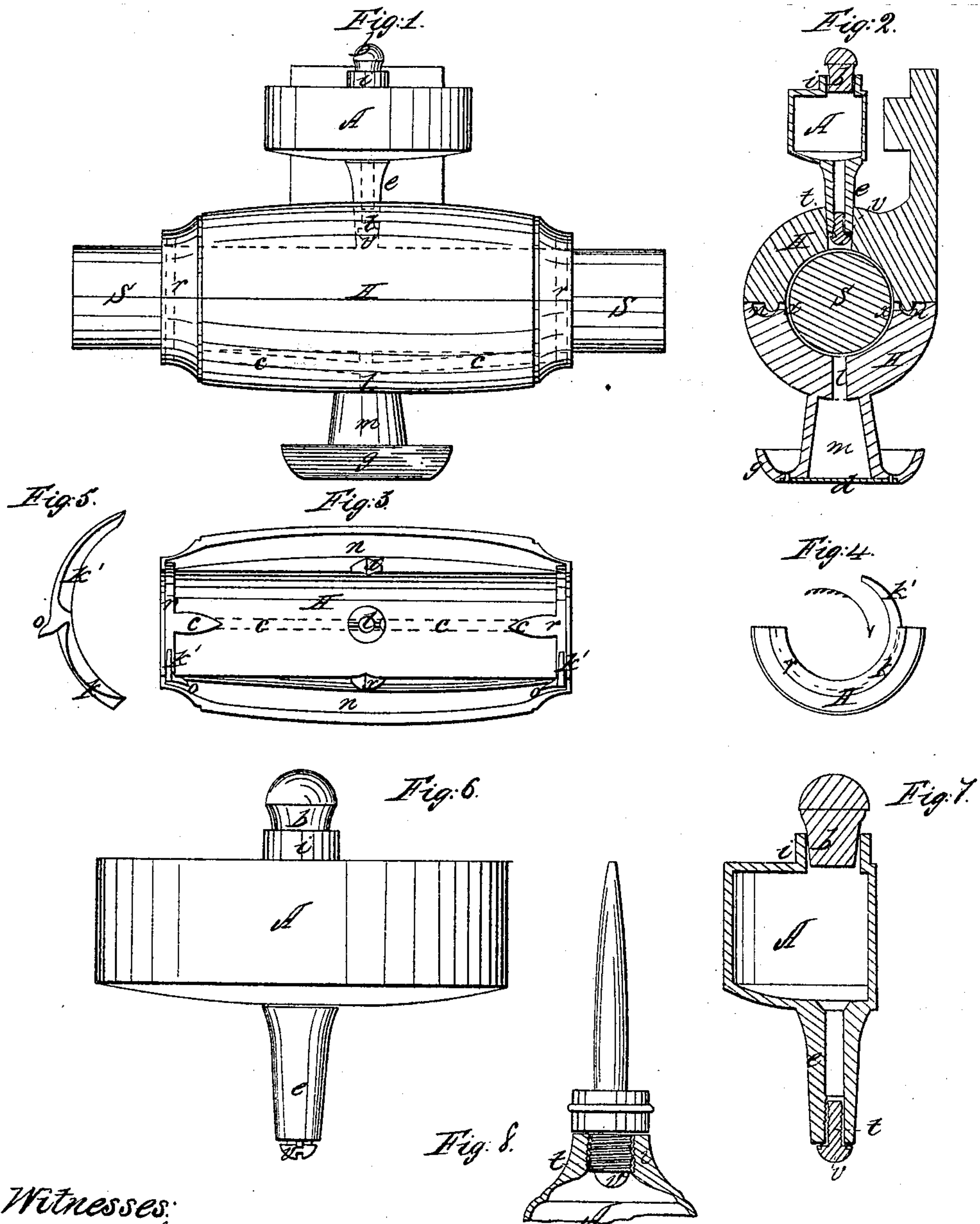


C. Andrew,
Journal Lubricator.
N^o 50,786. Patented Nov. 7, 1865.



Witnesses:

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CHARLES ANDREW, OF PROVIDENCE, RHODE ISLAND.

IMPROVED MODE OF LUBRICATING JOURNALS.

Specification forming part of Letters Patent No. 50,786, dated November 7, 1865.

To all whom it may concern:

Be it known that I, CHARLES ANDREW, of Providence, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in the Construction and Mode of Lubricating the Bearings of Shafts, &c.; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a front elevation of my improved bearing and the improved devices for oiling or lubricating the same. Fig. 2 is a vertical section of the same. Fig. 3 is a plan of the lower part of the bearing or box, showing the internal construction of the same. Fig. 4 is an end view of the same. Fig. 5 is a view of my improved device or "conductor" (so called) for conducting the oil from the ends of the bearing toward the middle thereof. Fig. 6 is a view of the reservoir for containing the lubricating liquid. Fig. 7 is a vertical section of the same. Fig. 8 is an elevation and section of a hand-oiler to which my improvement is applied.

Similar letters of reference indicate corresponding parts in all the figures.

My invention consists, first, in combining with a suitable reservoir for containing the lubricating liquid an adjustable screw-plug for regulating the flow of the same to the bearing; second, in constructing the box or bearing with a closed chamber or receptacle beneath it and suitable ducts or passages for conducting the surplus of the lubricating liquid from the bearing into the same; third, in the use, in combination with a bearing so constructed, of certain peculiar devices which I term "lickers" or "conductors," which are arranged in each end of the bearing in such a manner as to trail the surplus of the lubricating liquid from the upper surface of the shaft toward the middle of the bearing, and thereby prevent it from flowing out at the ends thereof.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same.

In the drawings, A is the reservoir, which is a hollow metallic vessel with a nozzle, *i*, at the top, whereby it is filled, and this is secured with a plug or stopper, *b*. There is also pro-

jecting from the bottom of this reservoir a neck, *e*, which is designed to be inserted in top of the box or bearing H in the manner shown in Figs. 1 and 2. This reservoir as thus far described does not differ in any essential particular from the ordinary oil-cup in general use for lubricating bearings. There is, however, in this case a screw-plug, *t*, screwed into the orifice or passage through the neck *e*, and said plug is formed with two longitudinal grooves on opposite sides of its body, and there are formed also two corresponding grooves in the inside of the neck and besides this there is formed a shoulder on the under side of the screw-head *v*, which serves as a cap to cover and shut the orifice completely, and the parts being thus constructed it will be seen that when the two grooves in the plug and its orifice are together they form two passages for the oil to escape into the bearing, and the quantity which shall thus escape may be regulated either by turning the plug so that the grooves in the two parts will be only partially open or by securing the shoulder of the screw-head more or less closely to the end of the neck, or the flow of oil may be completely cut off if it is desired to do so in case the running of the shaft should be suspended for a time.

The improved adjustable screw-plug, as described, is also applicable to lubricating reservoirs in other forms—as, for instance, the hand-oiler, or, as it is generally termed, the "oil-dropper" for delivering a drip or small quantity of oil in lubricating machinery, said plug being applied to the interior of the delivering-neck *e*, as shown in Fig. 8, and serving in the same manner to graduate the flow of oil therefrom, for which purpose it is both useful and in many cases positively essential, and the use of the said adjustable screw-plug, in combination with such hand oiler or dropper, is therefore herein claimed.

H is a cast-iron bearing, as generally formed in hangers for shafting called "line-shafting," the same being formed in two parts, as shown in Figs. 1 and 2. S represents the shaft as it rests in said bearing. Beneath this bearing is formed a chamber, *m*, which may be cast in the form shown, and closed from beneath by a metal plate, *d*, riveted thereon, as shown. From this chamber there is a duct or opening, *l*, extending up to the under side of the shaft,

and from which extend two branch ducts, *c c*, to near the ends of the bearing, when are formed two annular grooves, *r r*, completely around the inside of the bearing. There is also formed in the face *D* of the lower half of the bearing a trough, *n*, on each side thereof extending from end to end, when they grow shallow and terminate, and in the middle of these troughs a notch, *x*, is formed, which conducts the oil which may collect in these troughs to the journal of the shaft, as shown in Figs. 2 and 3.

There is a projecting ledge, *g*, around the bottom of the chamber-piece *m*, which forms a dripper to provide for any accidental overflow.

k k, Figs. 3, 4, and 5, are the "lickers" or "conductors," so called, formed substantially as shown in Fig. 5, of metal, leather, or india-rubber, the curved portion of which rests in the annular grooves *r r* on the side of the bearing upon which the oil is carried from the top of the shaft as it revolves, as seen in Fig. 4, (the shaft revolving in the direction indicated by the arrow.) Midway between the ends of these lickers there is a conical or pointed projection, *o*, which extends into the ends of the trough *n*. As situated in the bearing, and thus constructed and arranged with the upper ends, *k'*, bearing on the upper surface of the revolving shaft, the oil thereon, which has a tendency to work toward and run out at the ends of the bearing, is trailed or conducted toward the projection *o*, and from thence into the trough *n*, and thence to the surface of the shaft, and finally to the receptacle or chamber *m* beneath.

In the use of lickers or conductors of india-rubber, if the shaft or bearing should become

heated, owing to the absence of the lubricating material, the india-rubber would be heated and burned, whereby a peculiar smell would be created before the bearing became hot enough to be injured, which would thus serve as a detector or an alarm indicative of such absence of lubrication, and the same, constructed of this material, is for this purpose claimed.

There is designed to be a quantity of wicking or a similar fibrous material inserted in the straight duct connecting with the chamber, in order that when the shaft or bearing becomes heated from the absence of a supply of oil from the reservoir above, the wicking may yet lubricate the shaft from the oil in the chamber by means of capillary attraction thus created.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of the lubricating-reservoir with an adjustable screw-plug, constructed and operating substantially as and for the purpose specified.
2. The combination of the box or bearing *H*, the chamber *m*, and the ducts or passages connecting with the same, the whole being constructed to operate substantially as and for the purpose specified.
3. The lickers or conductors *k k*, or their equivalent, in combination with a suitably constructed bearing, substantially as described, for the purpose set forth.

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