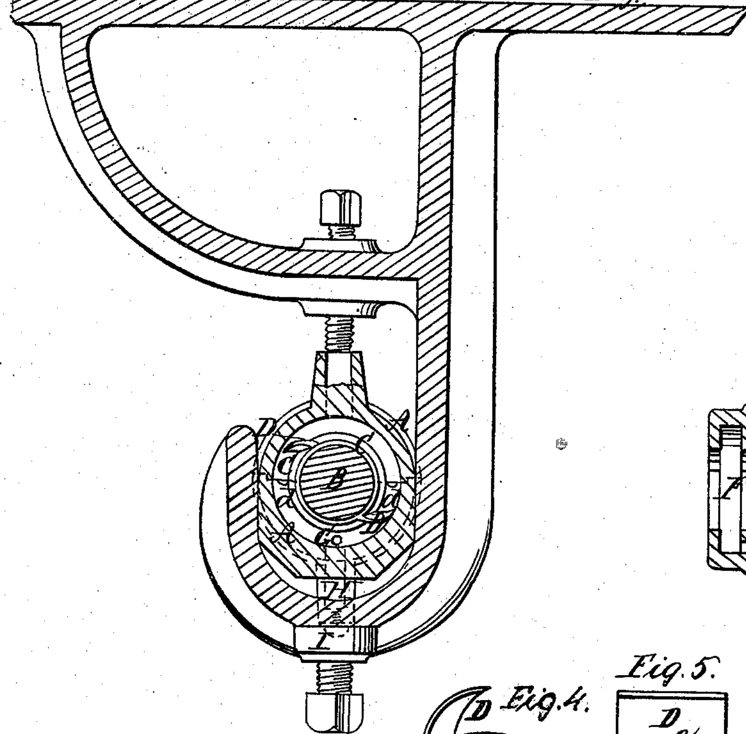
R. Sibley.

Journal Box.

No. 89,839. Patented May 4, 1869.

Fig. 2. Fig. 1.



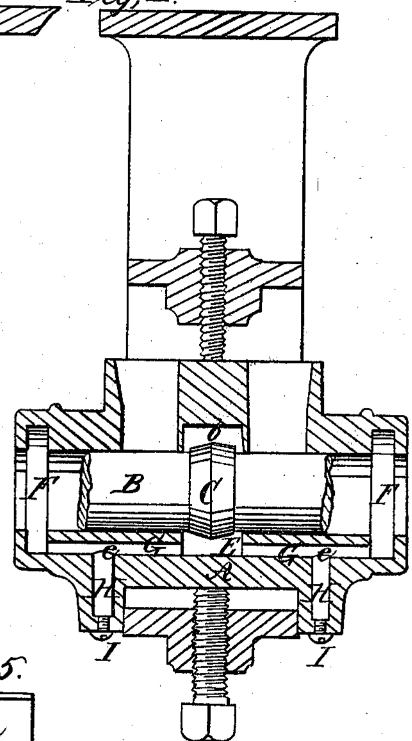


Fig. 4.

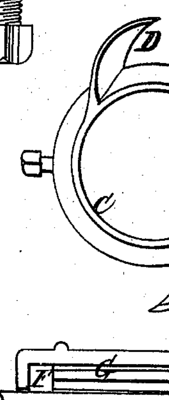


Fig. 5.

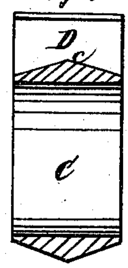


Fig. 3.

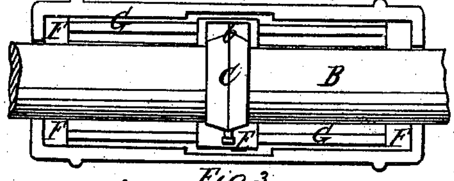
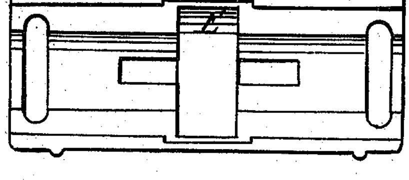


Fig. 3.



Witnesses,

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United States Patent Office.

RUFUS SIBLEY, OF GREENVILLE, CONNECTICUT.

Letters Patent No. 89,839, *dated May* 4, 1869.

IMPROVED JOURNAL-BOX.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, RUFUS SIBLEY, of Greenville, in the county of New London, and State of Connecticut, have invented certain new and useful Improvements in Journal-Boxes, designed for mill-shafting, and other analogous purposes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawing which accompanies and forms a part of this specification.

Of this drawing—

Figure 1 is a lengthwise vertical section, through the centre of my improved box, and of the shaft running in the same, and showing also the hanger, which carries the box.

Figure 2 is an end section of the same.

Figures 3 3 are top or plan views of the upper and lower halves of the box, and of the shaft.

Figures 4 and 5 are detail views.

Similar parts in the different figures are designated by similar letters.

The object of these improvements is to provide what is termed a "self-oiling" journal-box, for the purposes mentioned, which shall be free from the serious defects of the various self-oiling boxes which have been heretofore in use, and which shall be at all times a reliable and positive oiler.

Prior to my invention, a great number of devices have been attempted to be employed as automatic oilers, for running shafting, but, so far as I am aware, none of them have been practically successful.

One class of them has consisted of a metallic ring, or collar, attached to the shaft, and dipping, as the shaft turns, in an oil-reservoir cast in the box; and this collar has sometimes been provided with a wiper, of cotton, woollen, or other suitable material, which, as the shaft revolves, wipes the oil off of the collar, and spreads it upon the shaft. The defects of this apparatus were, that the centrifugal force of the revolving shaft would throw the oil off the collar, away from the shaft, and not on to it; and when the wiper was employed, the friction of the revolving collar against the wiper would soon wear the latter away, so that it would no longer come into sufficient contact with the collar to take off the oil successfully, and would, therefore, in a short time become practically inoperative

A second device consisted of a small wheel, hung beneath the shaft on journals, in such a manner that the under surface of the wheel would run in oil, contained in an oil-reservoir placed below it, while its upper surface would press against the under side of the shaft, which, as it revolved, would give revolution to the wheel, and thereby bring and apply to the shaft the oil taken up by the latter. The objection to this was, that the wheel was liable, by slight obstructions, to be prevented from revolving, and when it ceased turning it would not lubricate the bearing, and would soon injuriously wear the shaft.

A third device was an endless chain, running over the shaft, and extending down and dipping into an oil-chamber beneath, and which, when motion was imparted to it by the revolution of the shaft, would bring up the oil and spread it upon the bearing. This was objectionable, because it was in danger, as the shaft revolved, of being caught on it and being broken, so that it would cease to operate, and even when it did operate, it would bring up on to the shaft the sediment and dirt of the oil.

Still another class of box was formed with recesses, cored through the bottom of it, and had a wick inserted through the recesses and reaching into an oil-chamber below, which, by capillary attraction, would draw up the oil and lubricate the journal. This method of oiling has been more extensively used than all others combined, but it has now, like the others, been abandoned as worthless, it being found that the wick would soon become filled with sediment, and would grow hard and fail to bring up the oil, and would also scratch and wear the shaft.

A patent has recently been granted to Richard Colburn and George W. Gould, for a journal-box, provided with a wick, inserted in a recess cast in the box beneath the journal, one end of which wick reaches down behind the journal into oil contained in the recess, while the other end turns over upon and rests on the top of the shaft, and thereby lubricates the latter. But this device is as uncertain in its operation as all other wick-oilers, and all familiar with the subject are aware that many serious accidents and much damage have resulted from the use of oilers which are thus unreliable.

My improved box avoids all the mischiefs above mentioned, and will be found, in practical use, to be entirely certain in its performance, and to be extremely economical of oil, and to require very little care.

The form in which I prefer to embody my invention, is illustrated in the drawings. The improvements in it are, mainly, first, a means of taking up the oil and distributing it upon the shaft, consisting of a collar, or ring, preferably having a V-shaped, or inclined-sided periphery, as hereinafter described, attached to the shaft, so as to turn with it, and provided with one or more of what I call scoops, each preferably having a similar V-shaped periphery; and, second, what I call "sediment-chambers," combined with the box so as to collect and retain the sediment of the oil, thereby keeping the latter pure and clean for use in the box.

A A is the box, cast, of any suitable metal, in the form shown, or in any other which is convenient and proper.

B B is the shaft, arranged and running in the box in the usual way.

C is the collar, or ring, placed around the shaft at about the middle of the length of the box, or at any other convenient point, and securely fastened to it, so as to revolve with it, by a set-screw, *a*, or other suitable means.

The periphery of this collar I preferably make of the peculiar V, or inclined shape, shown at *b b*, figs. 1 and

3, and I provide it with one or more "scoops," D D, of the form represented, or any other which will be suitable, and also preferably having the V, or inclined periphery, shown at *c c*. If desired, however, the periphery of both collar and scoops, or of either of them, may be square, or of any preferred shape or section, or the collar around the shaft may be dispensed with, and the scoop or scoops may be secured directly to the shaft, or journal, either by being tapped into it with a screw-thread, or by being fastened in any other convenient manner.

I do not make any claim to sediment-chambers, broadly.

E is a recess, cast in the box, and forming the main oil-chamber, which contains the lubricating-oil.

The collar C runs in the oil in this recess, and as it revolves, the scoops D D take up a portion of such oil and carry it upward, and when they have made a partial revolution, pour it off upon the periphery of the body of the collar, and also spread it, to some extent, upon the shaft itself. The object and operation of the peculiar V-shape which I give to the periphery of this collar, and to the scoops, are to cause the oil, as it is brought up by the scoops, to be quickly and evenly distributed upon the shaft.

The invention will, however, be successful, if the collar and scoops, or either of them, have a straight, square surface, or a surface or periphery of any desired section. And, although I have shown them with peripheries having what may betermed a double V-shaped incline, it is not indispensable to give them this shape, as the incline may, if desired, be upon only one side of the periphery. But the form shown in the drawing is obviously best in practice.

When the shaft is a quick-running one, the scoops will, by centrifugal force, throw the oil out each way upon the bearings B B, lubricating them perfectly.

If the shaft runs slowly, the oil will, by gravity, easily flow down the inclined sides of the periphery of the collar, and distribute itself, with extreme evenness, upon the bearings.

Thus, no matter what may be the rate of speed at which the shaft revolves, whether faster or slower, my oiler is always sure to operate with certainty and uniformity.

In constructing my improved box, I usually prefer to cast a chamber, F F, in each end of the same, and to form, in the lower half of the box, channels G G, communicating with these chambers F F, and with the main oil-chamber E, so that the oil, which has been brought up by the scoops, as it works each way along the shaft, may run down into the chambers F F, and back under the shaft, through the channels G G, into the main chamber E, and be used over and over.

By reason of these provisions, no oil can ever work out at the ends of the box, and it is all fully utilized.

To prevent any of it from running out at the sides of the box, I generally employ channels *d d*, cast in the sides of the lower half of the box, but these may be dispensed with, if desired.

For the purpose of keeping the oil at all times clean and free from sediment, and also for the purpose of making room in the box for a larger quantity of it, I usually prefer to provide the lower half of the box with the sediment-chambers H H, which I prefer to cast under each end of the box, their tops being open, by small orifices *e e*, to the chambers F F, and channels G G. As the oil passes around through these channels, it will deposit any sediment or dirt contained in it in the chambers H H, and, if desired, screws I I may be inserted in the lower end of these last-mentioned chambers, in order to enable the oil to be drawn out, and the box to be cleaned, as occasion may require.

Having thus described my improvements—

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a shaft or bearing designed to run in a journal-box, of one or more scoops, of any desired shape or section, formed on the exterior of either a shaft, or of a collar thereon, substantially as and for the purposes set forth.

2. The combination of one or more of the sediment-chambers H, with one or more of the longitudinal channels G, substantially as and for the purposes described.

RUFUS SIBLEY.

Witnesses:

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