

(No Model.)

J. WOOD.
LUBRICATOR.

No. 446,049.

Patented Feb. 10, 1891.

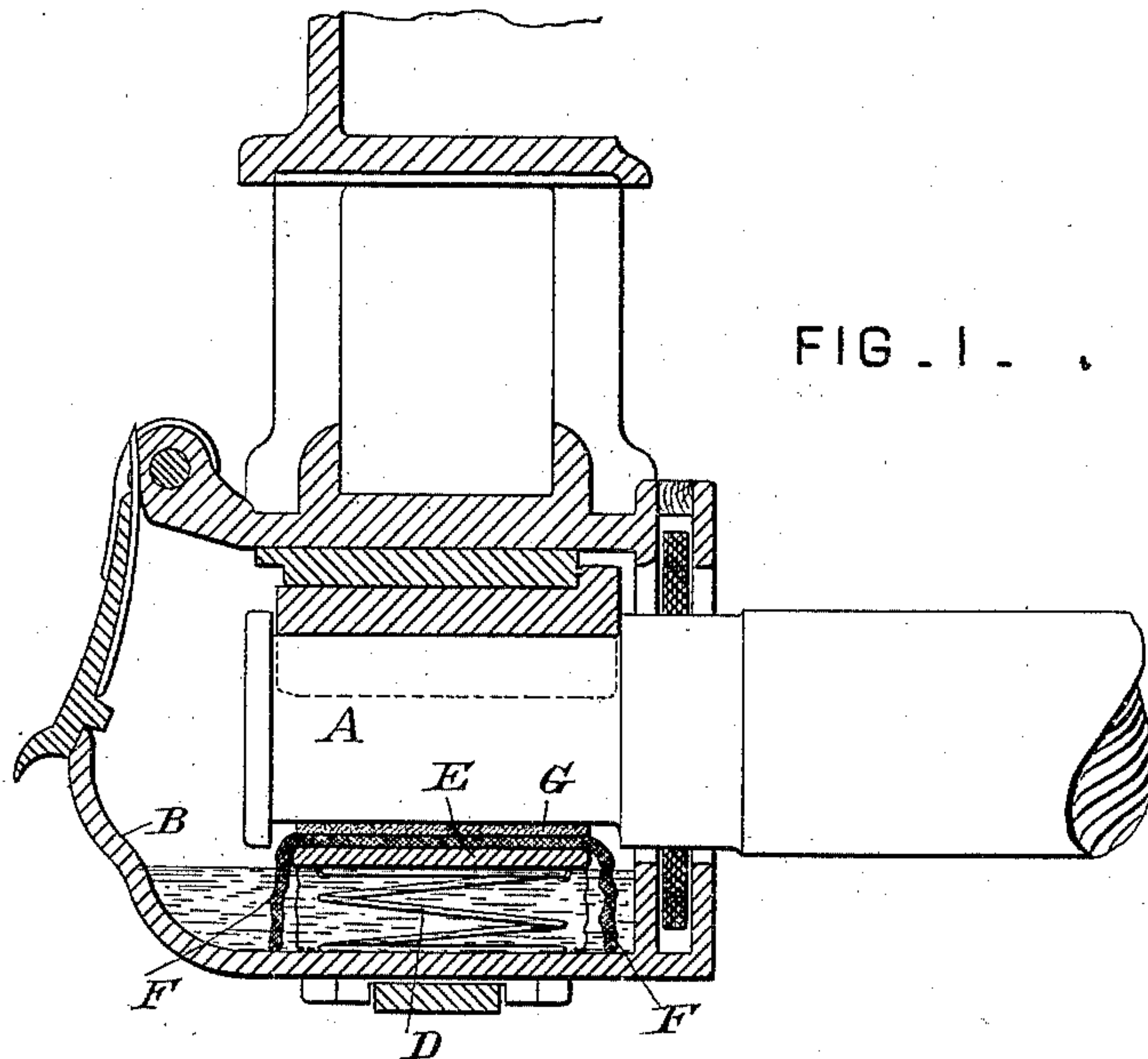


FIG. I.

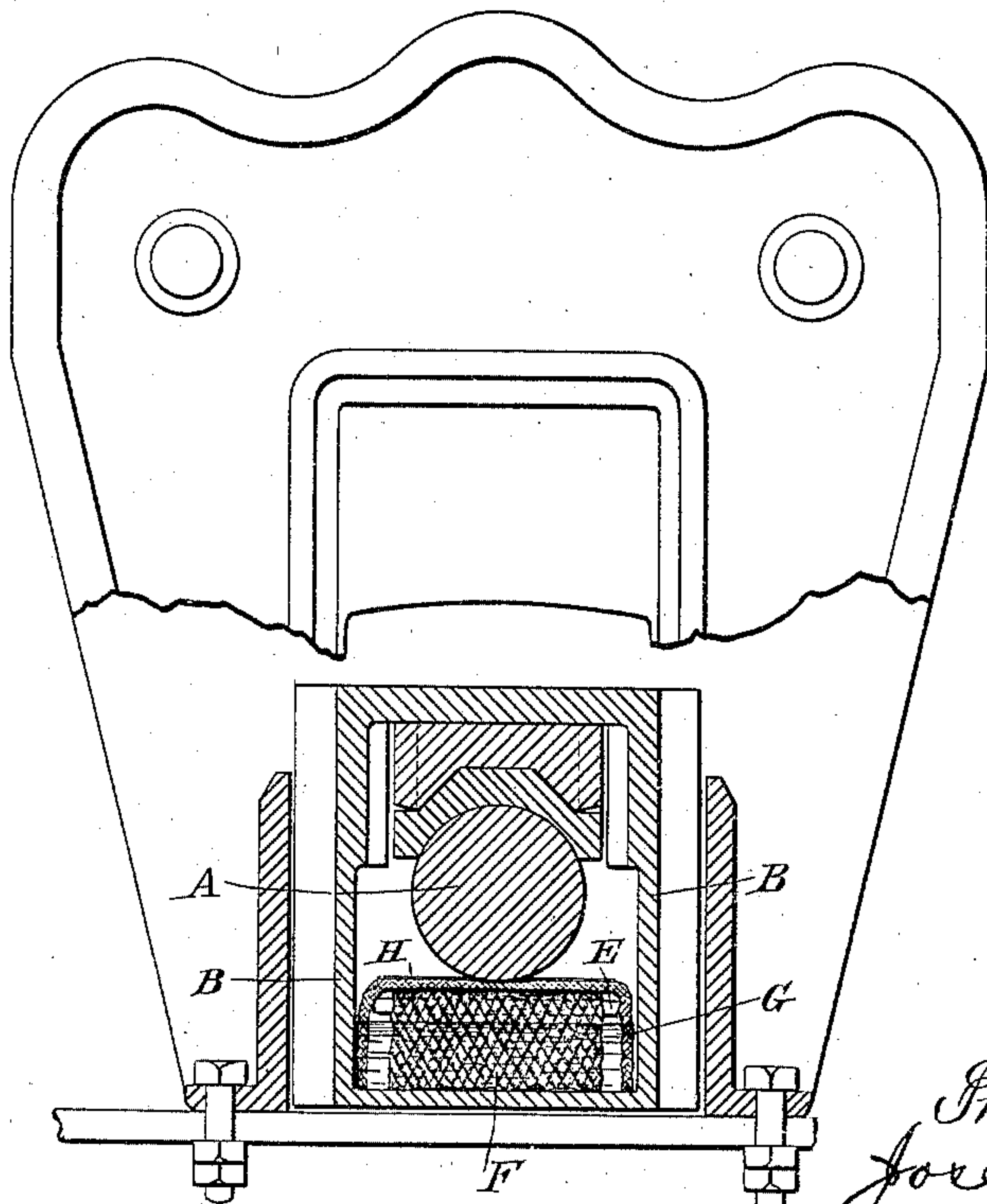


FIG. II.

Attest:
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UNITED STATES PATENT OFFICE.

JOSEPH WOOD, OF RED BANK, NEW JERSEY.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 446,049, dated February 10, 1891.

Application filed May 13, 1890. Serial No. 351,596. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH WOOD, residing at Red Bank, in the county of Monmouth and State of New Jersey, have invented a new and
5 useful Improvement in Lubricators, which invention is fully set forth in the following specification.

My invention has for its object to supply to the journal-bearing of the axle of a rail-
10 way-car or the shafting of machinery a continuous and regular supply of oil or lubricant. It is especially adapted to prevent hot box on an engine or car.

The method in which I prefer to carry out
15 my invention is as follows: I use a spring-coil which so coils around itself horizontally at the bottom as to form a sufficiently firm support. The other end of this spring coils upward to such an extent as may be neces-
20 sary in accordance with the location of the oil-chamber and the journal or shaft to be lubricated. To the upper portion of this spring is attached a flat rectangular piece of wood. If this is intended to be inserted in
25 the journal-box of a car or engine, it should be made somewhat smaller than the section of the journal-box in which it is designed to be inclosed, so as to allow of a slight play. Thus in a journal-box six inches by eight
30 inches a wooden top five inches by six inches and half an inch thick (more or less) will be sufficient. Over this wooden top and fast-
ened thereto I place an ordinary thick cot-
35 ton wick, the length of which should be sufficient to reach down upon either side into the oil-chamber. This cotton wick should be
nailed or otherwise firmly attached to the
40 wooden top, preferably at the sides thereof, so that the top surface of the wick should lie
smooth upon the wooden top, and so that the
45 nails or other means of attaching the same to the wooden top should not be upon the top surface of the cotton wick. At right angles
to this wick I place another wick over the
50 first, whose ends hang down the other two sides of the wooden top, and it should be of a length sufficient to reach into the oil-receptacle below. This wick should be fastened
in the same manner as the other, and should
likewise present a smooth even surface upon
its top. Over this second wick I place a cov-
ering of wire-gauze, which should preferably

be somewhat narrower than the second wick, and the second wick should preferably be of a width slightly narrower than the wooden
55 top, so as to leave, say, half an inch upon either side. The first-mentioned wick should preferably be not quite as wide as the wooden top, but very nearly so. The wire-gauze is
60 itself a conductor of oil. It also serves to protect the wick. The wire-gauze and the top wick should preferably be so arranged
that their length should run parallel to the axle or shaft to which the oil is to be applied. This device should then be placed in such a
65 position that by force of the spring it will at all times gently press against the shaft or axle while the same is revolving. It should be placed immediately underneath the jour-
70 nal-bearing.

The accompanying drawings will serve to
illustrate my invention.

Figure I is a section of the lubricator length-
wise of a car-axle, in connection with which
it is illustrated; and Fig. II is a cross-section
75 of the same.

A represents a car-axle, and B is the jour-
nal-box, which contains a suitable quantity
of oil in a chamber beneath the axle.

D represents a spiral spring having a flat
80 coil at the bottom, which rests upon the bottom of chamber B. The spring D supports a flat block or piece of wood E, on which is
placed a broad wick F, whose ends hang over the board and dip into the oil. Above and
85 at right angles to this wick is a second wick G, whose ends likewise hang down into the oil, and upon wick G is a rectangular strip
H, of wire gauze or netting, which comes into contact with the axle A and is caused to press
90 gently against the same by the action of spring D.

It will of course be understood that the
illustration is given only as an example of a
convenient way in which the invention may
95 be applied, and that the improved lubricator may be used in connection with shafts in various kinds of machinery, the details being modified as may be required.

It will be found that by means of this de-
100 vice a constant, free, and regular supply of oil will be led to the axle or shaft, and that neither the gauze nor the wick-surface will become glazed or clotted, which is one of the

principal difficulties which this device is designed to avoid.

I am aware that the use of a spring or spiral coil for such a purpose as this is old. I am
5 also aware that a sponge or a mass of cotton or waste pressed against the axle or shaft by a spiral coil or spring has been used as a lubricating device. I am also aware of Letters
10 Patent No. 103,617, granted to William B. Howe on the 31st day of May, 1870; but in none of these is there the smooth flat surface of a cotton wick firmly held in a horizontal position and smooth and even throughout all
15 that portion of its length which comes in contact with the axle or shaft to be lubricated; nor is there shown a wire-gauze or anything equivalent thereto, such as has been heretofore described.

I am aware also that a lubricator composed
20 of hair-netting or fine cloth stuffed with fibrous material has been heretofore devised, and that it has been proposed to use metal pad-holders slightly concave and supported on springs. The former device would not be
25 serviceable, as it would quickly cake on the surface, causing an imperfect, irregular, and unreliable supply of oil. It is also an important feature of my invention that the support is a flat strip of wood or equivalent material, which itself is a good conductor of oil,
30 as this device is found to assist materially in producing regularity of action and economy of oil.

I prefer the exact arrangement here described; but obviously many alterations and
35 changes could be made without departing from the spirit of my invention. Among the advantages of the exact structure that I have described are the following: In case the wire-gauze should be worn through, the cotton is
40 itself a powerful conductor of oil, and would itself serve as a lubricant. In case the wick or wicks should be worn through, the wood is also a good conductor of oil, so that in the
45 event of any unexpected destruction of the wire, or even of both the wire and the wicks, the device would still perform its work for some time.

The axle or shaft in its rapid revolution
50 creates a partial vacuum, and for this reason and by reason of its rapid motion performs, as it were, the function of a pump in drawing the oil upward.

The wire-gauze can be omitted, or any well-known substitute therefor might be used, 55 such as a perforated metal sheet. A single wick alone or more than two wicks can be used, or the method of fastening the wicks can be varied without departing from the spirit of my invention. 60

In place of resting upon the horizontal coil or coils of the spring, the spring may be attached to a flat board, upon which it is supported, or the spring may be attached to the bottom or side of the box. 65

Numerous other changes both of material and of construction might readily be made by one skilled in the art.

I believe that the use of a wire-gauze or perforated sheet metal and the use of a flat board 70 of wood or its equivalent in a lubricator are both broadly new.

What I claim, and desire to secure by Letters Patent, is—

1. The combination, with a shaft having a 75 receptacle beneath the bearing for containing oil, of a lubricating device in said receptacle, comprising one or more wicks of cotton or other suitable material fastened to a flat support of a material such as wood, which is a 80 good conductor of oil, so as to present a flat, smooth, and even surface to the shaft or axle to be lubricated, and held against the axle by the pressure of a spring or spiral coil or other suitable means, substantially as described. 85

2. A lubricating device adapted to be placed in an oil-receptacle beneath the journal-bearing of a shaft, said device comprising, in combination, the following elements: a flat support, one or more wicks secured thereon so as 90 to present an even flat surface on top of the support, a sheet of wire-gauze or perforated sheet metal placed over the wick or wicks, and a spring or similar means for pressing the lubricator against the shaft, substantially 95 as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOSEPH WOOD.

Witnesses:

W. H. L. LEE,
FREDERICK GELLER.