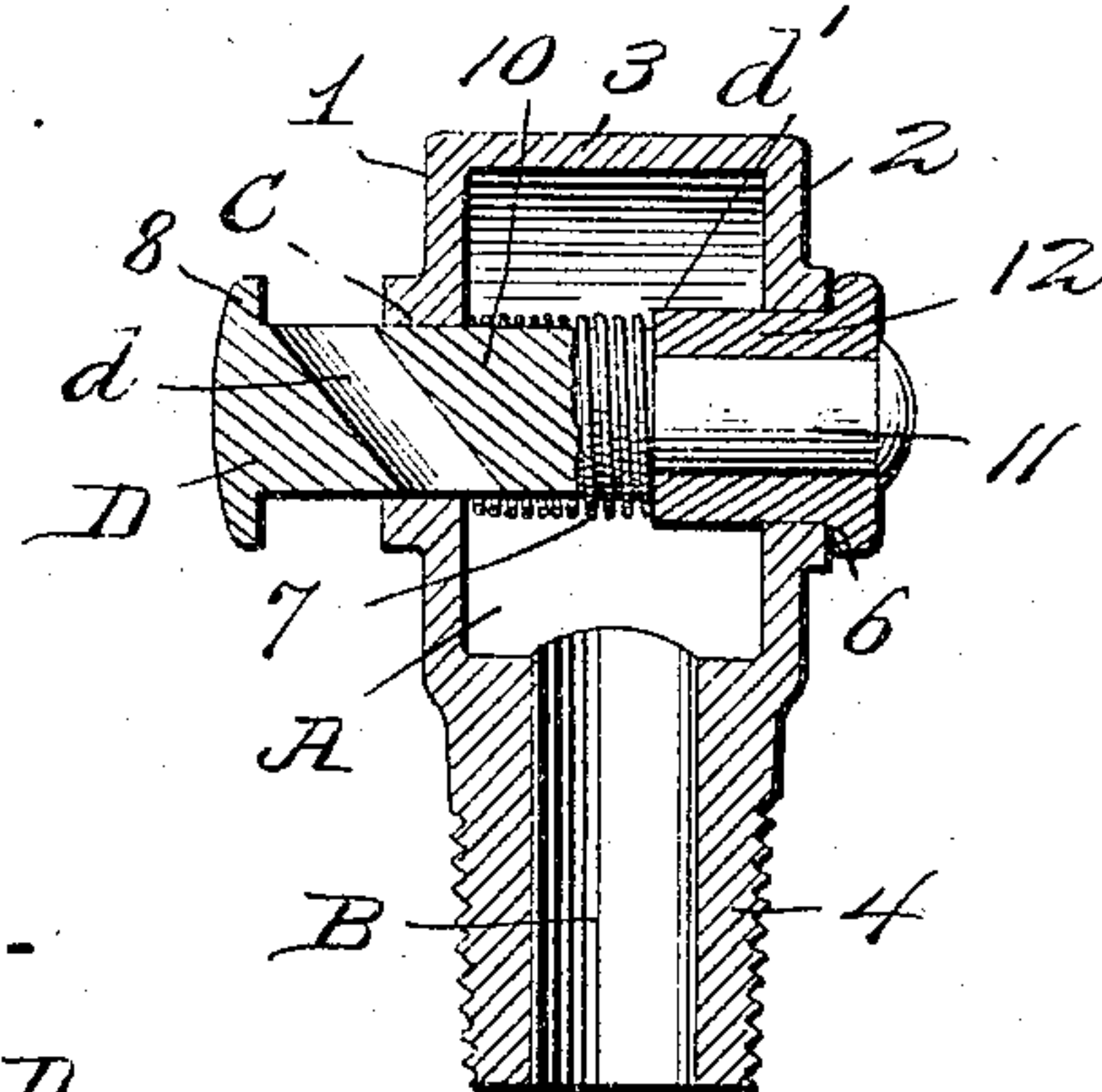
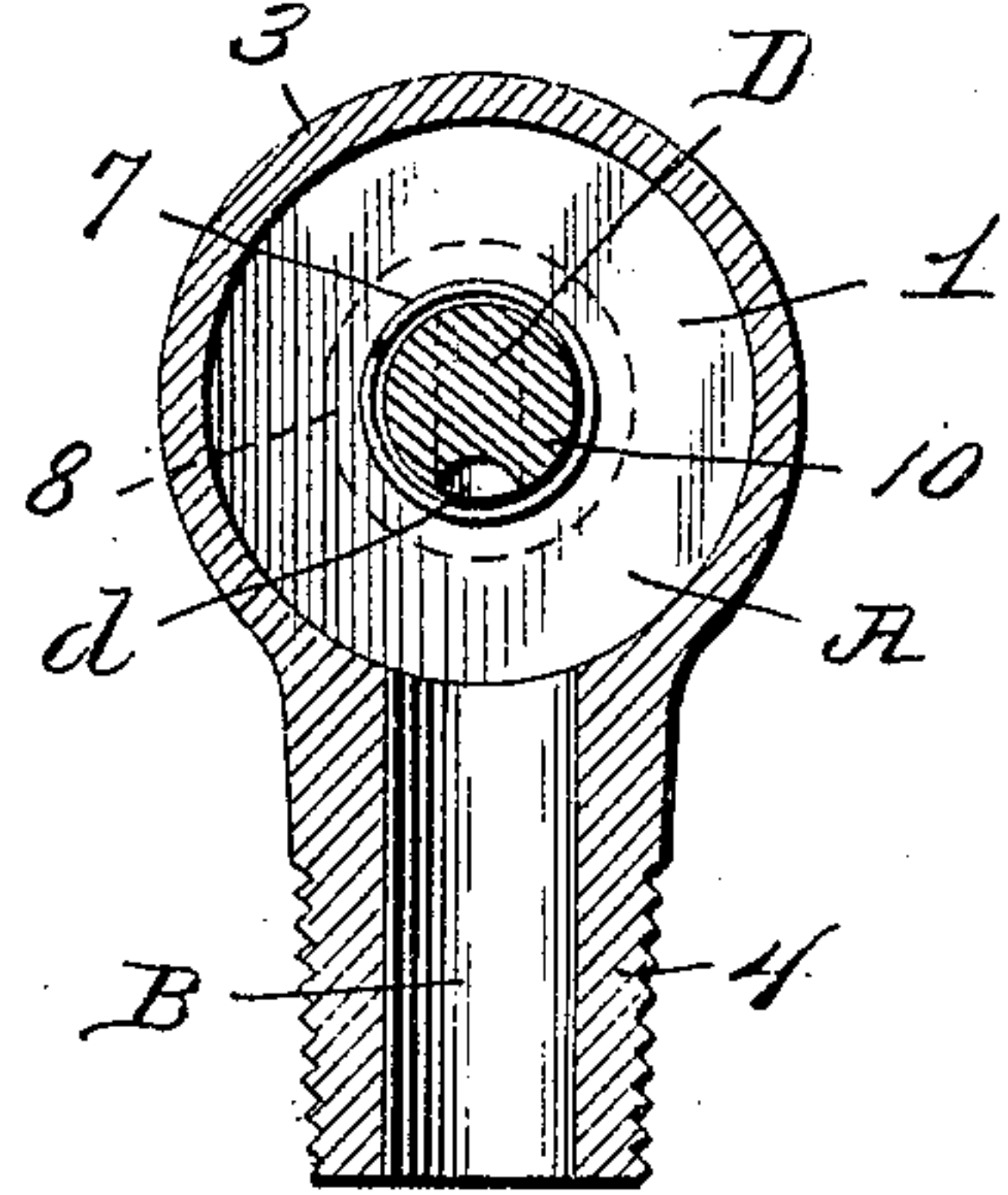


FIG. 4.



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EMIL EINFELDT, OF DAVENPORT, IOWA, ASSIGNOR TO BETTENDORF METAL WHEEL COMPANY, A CORPORATION OF IOWA.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 791,888, dated June 6, 1905.

Application filed January 6, 1905. Serial No. 239,875.

To all whom it may concern:

Be it known that I, EMIL EINFELDT, of Davenport, county of Scott, and State of Iowa, have invented a new and useful Improvement in Lubricators, of which the following is a specification.

This invention has reference to lubricators, intended more particularly for use in connection with wheels, pulleys, and the like, the lubricating-chamber being carried by the rotating part and having a passage communicating with the bearing-surface to be oiled. In lubricators of this type the oil-chamber is usually of circular form and is provided with an inlet or feeding opening, through which it may be filled.

My invention is directed particularly to the form, construction, and arrangement of the closure for the feeding or filling opening, the purpose being to provide a simple, easily-operated, and automatically-acting device which when in open position will admit of the chamber being filled and which when in closed position will effectually seal the chamber both against the escape of oil through the closure and the entrance of dust or other foreign substances to the chamber.

My invention consists in the improved arrangement and construction of parts, as will be fully described in the specification and the novel features pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view showing my improved lubricator applied to a wheel-hub. Fig. 2 is a longitudinal section through the lubricator, on an enlarged scale, with the closure in closed position. Fig. 3 is a similar view showing the closure opened for the admission of oil to the oil-chamber. Fig. 4 is a section on the line *a a* of Fig. 1.

Referring to the drawings, my improved device embodies as its essential elements a chamber or receptacle A for the lubricant, communicating with which is a passage B, leading to the bearing to be oiled, the receptacle being formed with an inlet-opening C, which opening is controlled by a closure D. This closure when in open position, as shown in Fig. 3, affords a means for the introduc-

tion of oil to the chamber and when in closed position, as shown in Fig. 2, effectually closes and seals the chamber.

In the preferred embodiment of my invention the oil-chamber is of flat cylindrical form, with flat side walls 1 and 2 and a peripheral connecting-wall 3, which parts are in the form of a single casting and which merge into an extension or neck 4, containing the passage B, which passage extends longitudinally through the neck and communicates with the oil-chamber. The end of the neck is in the present instance threaded to adapt it to be secured in position; but it is understood that other means may be employed for this purpose. As shown in Fig. 1, the threaded end is screwed into a wheel-hub E, the passage B communicating with the bearing-surfaces.

The inlet-opening C is formed centrally in the wall of the oil-chamber and is circular in form, the closure D being mounted to slide back and forth in said opening and being guided and mounted at its opposite end in a similar opening 6 in the opposite wall 2, which openings are axially in line.

The closure is in the form of a cylindrical plug or stopper containing near one end a feeding-hole *d*, extending diagonally through it from side to side, which hole is so related to the oil-chamber and is so disposed with reference to the wall 1 of the chamber that when the plug is moved outward, as shown in Fig. 3, one end of the feeding-hole will be exposed on the outside and the other end will communicate with the interior of the oil-chamber, in which position of the parts the oil-chamber may be filled with the lubricant by introducing the same into the exposed open end of the feeding-hole. When, however, the plug is returned to its former normal position, as shown in Fig. 2, the feeding-hole will be closed at its outer feeding end and covered by the inner face of the inlet-opening through the wall 1.

The closure or plug is automatically closed and held in closed position yieldingly by means of a spiral spring 7 encircling the same within the oil-chamber, one end of which spring bears against the inner face of the wall

1, while the opposite end bears against an annular shoulder d' on the plug. When the closure is to be opened for the introduction of oil, pressure is applied to the end of the plug projecting at the side of wall 2, which will slide the plug through its guiding-openings, compress the spiral spring, and expose the outer end of the feeding-hole on the outside. The plug is held in this position against the action of the spring until the required amount of oil has been introduced through the feeding-hole, when on being released the spring will in expanding urge the plug in the opposite direction to the position shown in Fig. 2, this action carrying the outer end of the feeding-hole into the opening of the wall 1, by which it is closed.

The movements of the plug through the chamber A are limited by stops on the ends of the plug, which stops are in the form of annular shoulders 8 and 9, the shoulder 8 limiting the closing movement of the plug by coming in contact with the wall 1 and the shoulder 9 limiting the opening movement of the plug by contacting with wall 2.

I propose, in order that the parts of the device may be properly assembled in their operative relations, to form the plug in two parts, one part in the form of a stem or body portion 10, containing the feeding-hole d and having a reduced end 11, and the other part in the form of a sleeve or collar 12, adapted to fit over the reduced end of the body portion. In assembling the parts the body portion of the plug is first inserted through the opening in the wall 1 of the chamber, so that its reduced end will extend through and beyond the opposite wall. The spiral spring is then passed over the stem and seated against the inner face of wall 1 within the chamber, after which the collar 12 is passed over the reduced end of the stem and against the spring. The reduced end 11 may be riveted down on the collar to hold the parts permanently in fixed relations, or these parts may be by other means permanently secured together.

From the construction described it will be observed that the closure or plug extends and is slidable axially through the oil-chamber, being guided in its movements by the respective walls of said chamber. It will also be observed that the closure is automatically operated in the respect that it is adapted to be closed automatically after being positively opened to admit oil, this action being effected by the spring, which acts on the plug in such manner as to hold the same yieldingly in a position where the outer end of the feeding-hole will be covered and all communication with the outside closed.

The device as a whole is simple in construction and operation, is compact in form, and free from detachable parts which in the practical use of the device might become lost or separated.

While I have described my improved closure as applied to an oil-chamber attached to the moving part of the bearing or, as illustrated, to a wheel-hub, it will be understood that the invention is applicable as well in other connections and could be employed to good advantage in connection with fixed lubricating-chambers.

Having thus described my invention, what I claim is—

1. A lubricator provided with an oil-chamber in combination with a closure movable through said chamber with both ends exposed on the outside and formed with a feeding-passage adapted by the movement of the closure to have one end of the passage exposed for the introduction of the lubricant.

2. A lubricator formed with an oil-chamber having opposing walls, each provided with a guiding-opening, in combination with a closure for said chamber slidable in said openings and formed with an oil-feeding passage.

3. A lubricator formed with a flat cylindrical oil-chamber having a passage through its periphery leading to the parts to be lubricated, in combination with a closure device extending axially through the chamber and slidably mounted in the side walls of the same.

4. A lubricator having an oil-chamber provided with opposing walls, in combination with a closure-plug slidably mounted and guided in both of said walls and extending through the chamber, and formed with an oil-feeding passage, a spring acting on the sliding plug, and stops adapted to limit the movements of the plug in both directions, said stops being independent of the spring.

5. A lubricator having an oil-chamber formed with opposing walls provided with axially-alined guiding-openings, in combination with a plug slidably mounted and guided in said openings and extending through the oil-chamber, an oil-feeding opening in the plug adapted by the movement of the plug in one direction to have one of its ends exposed on the outside, and adapted by the movement of the plug in the opposite direction to have said end covered, a spring encircling the plug and bearing at its opposite ends respectively against the wall of the chamber and the plug, and acting to hold the plug yieldingly with the feeding-opening covered.

6. A lubricator having an oil-chamber comprising two opposing side walls and a peripheral connecting-wall, in combination with a closure slidable through the chamber and guided in the side walls, said closure when in one position affording a passage for the introduction of oil into the chamber, and when in another position sealing said chamber, and means for automatically moving said closure to seal the chamber after it has been actuated to admit the oil.

7. A lubricator having an oil-chamber com-

prising two opposing side walls, and a peripheral connecting-wall, in combination with a neck extending from the peripheral wall and having an opening through it extending
5 through the peripheral wall, said side walls being formed each with a guiding-opening, and a closure mounted in said guiding-openings in the side walls and extending through the oil-chamber.
10 8. A lubricator having an oil-chamber comprising opposing walls, one of said walls being provided with a guiding-opening, in com-

bination with a movable closure device extending through and being guided by said opening in the side wall, and a guiding means 15 in the opposite wall by which said closure is further guided.

In testimony whereof I hereunto set my hand, this 31st day of December, 1904, in the presence of two attesting witnesses.

EMIL EINFELDT.

Witnesses:

M. LOUISE DODGE,
ANDREW NEILSON.