

2 Sheets—Sheet 1.

No. 417,887.

Patented Dec. 24, 1889.



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SELF OILING JOURNAL BOX.

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Fig. 6.

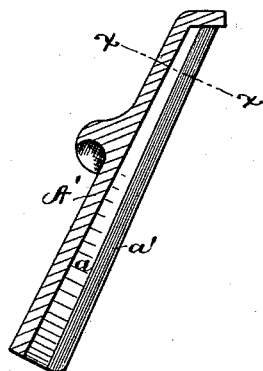


Fig. 5.

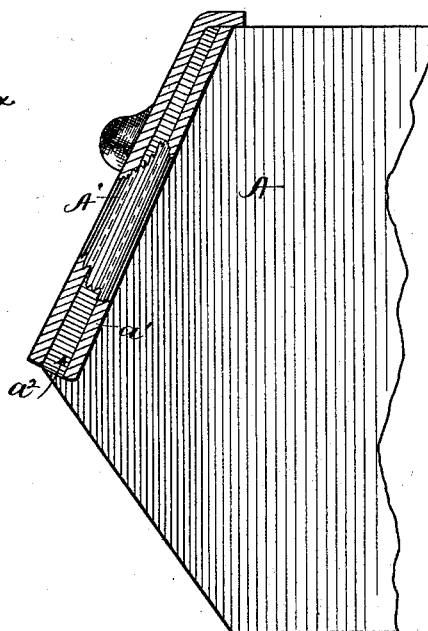
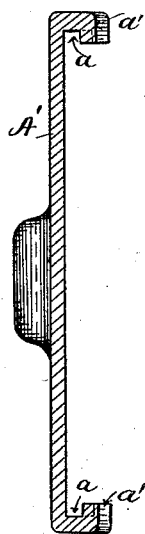


Fig. 7.



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UNITED STATES PATENT OFFICE.

WILLIAM O. SMITH, OF NORWALK, ASSIGNOR OF ONE-FOURTH TO THOMAS FLESHER, JR., OF CLEVELAND, OHIO.

SELF-OILING JOURNAL-BOX.

SPECIFICATION forming part of Letters Patent No. 417,887, dated December 24, 1889.

Application filed November 21, 1888. Serial No. 291,499. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM O. SMITH, of Norwalk, in the county of Huron and State of Ohio, have invented certain new and useful Improvements in Self-Oiling Journal-Boxes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in self-oiling journal-boxes designed more especially for railroad-cars, although it may be applied to various other uses, in which a broad wick is drawn up against the lower half of the journal, with locking-devices to hold the wick in such position, the ends of the wick extending down into the oil well or container. A spring-actuated curved plate engages the under side of the wick to hold the latter against the journal in case of accident to the locking device or of the wick becoming stretched.

My invention also relates to the details of construction hereinafter described and claimed, the object being to provide a cheap and reliable self-oiling journal-box.

The journal-box embodying my invention and shown in the accompanying drawings is designed for railroad use.

Figure 1 is a side elevation, in section, through the center of the box. Fig. 2 is an end elevation, in section, through the center. Fig. 3 is a plan of the oil-container detached. Fig. 4 is an end elevation, partly in section, of the oil-container, the section-lines corresponding with Fig. 2. Fig. 5 is an enlarged view of the box proper in detail, with edge of cover broken away, exhibiting wedge-shaped flange or gib a^2 . Fig. 6 is a section of door, exhibiting flaring groove corresponding in angles to fit closely on the wedge-shaped flange a^2 . Fig. 7 is a top edge view, in section, of the door on line $x x$ of Fig. 1.

A represents a cast-iron shell or casing, in the main substantially like those commonly employed for railroad service, having the ordinary inverted half-box B for engaging the axle B'. The outer end of the casing is closed by sliding doors A' and A², the ends of the latter fitting in grooves a of the casing, and door A',

having hook flanges a' , that engage wedge-shaped ribs a^2 of the casing. As the larger ends of these ribs present downward, the gravity of door A' and the jarring when the cars are in motion tend to tighten the door so that there is no liability of its being lost off. A slight blow applied from below will loosen the door, after which it may be removed by hand.

C is the oil-container, the same having a semi-cylindrical concavity on top of a somewhat larger radius than the journal, and having slits c along the edges thereof, through which the wick D passes. The width of the wick corresponds approximately with the length of the journal. The end of the wick should reach well down into the container, so as to reach the oil when the latter is nearly exhausted. Container C at the rear end abuts the inside of the casing, and is held down by lugs a^3 of the casing, these lugs overlapping the top wall of the container at the rear corners thereof. The front end and lower edge of the container fits against shoulder a^4 of the casing, and at this part the container is provided with a forwardly-projecting ledge c' , that is engaged by a button a^5 for holding down the front end of the container, the button of course being pivoted to the casing, as shown. By turning the button to one side the front end of the container may be raised above the opposing shoulder of the casing, after which the container may be drawn forward and removed from the casing.

E is a spindle extending lengthwise of the container and journaled in the walls thereof, or in an attachment of the container, in the position shown. This spindle is provided with a series of toothed wheels e for engaging the wick to move the latter endwise, and having a thumb-piece e' for operating the spindle, this device for moving the wick being similar to those employed on lamps, except that it is on a larger scale.

F and F' are spindles journaled in the end walls of the container, or in an attachment thereof, and located as shown, each spindle having a series of hooked teeth f , for hooking into and locking the wick to prevent the movement of the axle from drawing the wick endwise. These spindles have upturned ends

f' , that are engaged by loops g of cross-bar G when these ends are upright, in which position of parts teeth f engage the wick.

For inserting the wick, the oil-container is removed from the casing and the respective ends of the wick are thrust down through slot c into the container, the teeth f on either hand having meantime been turned back out of the way of the wick, as shown in Fig. 4. The container may then be replaced in the casing, and the wick is fastened on the right-hand side by turning teeth f at the right hand to the position shown in Fig. 2. Next, by turning spindle E , the wick is drawn endwise until it engages and fits the under side of the journal, after which the locking-teeth on the left hand are turned to the position shown in Fig. 2, thus, by means of the two sets of locking-teeth, securing the wick against end movement in either direction, after which cross-bar G is placed in the position shown in Fig. 2, to hold locking-teeth to their engagement with the wick.

In addition to the capillary attraction of the wick, the movement of the journal on the wick produces a suction that draws the oil freely in whichever direction the under side of the journal is moving. The journal takes off whatever oil can adhere to it, and the surplus oil passes on along the wick and is discharged below into the container.

As a matter of fact, and to show the practicability and saving of my improved journal-box, I will state that I have run a passenger-car provided with my improved boxes four thousand miles with the consumption of one-half pint of cheap hydrocarbon lubricating-oil per box.

Although the size of the container may be varied indefinitely, they are usually made to hold about a quart of oil, in which case the car could safely be run about sixteen thousand miles with one oiling.

In case of accident to the locking device for the wick, or in case the latter should become stretched, so as not to engage the journal, I provide a curved plate H , adapted to fit the under side of the wick when the latter is in its normal position engaging the journal. Plate H has depending lugs H' , that fit easily in corresponding sockets C' in the container. (See Fig. 1.) Spiral springs h , coiled around the respective lugs H' , elevate plate H and insure the wick being held against the journal. The rear end of the casing has double walls, between which fit loosely plate I . This plate has a central opening i , adapted to receive the axle with an easy fit, by means of which plate dirt and

dust are excluded from the box. As plate I is free to move vertically and has a limited lateral movement, it is not cramped on the axle, and therefore causes only such slight friction and wear as is caused by the gravity of the plate, such wear of course being merely nominal.

As I have had my improved journal-box in operation for something more than four and one-half months without the wick showing any deterioration or change, it is probable that the wick will last as long as box B , and will in the meantime require only oil supplied at long intervals, as aforesaid.

What I claim is—

1. The combination, with journal, oil-container, wick, and mechanism for moving the wick endwise, substantially as indicated, of a series of locking-hooks for engaging the wick on either side of the journal to hold the wick endwise, substantially as set forth.

2. In a self-oiling journal-box, the combination, with a box, of an oil-container located therein and provided with slots near its side edges, a wick the ends of which are passed through the slots into the container while the exposed portion thereof spans the space between the slots, a yielding saddle located between the top of the container and exposed portion of the wick and supporting the latter, and a shaft carrying toothed wheels for moving the wick endwise.

3. The combination, with journal, oil-container, and wick, of locking-hooks for securing the wick endwise, each series of hooks being mounted on a spindle, upwardly-projecting arms connected with the respective spindles, and a cross-bar having sockets for engaging the arms in their upright position to hold the hooks to their engagement with the wick, substantially as set forth.

4. In a self-oiling journal-box, the combination, with a box, of an oil-container therein having slots, a wick the ends of which are passed through the slots into the container, a saddle yieldingly supported on the container and carrying the exposed portion of the wick, a shaft carrying toothed wheels for moving the wick longitudinally, and devices for locking the wicks against accidental endwise movement, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 2d day of October, 1888.

WILLIAM O. SMITH.

Witnesses:

CHAS. H. DORER,
S. G. NOTTINGHAM.