(No Model.)

# G. S. NICKUM.

## OIL CUP.

No. 288,102. Patented Nov. 6, 1883.

Fig. 1.

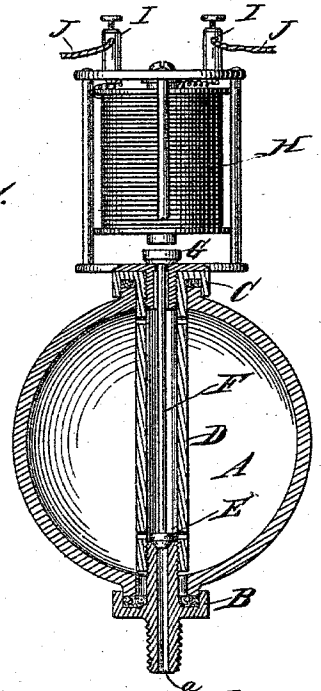
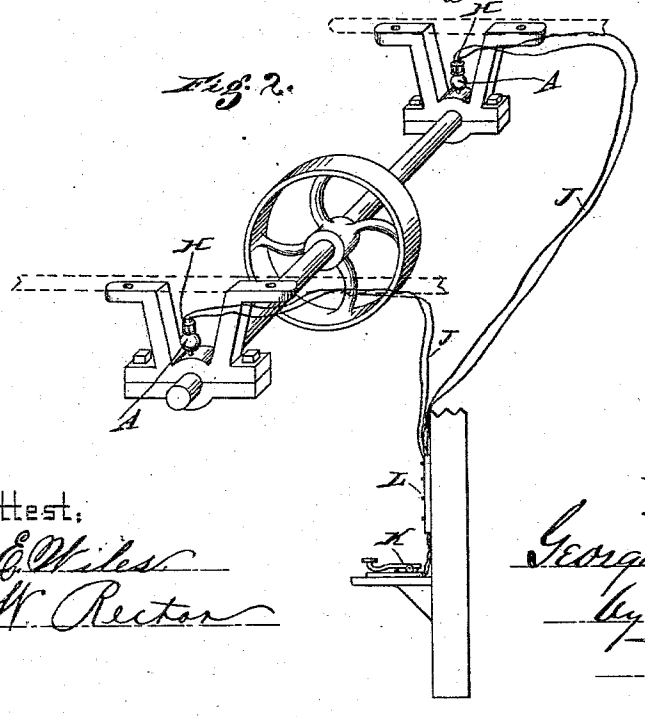



Fig. 2.




Attest:
Jno. E. Wilcox
E. K. Rector

Inventor,
George S. Nickum
by Munn & Scott
his Attys.

N. PETERS. Photo-Lithographer. Washington, D. C.

# UNITED STATES PATENT OFFICE.

GEORGE S. NICKUM, OF DAYTON, OHIO, ASSIGNOR OF ONE-HALF TO E. FOWLER STODDARD, OF SAME PLACE.

## OIL-CUP.

SPECIFICATION forming part of Letters Patent No. 288,102, dated November 6, 1883.

Application filed September 3, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE S. NICKUM, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Oil-Cups, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to that class of oil-cups or lubricators consisting, ordinarily, of a spherical oil-chamber, usually of glass, with a vertical valve-stem for regulating and controlling the flow of oil, and designed for application to shaft-bearings, journals, and other parts of machinery requiring lubrication.

The novelty of my invention consists in the combination, with an oil-cup and its valve-stem, of an electro-magnet with suitable electric connections whereby any one or a series of these oil-cups in an establishment may be operated at will, and simultaneously, if desired, to lubricate the machinery, as will be herewith set forth and specifically claimed.

In the accompanying drawings, Figure 1 is an elevation, partly in section, of my improved oil-cup. Fig. 2 is a perspective view, showing the application of my invention to a series of parts to be lubricated.

Hitherto the lubrication of machinery, particularly line-shaft journals, has been a source of much annoyance in manufacturing establishments from the fact that each cup required individual inspection and operation by hand, and in the case of line-shafting necessitated the climbing up of an attendant to within dangerous proximity of the shafts and pulleys, which resulted not infrequently in loss of life and limb. Furthermore, to insure constant lubrication by the old plan of cups the valves had to be left so far open that great and unnecessary waste of oil resulted. By the employment of my invention the superintendent or foreman of the shop at a single, and, if desired, remote place, can, whenever necessary, or at stated intervals, operate all of the oil-cups simultaneously by merely pressing the button of the key; or by the use of a switch-board he can operate all of the cups of any given piece of machinery or any particular line-shaft. The advantages of this system are self-evident and apparent to any one at all familiar with the running of a machine-shop or manufacturing establishment.

A represents any suitable oil-cup, in this instance a glass sphere, containing the lubricant, clamped between metal caps B and C, the latter of which has a vertical perforated tube, D, extending to the bottom of the cup, and into the lower end of which the former, B, is screwed, as shown. This lower cap has at its upper end a valve-seat, opening into a perforation, *a*, extending through the same, which forms the oil-outlet, and its lower end is threaded, to enable the cup to be screwed or tapped into the journal of the shaft, or into such parts of the other machinery as require lubrication.

The valve E has a vertical stem, F, extending through the top of the cup, with an enlarged head or button, G, preferably of soft iron, at its upper end.

Just over the valve-stem, and attached to the cup in the manner illustrated, or in any suitable way, is an electro-magnet, H, whose core is presented to the button G of the valve-stem.

I I are the usual binding-screws and connections by which the battery-wires J are connected to the helix of the electro-magnet. These wires J have the usual electric connections, and extend, as shown in Fig. 2, to a key, K, located wherever it may be desired.

The wires extending from all the cups may be brought into the same circuit, so as to be operated by a single key, if desired; or they may be grouped into different circuits, as the necessities or conveniences of the case require, with different keys for each circuit; or by the employment of a switch-board, L, Fig. 2, of the usual or any suitable construction, a single key may be used to operate any one or more of the cups, either singly or in sets, as desired; or in some instances it may be found desirable to employ clock mechanism in connection with the circuit-establishing key or button, whereby at any stated intervals desired the current would be established to operate the lubricators.

When the electric current is sent through the helix, the electro-magnet attracts the button G of the valve-stem and raises the valve,

to permit the flow of oil. When the current is broken, the valve-stem drops by its own gravity and closes the valve, thereby cutting off the flow of oil. By operating the key intermittently the valve will rise and fall, and the oil will pass from the cup in drops; or by holding the key down for a greater or less length of time a continuous flow of oil will result, as will be readily understood.

The above I consider to be the simplest construction and method of operation; but, if desired, the button G may be a permanent magnet, so that upon sending a reverse current of electricity through the wires repulsion would take place to aid the gravity of the valve in reseating itself.

Having thus fully described my invention, I claim—

1. The combination, with an oil-cup and its valve, of an electro-magnet and suitable electric connections whereby the operation of the valve to start or stop the flow of oil can be controlled at will.

2. The combination, with a series of oil-cups each provided with an electro-magnet for operating its valve, of electrical connections and an operating button or key, whereby the entire series of oil-cups may be operated simultaneously at will.

3. The combination, with a series oil-cups each provided with an electro-magnet for operating its valve, of electrical connections, a switch, and an operating button or key, whereby any desired number of oil-cups may be operated simultaneously at will.

GEO. S. NICKUM.

Witnesses:
ED. W. RECTOR,
WM. J. T. WILSON.