

(No Model.)

3 Sheets—Sheet 1.

F. F. FISCHER.
AUTOMATIC LUBRICATOR FOR ENGINES.

No. 545,279.

Patented Aug. 27, 1895.

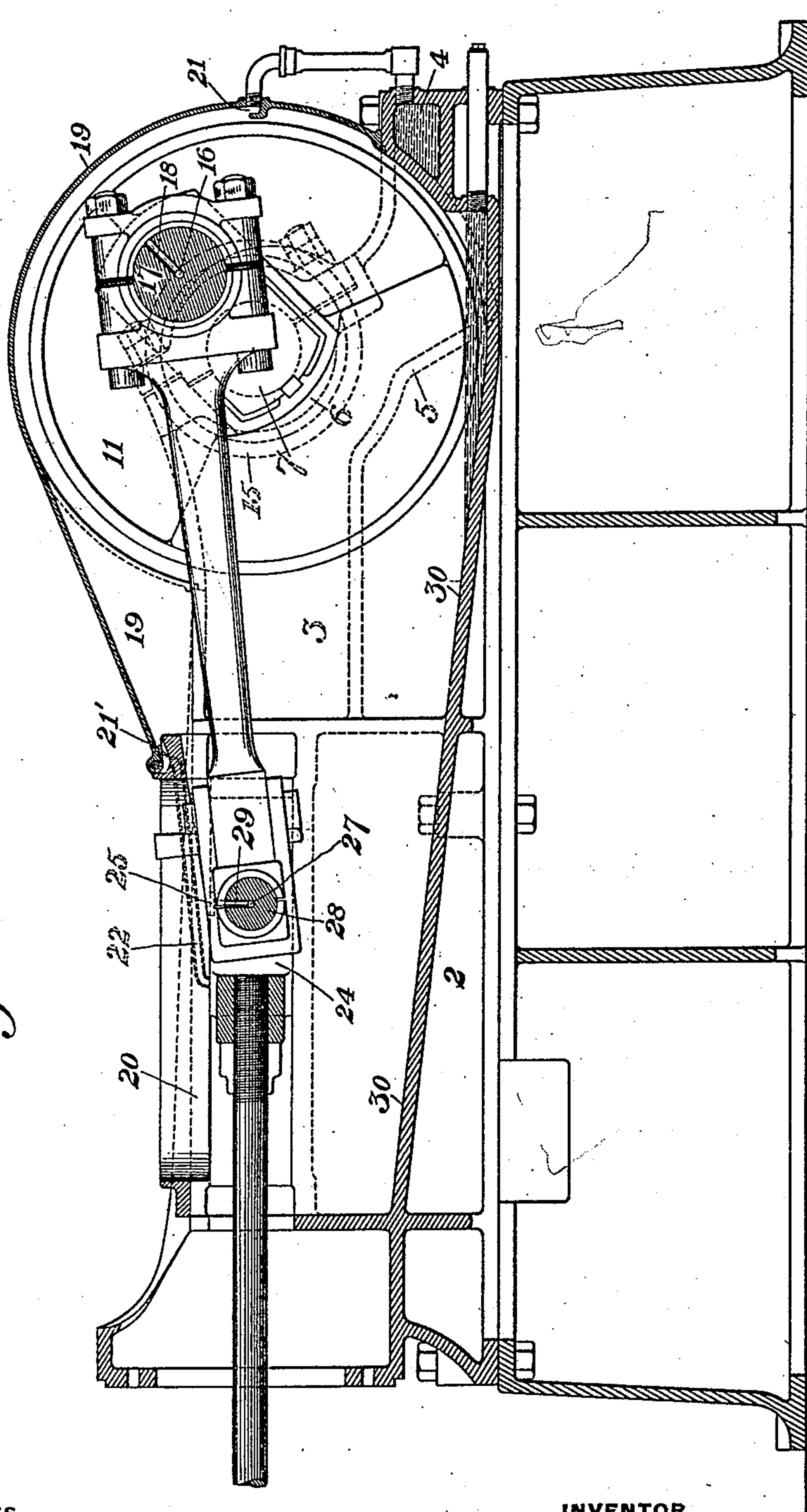


Fig. 1.

WITNESSES

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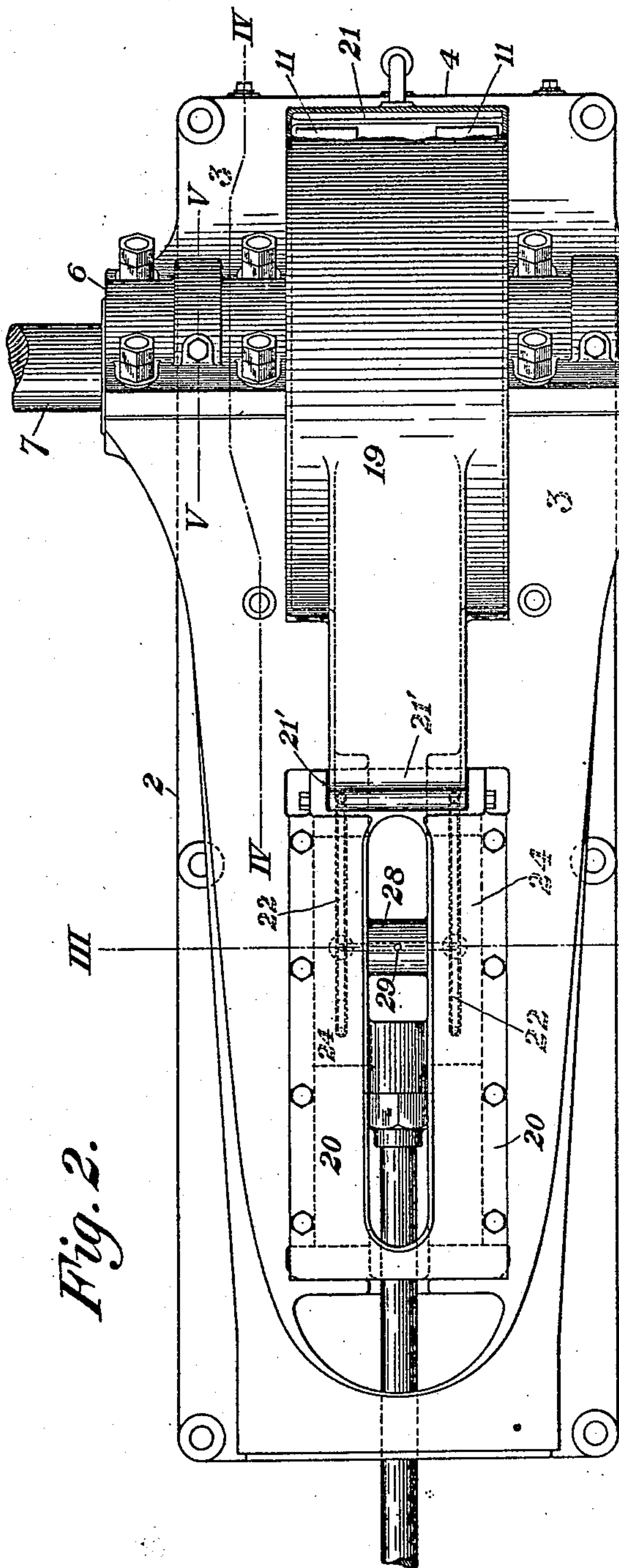


Fig. 2.

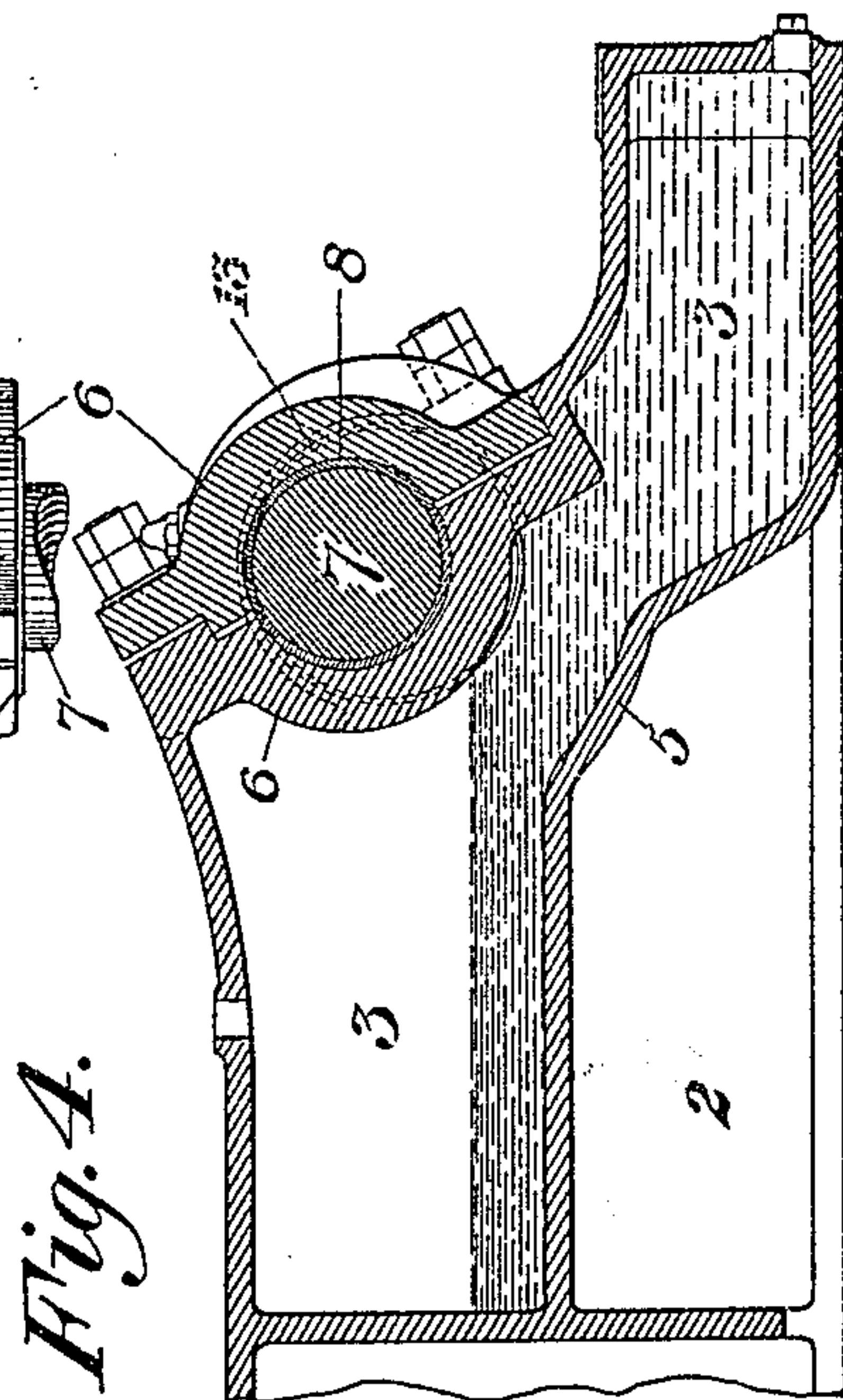


Fig. 4.

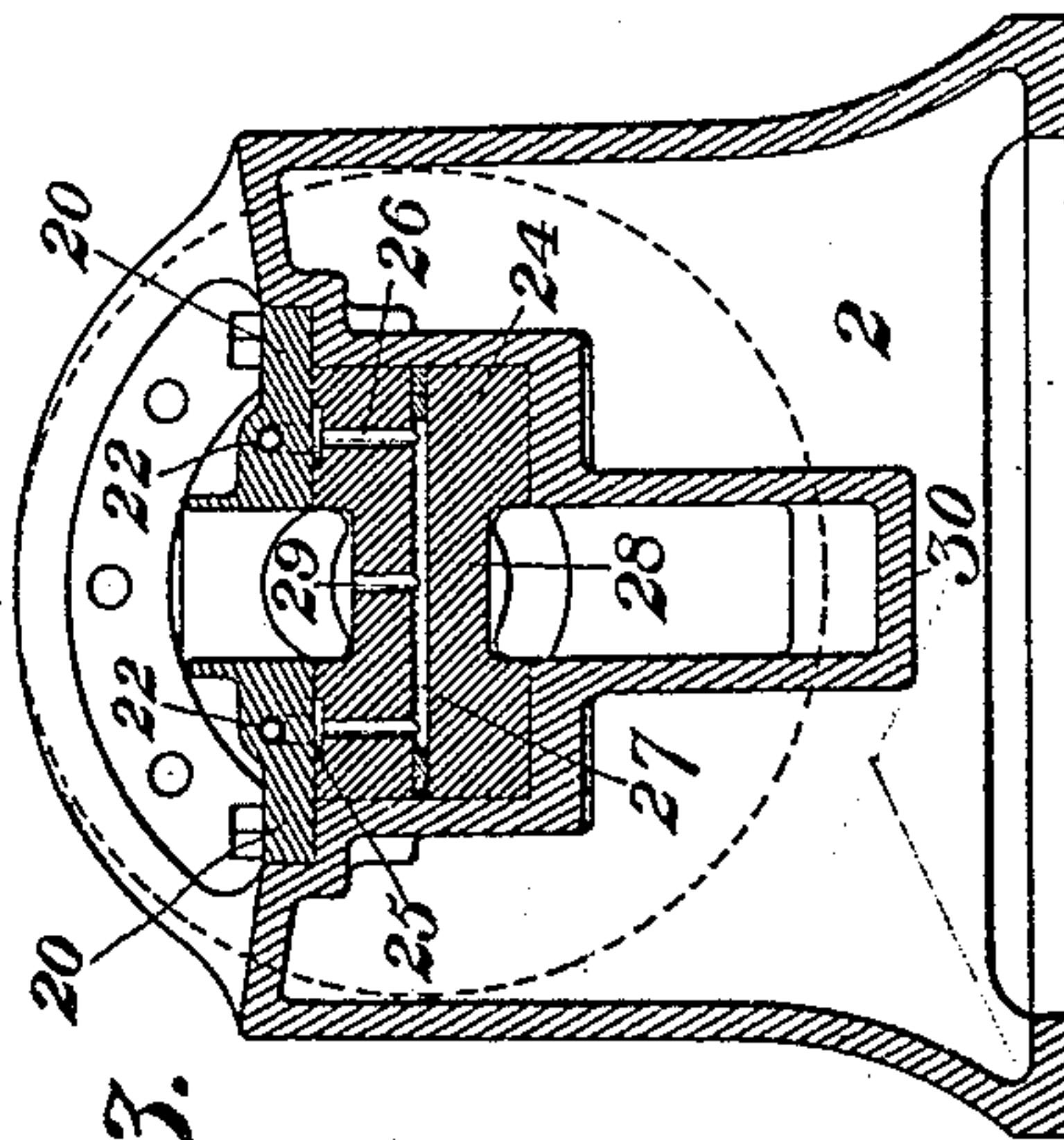


Fig. 3.

WITNESSES

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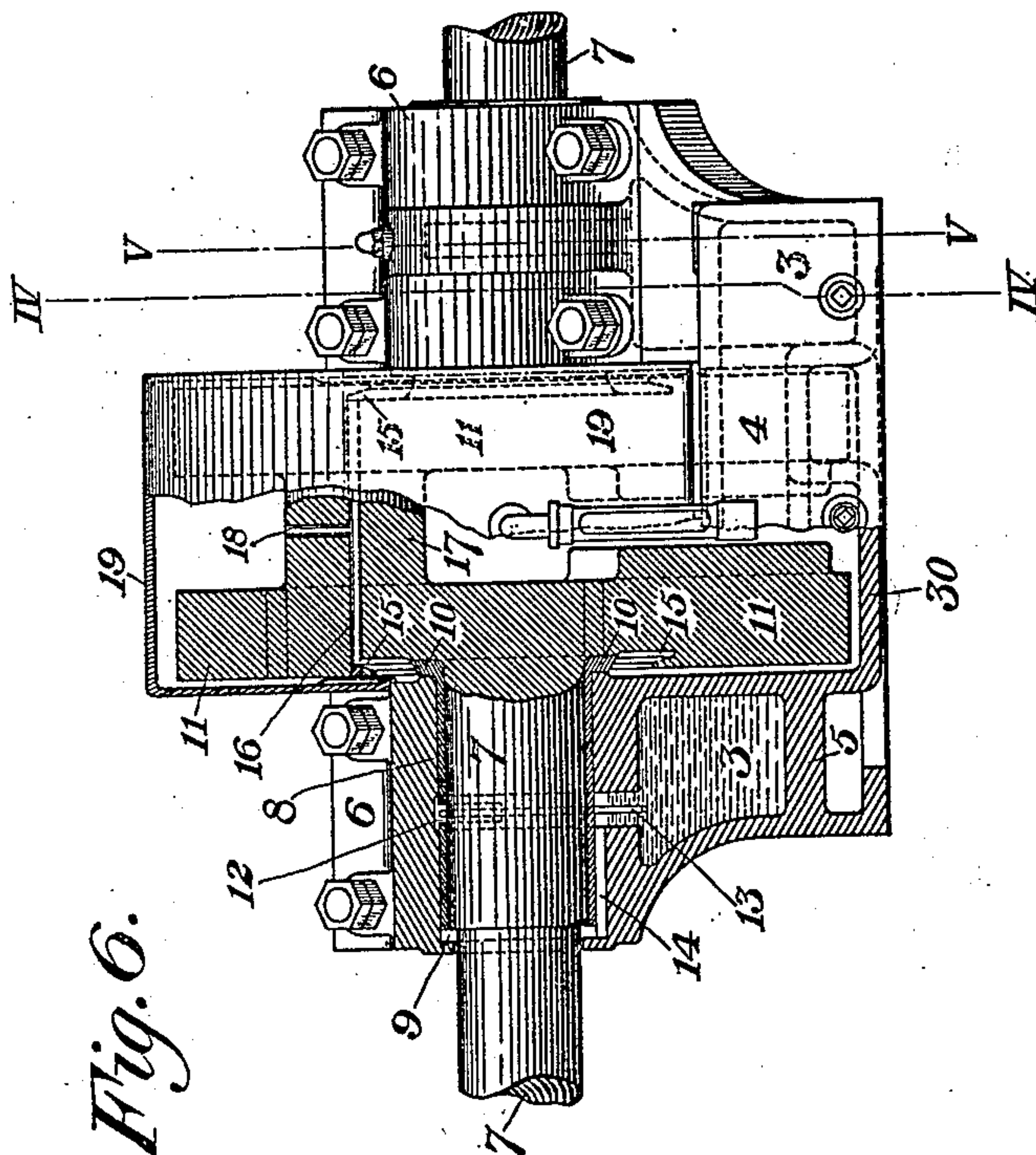


Fig. 6.

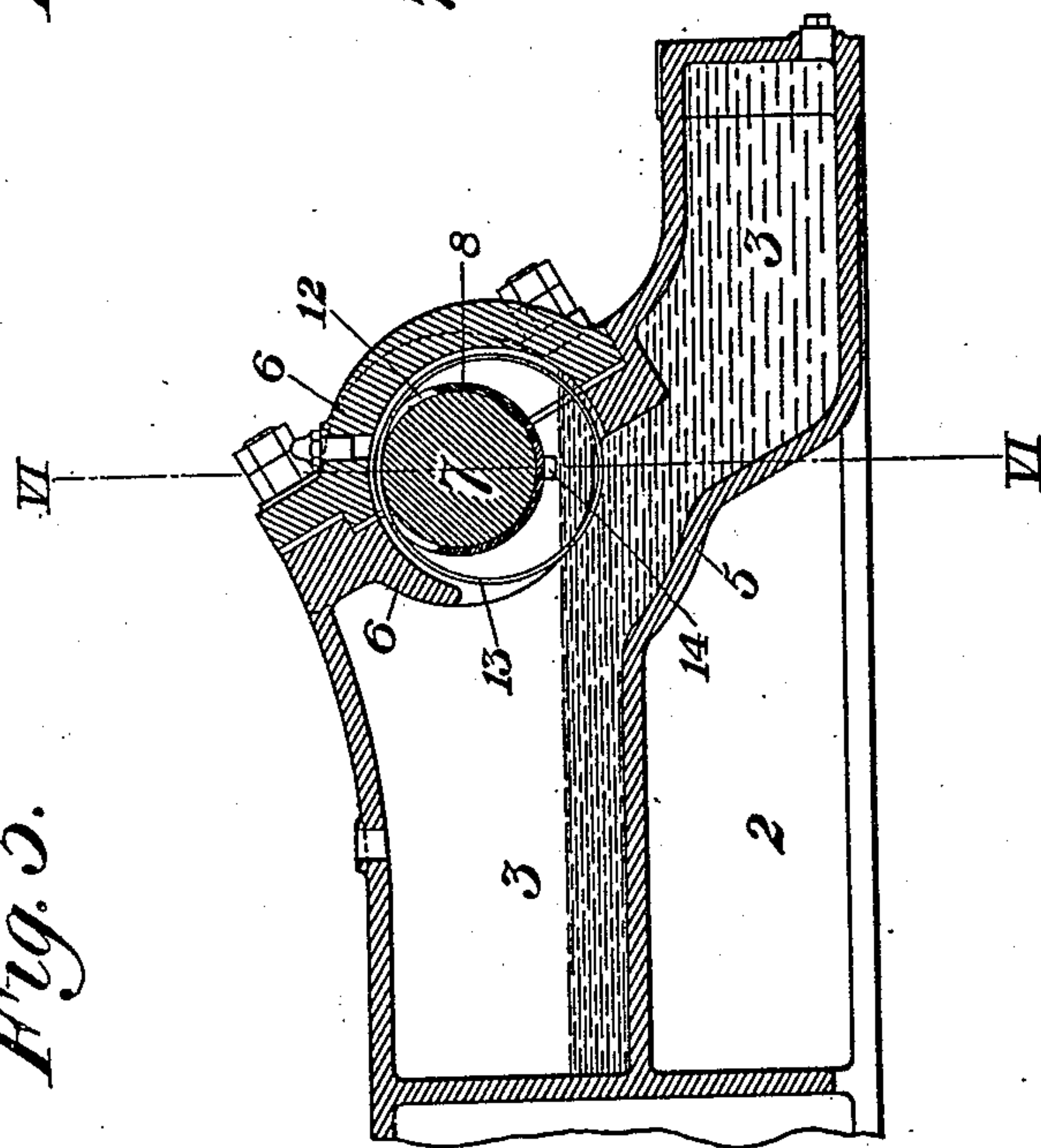


Fig. 5.

WITNESSES

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UNITED STATES PATENT OFFICE.

FRED F. FISCHER, OF PITTSBURG, PENNSYLVANIA.

AUTOMATIC LUBRICATOR FOR ENGINES.

SPECIFICATION forming part of Letters Patent No. 545,279, dated August 27, 1895.

Application filed May 3, 1895. Serial No. 548,000. (No model.)

To all whom it may concern:

Be it known that I, FRED F. FISCHER, of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Automatic Lubricators for Engines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—
10 Figure 1 is a vertical longitudinal section of an engine provided with my improved oiler. Fig. 2 is a top plan view of the same. Figs. 3, 4, and 5 are sectional views on the lines similarly numbered of Fig. 2; and Fig. 6 is
15 an end elevation, partly in section, on the line VI VI of Fig. 5.

My invention relates to the lubrication of the various bearings of an engine, and is designed to provide a simple and efficient system therefor as well as to afford means for
20 returning the lubricant after each using to a quiescent body of the liquid, in which the impurities settle before it again passes to the bearings.

25 In the drawings, in which similar numerals indicate corresponding parts, 2 represents the bed, having the hollow side portions 3 3, which serve as reservoirs for the oil and the interiors of which are connected by the rear hollow
30 casting 4. Each reservoir is of the shape shown in Fig. 5, the bottom 5 sloping downwardly toward the rear, into which rear or deeper portion the oil returns before being taken up and reused. The main bearings 6
35 are formed in the hollow side or cheek pieces 3, and the crank-shaft 7, which is supported in these bearings, is provided with tubular collars or lining-pieces 8, which at their outer ends terminate short of the bearing, leaving
40 annular spaces 9, and at their inner ends terminate in outwardly-extending annular flanges 10, fitting against the crank-disks 11.

An arc-shaped slot 12 is cut in the upper side of each collar 8 to expose the shaft, and
45 in the groove so formed lies a loose metal ring 13, which hangs by its own weight upon the shaft and being rotated thereby carries up oil from each side reservoir and leads it to the crank-shaft. The size of this ring regulates the amount of oil carried up. The oil
50 being thus deposited upon the shaft travels in both directions along it, and that portion trav-

eling outwardly is caught in the recess 9 and runs back through a groove 14 into the reservoir. The other portion of the oil, which runs
55 inwardly, is thrown outwardly by centrifugal force along the flange 10 into an undercut annular recess 15 in the face of the crank-disk. A central hole 16 passes longitudinally through the crank-pin 17 and through the re-
60 cesses 15 of each crank-disk, and into this hole leads another passage 18, extending transversely of the crank-pin. The oil thus lubricates the crank-pin and then escaping is thrown against the curved splasher or shield
65 19, which incloses these parts. Striking the upper curved portion of the splasher, the oil runs down its inner surface partly forward to the cross-head guides 20 and partly to the rear, when it is caught by a projecting lip 21,
70 from which a pipe leads to the hollow connection 4, this pipe preferably having a glass tube or plate interposed therein to provide for observing the height of oil in the reservoir and the flow through the tube. The oil passes
75 forward along the splasher into a cross-reservoir 21', and thence through downwardly-sloping passages 22 in the cross-head guides or holding-plates 20 and drops upon the upper face of the cross-head 24. The cross-head
80 is provided with two central depressions 25, from which holes 26 lead downwardly to a common transverse channel 27, extending through the cross-head pin 28 and through the cross-head and serving to direct the oil
85 to a transverse hole 29 through the cross-head pin, which leads the oil to the rod and the oil then dripping down upon the inclined face 30 of the base-plate runs back under the crank-disks, which pick it up and throw it
90 against the splasher.

It will be seen from the above description that the oil being taken up by the loose rings from the upper part of the body of oil passes
95 to and lubricates all the bearings and then returns to the lower rear portion of the quiescent body from which it was taken, and before it is again taken up the dirt and impurities have settled down to the bottom, whence they are drawn off intermittently. The oil
100 is fed automatically by the movement of the parts, and at the same time the cranks are not submerged in oil, in which case the dirt cannot settle and the oil is churned to such

an extent that it sometimes stops the movement of the parts.

Many changes may be made in the means for conducting the oil to the various parts without departure from my invention as expressed in my broader claims, since I consider myself the first to provide a quiescent body of oil in an engine from which a portion is taken and passing to a bearing is returned thereto and given time to settle before reuse.

I claim—

1. An engine having a reservoir for a quiescent body of lubricant said reservoir being cut off from the crank pit, means for conducting a portion of the lubricant from the reservoir to a bearing, and channels arranged to lead the used oil back to the quiescent reservoir; substantially as described.

2. An engine having its frame hollow, forming a reservoir for a lubricant said reservoir being cut off from the crank pit, a feeder leading the lubricant from the reservoir to a bearing, and a passage from the bearing back to the reservoir; substantially as described.

3. An engine having its frame hollow, forming a reservoir for a lubricant said reservoir being separate from the crank pit, a feeder leading the lubricant from the reservoir to a shaft bearing, a passage from the bearing back to the reservoir, a crank disk having a groove to receive the oil from the shaft, and a passage leading from the groove to the crank-pin; substantially as described.

4. An engine having a curved splasher, and guides having holes leading from the splasher to the cross-head; substantially as described.

5. An engine having a hollow frame forming a reservoir separated from the crank pit,

a curved splasher, a lip on its inner face to catch the oil, and a pipe leading therefrom to the reservoir; substantially as described.

6. An engine having a bed provided with a cavity having a downwardly-sloping bottom, forming a reservoir cut off from the crank pit a ring arranged to feed oil from the upper part of the reservoir formed by the cavity, and channels arranged to lead the oil back to the lower portion of the reservoir; substantially as described.

7. An engine having a curved splasher and a cross-head guide having an oil hole or gutter beneath the lower end of the splasher, said guide having a conduit leading from the gutter to the cross-head; substantially as described.

8. An engine having a curved splasher and oil conduits leading from beneath the end of the splasher through the cross-head guides to the cross-head, central depressions in the upper face of the cross-head, and holes leading therefrom through the cross-head to the cross-head pin; substantially as described.

9. An engine having a splasher, a cross-head guide having a gutter beneath the end of the splasher, and arranged to receive oil therefrom, a channel leading from the gutter through the guide and a hole in the cross-head leading to the cross-head pin; substantially as described.

In testimony whereof I have hereunto set my hand.

FRED F. FISCHER.

Witnesses:

H. M. CORWIN,
C. BYRNES.