

(No Model.)

J. T. SMITH.
OILER.

No. 459,462.

Patented Sept. 15, 1891.

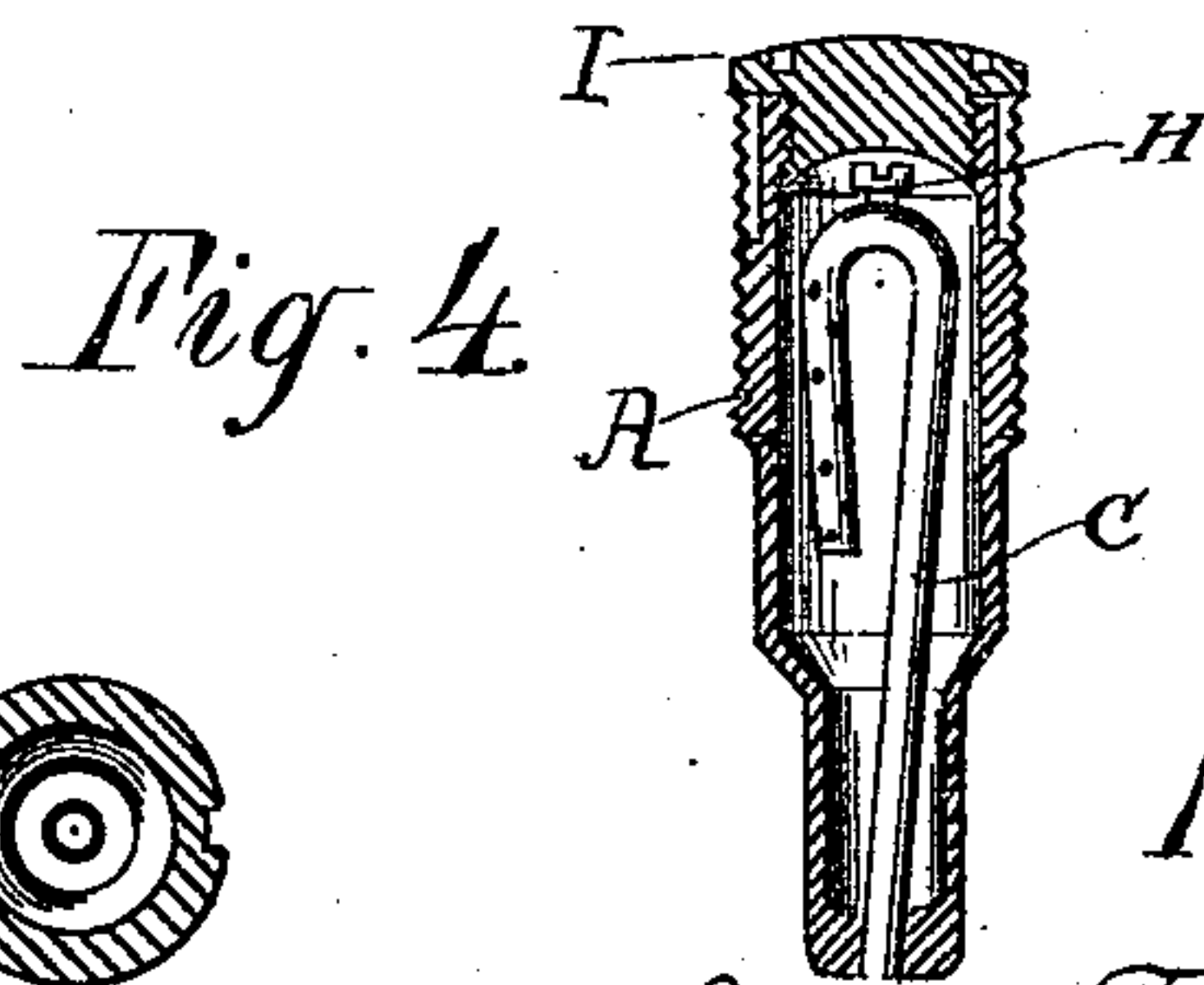
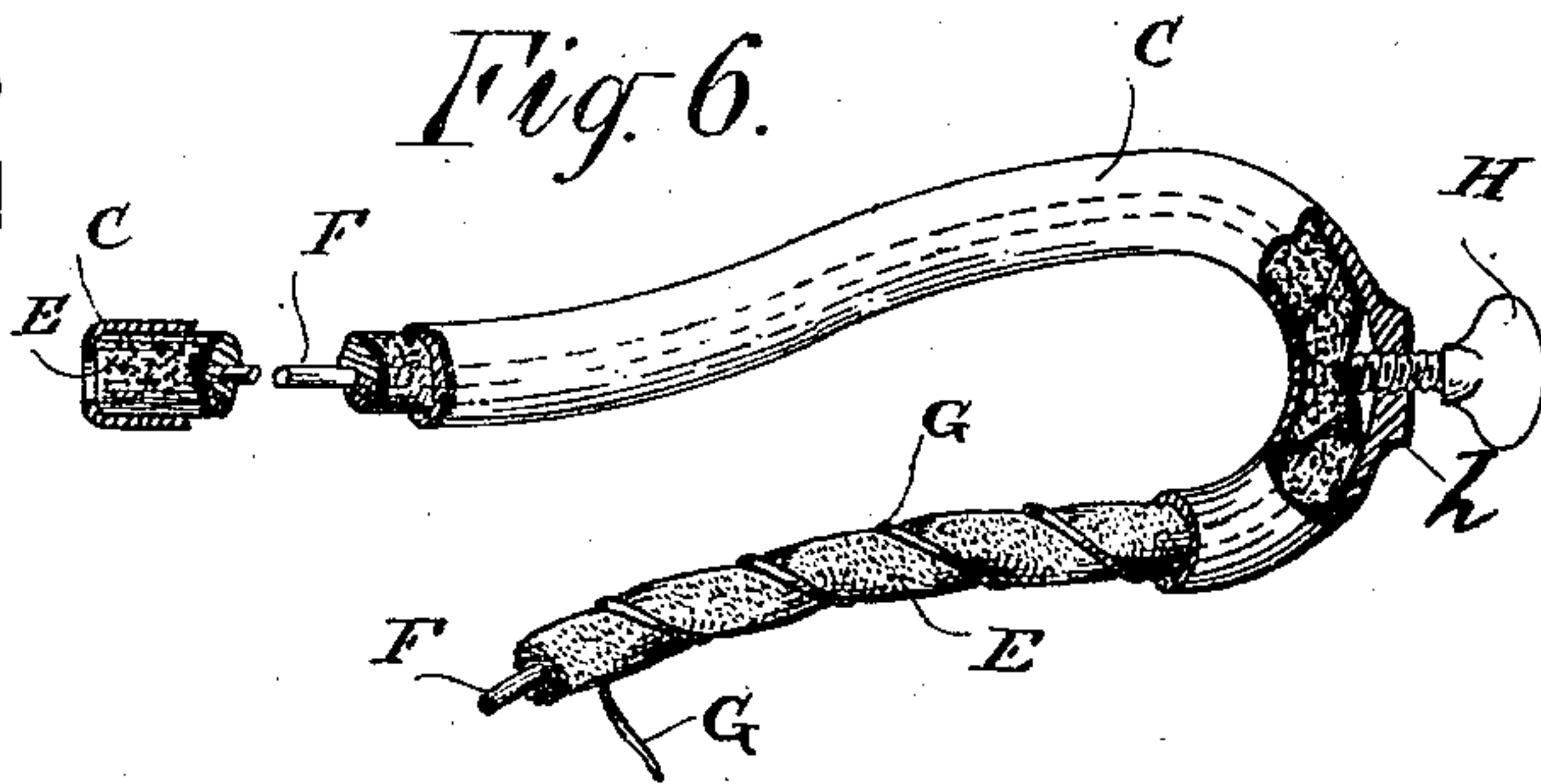
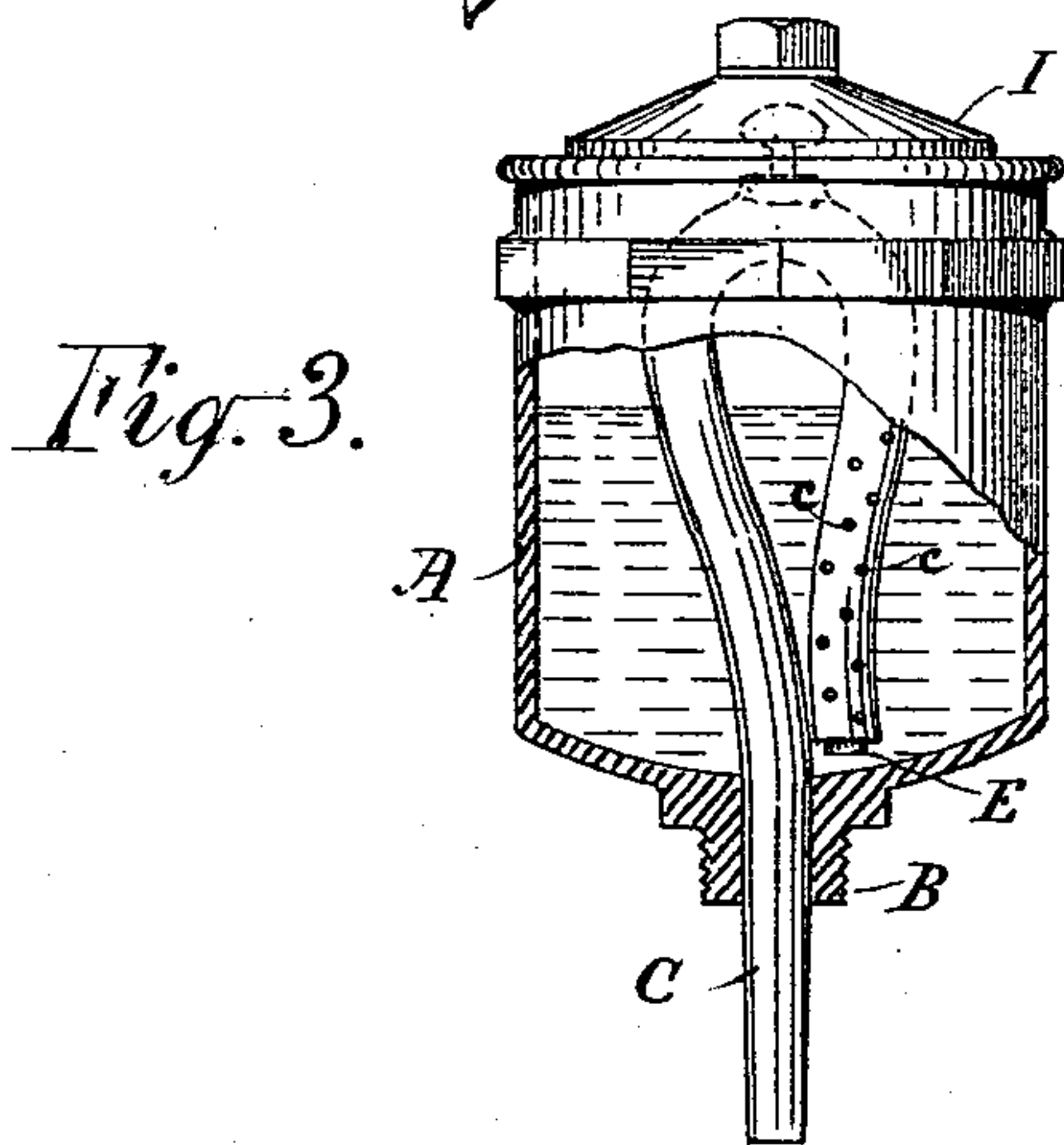
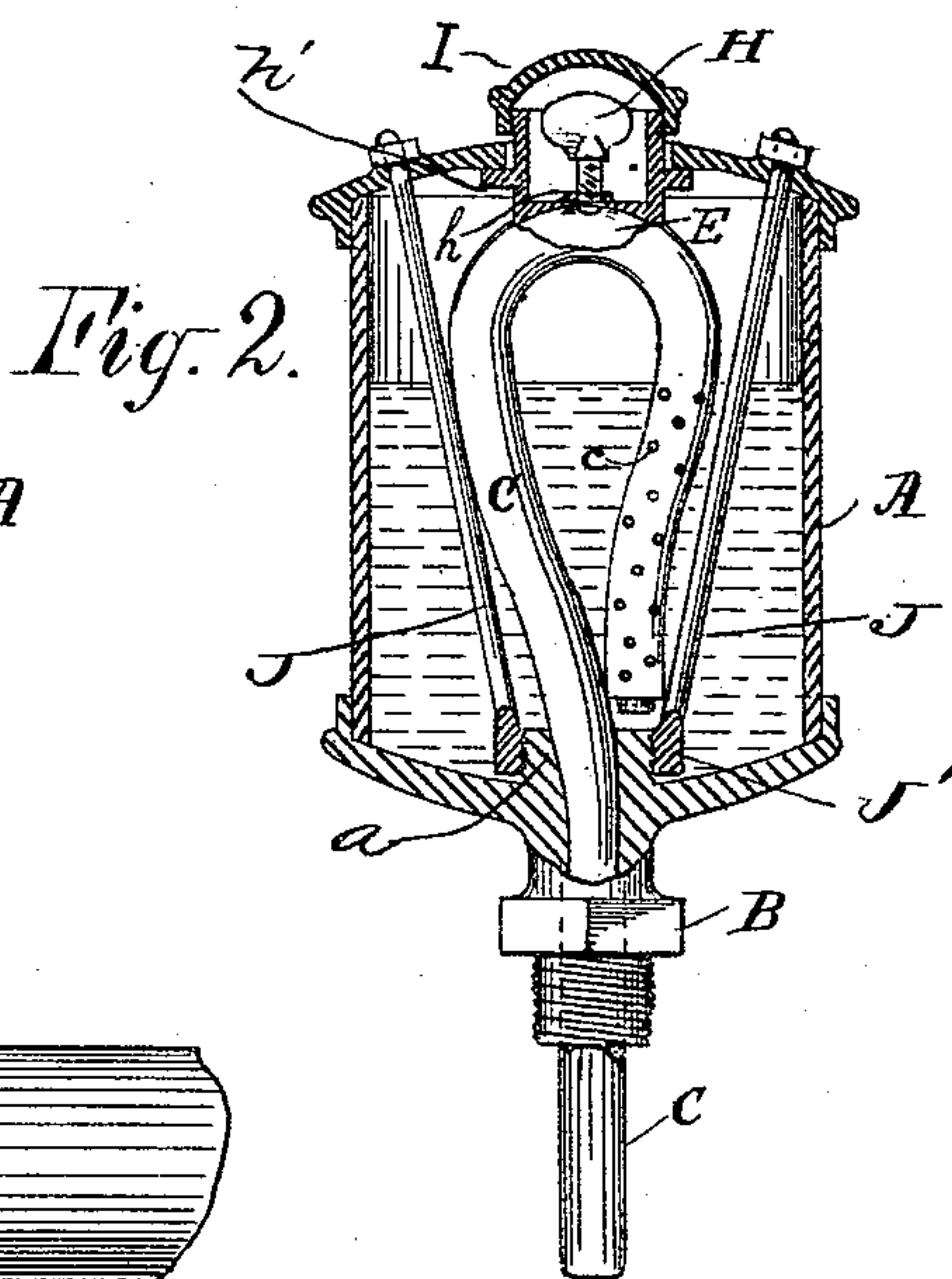
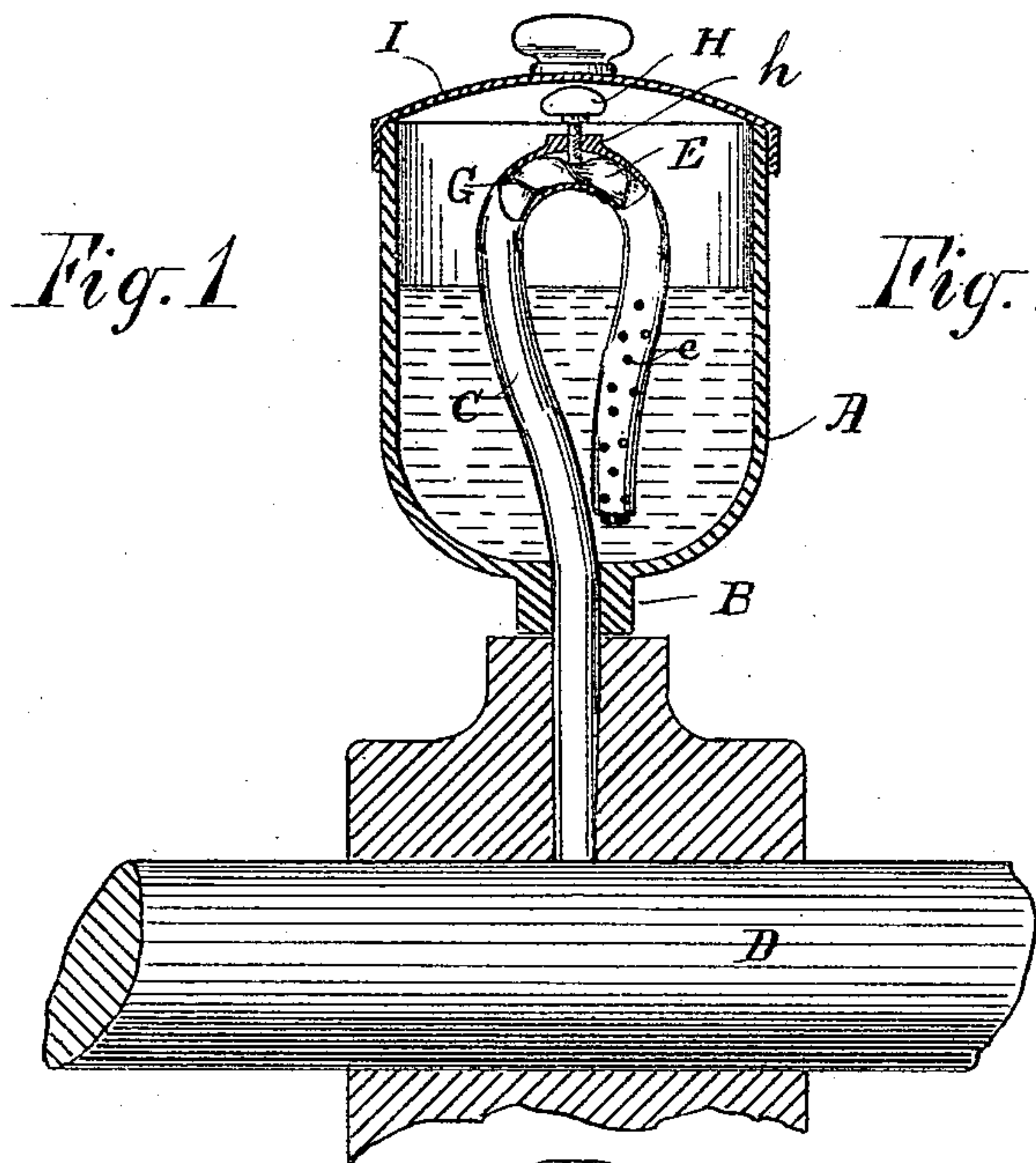


Fig. 5.

Witnesses.
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by *A. H. Le Mare*
att'y

UNITED STATES PATENT OFFICE.

JOHN T. SMITH, OF SAN FRANCISCO, CALIFORNIA.

OILER.

SPECIFICATION forming part of Letters Patent No. 459,462, dated September 15, 1891.

Application filed June 13, 1890. Serial No. 355,366. (No model.)

To all whom it may concern:

Be it known that I, JOHN T. SMITH, a citizen of the United States, and a resident of the city and county of San Francisco, in the State of California, have invented a new and useful Improvement in Oilers, of which the following is a specification.

My invention has reference to an automatic oiler, and it is particularly designed as an improvement upon my patents, Nos. 306,542 and 365,153, dated, respectively, October 14, 1884, and June 21, 1887.

The object of my present improvement is to provide an oiler which will not only be as effective as those previously patented by me, but still more desirable on account of its greater simplicity of construction and lower cost of manufacture.

Referring to the accompanying drawings, which form part of this specification, Figure 1 is a sectional elevation of a shaft-oiler containing my improvement; Fig. 2, a similar view of a machine-oiler; Fig. 3, a like view of a loose-pulley oiler; Fig. 4, a sectional elevation of my improved oiler for vehicle-axes; Fig. 5, a plan of the axle or hub oiler with the cap removed, and Fig. 6 a detail view of the oil-feeding tube.

The same letters of reference indicate corresponding parts in all the views.

Let A designate a cup or vessel containing oil. This vessel may be made of any suitable material and given any required shape, as circumstances may suggest. The bowl of the cup is perforated at the bottom and provided with a boss or short hollow stem B. The latter is not indispensable, but it facilitates the fitting of the oiler.

Within the stem B, I fit a tube C, extending from the inside of the cup down to the point which is to be lubricated—such, for instance, as the shaft D, Fig. 1, which it reaches through the cap of the bearing or journal-box. The upper end of the tube C is bent down so as to constantly dip in the oil, and thus forms a convenient means for draining the cup of its contents by capillary attraction, as will more fully appear hereinafter. Perforations c are provided in the sides of the shorter branch of the siphon to allow the oil to rise within it more readily.

To retard the outflow of oil or check it in

a certain measure I slightly contract the tube C at its lower end and fill its interior with some permeable material E—wool, preferably—through which the oil has to pass before coming out. The filling not only acts to conduct to the axle by capillary attraction, but also acts as a strainer for the oil, so that no foreign substances can be conveyed to the bearing and all sediments settle at the bottom of the vessel. The filling E has a core F, preferably made of metal and usually composed of from one to five strands of copper wire, one strand only being shown in the drawings. This core runs the entire length of the tube C and comes in contact with both the supply of oil and the point lubricated. The filling E and core F are bound together or surrounded by a wire G, loosely wound about said filling.

In order to more adequately regulate the flow of oil from the vessel, I provide the upper portion of the tube with a thumb-screw H, adapted to compress the filling material within it and reduce the passage usually afforded to the oil. One is thereby enabled to gage the feed of the oiler to the greatest advantage. By preference a seat h, having internal screw-threads, is formed upon the bent tube for the thumb-screw H. It will be seen that this seat is provided with a lateral flange h', upon which the edges bordering the aperture of the upper part of the oil-vessel or top rests.

The height of the tube within the vessel is determined by circumstances; but it is in most cases brought up to a point near the lid or cover I, which is conformed or raised so as not to interfere with the screw H. Thus the cover may be curved up, as in Fig. 1, which represents an ordinary shaft-oiler.

In the case of a machine-oiler, which usually consists of a glass cylinder set in brass mountings, the screw H is preferably made to project above the top of the vessel and confined in a tubular seat covered by a small cap, as illustrated in Fig. 2. The purpose of this special construction is to bring the compressing-screw within easy reach and yet prevent all leakage of oil. In this form of oiler the main cover or brass top has to be cemented, as well as the bottom portion, to the glass cylinder in order to insure a tight joint, and were the compressing-screw placed wholly below the top, as in the

ordinary cup, it could not be handled with convenience through the small aperture commonly left for filling up this kind of lubricator with oil. Were the screw applied, on the other hand, directly from the outside, it would be subject to let the oil escape, as it becomes loose at times, owing to the continuous jar of machinery; but by using the covered tubular seat, which is provided with a flange *h'*, bearing on the edges bordering the aperture in the top, the compressing-screw may be brought up to any desirable height, so as to be close at hand, and though it may become loose the oil escaping from the bent tube on account of that will be duly collected in the space inclosed by the sides of the seat. This machine-lubricator is rendered still more oil-tight by the use of bolts or tie-rods *J J*, which are secured to the stem or boss *a* of the oil-vessel by their lower ends, and are provided with nuts at their upper ends, pressing down upon the top. The brass top and bottom parts of the cup will thus be firmly tied together over the ends of the glass tube and the cemented joints will not be loosened by the concussions they are constantly subjected to.

The form of oiler shown in Fig. 3 is better adapted to oilers for loose pulleys, and that in Fig. 4 to hub-oilers.

The oiler illustrated in Fig. 4 is somewhat different in shape from that represented in the other views; but it contains the same elements and performs the same functions. This sort of oiler is intended for use in the hubs of vehicle-wheels, and it therefore calls for a special design. I thus produce an oiling de-

vice which is made of but few parts, easily constructed, and very economical in its workings.

Having described my invention, what I claim as new, and desire to secure protection in by Letters Patent of the United States, is—

1. In an oiler, the combination of an oil-vessel provided with an apertured upper portion, a covered tubular seat passing through the aperture in the top, a bent feeding-tube within the oil-vessel, a permeable filling within the tube, and a thumb-screw working within the tubular seat and through the tube, so as to compress the filling therein, substantially as set forth.

2. In an oiler, the combination of an oil-vessel having an apertured top and provided with an interiorly upwardly-extending stem, tie-bolts passing through the top, provided upon their upper ends with nuts and having their lower ends secured to the stem, a covered tubular seat passing through the aperture of the top and provided with a lateral flange bearing on the edges bordering the said aperture, a bent tube within the oil-vessel, a permeable filling within the tube, and a thumb-screw working within the seat and through the tube, so as to compress the permeable filling, substantially as set forth.

In testimony whereof I have hereunto set my hand and affixed my seal in the presence of two witnesses.

J. T. SMITH. [L. S.]

In presence of—

R. A. CAMPBELL,
R. R. STRAIN.