

S. J. & G. J. SHIMER.
Car-Axle Lubricator.

No. 214,592.

Patented April 22, 1879.

Fig 1.

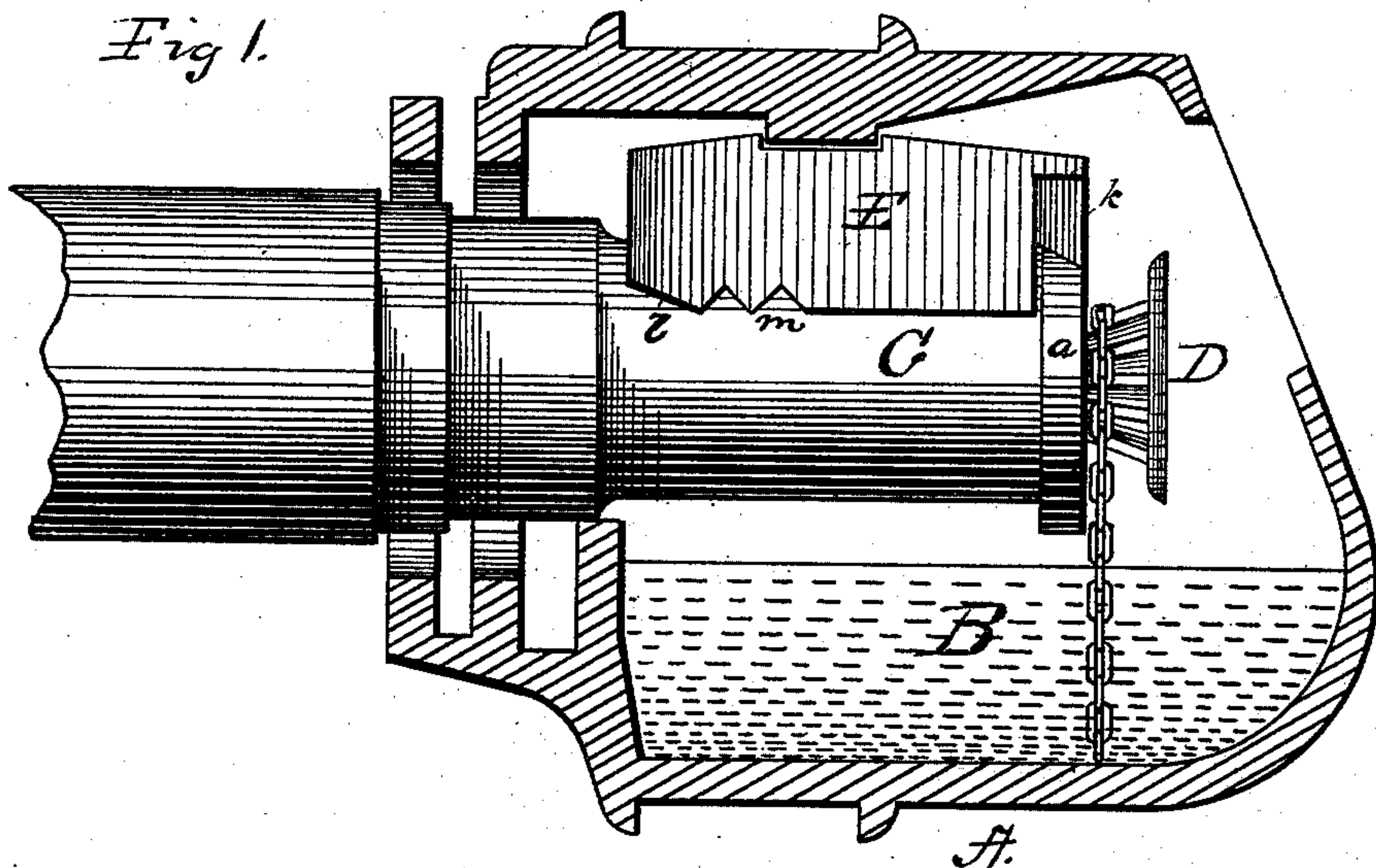


Fig 2.

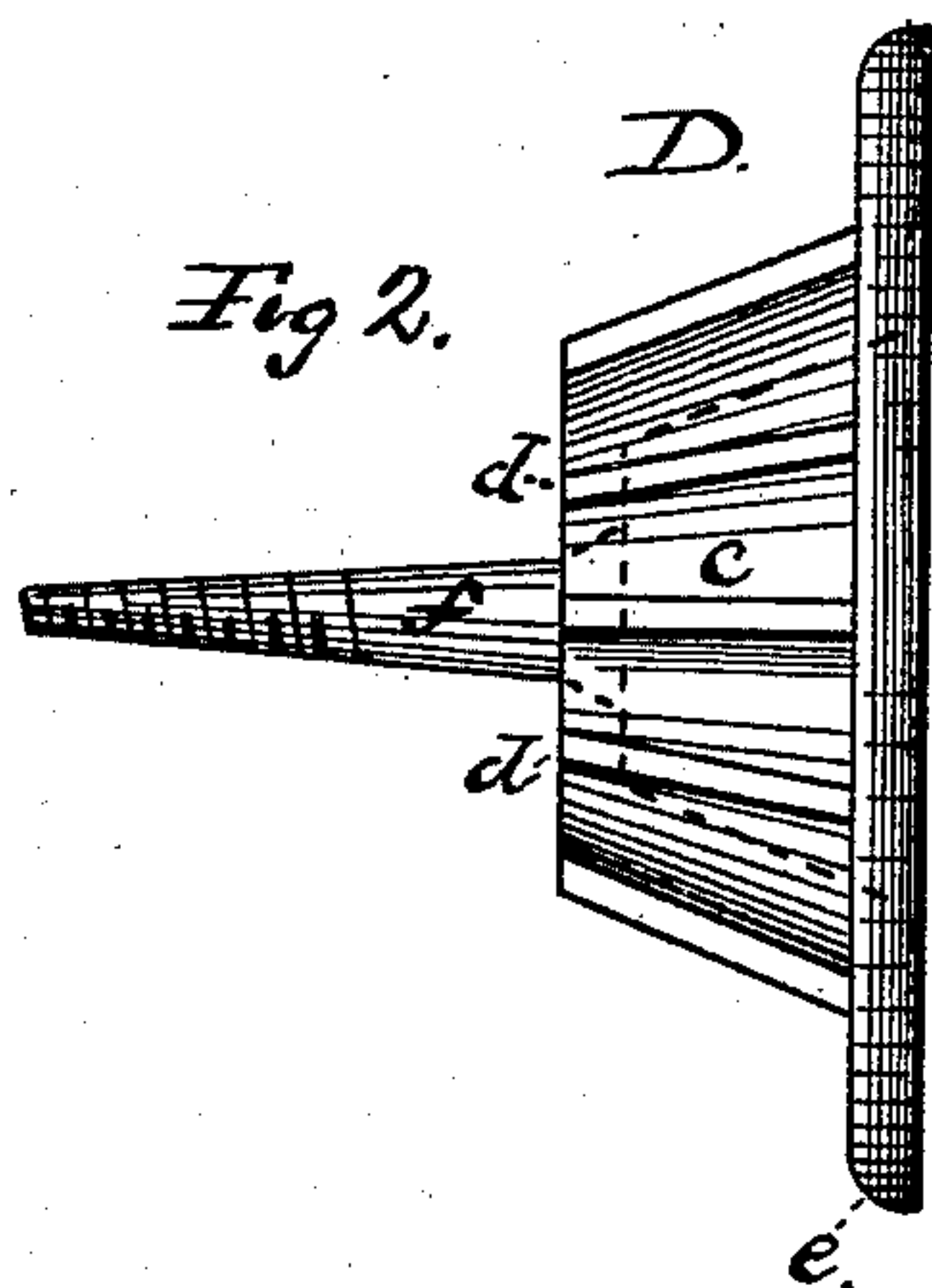
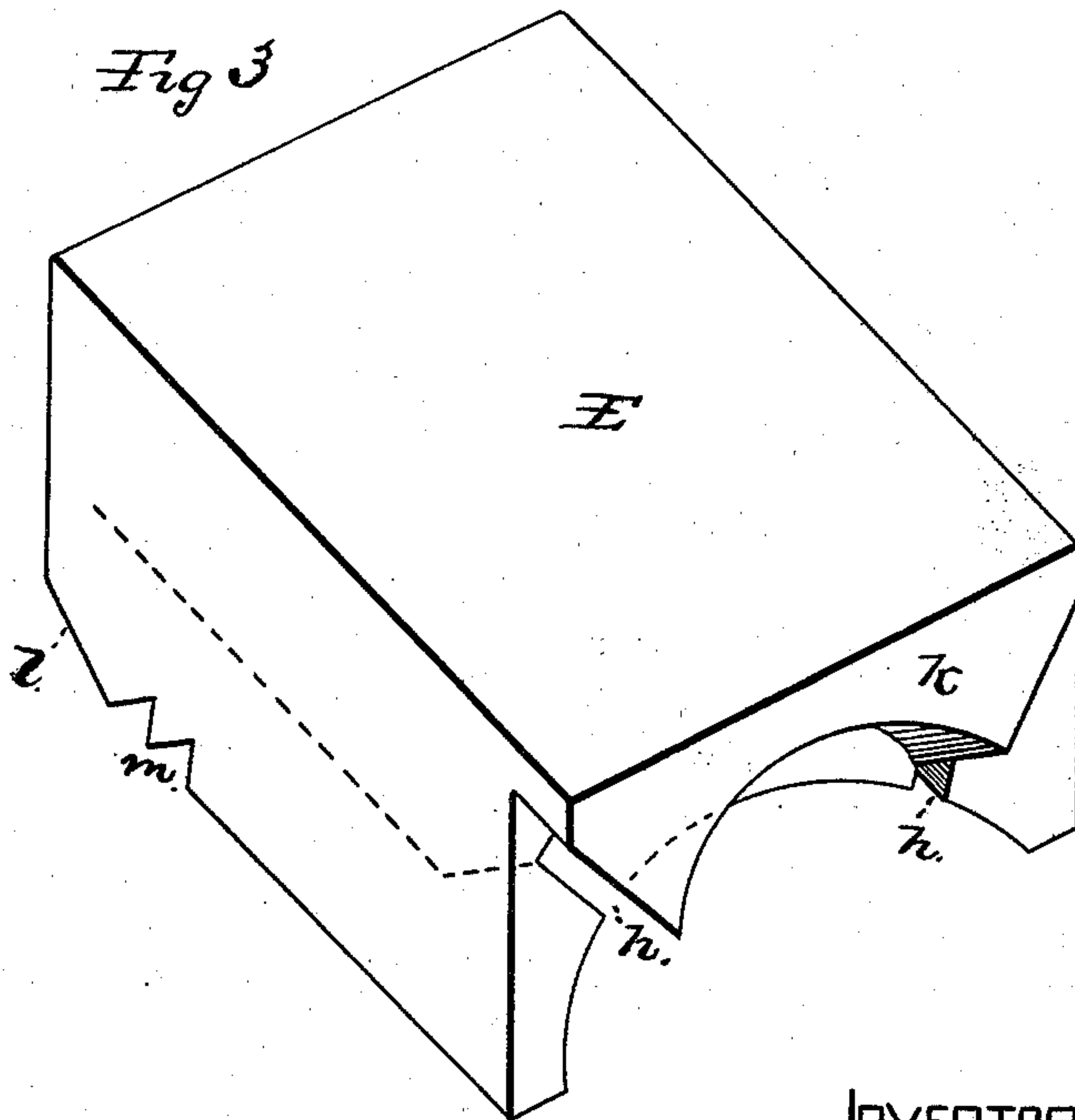


Fig 3



WITNESSES

Nat. E. Oliphant-
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INVENTORS

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UNITED STATES PATENT OFFICE.

SAMUEL J. SHIMER AND GEORGE J. SHIMER, OF MILTON, PENNSYLVANIA.

IMPROVEMENT IN CAR-AXLE LUBRICATORS.

Specification forming part of Letters Patent No. **214,592**, dated April 22, 1879; application filed February 5, 1879.

To all whom it may concern:

Be it known that we, SAMUEL J. SHIMER and GEORGE J. SHIMER, of Milton, in the county of Northumberland and State of Pennsylvania, have invented a new and valuable Improvement in Lubricators; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a longitudinal sectional view of a car-axle box, showing in connection therewith our invention. Fig. 2 is a side view of the pulley detached. Fig. 3 is a perspective view of the top bearing.

This invention relates to means for lubricating car-axle bearings; and the novelty consists in the automatic feeding device, in connection with the top bearing, as will be hereinafter set forth, whereby the oil is regularly and uniformly conveyed to the journal-bearing when in motion from the oil well or chamber below the journal by an endless chain located at the end of the journal that is to be oiled.

Our main object is to provide a lubricant device for supplying the oil to the journal to the full length of its bearing, so as always to properly supply a sufficient amount of oil from the well below to the journal and conduct the surplus or waste oil back to the oil-well.

In the annexed drawings we have shown our invention applied to a car-axle box having an oil-well.

The letter A represents a car-axle box having an oil well or chamber, B, and C is the journal of a car-axle having a collar, *a*, on its outer end. The outer end of the journal C is provided with a pulley, D, which is firmly secured at the center. This pulley may be of any suitable construction, having a recess or groove to receive and carry a chain; but we prefer a pulley of the construction substantially as shown in Fig. 2 of the drawings. This pulley consists of a beveled or inclined hub, *e*, having a series of ridges or projections, *d*, and a flange, *c*, at the outer or enlarged end of the hub. The hub portion of the pulley is

recessed, as indicated by dotted lines, and perforated to receive the fastening device *f*. This construction of the pulley with the smaller unflanged end resting against the face end of the journal has a tendency to, and, in fact, will, throw the elevating-chain suspended therefrom in close contact with the face of the journal-collar, and, by the motion of the journal, elevate the chain, which, passing through the oil-reservoir, carries the oil in its course to the periphery of the collar, where it is removed and directed to the proper course by the overhanging forward portion of the top bearing, as will be hereinafter described.

The letter E indicates the top bearing or brass applied in the usual manner—that is to say, arranged over the journal within the car-box, substantially as shown in Fig. 1 of the drawings. This top bearing is provided with two horizontal grooves or channels, *h*, designated as the forward and rearward oil-channels. These grooves are arranged divergent at an angle of about forty-five degrees from the center of the journal. At the forward portion of the brass and at the open end of the grooves is the projecting portion *k* to come in contact with and rest lightly on the collar *a* of the journal. The ends of this portion are cut away and beveled inwardly, forming a communication with the grooves or channels *h* of the bearing, as seen in Fig. 3 of the drawings.

The grooves *h* are closed at their rear ends to prevent the oil from communicating to the axle in rear of the bearing. The rear end or part of the top bearing is provided with slant or inclined edges *l*, intended to convey the oil from the back collar to the reservoir; and the lower edge of the sides of the top bearing are notched or serrated at *m*, for the purpose of stopping or breaking the beads or large drops of oil which accumulate between and below the edge of the bearing and the upward-moving side of the journal. These beads or drops of oil would, if the edge of the bearing were straight, speedily find their way to the rear shoulder of the axle next to the wheel, and from thence to the wheel, causing a waste of oil, which is overcome in a great measure by the presence of these notches and the slant edges at the rear part of the top bearing.

Operation: The lubricant is supplied to the journal from the bottom of the oil-well in the following manner: The lower part of the endless chain dipping into the oil-well lifts by the rotation of the axle-journal, carrying a portion of the oil with it, and distributes it upon the collar, from where it is removed by the inclined projecting shear ends of the top bearing, and directed into the forward oil passage or channel in the box, and from thence distributed over the journal-bearing. The waste or surplus oil which reaches the edges of the top bearing is reconveyed to the oil-well; that going from the outer end of the bearing in the direction of the notches is by them arrested and drops down, and that which reaches the shoulder of the axle next to the wheel is sheared off by the inclines at the rear end of the top bearing, and running down the inclines is also arrested by the notches and drops in the oil-well.

The motion of the axle-journal may be either forward or backward. The feed of the lubricant will be the same.

What we claim is—

1. The hereinbefore-described self-feeding lubricant-conveyer for car-axle journals, consisting, essentially, of an endless chain running upon a pulley, or its mechanical equivalent, fastened at the center of the end of a car-axle, and the chain depending therefrom into the oil below.

2. The combination, substantially as hereinbefore described, of a car-axle journal, an endless chain suspended from a pulley at the end of the axle, with a portion thereof passing through an oil-well, and an upper bearing

having horizontal grooves, and a projection, *k*, for conducting the oil to the journal.

3. In combination with a collar-journal, an oil-well, and an endless chain suspended at the end of the journal, a top bearing having projecting inclined directing ends and horizontal grooves divergent at an angle of about forty-five degrees, substantially as set forth.

4. The combination, with a car-axle box having an oil-well, of a journal, *C*, having at its outer end a flanged pulley, *D*, and an endless chain, substantially as described, and for the purpose set forth.

5. A top bearing for a journal having the forward projection, *k*, the ends of which are cut away and beveled, and the horizontal grooves *h*, substantially as described, and for the purposes set forth.

6. A top bearing for a journal having its lower rear end inclined at *l*, and provided with one or more notches, *m*, substantially as and for the purposes set forth.

7. A top bearing for a journal provided with two horizontal grooves, *h*, divergent at an angle of about forty-five degrees, projection *k*, cut away and beveled to form a communication with the said grooves, the notches *m*, and the inclined edges *l*, substantially as described.

In testimony whereof we have hereunto subscribed our names.

SAMUEL J. SHIMER,
GEO. J. SHIMER.

Witnesses:

SAMUEL H. KOCH,
J. F. BLAIR.