

(No Model.)

Fig. 1

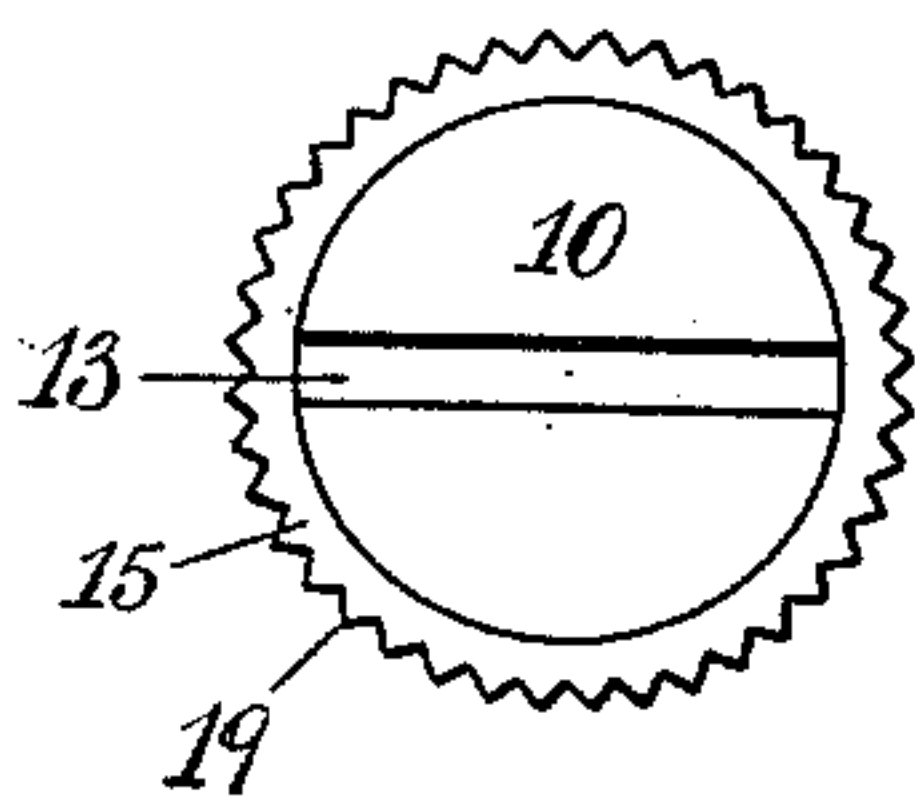


Fig. 2

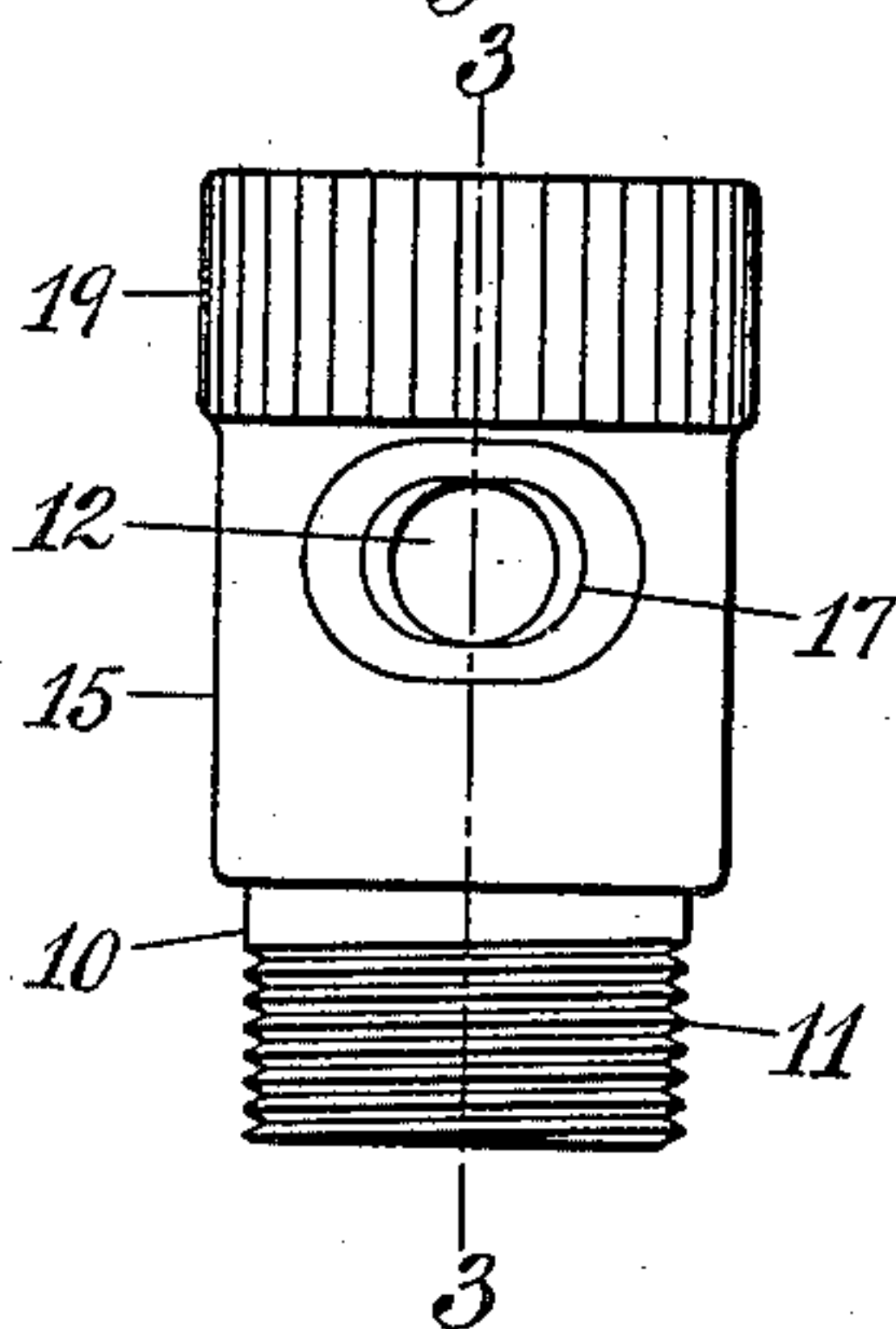


Fig. 6

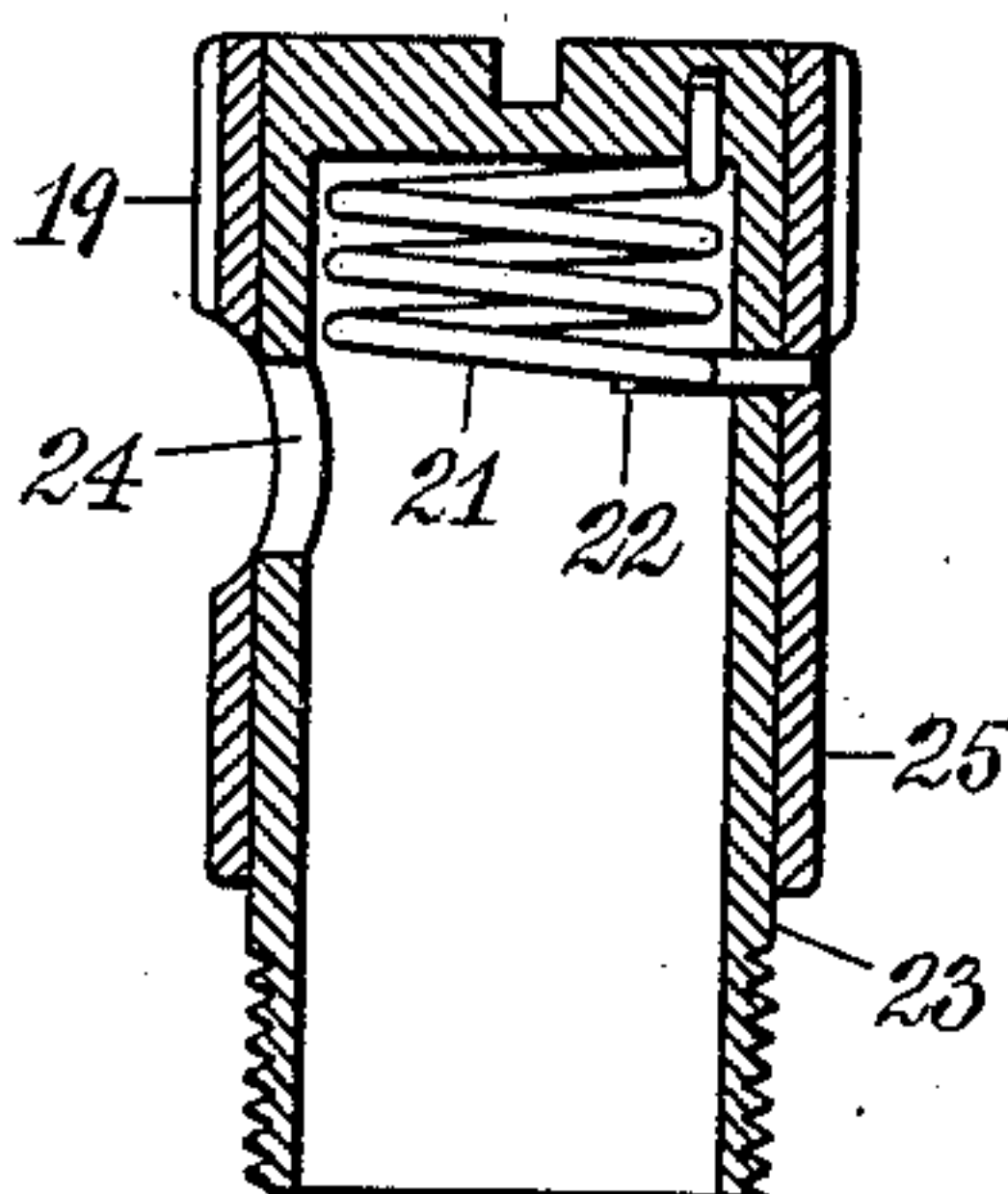


Fig. 9

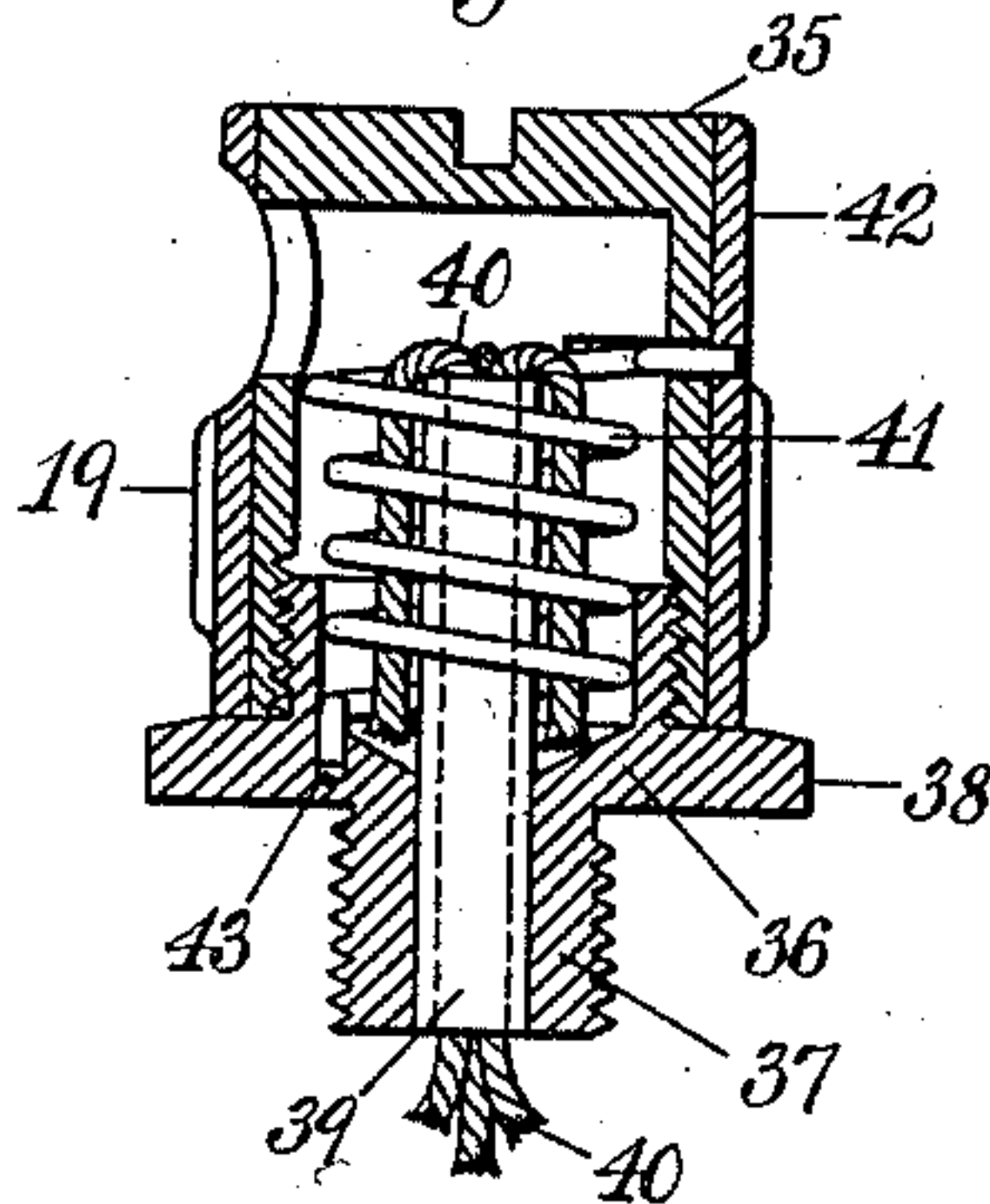


Fig. 3

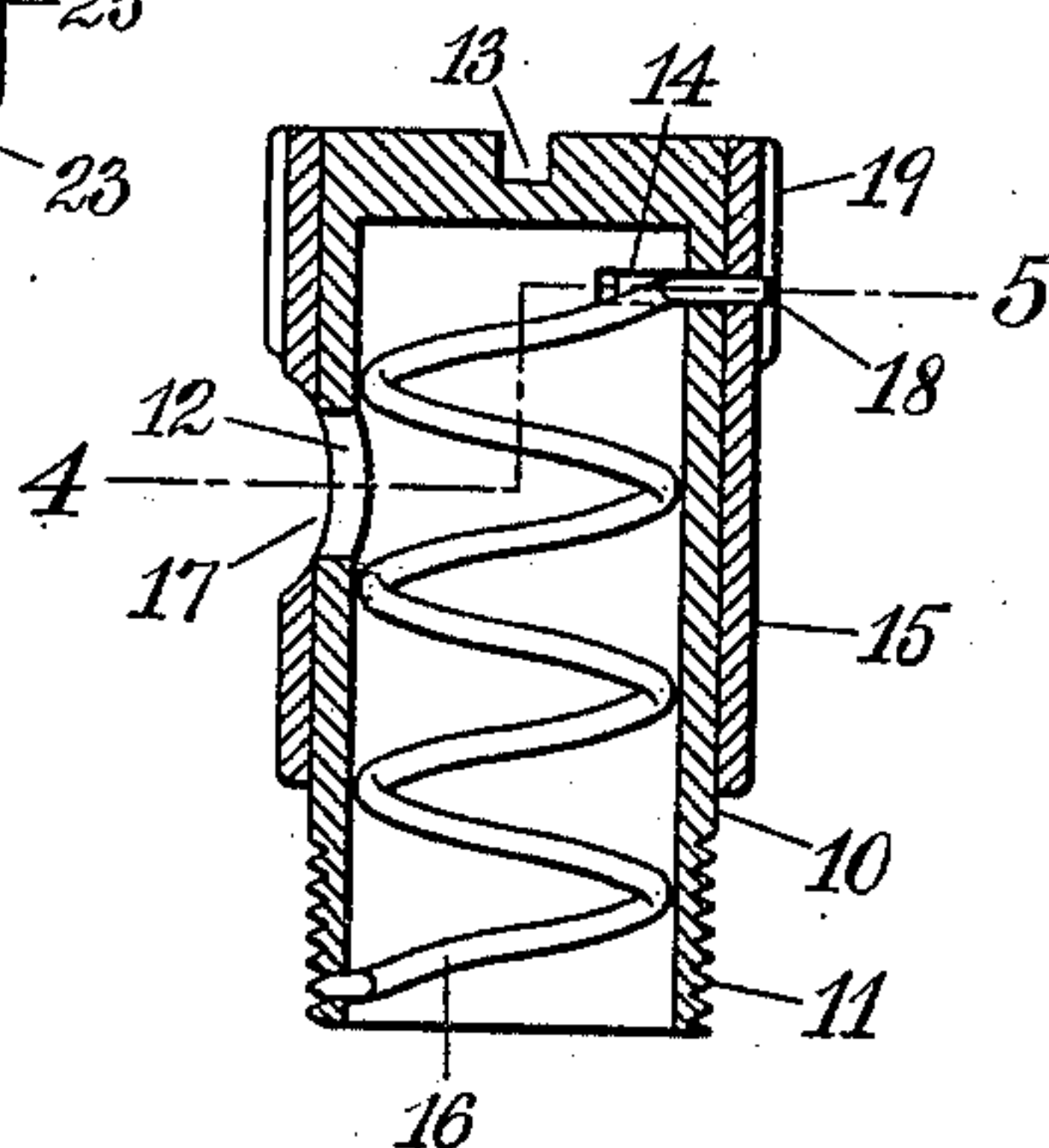


Fig. 7

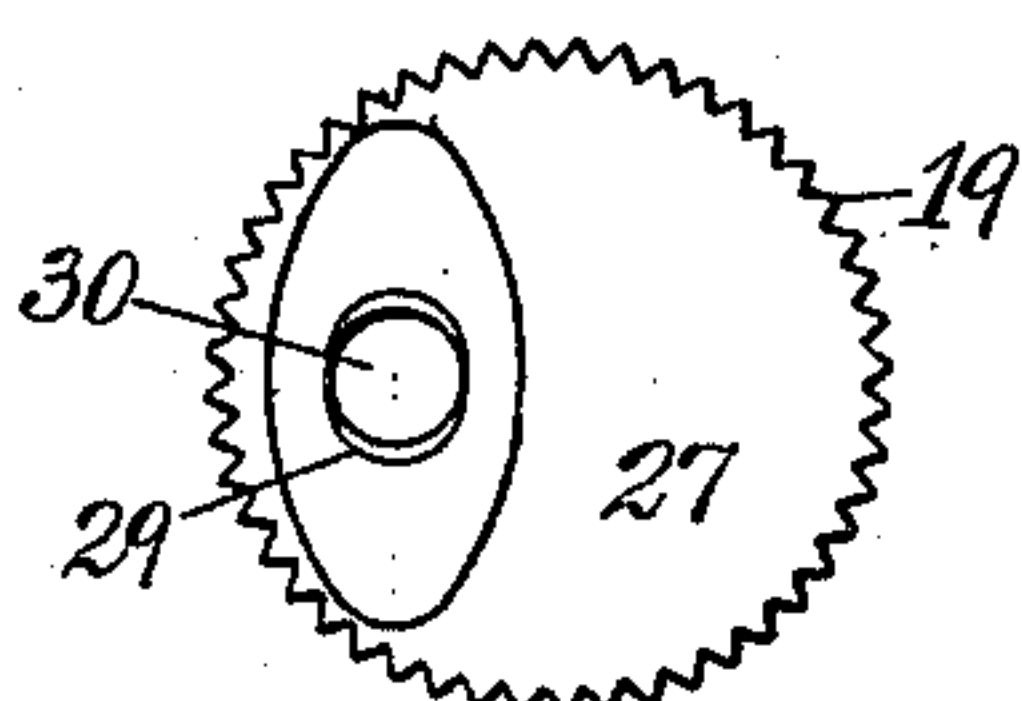


Fig. 4

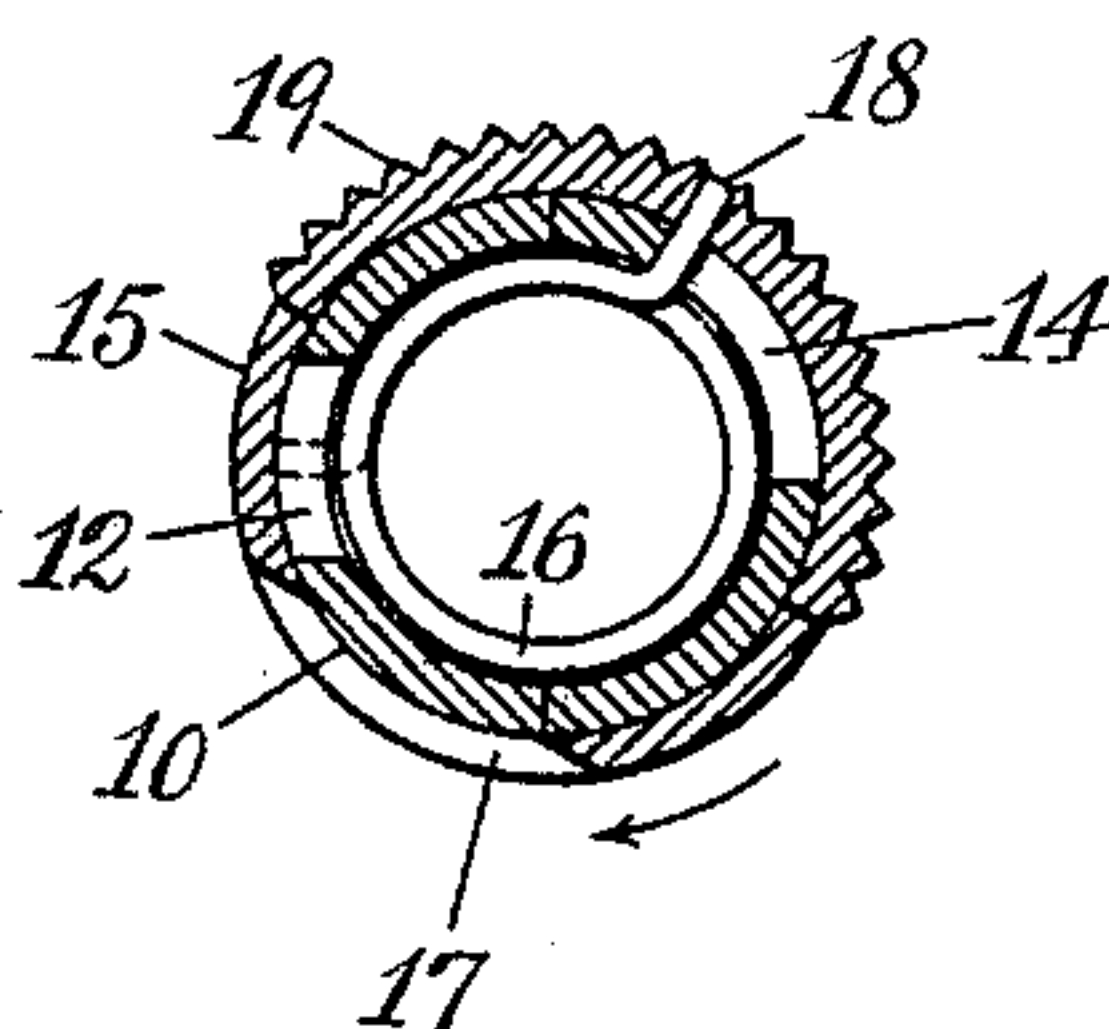


Fig. 5

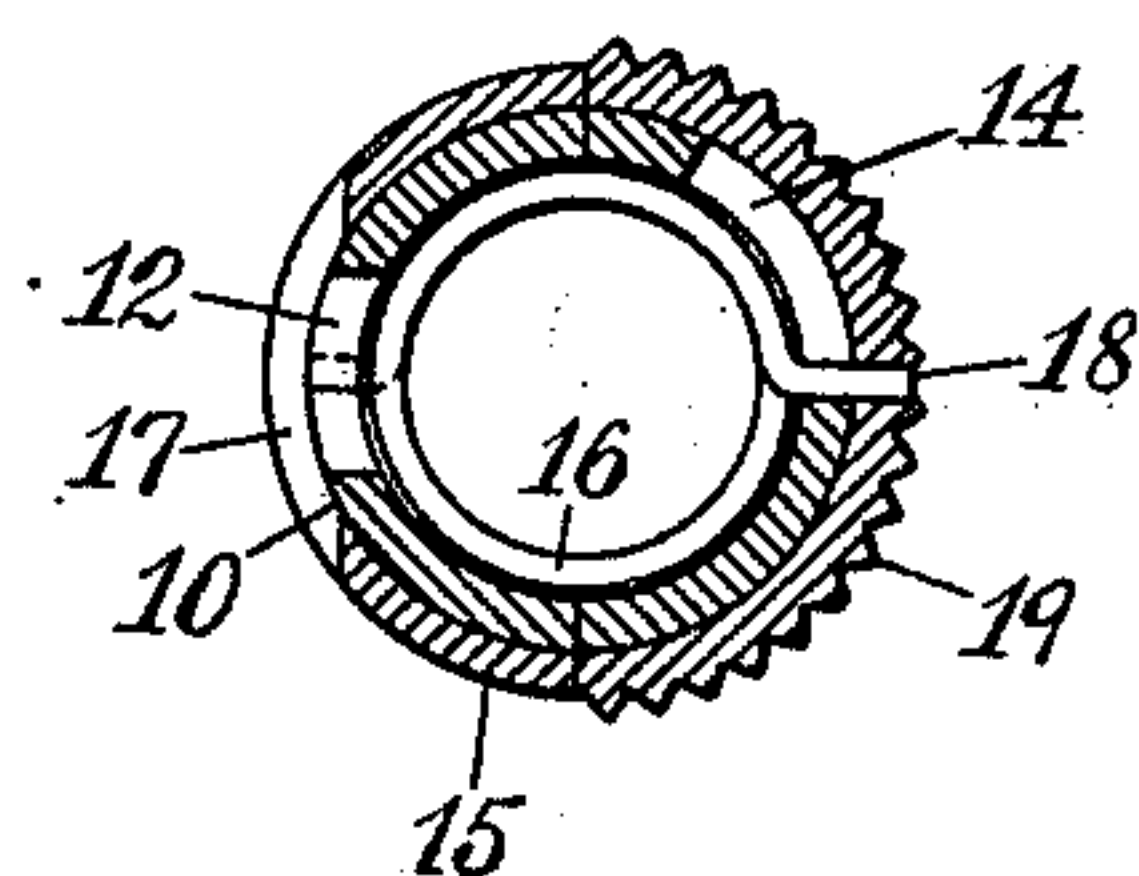
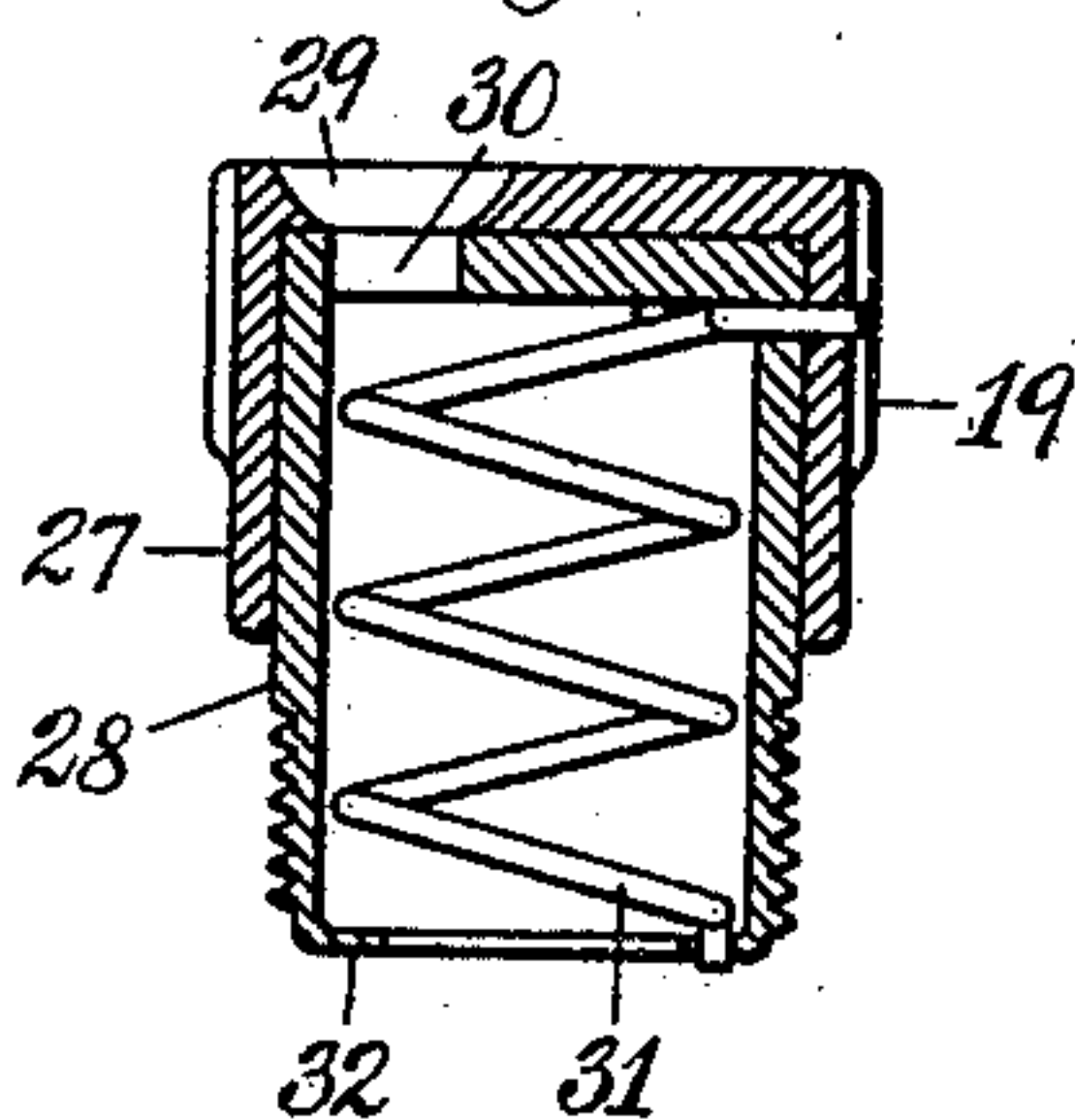


Fig. 8



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## OIL-CUP.

SPECIFICATION forming part of Letters Patent No. 697,109, dated April 8, 1902.

Application filed April 25, 1900. Serial No. 14,210. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM E. S. STRONG, a citizen of the United States of America, and a resident of Hartford, in the county of Hartford, State of Connecticut, have invented certain new and useful Improvements in Oil-Cups, of which the following is a specification.

This invention relates to improved devices for supplying oil or other lubricant to bearings or journals of machinery of various kinds, the object being to provide a simple and compact oil-cup so constructed that it may be readily opened for the introduction of oil and which when closed will exclude dust, grit, and other foreign substances liable to accumulate on and around the lubricated portions of machinery.

Figure 1 of the drawings is a plan view, and Fig. 2 is a side elevation, showing the external appearance of this improved cup. Fig. 3 is a side view in section, taken substantially along the line 3 3 of Fig. 2. Both of the latter figures show the cup in its opened position. Figs. 4 and 5 are plan views in section, taken along the line 4 5 of Fig. 3, showing the cup in its closed and open positions, respectively. Fig. 6 is a side view in section, taken through its longitudinal center, showing a modified arrangement of the closing-spring. Fig. 7 is a plan view, and Fig. 8 a sectional side view, of another modified form of cup in which the oil-inlet is on the top of the cup, the cover being in the form of a cap covering the end of the thimble. Fig. 8 also shows a modified way of attaching the lower end of the spring to the thimble. Fig. 9 is a side view in section, taken along the plane of its longitudinal center, of a modified construction which is preferred for the larger sizes. This cup is also shown to be provided with a feed-tube and wick to adapt it to serve as a slow-feeding reservoir-cup.

The thimble 10 is preferably of cylindrical form, closed at its upper and open at its lower end, which is also adapted to be attached to the bearing to be lubricated either by driving it into a plain or a tapped hole therein. In the latter case the thimble should be provided with a screw-thread 11, as herein shown, and in that case the thimble should

also be provided with a slot 13 or otherwise adapted to receive a screw-driver, wrench, or spanner. The thimble is provided at or near its upper end with an inlet 12 for receiving oil from the spout or nose of an oil-can.

As a means for closing the oil-inlet the cover 15, which is preferably a cylindrical shell, is fitted to oscillate freely upon the outside of the thimble. This cover is also provided with an oil-inlet 17, located in the plane of the thimble-inlet 12, so as to enable it to be moved into and out of coincidence therewith by the oscillation of the cover. The latter is yieldingly or resiliently held with its inlet out of coincidence with this inlet 12, so as to close the latter by the action of the spring 16, the body of which is located within the thimble and has one end attached thereto. The opposite end of the spring extends through a slot 14 in the walls of the thimble and enters a hole or recess 18 in the cover.

The slot 14 is elongated laterally, so as to allow of the requisite oscillatory movement of the cover upon the thimble to open and close the oil-inlet 12, this amount of movement being shown by comparison of Figs. 4 and 5. The ends of the slot serve also, in connection with the end of the spring 16, as stops to limit the oscillatory movement. The sides of the slot 14 also prevent longitudinal movement or displacement of the cover with relation to the thimble.

The oil-cup shown in Fig. 6 is modified chiefly in respect of the location and arrangement of the spring 21, the fixed end of which is seated in a hole or recess 20 in the interior of the top of the thimble 23. This spring is shown to be located entirely above the oil-inlet 24, and therefore may be wound more closely than the spring 16 of the preceding figures, since the latter must be sufficiently open, at least at the oil-inlet, to allow of the entrance of the spout of an oil-can. The opposite end of the spring extends through a slot 22 in the side wall of the thimble and engages with the cover 25, as in the preceding figures above described.

The oil-cup shown in Figs. 7 and 8 is modified chiefly in respect of the cover 27, which



is in the form of a cap covering the top as well as the sides of the thimble 28. The oil-inlets 29 and 30 of the cover and the thimble, respectively, are in their upper or end walls instead of being in the side walls, as in the preceding figures. The spring 31 is so arranged between the cover and thimble as to oscillate the former, and thus move their respective inlets out of coincidence. The oil-inlet 27 of the cover is preferably elongated, as best shown in Fig. 7, so as to enable it to be wiped out readily and also enabling it to be milled by a milling-cutter of suitable contour. The upper end of the spring 31 extends through a slot in the side wall of the thimble and engages with the cover 27, as in the preceding figures. The lower end of the spring is, however, here shown to be attached to the thimble in a different way—namely, by spinning or otherwise turning the lower end of the shell of the thimble inwardly, as at 32, and then cutting a hole or a recess in the inwardly-turned portion to receive the lower end of the spring.

Fig. 9 shows a modified form of this cup, whereby it is adapted to serve as a slow-feeding reservoir for the oil. This form is also preferable for the larger sizes of cups. The thimble 35 is screwed or otherwise firmly attached to a reducing stud or bushing 36. The lower portion 37 of this stud may be of any convenient diameter to suit the bearing and may, as stated in connection with the thimble 10, be threaded, as herein shown, or it may be made plain and driven into a plain hole in the bearing. If threaded, it should be provided with some means, as a square or hexagon flange 38, to enable a wrench to be used thereon. To enable this form of cup to serve as a slow-feeding reservoir for the oil, it is provided with a feed-tube 39, the lower end of which is fastened into the bushing 36. The feed-tube should be provided with wicking 40 or with any suitable material for feeding the oil by capillary attraction in the usual way. The upper end of the spring 41 extends through the side wall of the thimble and engages with the cover 42, as in the preceding figures, the lower end being preferably turned downwardly and seated in a recess 43 in bushing 36. Where, as in this case, the general diameter of the spring is less than that of the interior of the thimble 35, one or more of the upper coils should be expanded, as here shown, so as to bear against the side of the thimble opposite to its point of engagement with the cover, so as to prevent the end of the spring becoming accidentally retracted therefrom.

The spring 16 of the cup (shown in Figs. 1 to 5, inclusive,) should be wound sufficiently open, at least at that portion thereof that comes opposite to the oil-inlet 12, to enable

the spout of an oil-can to pass freely between the coils; but in the modified forms of cup shown in the subsequent figures this is not necessary, since the springs of these modified forms are located either wholly above or wholly below their respective oil-inlets.

These oil-cups may be screwed in by a suitable spanner-wrench inserted in the oil-inlets of the respective thimbles after turning their covers to their open positions. (Shown in most of the figures.)

Some portion of the exterior of the covers of these cups should be knurled or roughened, as at 19, so as to enable them to be grasped by the finger and thumb of the operator and turned to their open position against the torsional resistance of their respective springs. The knurled portion may be above the oil-inlet, as shown in Figs. 2 and 6, or it may be below that inlet, as shown in Figs. 8 and 9.

I claim as my invention—

1. In an oil-cup, the combination of a thimble, provided with an oil-inlet and with a slot, a cover having a similar inlet, and mounted upon the thimble to oscillate far enough to bring the oil-inlets into and out of coincidence, and a spring located within the thimble and extending through the wall thereof to resiliently hold the cover with its inlet out of coincidence with that of the thimble.

2. In an oil-cup, the combination of a thimble, provided with an oil-inlet and with a slot, a cover having a similar inlet, and mounted upon the thimble to oscillate far enough to bring the oil-inlets into and out of coincidence, and a spring extending through the slot of the thimble to resiliently hold the cover with its inlet out of coincidence with that of the thimble, the slot and spring serving to prevent longitudinal movement of the cover and to limit the oscillatory movement thereof.

3. In an oil-cup, the combination of a cylindrical thimble provided with an oil-inlet and with a slot, a cylindrical cover having a similar inlet and mounted upon the thimble to oscillate far enough to bring its inlet into and out of coincidence with that of the thimble, and a torsional spring attached to and located within the thimble, and extending through the slot thereof to resiliently hold the cover at one end of its oscillatory movement with its oil-inlet out of coincidence with that of the thimble, the slot and spring serving to prevent longitudinal movement of the cover, and to limit the oscillatory movement thereof.

Signed at Hartford, Connecticut, this 14th day of April, 1900.

W. E. S. STRONG.

Witnesses:

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BERTHA M. PINNEY.