

(No Model.)

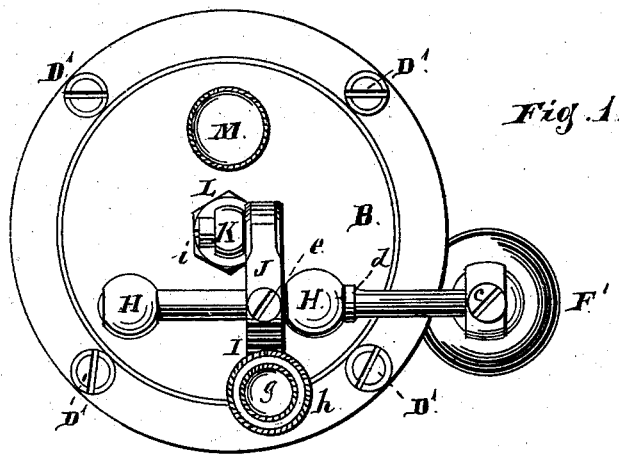
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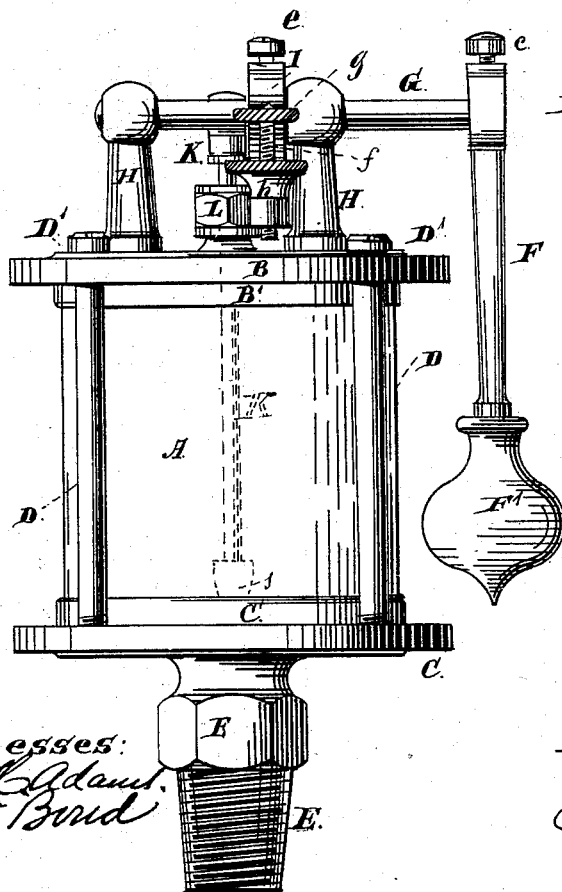
AUTOMATIC FEEDING DEVICE FOR OIL CUPS.

No. 262,848.

Patented Aug. 15, 1882.



*Fig. 1.*



*Fig. 2.*

*Witnesses:*  
*Albert H. Adams.*  
*Edgar T. Bond*

*Inventor:*  
*James Stewart*

(No Model.)

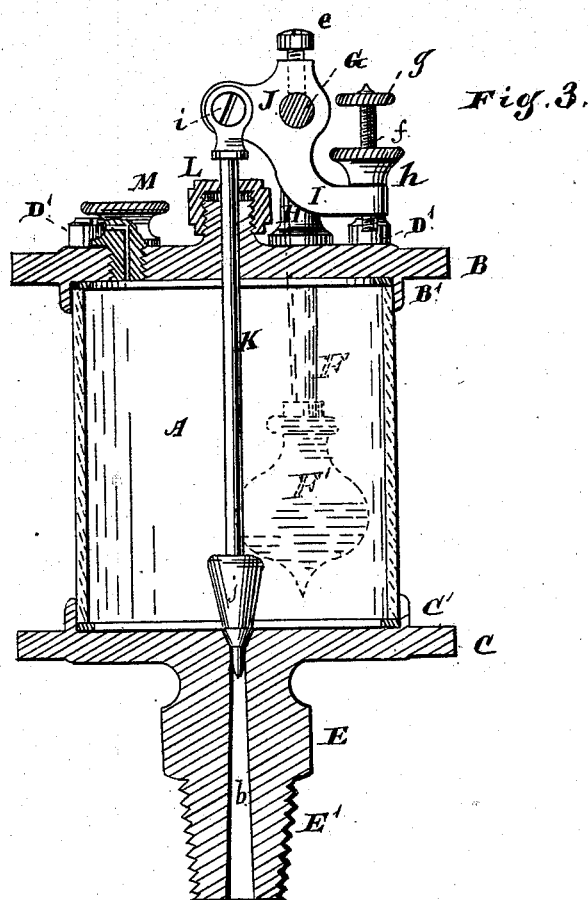
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# UNITED STATES PATENT OFFICE.

JAMES STEWART, OF CHICAGO, ILLINOIS.

## AUTOMATIC FEEDING DEVICE FOR OIL-CUPS.

SPECIFICATION forming part of Letters Patent No. 262,848, dated August 15, 1882.

Application filed March 10, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES STEWART, residing at Chicago, in the county of Cook and State of Illinois, and a citizen of the United States, have invented a new and useful Improvement in Automatic Feeding Device for an Oil Cup or Receptacle, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a top or plan view; Fig. 2, a side elevation; Fig. 3, a vertical section on line *x* of Fig. 1.

The object of this invention is to construct an oil-cup and feeding device therefor which can be placed on a crank-pin, eccentric, cross-head, either end of a connection, or any vibrating journal or other part of a machine or machinery having a vibrating or pendulum movement or movement in an arc or part of a circle, and act automatically to feed the required quantity of oil or other lubricant to the part to which it is applied; and its nature consists in providing an oil-cup having at its lower end a feed-opening closed by a valve located on a rod or stem connected with a rock-shaft the movements of which are controlled by a pendulum, and providing an adjustable stop for controlling the swing of the pendulum in opening and closing the valve to control the feed, and in the several parts and combinations of parts hereinafter more specifically pointed out, and set forth in the claims.

In the drawings, A represents a cylinder, of glass or other suitable material, of the required dimensions for the capacity of the cup, and forming, in connection with the top and bottom plates, the oil cup or receptacle; B, the upper plate; C, the lower plate. Between these plates is located the cylinder A, the plates having annular flanges or rings B' C', within which the ends of the cylinder are placed, suitable packing or other provision being provided to make a tight joint; D, tie-rods connecting the two plates B and C and drawing them snugly against the end of the cylinder. These rods may be formed, as shown, with a head, D', at one end, having therein a notch, and a screw-thread at the other end to enter a screw-threaded opening in the plate C; or it may have a head without the notch, and the screw-threaded ends may pass through

suitable openings in the plate and nuts be screwed thereon to do the clamping and drawing together. As many rods may be used as desired. As shown, four are provided. These parts (represented by the letters A, B B', C C', and D) may be of any of the usual and well-known forms of construction and arrangement, and when the cylinder A is made of metal or other opaque material a strip or window of glass or other suitable material can be provided for observing the state of the oil in the receptacle.

E is a plug depending from the bottom of the plate C at the center thereof, and formed therewith, as shown. The lower end, E', of this plug, as shown, is slightly tapering, and is screw-threaded for attaching the device to the part to which it is to be applied. This plug E E' has a central opening, *b*, which opening also extends through the plate C, and, as shown, is formed slightly tapering, the smaller end being at the top, and in this end is provided a seat for the feed-controlling valve or plug.

F is a rod, and F' a ball, these parts forming together the pendulum, and they may be cast or otherwise formed together; or the ball may be an independent piece suitably attached to the end of the rod.

G is a rock-shaft, to the end of which is attached the upper end of the rod F, such rod having an opening to receive the end of the shaft, and the attachment is completed, as shown, by means of a set-screw, *e*, or in any other suitable manner that will permit of the adjustment of the pendulum in proper relation to the rock-shaft and the other devices to give it the required amount of swing to open and close the controlling valve or plug by the vibrating movements of the parts to which the device is attached.

H represents standards or posts suitably secured to or formed with the plate B, in the upper ends of which is mounted or placed the rock-shaft G, which shaft, as shown, has a collar or flange, *d*, which bears against one side of one of the posts and prevents end movement of the shaft in one direction, end movement in the other direction being prevented by the arm or lever for controlling the movement of the shaft in the form of construction

shown; but end movement of the shaft G may be prevented in any other suitable manner.

I is the arm or lever for controlling the movement of the rock-shaft, and the rod or stem carrying the controlling valve or plug. This arm or lever is located on the rock-shaft G, a suitable opening being formed on its upper end for the insertion of the shaft, and the attachment, as shown, being completed by means of a set-screw, *e*; but other devices or means may be used which will permit of the adjustment of the arm or lever and hold it firmly when adjusted. This arm or lever I is curved or bent, or otherwise formed so as to bring its outer or free end above the face or top of the plate B, and in this free end is formed a screw-threaded opening to receive a screw-threaded stem or shank, *f*, on the upper end of which is a thumb-piece or head, *g*, by means of which the stem or shank can be raised or lowered to bring its lower end in proper relation to the top or face of the plate B to form the stop for adjusting the movement of the rock-shaft. The stem or shank *f*, when properly adjusted, is held in its adjusted position, as shown, by means of a lock-nut, *h*, the face or end of which can be brought into contact with the upper face of the arm or lever to form the lock, the nut having a screw-threaded opening, so that it can work up or down on the stem or shank. Other forms of devices than the stem or shank *f* can be used to form the stop, and other means than the arm or lever I can be applied to the rock-shaft to coact with the stop and regulate or control the movements of the rock-shaft.

J is an ear or lug extending out from the head or upper end of the arm or lever I.

K is the stem or rod for the valve controlling the flow. The upper end of this stem or rod, as shown, is enlarged somewhat, and has therein an opening for the passage of a pivot or screw, *i*, by means of which the attachment is made to the ear or lug J, the end of the screw or pivot being screw-threaded and entering a screw-threaded opening in the ear or lug; or the attachment can be made in some other suitable manner. The lower end of this stem or rod has thereon a valve or plug, *j*, suitably formed to close the opening *b*, through which the oil passes, which plug may be of a conical or tapering form, as shown, or of any other form adapted for the purpose, its lower end seating in the seat formed therefor in the end of the opening *b*.

L is the stuffing-box, located in the plate B, at the center thereof, through which the rod or stem passes, so as to properly center the plug or valve *j* with the opening *b*.

M is the plug or cap for closing the opening in the plate B, through which oil or other lubricant is passed into the receptacle.

The operation is as follows: The device is attached to the part of the machine or machinery to be lubricated by the plug or stem

E E', so that the oil or lubricant will pass through the opening *b* in the proper manner for lubricating the parts. The pendulum is adjusted in relation to the movement of the device to which the oiler is attached, so as to have a swinging or pendulum movement from the movement of the device. The arm I is adjusted for the proper attachment of the valve rod or stem, and the stop *f* is raised or lowered, according as it may be desired to have the valve open to a greater or less extent, the bringing of the stop closer to the top or face of the plate lessening the movement, and its adjustment farther away from the top or face increasing the movement. When the proper adjustment has been made for the pendulum, arm, and stop the movement of the device or part to which the oiler is attached will give the pendulum its swinging movement, and the movement of the pendulum in one direction acts to raise the arm or lever I and depress the ear or lug J, forcing the valve or plug *j* into its seat, the movement of the pendulum in the opposite direction reversing the movement of the lever or arm and the ear and raising the valve, allowing oil or lubricant to escape through the opening around the valve and pass through the opening or passage *b* to the part to be lubricated, and these movements will continue while the device or part to which the oiler is attached is in motion, so that the valve is automatically closed to shut off the flow of oil or other lubricant and opened for the flow thereof for lubricating purposes.

The pendulum is to be so set and adjusted in relation to the movements of the device or part to which the oiler is attached that when such device or part is stopped the pendulum will be swung to that position which closes the valve or plug *j*, and will remain in that position until the machine is again started, by which means it will be seen that when the machine is at rest the flow of the oil is effectually cut off and will remain so during the time that the machine is stopped.

This device, as will be seen, is very compact, and at the same time is not liable to become inoperative. It can be readily attached, and when in place it will do the required work effectually and in a reliable manner. It is only operative when the device or part to which it is attached is in operation, and can be readily and quickly adjusted to suit the amount of feed and to give the precise feed that is required.

The device is to be connected with the strap-band of a connecting-rod or an eccentric or crank, where it is practicable so to do; or in case of a vertical part to which the oiler is to be attached the connection can be made by means of a bracket or arm or in some other suitable manner.

The cap N has a vent-opening, and where the movement of the part to which the oiler is attached is not sufficient to produce agitation

of the oil for feeding purposes such vent may be used to give the required pressure for the feed.

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

1. A rocking shaft arranged in a bearing supported above the top plate of the vessel containing the lubricant, in combination with a valve rod or stem extending through the top plate of the said vessel and connected at its upper end with the rocking shaft, and an oscillating arm or pendulum connected with the said shaft, substantially as described.

2. A swinging arm or pendulum and a rock-shaft, in combination with an adjustable arm for controlling the movement of the rock-shaft, and a valve rod or stem located within the cup or receptacle and carrying a valve or plug for automatically opening and closing the

valve or plug for feeding purposes, substantially as specified.

3. A swinging arm or pendulum and a rock bar or shaft, in combination with an adjusting arm or lever having a stop, and a valve rod or stem passing within the cup or receptacle, and carrying a valve or plug for regulating the flow of the oil or lubricant and automatically feeding the same, substantially as specified.

4. A swinging arm or pendulum and rock-shaft, G, in combination with the arm or lever I, stop *f*, ear or connection J, valve rod or stem K, and valve or plug *j*, all located and carried by the feed-cup or receptacle, substantially as and for the purposes specified.

JAMES STEWART.

Witnesses:

ALBERT H. ADAMS,  
EDGAR T. BOND.