

(No Model.)

E. PYNCHON.
CAR AXLE LUBRICATOR.

No. 377,271.

Patented Jan. 31, 1888.

Fig. 1.

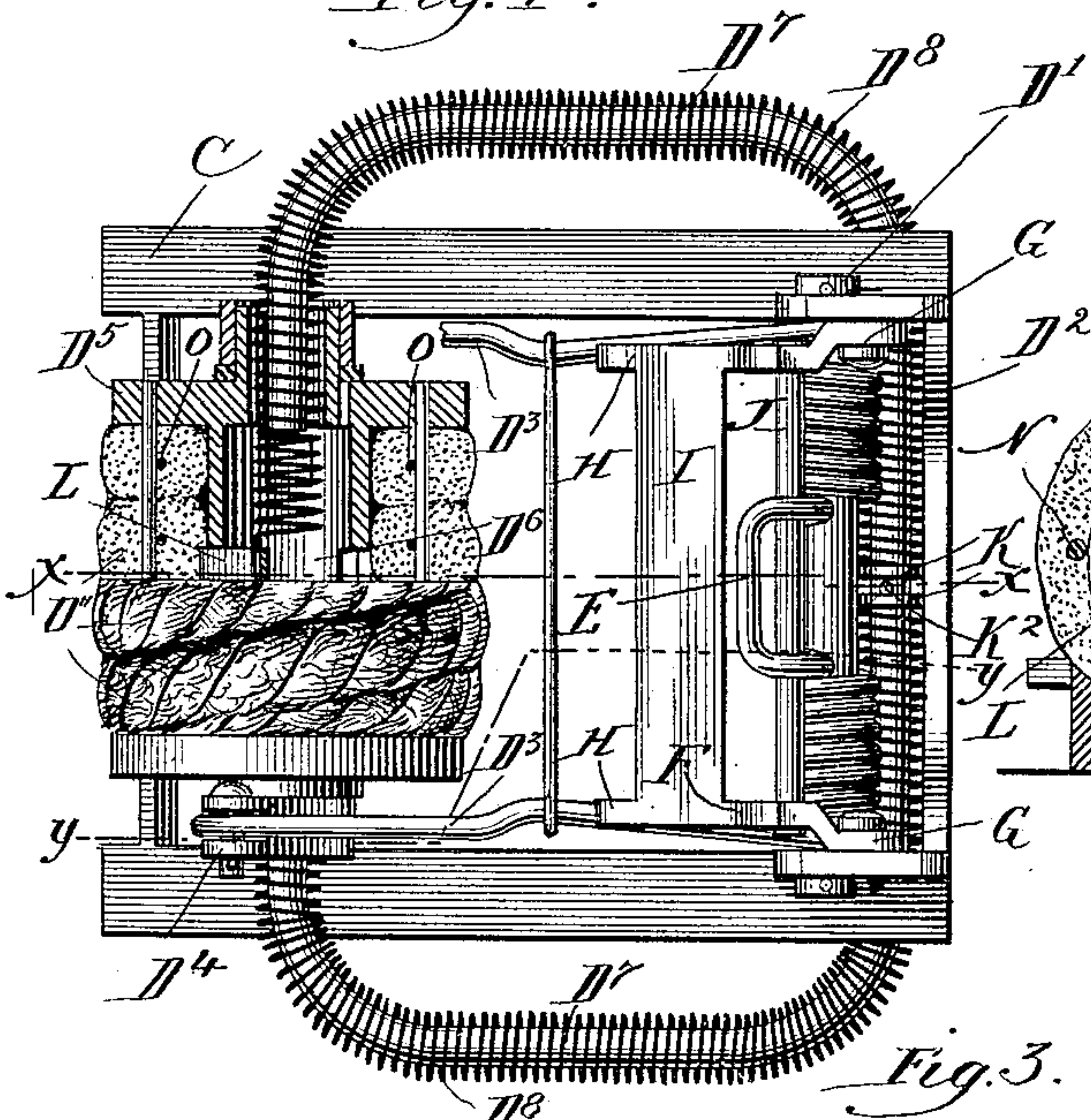


Fig. 2.

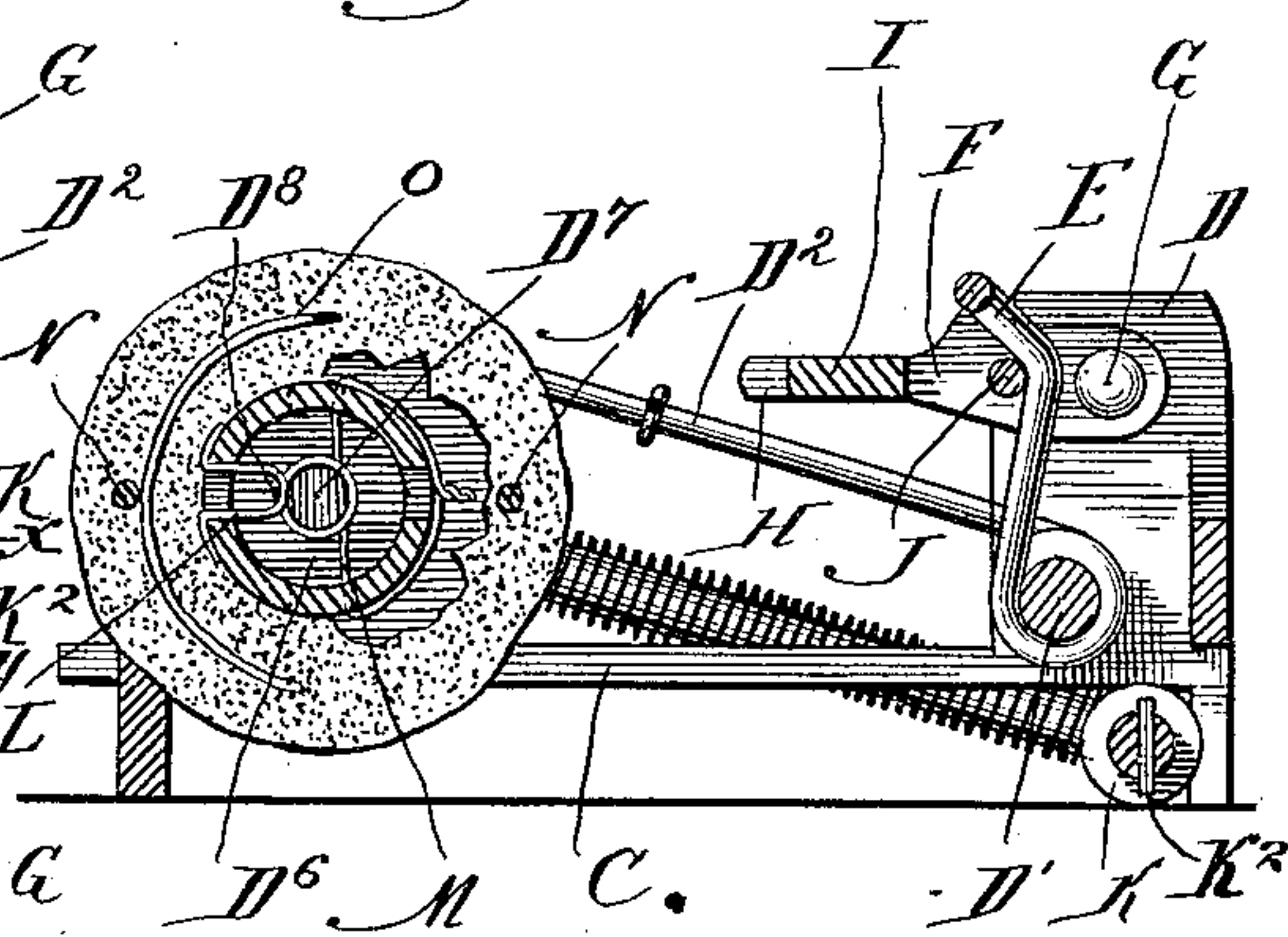


Fig. 3.

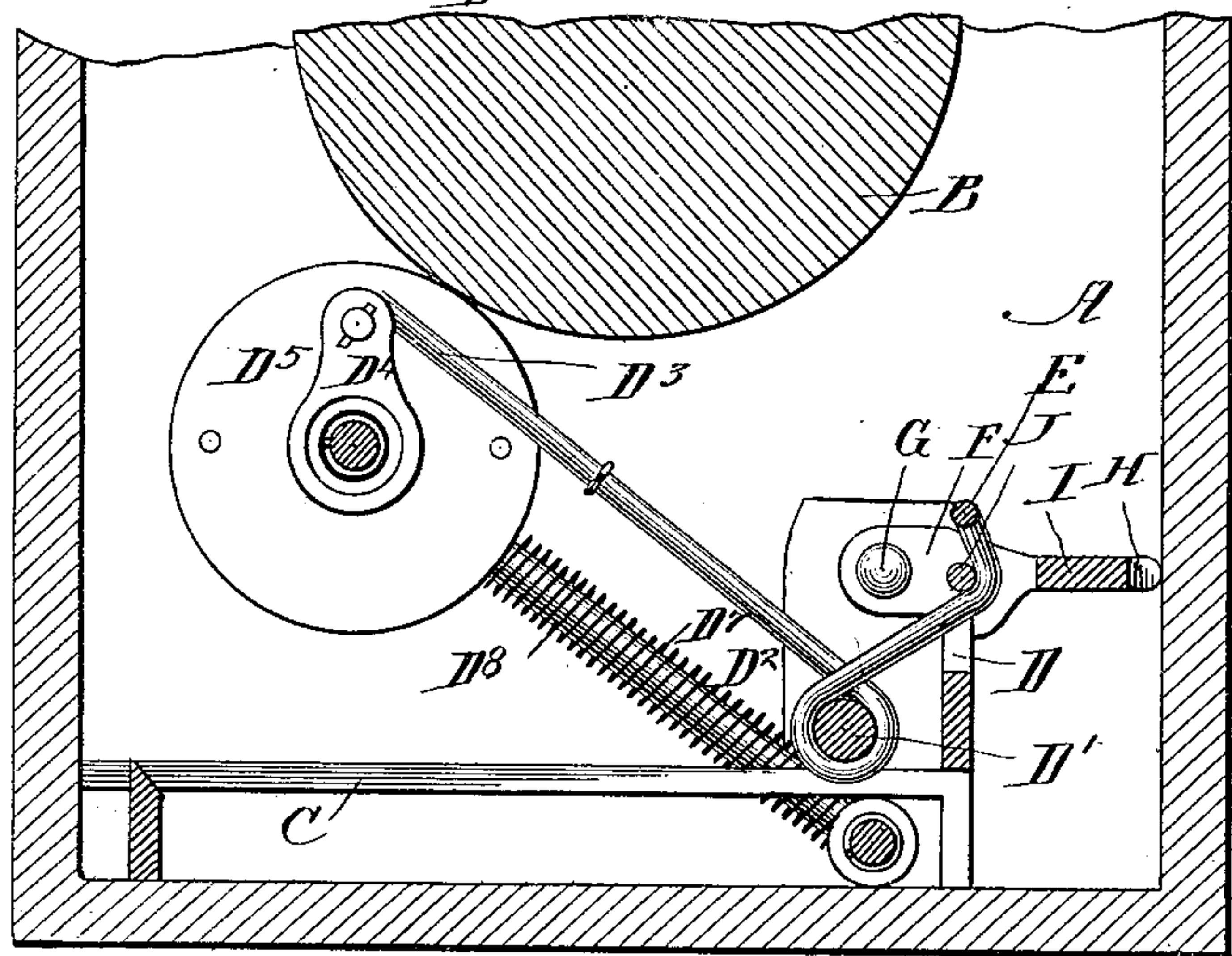


Fig. 4.

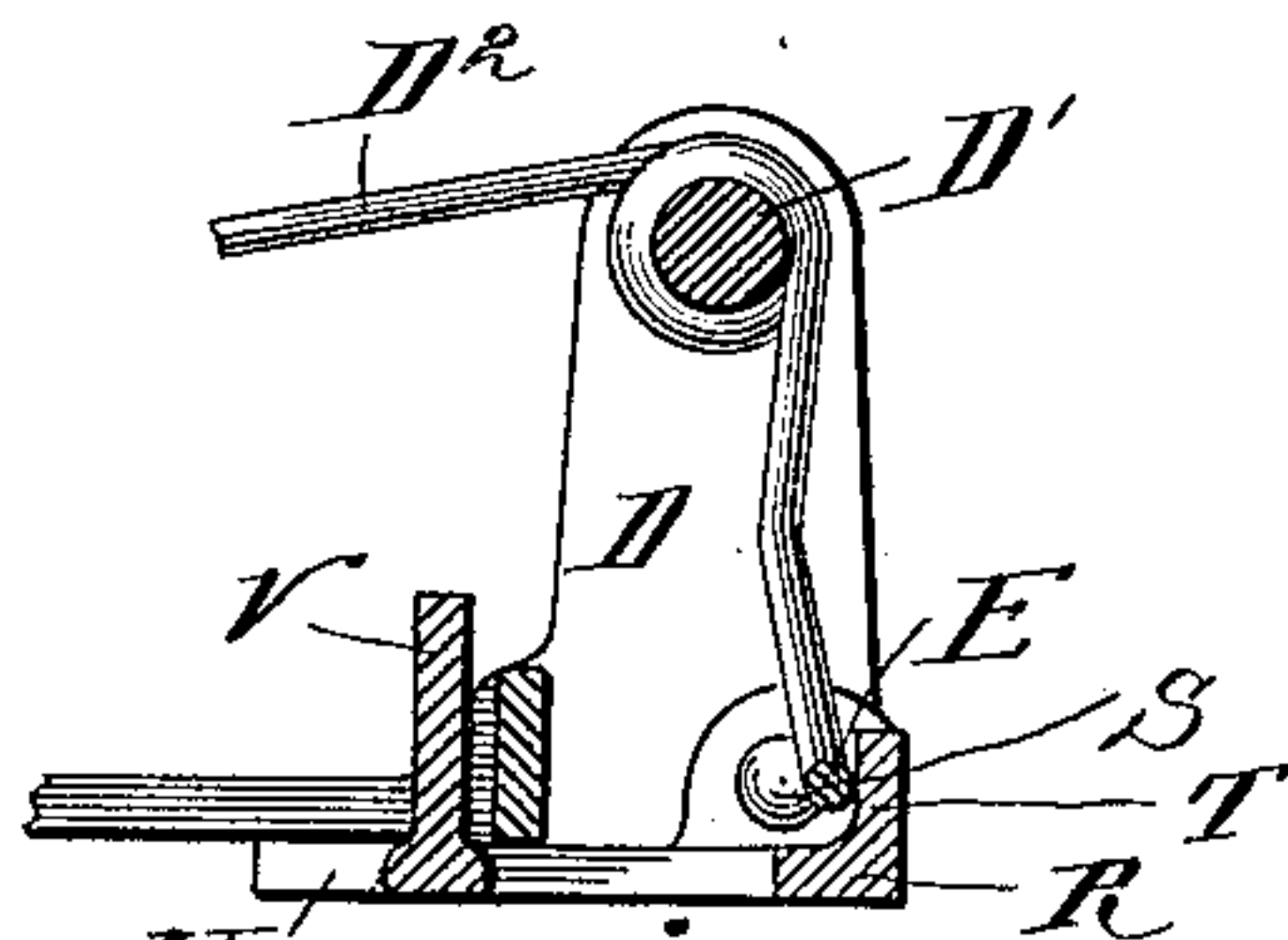


Fig. 5.

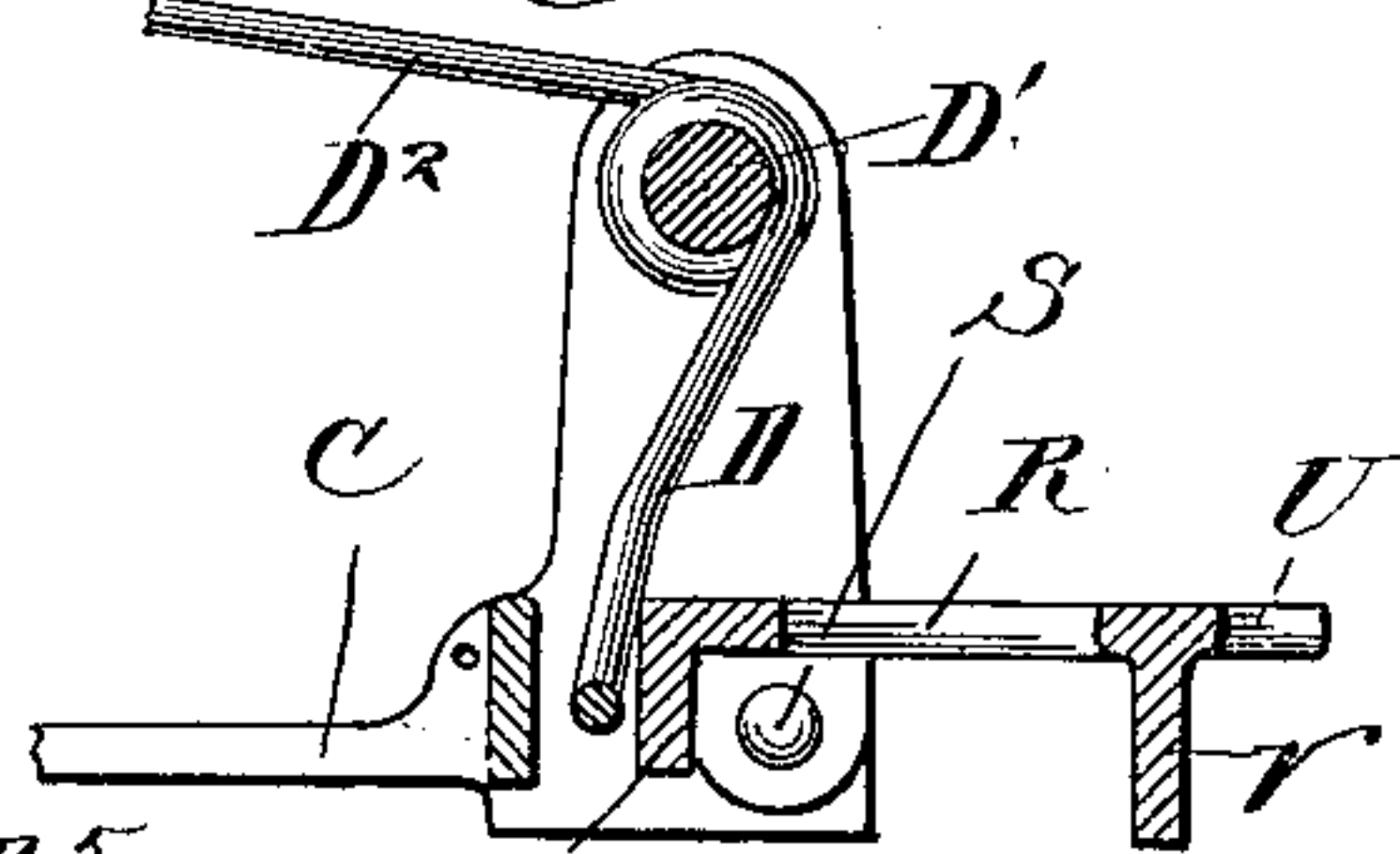
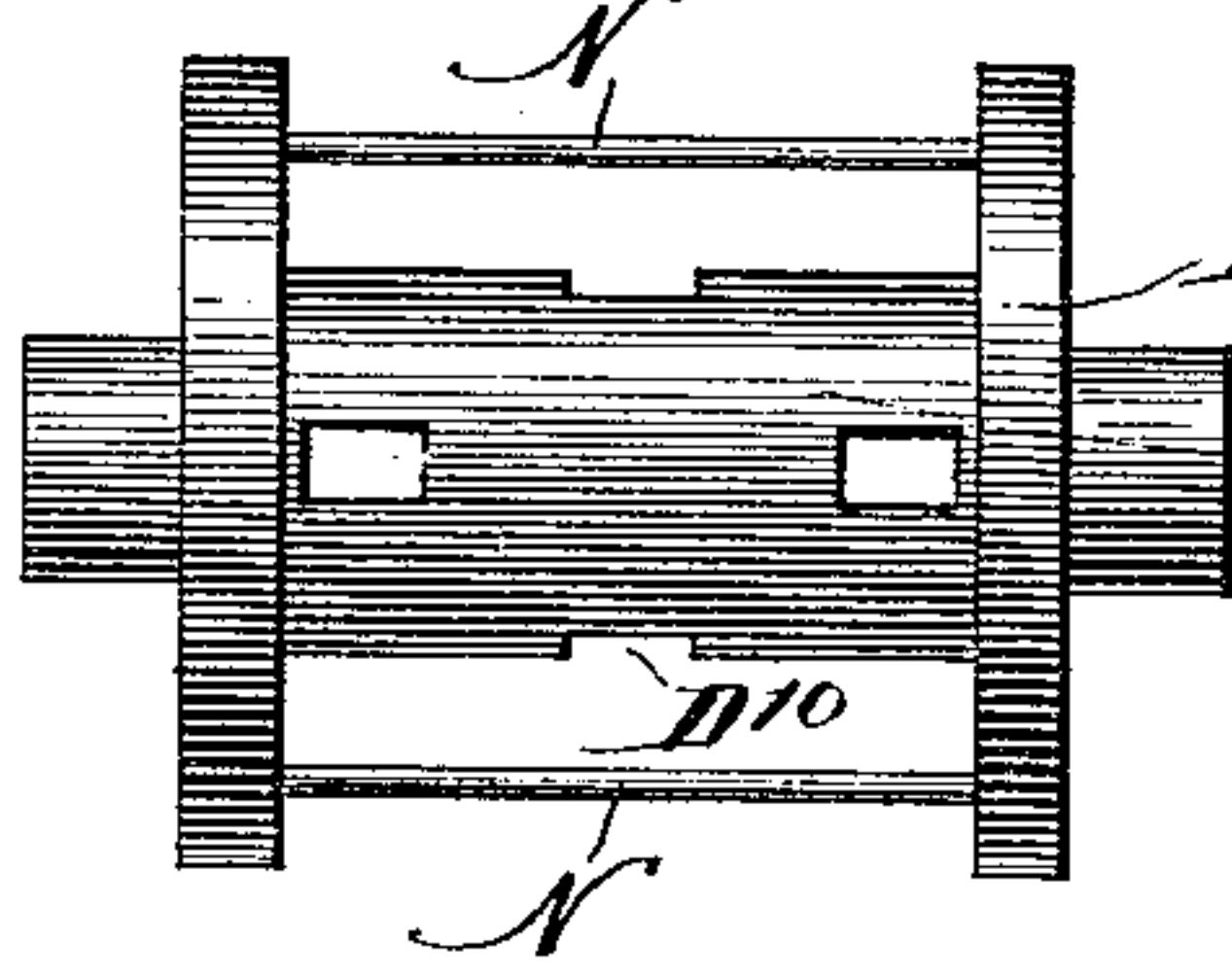


Fig. 6.



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UNITED STATES PATENT OFFICE.

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CAR-AXLE LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 377,271, dated January 31, 1888.

Application filed August 1, 1887. Serial No. 245,841. (No model.)

To all whom it may concern:

Be it known that I, EDWIN PYNCHON, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Car-Axle Lubricator, of which the following is a specification.

My invention relates to car-axle lubricators, and has for its object to provide a lubricator which may be capable of adjustment to fit any ordinarily-sized box, which is provided with a single lubricating-roller and an oil-conveyer, and has certain other features hereinafter described.

My invention is illustrated in the accompanying drawings, wherein—

Figure 1 represents a plan view of my device when in a position for introduction to the box, and a part-sectional view of the lubricating-roller. Fig. 2 is a vertical section of the same through the middle thereof on the line *x x*. Fig. 3 is a part-sectional view through the line *y y*, showing the lubricator in use. Figs. 4 and 5 are detail views of a modification of my device, whereby the lubricator is made to fit any sized box. Fig. 6 is a detail view of the lubricating-roller.

Like parts are indicated by the same letter in all the figures.

A is a car-axle box, and B the axle.

C is a base, upon which the operating parts of my lubricator rest. On this base is raised the standard D, on which is secured the transverse rod D', about which is wound the spring D², having the ends D³ D³, which carry the hangers D⁴, upon which is pivoted the lubricating-roller D⁵. This lubricating-roller is provided with a central tubular aperture, D⁶, through which passes the rod D⁷, encircled by the spiral wire D⁸. The roller has a central core, D⁹, with apertures D¹⁰, and also carries lubricant-carrying material, as D¹¹. The wire D² has the curved end E. On the standards D is secured the frame F by the pivots G, and this frame has the projecting ends H, cross-bar I, and cross-rod J. The cross-rod J bears against the end E of the spring D² and rests in the angle thereof. The rod D⁷ passes, as shown in Fig. 1, below the base and through the central aperture in the roller at a point below the standard, and carries the rollers K

K. This keeps the wire slightly elevated above the bottom of the box. The wire D⁸ is straightened out at one point, as shown in Figs. 1 and 2, within the tubular cavity in the roller and passes under the keeper L. It may also be secured by a piece of wire, M, which passes between its folds, so that as the roller rotates about the rod D⁷ the wire will be caused to rotate about the rod.

N N are cross-rods to form the roller and assist in securing the lubricant-carrier in position.

O O are wires for the same purpose. In the modification shown in Figs. 4 and 5 the supporting-wire D² is inverted, and its end E is below instead of above the rod upon which it is supported. The frame F in these modifications is replaced by the frame R, pivoted at S, having the cross-piece T, the ends U, and the foot-piece V.

K² is a pin between the wheels or washers K to keep them from moving along the rod. The ends of the wire on which the roller is suspended are held together by a cross-wire, as shown.

The use and operation of my invention are as follows:

When it is desired to introduce the device into a car-axle box, the "extension-frame," as it may be called, F or R, is folded in toward the roller, as shown in Figs. 2 and 4. In this manner the length of the base is materially reduced, while by turning this extension-frame out, as shown in Figs. 3 and 5, the base may be lengthened to any ordinarily desired length. The ends U and H of the frame can of course be of any desired length. The object of this structure is to permit of the device being easily folded, so as to occupy a small space when stored or shipped, and particularly to permit of its being folded so as to be easily introduced through the opening into the box, and when it has been introduced by folding of the extension-frame, the same having been made of a size to correspond with the box to which the lubricator is to be applied, by extending the extension-frame the lubricator will be made to exactly fit the box, as shown in Fig. 3, so as to prevent it from sliding about therein. The further object of this extension-frame is, in conjunction with the

spring D^2 and its parts, to elevate the roller in position for use. When the extension is folded toward the roller, as shown in Figs. 1 and 2, the spring D^2 is relaxed, its ends D^3 fold downward toward the base, and the roller rests upon the base, thus leaving the lubricator folded without the application of pressure to hold it in that position while it is being introduced or shipped or packed. Now, when the extension-frame is folded about its pivot for the introduction of the lubricator into the box, its rod J, or, in the modification, its end T, rolls upon the extended end E of the spring D^2 , applies the tension to the spring, causes the same to slightly turn on its supporting-shaft D' , and thus raises the arms D^3 D^3 , and with them the roller, to the desired height. By this means a single spring-support is all that is required to elevate the roller, and by this spring being applied through its two arms to each end of the roller the latter is capable of being unequally depressed at its opposite ends to accommodate itself to the somewhat-irregular motion or shape of the axle. When the roller is thus raised to the axle, as shown in Fig. 3, it is supported on the hangers D^4 , thus giving it an easy oscillatory motion to accommodate itself to the motion of the axle. The oil is poured into the bottom of the box, and there surrounds and, according to the quantity, covers the base and also a portion of the lubricator, so that the rod D^7 and spring D^8 are partially immersed therein. Now, when the car is set in motion, the rotation of the axle causes the roller D^5 to rotate, and since the wire D^8 , which passes through said roller, is secured thereto, the rotation of the roller will cause the wire to rotate about its central rod, D^7 , thus causing said wire to act as a conveyer or Archimedean pump, carrying the oil up one side and into the tubular aperture within the roller. Here the oil passes through the apertures D^{10} in the central core, D^9 , of said roller, and thence out into the lubricant-carrying material, saturating the same and causing it to keep the axle constantly supplied with oil. When the motion of the car is reversed, the roller will operate in the opposite direction and the oil will be similarly conveyed upward along the opposite portion of its supporting-rod.

The lubricant-carrying material should be sufficiently loose on the roller to permit of the passage of the oil through it. In the modification the extension-frame R is used in a similar manner to the extension-frame E, as shown in Figs. 1 and 2, except that it lies in the bottom of the base instead of at the top thereof. I have contemplated the application of this conveyer-wire to several different though similar constructions—as, for instance, by putting it on the inside of a tubular conveyer or by constructing it in such manner as that neither tube nor rod will be necessary; but I think the form shown is the best.

The application of the lubricator is very

simple. The parts, as shown in Figs. 1, 2, and 3, being secured together in the manner indicated, the extension-frame is folded in toward the base, so as to reduce the length of the box and also its thickness by bringing the parts close together, as shown in Fig. 2. In this condition it is introduced into the box to which it is to be applied in the proper position. Its extension-frame is then folded out until its ends rest upon the sides of the box, as shown in Fig. 3, so that it can slide therein. By the same movement the roller is elevated against the axle. By the operation of the axle the roller is rotated, and the wire conveyer introduces the oil into the interior of the lubricating-roller, whence it is sent through the lubricant-carrier to the car-axle.

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

1. In a car-axle lubricator, a lubricating-roller provided with lubricant-carrying material and having a central aperture into which the oil is fed to the lubricant-carrying material.
2. In a car-axle lubricator, a lubricating-roller pivoted on depending hangers pivotally supported above, so as to permit of a free oscillatory motion.
3. In a car-axle lubricator, a lubricating-roller provided with a central aperture, perforated core, lubricant-carrying material thereon, and an oil-conveyer which carries the lubricating material into the central aperture of the roller.
4. In a car-axle lubricator, a lubricating-roller pivoted on depending hangers which are supported above each by a spring-arm, so that each end of the roller has an independent vertical motion.
5. In a car-axle lubricator, a lubricating-roller supported by depending hangers, one at each end, each of which hangers is suspended from a spring-arm, so that each end of the roller has an independent vertical motion and the entire roller a free oscillatory motion.
6. In a car-axle lubricator, a lubricating-roller provided with a hollow axle which is a part of and revolves with the same.
7. In a car-axle lubricator, the combination of a spiral oil-conveying coil with a lubricating-roller, the coil attached to the roller and made to revolve on its own axis thereby.
8. In a car-axle lubricator, the combination of a spiral oil-conveying coil, a fixed rod or core therein, with a lubricating-roller, the coil being attached to the roller and revolving therewith about the fixed core.
9. In a car-axle lubricator, a lubricating-roller having a central aperture, in combination with an oil-conveying spiral coil which passes into said roller and is also immersed in the oil.
10. In a car-axle lubricator, the combination of a lubricating-roller having a central aperture, a rod which passes through said ap-

erture and into the lubricating material, and a spiral spring which is wound about said rod.

11. In a car-axle lubricator, a lubricating-roller having a central aperture, a rod which passes into said aperture and also into the lubricating material, and a spiral wire which encompasses said rod and is secured to said roller.

12. In a car-axle lubricator, a hollow lubricating-roller which is supplied with a spiral coil passing into the same, said coil being so securely attached thereto that it revolves with the roller, while the dependent ends of said coil reach to the lubricant below.

13. In a car-axle lubricator, the combination of a lubricating-roller having an internal aperture with a spiral wire oil-conveyer, and wheels whereby the said oil-conveyer is supported at its lower end.

14. In a car-axle lubricator, the combination of a lubricating-roller supported by spring-arms, the opposite ends of which have a movable point of resistance, with a locking-lever which presses thereagainst, so that by turning the same a maximum or minimum condition of elevation of the lubricating-roller may be secured.

15. In a car-axle lubricator, the combination of a lubricating-roller with a spiral spring, the two arms at one end of which support the roller, the middle of which is bent and extended from its pivotal rod, with a fastening-frame which operates against the middle portion of said spring, and by moving which the spring may be rotated on its supporting-rod and the roller elevated or depressed, as desired.

16. In a car-axle lubricator, a base in combination with an extension-frame pivoted thereto and adapted to be folded upon the base or extended from the same, so as to increase or diminish the length of the base at will.

17. In a car-axle lubricator, the combination of a roller, a base, a shaft on said base, a spiral spring twisted about said shaft, its two extended ends supporting the roller, its middle bent away from said shaft, an extension-frame pivoted on said base and adapted to engage the middle portion of said spring, so that when the frame is lengthened by turning the extension-frame out the roller is elevated.

18. In a car-axle lubricator, the combination of a base with a lubricating-roller supported thereon and an extension-frame pivoted thereto, the roller-support and extension-frame being so connected as that both are folded to the base or extended therefrom simultaneously by operating the extension-frame.

19. A car-axle lubricator provided with a lever extension-frame so arranged that by turning the same the lubricator-frame is lengthened simultaneously with the elevation of the lubricating mechanism.

20. A car-axle lubricator provided with a lever extension-frame, in combination with a spring the free ends of which support the lubricating-roller, and the opposite end of which is provided with a bend, so that the frame is held in position thereby when extended.

July 28, 1887.

EDWIN PYNCHON.

Witnesses:

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