(No Model.)

W. McINTOSH.

LUBRICATOR.

No. 566,788. Patented Sept. 1, 1896.

Fig. 1.

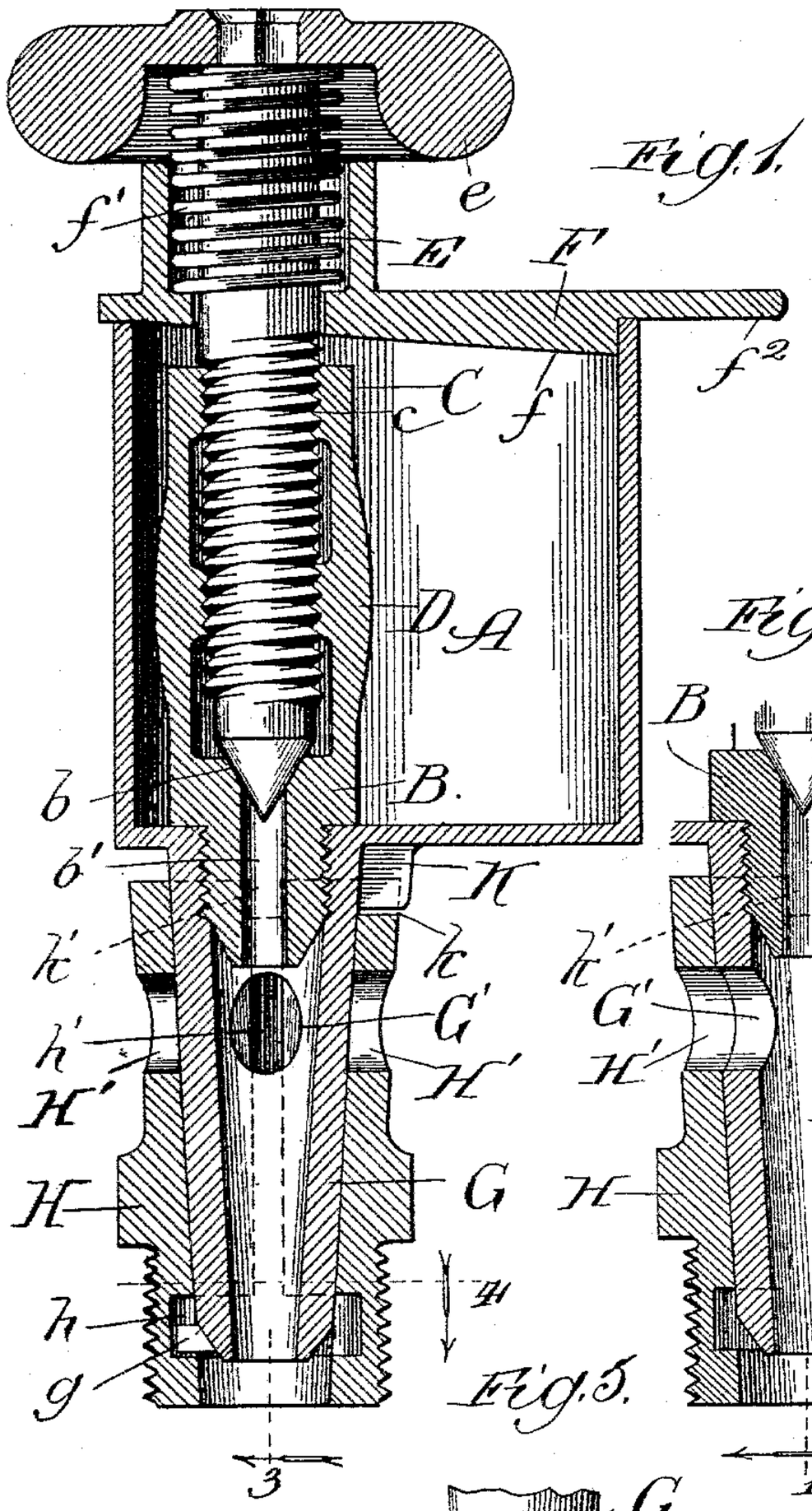


Fig. 2.

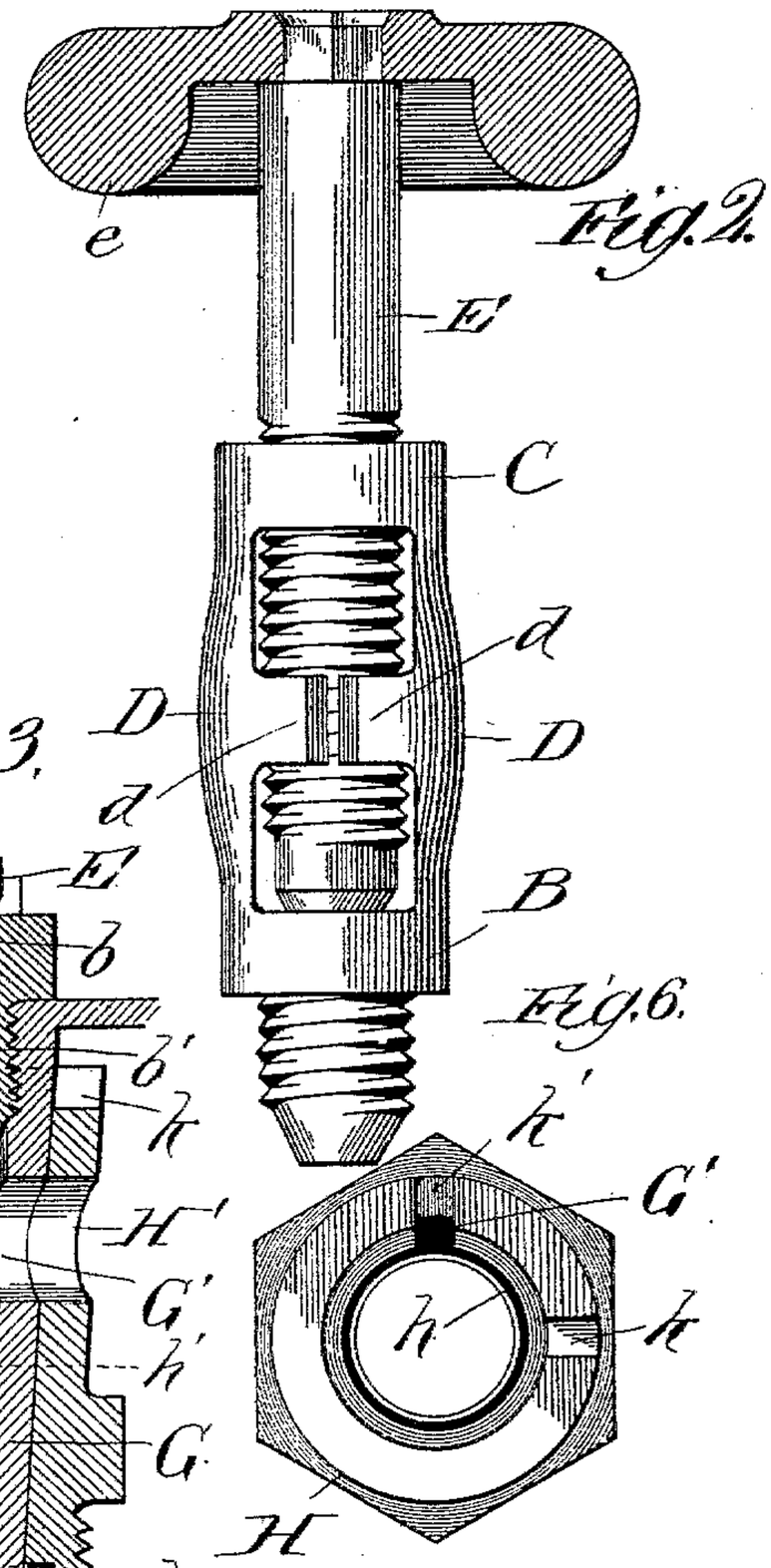


Fig. 3.

Fig. 4.

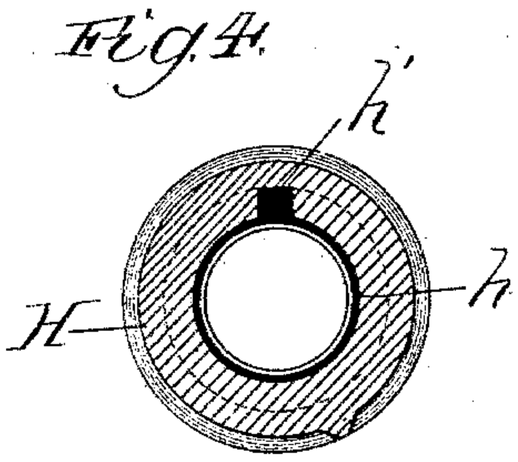


Fig. 5.

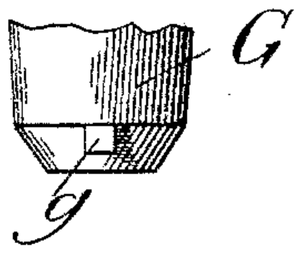
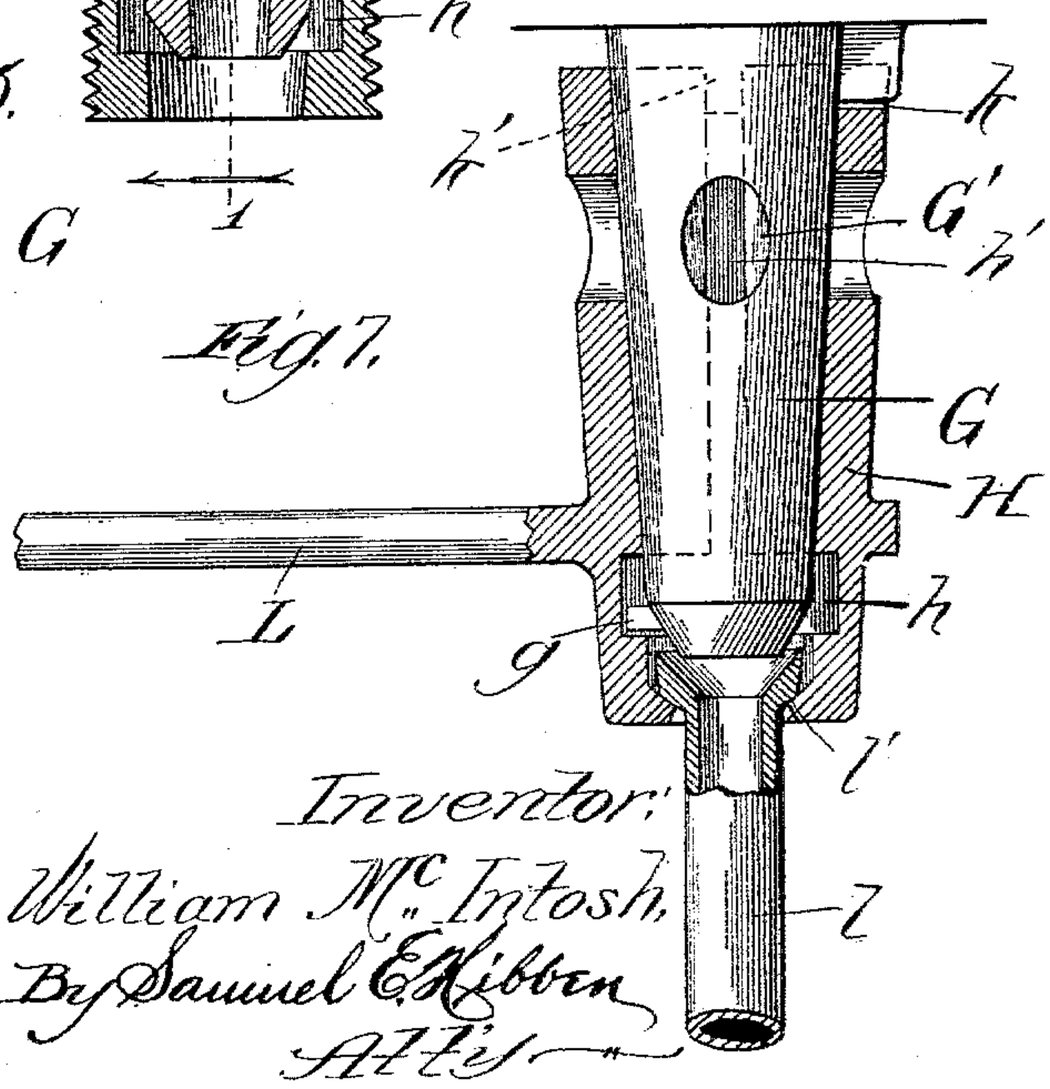


Fig. 6.

Fig. 7.



Witnesses:
Chas. E. Gaylord,
Leite f Alter

Inventor:
William McIntosh,
By Samuel E. Gibbon
Atty

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM McINTOSH, OF WINONA, MINNESOTA.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 566,788, dated September 1, 1896.

Application filed June 7, 1895. Serial No. 551,998. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MCINTOSH, residing at Winona, in the county of Winona, in the State of Minnesota, have invented certain new and useful Improvements in Lubricators, of which the following is a specification.

The object of my invention is to make an oil-cup for use in connection with lubricators of all descriptions, which shall be simple in construction and reliable and perfect in its operation, and which, in its preferred form, shall be capable of adjustment from the ordinary to the sight feed, if desired.

My improved oil-cup embodies many other novel points and advantages which will be apparent from the description hereinafter given; and my invention consists in the features and details of construction hereinafter described and claimed.

In the drawings, Figure 1 is a sectional view taken on the line 1 of Fig. 3; Fig. 2, a view in elevation of a plug and feed-screw; Fig. 3, a sectional view taken on line 3 of Fig. 1, showing the oil-cup in a reverse position to that in Fig. 1; Fig. 4, a sectional view taken on line 4 of Fig. 1, looking in the direction of the arrow; Fig. 5, an elevation of the lower end of the shank or plug of the oil-cup, showing the point or projection thereon; Fig. 6, a plan view of the socket, and Fig. 7 a sectional view particularly of the socket when adapted for use on locomotive or other similar trucks.

The oil-cup A may be made in any suitable form and of the required dimensions, but I prefer to make it cylindrical and secure therein a plug, whose preferred construction is clearly shown in Figs. 1 and 2. It consists, preferably, of a single piece, comprising a base portion B, having a valve-seat *b* around the oil-passage *b'*, and a head portion C, connected to the other portion by side pieces or standards D. The head C is provided with a screw-threaded bore *c*, while between the standards is arranged what is in effect and operation a split-nut device *d*, which is shown in its preferred form as integral with the plug. In practice the plug may be made as follows: It is cast or otherwise made in the general form shown, with the two ears on the standards and with angular wedge-shaped notches or furrows. The casting is then turned down and the bore in the head portion tapped out in the usual manner. The tap then cuts the proper thread in the ear portion, and in this operation the angular notches are cut through by the tool, and the ears are somewhat sprung, which will cause the thread to bind tight upon its screw-fitting therein after the manner of a split nut, but will not interfere with its rotation when positive force is applied. A feed-screw E is adapted to screw into the plug and is provided at one end with a tapering point to fit on the valve-seat in the base of the plug to regulate the flow of oil. Its outer end is provided with any suitable form of handle *e*, which projects exterior of the cup and thus provides for a convenient and easy manipulation of the feeding device from the outside without raising the lid or disturbing any parts of the device. It is obvious that the feed-screw moves easily in the head C, but when screwed into the split-nut device its free movement is prevented and it cannot be turned except through the application of positive force on the handle. The feed-screw will therefore remain in the desired position and cannot be accidentally shifted or changed by the jarring movements of machinery or by any other cause whatsoever.

As shown in the drawings, I prefer to arrange the feed device off the center of the cup, so that I can pivot a preferably circular lid F eccentrically on the feed-screw. This lid consists of a flat piece or diaphragm portion provided with a suitable handle f^2 and having on its under surface a flange or shoulder *f* of varying width, being greatest at the farthest distance of the circumference from the pivot and diminishing to nothing on the opposite side. I prefer to make this shoulder solid, as shown, but it is obvious that a circular flange might answer the purpose. The lid is normally kept in place to close the cup by means of an ordinary spiral spring *f'*, encircling the feed-screw and abutting against the lid and the screw, respectively, as illustrated in the drawings. Secured in any suitable manner, as by pressing or screwing into the bottom of the cup, or, if desired, formed integral therewith, is a hollow shank G, which is of the desired length and prefer-

ably somewhat tapering, and provided, if preferred, with sight-feed apertures G′ G′. This shank is adapted to fit loosely into a socket H, which is supposed to be secured by means of the external screw-threads shown, or in any other desired manner, in a fixed position adjacent to the oil cellar or bearing. A circular interior groove *h* is formed near the bottom of the socket and is continuous, but entered at one point by a vertical groove *h′*. The function of these grooves is to accommodate a small projecting stud or point *g*, located near the lower end of the shank, so as to render the oil-cup adjustable in the socket, but prevent its withdrawal except in a certain position. The circular groove is sufficiently large, as shown, to provide the proper play for the point *g* when the socket is being disengaged from the locking device, as hereinafter described. The socket may be provided with sight-feed apertures H′ H′, adapted to register in certain positions with the apertures G′ in the shank.

As particularly shown in Fig. 6, the top of the socket is provided with two vertical recesses *k k′*, adapted to receive when in certain positions a pin or projection K, located substantially at the junction of the shank and oil-cup. The various parts are put together and adjusted in the following manner: The shank of the oil-cup is inserted in the stationary socket in the proper position and its point or projection *g* will slide down the vertical groove *h′*. When this point enters the circular groove *h*, the cup is then free to turn and to be thereby adjusted to the desired position. In case sight-feed is desired the cup is turned until the projection K enters the notch or recess marked *k′* and is thereby locked in that position, as shown in Fig. 3. When sight-feed is not desired, the oil-cup is raised, so that the projection K will be disengaged, and the cup is then turned so that the projection will engage the other notch, when the parts will assume the position illustrated in Fig. 1. The apertures G′ and H′ in the shank and socket, respectively, will then register or coincide, and thus constitute sight-feed.

The advantage of my novel form and construction of lid will be readily apparent. On opening the oil-cup the lid is raised by the handle f^2 until the cam-shaped flange is above the rim, and it is then swung to one side, turning eccentrically on the feed-screw as a pivot and thereby sufficiently opening the cup for any desired purpose. In other lubricators, in order to swing the lid to open the cup, it is necessary to grasp the lid at two or more points, so as to raise it above the top of the cup before it can be turned, but, as above explained, it is only necessary in my device to raise the lid at one point, and it can then be swung to the right or left to open the cup. On closing the cup the lid is swung back to its initial position and springs instantly into place again. I thus provide a simple and reliable lid, which cannot be easily removed or lost, nor opened accidentally by the jarring of machinery or otherwise.

In Fig. 7 I have shown the construction of the socket when the device is intended to be used for lubricators on locomotive-trucks, or for similar purposes. Instead of being screw-threaded the socket is preferably provided with a suitable bracket L, whereby it may be secured to the engine-frame. A small metallic pipe *l*, having a funnel-shaped mouth, is adapted to be inserted from the top of the socket and to rest or bear upon an internal shoulder *l′*. This pipe, which may be straight or provided with an offset, has a universal motion or swing and is therefore capable of accommodating itself to the movements of the trucks or other parts. I am thus enabled to dispense with the usual rubber or other flexible tubing and provide a metallic oil-pipe which is not only serviceable and inexpensive but extremely durable.

It will be understood that my invention is applicable for many other purposes. For instance, it may be used for locomotive guide-bars, and, furthermore, when adjustability is not desired or required, the cup and feed device may be used without the socket, in which case the shank itself may be screw-threaded for the purposes of attachment.

Although I have described more or less precise forms and details of constructions, I do not intend to be understood as limiting myself thereto, as I contemplate changes in form, proportion of parts, and the substitution of equivalents, as circumstances may suggest or render expedient, without departing from the spirit of my invention; and, furthermore, it is obvious that certain parts and devices of my invention may be used separate and apart from other parts, or two or more or all of them may be combined into one complete apparatus, as may be desired, but in each instance the resulting device will come within the meaning and scope of my invention and claims.

I claim—

1. A feed-regulating device for lubricators consisting of an oil-cup, a feed-screw and a combined plug and elastic clamp secured within and removable from the cup and adapted to engage and bind the feed-screw.

2. A feed-regulating device for lubricators comprising an oil-cup having an oil-outlet, a combined removable plug and elastic clamp and a feed-screw adapted to govern the oil-outlet and to be received by the plug and clamp.

3. A feed-regulating device for lubricators consisting of an oil-cup, a plug removably secured therein and provided with two side portions or standards, a split-nut device supported by the standards, a valve-seat in the lower part of the plug and a feed-screw adapted to screw into the split-nut and thereby be

prevented from turning except through the application of positive force.

4. A lubricator comprising an oil-cup, a combined plug and elastic clamp within the cup, a feed-screw adapted to be engaged by the clamp and a lid or cover for the cup pivotally mounted upon the feed-screw.

5. An oil-cup comprising an oil reservoir or receptacle, a feed-regulating screw extending extraneous of the receptacle and a lid eccentrically pivoted on the screw.

6. A lid for an oil-cup comprising a diaphragm portion eccentrically pivoted and provided upon its under surface with a flange of varying width.

7. A lid for an oil-cup comprising a diaphragm portion eccentrically pivoted and provided upon its under surface with a flange of varying width, being greatest at the greatest distance from the pivot and merging into the surface of the lid at its shortest distance from the lid.

8. A lid for an oil-cup comprising a diaphragm portion eccentrically pivoted and provided upon its under surface with a flange or shoulder of varying width and a spring adapted to normally keep the diaphragm in place upon the oil-cup.

9. An oil-cup consisting of a cup portion or oil-reservoir, a shank therefor having a longitudinal bore communicating with the reservoir, a socket adapted to adjustably retain the shank and reservoir and means for locking the shank and socket in predetermined positions.

10. An adjustable oil-cup consisting of an oil-reservoir, a hollow shank communicating with the interior thereof and provided with a point or projection near its lower free end, and a socket adapted to receive the shank and provided with a groove near its lower end adapted to receive the projection in only one position and to lock it in all other positions.

11. The combination of an oil-cup, a hollow shank secured thereto and communicating with the interior thereof, the shank having sight-feed openings through its walls, a projection arranged near the head of the shank, a socket adapted to receive the shank and provided with sight-feed openings, the socket being provided with notches or recesses adapted to receive the projection whereby the oil-cup may be shifted and locked in desired positions.

12. The combination of an oil-cup, an oil-feeding device therein, a shank arranged upon the cup and having a longitudinal bore or feed-passage communicating with the oil-cup, said shank being provided with a point or projection near its lower free end and a socket adapted to receive the shank and provided with notches or recesses to engage the point on the shank whereby the oil-cup may be held in adjustable positions.

13. The combination of an oil-cup, an oil-feeding device therein, a hollow shank secured to the cup and having a longitudinal bore or oil-passage communicating with the cup, a socket adapted to adjustably retain the shank and cup, and means for locking the shank and cup in the desired position.

14. The combination of an oil-cup, an oil-feeding device therein, a hollow shank upon the cup and communicating with the feeding device, a point or projection located substantially at the base of the shank, a socket adapted to receive the shank and provided with recesses adapted to engage the projection and thereby retain the cup in adjustable positions.

15. The combination of an oil-cup, a device for feeding and regulating the oil therefrom, a shank secured to the cup and communicating with the feed device, a point or projection secured substantially at the base of the shank, a pin located near the free end of the shank, a socket adapted to receive the shank and provided with recesses to engage the projection and also with an interior circular groove to engage the pin on the end of the shank, whereby the cup may be adjusted to different positions with respect to the socket and locked in those positions.

16. The combination of an oil-cup, a hollow shank secured thereto and provided with sight-feed apertures, a stationary socket adapted to receive the shank and provided with similar sight-feed apertures and means for holding the oil-cup in different positions in the socket whereby the device may be changed from the ordinary feed to the sight-feed as desired.

17. The combination of an oil-cup A, a feed device therein, a hollow shank or plug G providing an oil-passage and communicating with the interior of the cup, the socket H adapted to receive the plug and provided at its lower free end with an internal shoulder l' and a pipe l resting upon the shoulder and forming a flexible continuation of the oil-passage of the shank or plug.

18. The combination of an oil-cup A, a plug secured therein, a feed-screw E movable in the plug, a split-nut device d for holding the screw against accidental rotation, a shank G secured to the oil-cup and communicating with its interior, a socket H adapted to receive the shank and allow of its adjustment therein and means for locking the shank and cup in the desired position.

WILLIAM McINTOSH.

Witnesses:
W. B. ANDERSON,
JESSIE B. MCINTOSH.