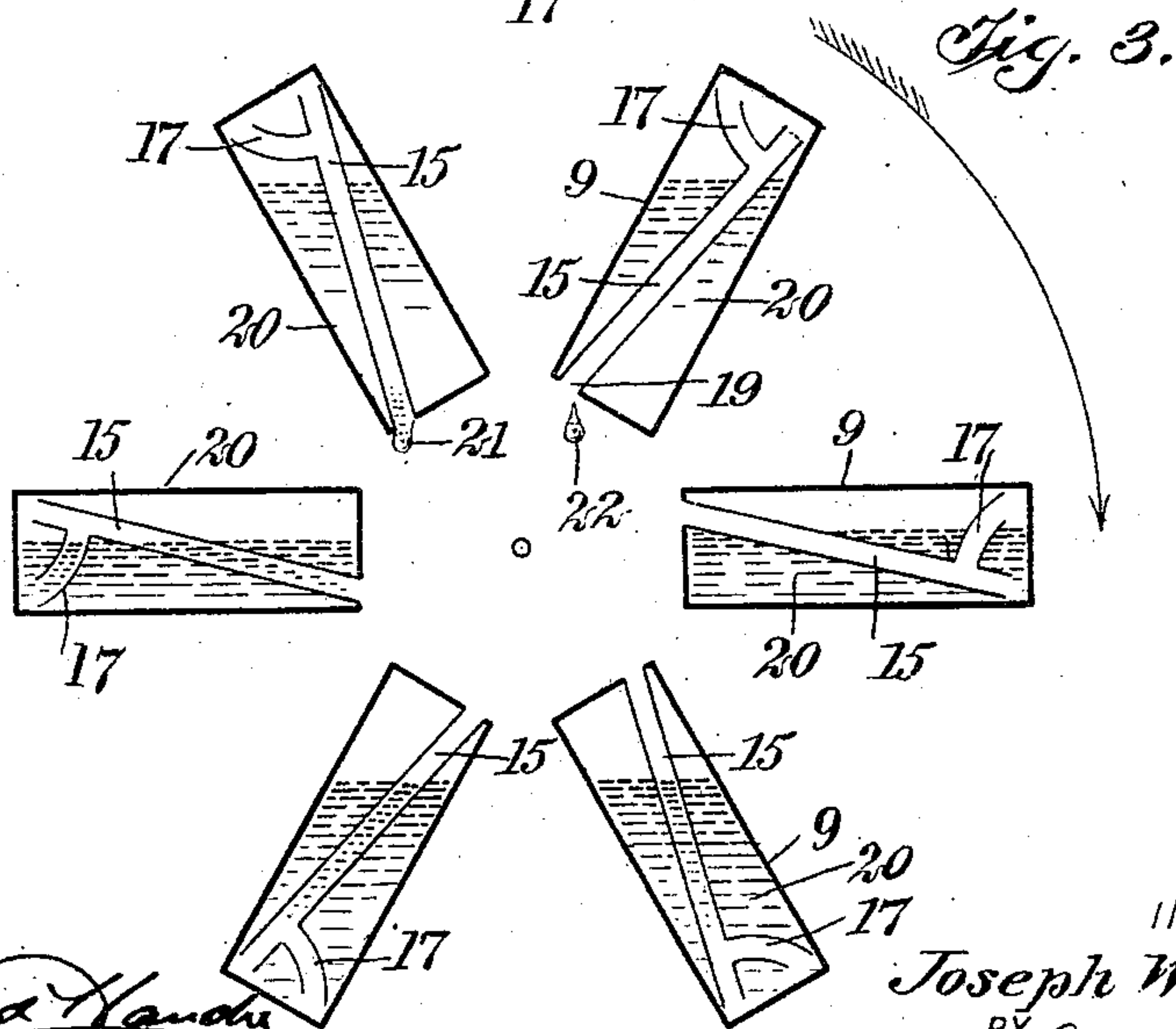
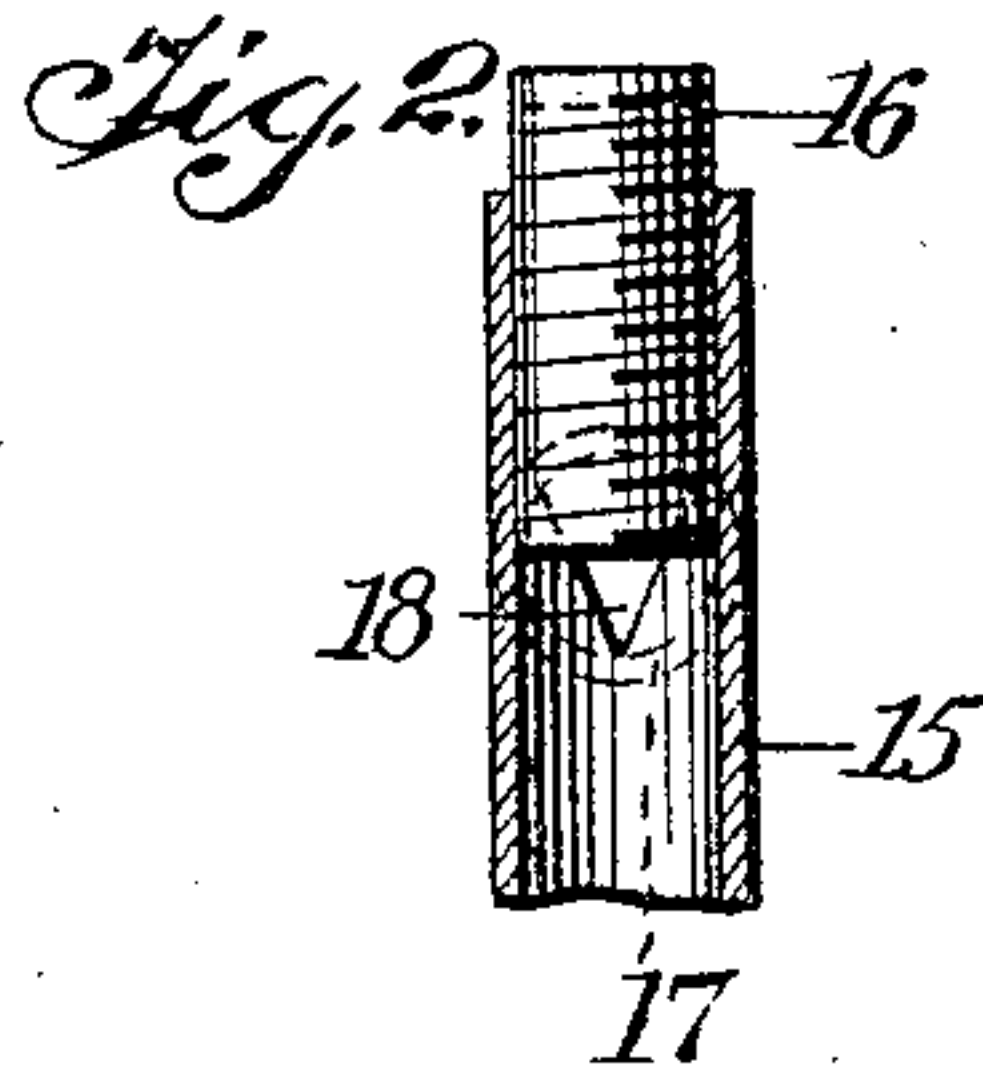
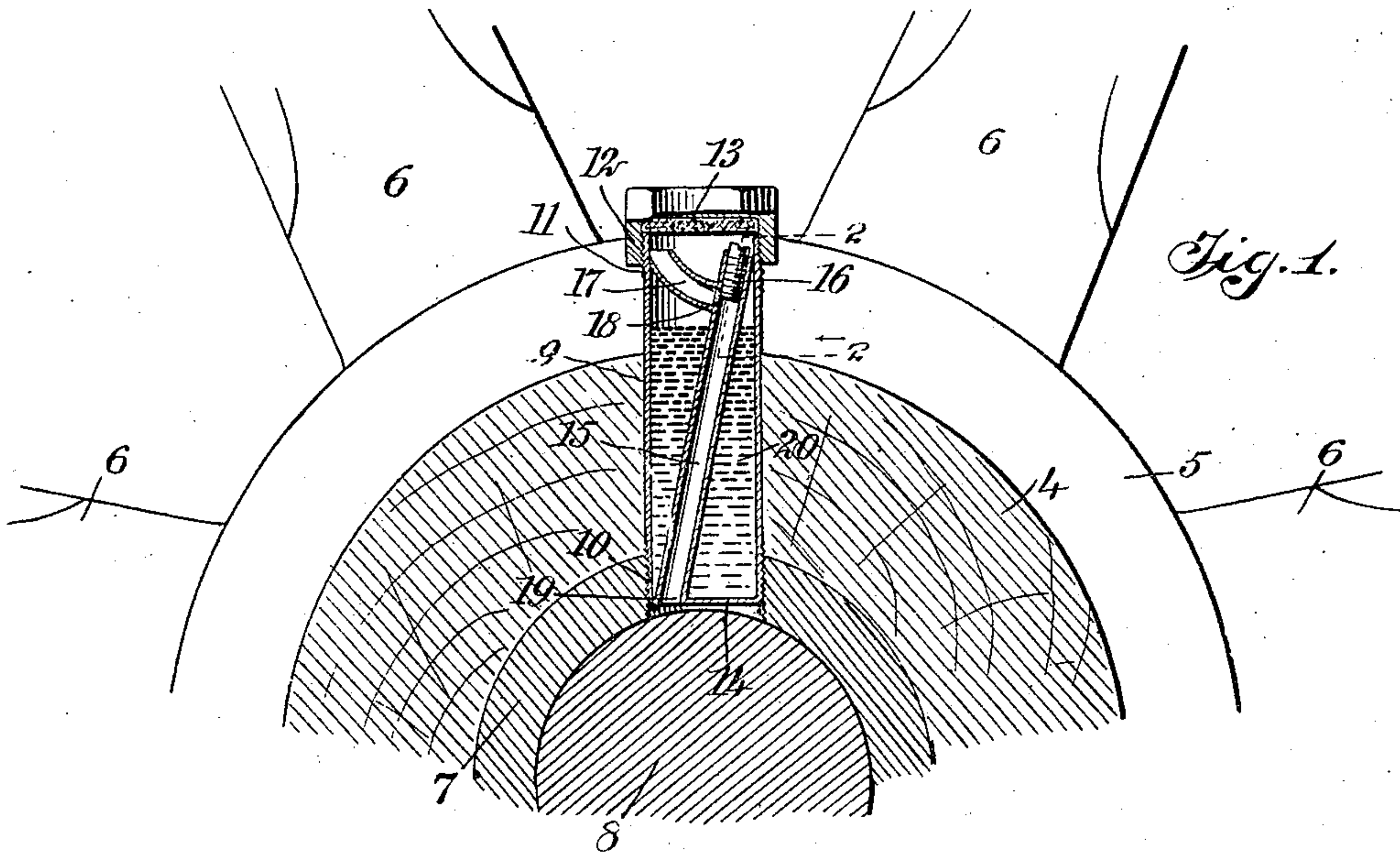


No. 868,456.

PATENTED OCT. 15, 1907.

J. W. LADD.
OILER.

APPLICATION FILED DEC. 12, 1906.



WITNESSES

L. George Hand
W. Harrison

INVENTOR

Joseph W. Ladd

BY *Munn & Co.*

ATTORNEYS

UNITED STATES PATENT OFFICE.

JOSEPH W. LADD, OF BRISTOL, NEW HAMPSHIRE.

OILER.

No. 863,456.

Specification of Letters Patent.

Patented Oct. 15, 1907.

Application filed December 12, 1906. Serial No. 347,406.

To all whom it may concern:

Be it known that I, JOSEPH W. LADD, a citizen of the United States, and a resident of Bristol, in the county of Grafton and State of New Hampshire, have invented
5 a new and Improved Oiler, of which the following is a full, clear, and exact description.

My invention relates to oilers, my more particular object being to produce a type of oiler comprising an oil receptacle capable of being inserted in a wagon-hub
10 or other revoluble member, and so constructed as to discharge oil in small quantities at a predetermined rate as the revoluble member rotates.

Among the several particular objects of my invention are the following: 1. To render adjustable the flow
15 of the oil; 2. To give the parts such conformity as to prevent the accidental release of oil when the oil receptacle happens to occupy any predetermined position; 3. To utilize the air pressure for equalizing the flow of oil; 4. To render the oiler easily removable
20 from its fastenings; 5. To draw the oil from the cup to the bearing, when placed in position. 6. To provide an oil cup so designed that it will automatically dip up the oil as it revolves and place the oil in contact with the feed tube.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts
25 in all the figures.

Figure 1 is a fragmentary vertical section through a
30 wagon-axle and hub, the latter being equipped with my improved oiler; Fig. 2 is an enlarged section showing the screw mechanism for controlling the flow of the oil; Fig. 3 is a diagram indicating the oiler as it rotates normally around the axle, and showing particularly,
35 the manner in which the oil is discharged in proper amount, and how excessive discharges are prevented.

The hub 4 is of wood or metal and may be of the usual conformity, being provided with an enlarged portion 5. The spokes are shown at 6. The hub is provided with
40 a wearing sleeve 7 which fits upon the axle 8 and forms a bearing and rotates relatively to the same. An oil cup 9 of cylindrical form is provided at one of its ends with a thread 10 and at its other end with a thread 11. A screw cap 12 is threaded internally and fitted upon
45 the threaded end 11. A pad 13 of resilient material, preferably absorbent, is fitted into the screw cap and closes the same. The oil cup 9 is provided with a disk-like bottom 14 which is air-tight. The oil tube 15 extends obliquely through the oil cup and is secured to
50 the bottom 14 in such manner as to leave the oil tube open at one end (the lower end as shown in Fig. 1), and yet to leave the oil cup 9, oil-tight at its bottom. A screw plug 16 is adjustably fitted into the opposite end of the oil tube 15 (that is the upper end as shown in
55 Fig. 1). The oil tube 15 is provided with a laterally extending portion 17 of tubular form, communication

between these parts being established by a V-shaped opening 18 as indicated in Fig. 2. Adjustment of the screw plug 16 varies the size of the opening 18. The end 19 of the oil tube 15 is immediately adjacent to the
60 wearing surface of the axle 18, which as usual, is non-revoluble.

A quantity of liquid 20 is poured into the oil cup 9 so as to fill the latter nearly full. For this purpose, the screw cap 12 and the pads 13 are first removed and af-
65 terwards replaced, thus leaving the oil in position and also leaving the oil cup air-tight. Drops of oil being discharged from the oil tube are shown at 21, 22 in Fig. 3.

The operation of my device is as follows: The oil
70 cup 9 is secured in position as indicated in Fig. 1, by screwing the threaded end 10 into the wearing sleeve 7 which is of metal. The oil cup having been filled previously, the device is now ready for use. When the wheel turns into the successive positions indicated
75 in Fig. 3 so that the wheel makes a complete revolution, one or two drops of oil 21, 22, pass out of the tube and lubricate the axle 8 and wearing sleeve 7.

It will be noted from Fig. 3 that no matter what position the oil cup 9 assumes during the rotation of the
80 wheel, the oil tube 15 can neither contain nor discharge a quantity of oil anything like sufficient to fill it; for instance, beginning at the top of the diagram in Fig. 3, and following the oil cup around into the six successive
85 positions, it will be seen that very little oil can enter the oil tube 15 and that the entrance of a small quantity, say one or two drops, is almost inevitable. When the general length of the oil cup 9 is horizontal as indicated at the right of Fig. 3, the oil 20 cannot flow freely
90 into the oil tube for the reason that the outermost end of this tube being sealed by the plug 16 the only available aperture is the upper end of the laterally extending portion 17 and the upper level of the oil does not quite reach this point. A moment afterward however,
95 (see lower right-hand corner of Fig. 3), the extended portion 17 of the oil tube dips below the upper level of the liquid and a little oil must therefore enter; since however, the air is not admitted freely into the oil cup, owing to the fact that the portion 17 immediately creates a seal, the entrance of the liquid 20 into the oil
100 tube 15 is stopped so that only a minute amount effects its entrance. When the wheel turns a little further (see lower left hand corner of Fig. 3), the seal is still maintained. When the oil reaches the position indicated at the left of the figure, the oil tube 15 becomes
105 inclined, and what little oil it contains begins to flow obliquely downward. Upon reaching the next successive position, (upper left-hand corner of Fig. 3) the oil drop 21 is deposited. Owing to the slight adhesion of the liquid within the tube, if there be two drops the
110 next one is deposited a little further along as at 22. It will thus be seen that the oil tube 15 is periodically

sealed after taking in a minute supply of oil and that this supply only is all that can be discharged upon the axle 8. It will also be noted that the air is automatically admitted into the oil cup at the same rate that
 5 the oil is removed automatically therefrom. The screw plug 16 being adjustable, and the aperture 18 (see Fig. 2) being substantially of V-shape, the rate of flow of the oil may be regulated to a nicety. No matter in what position the wheel may stop, the oil cannot be wasted.

10 Having thus described my invention I claim as new and desire to secure by Letters Patent:

1. In an oiler, the combination of a revoluble oil cup, an oil tube mounted therein, means for varying the rate of flow of oil through said oil tube, and means for causing
 15 the oil to seal said tube when the latter occupies certain predetermined positions.

2. The combination of a revoluble member, an oil cup of substantially cylindrical form connected therewith and provided with a closed end, an oil tube disposed within
 20 said oil cup and extending through said closed end, said oil tube being provided with a laterally extending tubular portion for admitting small quantities of oil, and means

controllable at will, for varying the flow of oil through said oil tube.

3. As an article of manufacture, an oil cup of substantially cylindrical form provided with a closed bottom, an
 25 oil tube mounted within said oil cup and connected with said bottom but communicating with the open air through said bottom, a laterally extending portion connected with said oil tube and having a substantially tubular form, and
 30 a screw plug for varying the flow of oil as between said laterally extended portion and said oil tube.

4. An oil cup of substantially cylindrical form, provided with a closed bottom, an oil tube mounted therein and disposed obliquely to the axis of the said tube, the end of
 35 said cylindrical oil cup being closed around the end of the said tube, a laterally extending portion connecting with the said tube and adapted to admit the oil thereto, this tube and laterally extending portion being so set in the hub
 40 that at every revolution of the hub it will dip up the oil and guide it into the feed tube.

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

JOSEPH W. LADD.

Witnesses:

WILLIAM T. BROWN,
 CHARLES E. TORREY.