

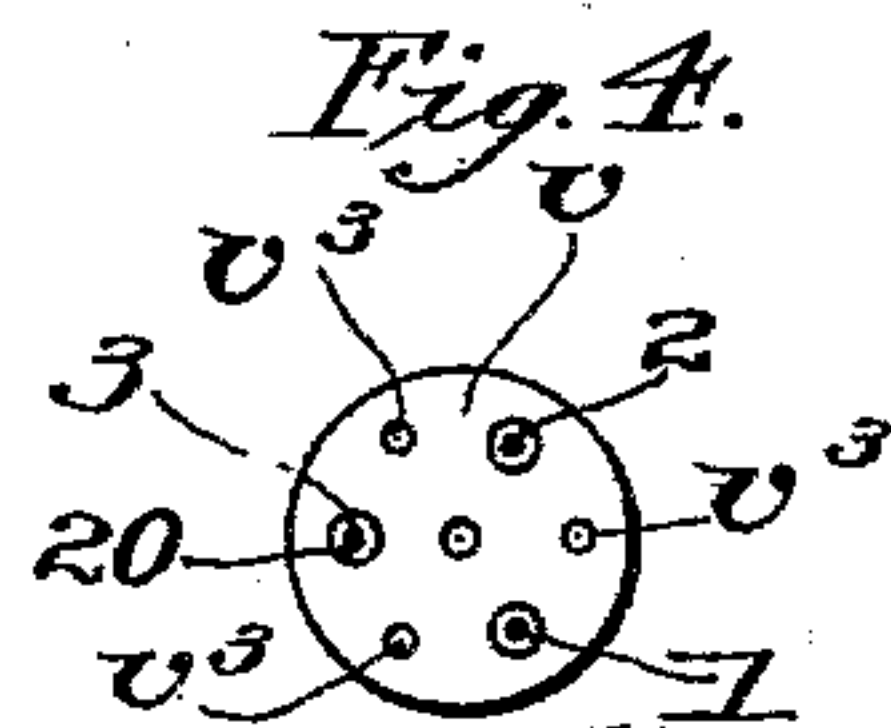
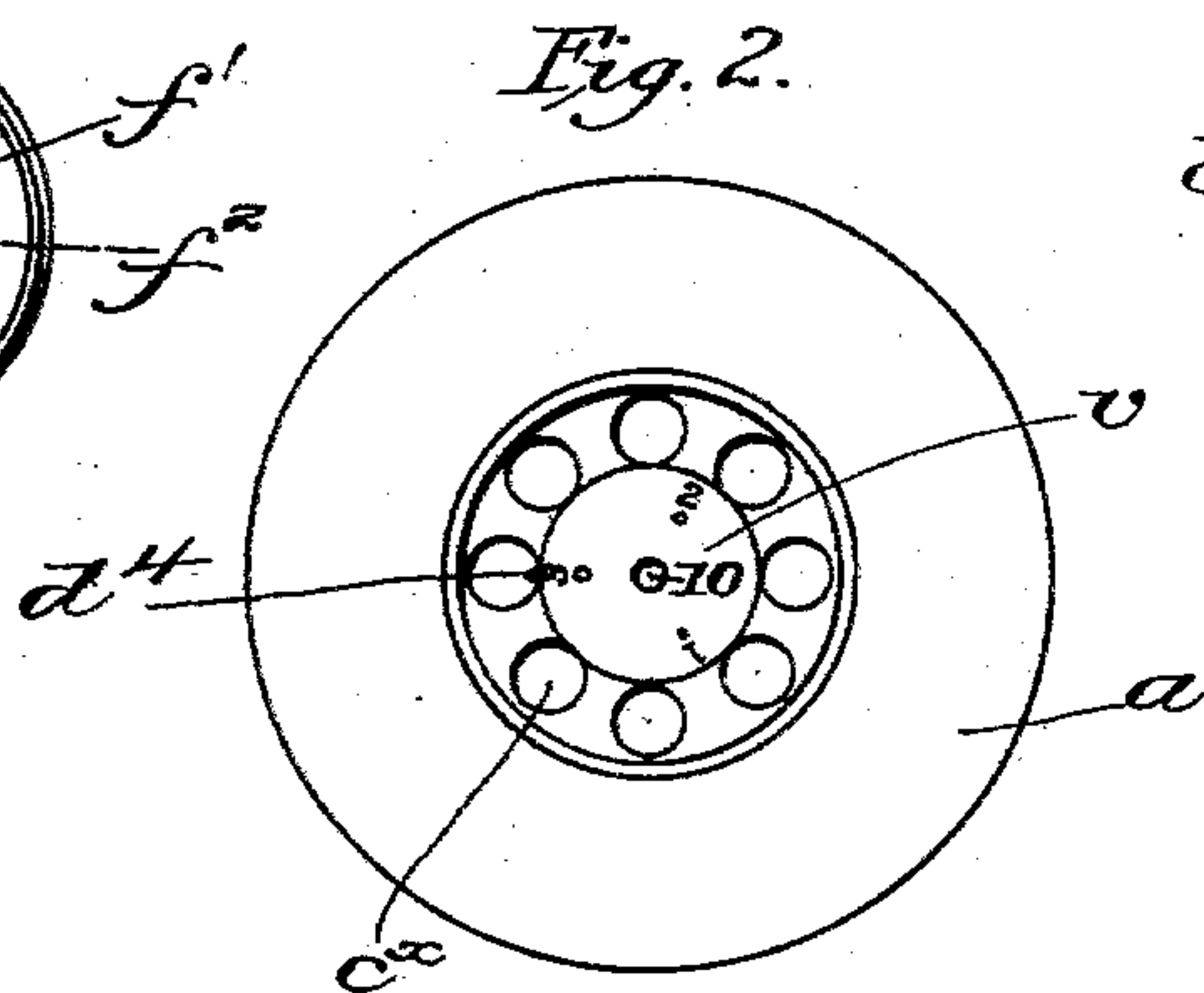
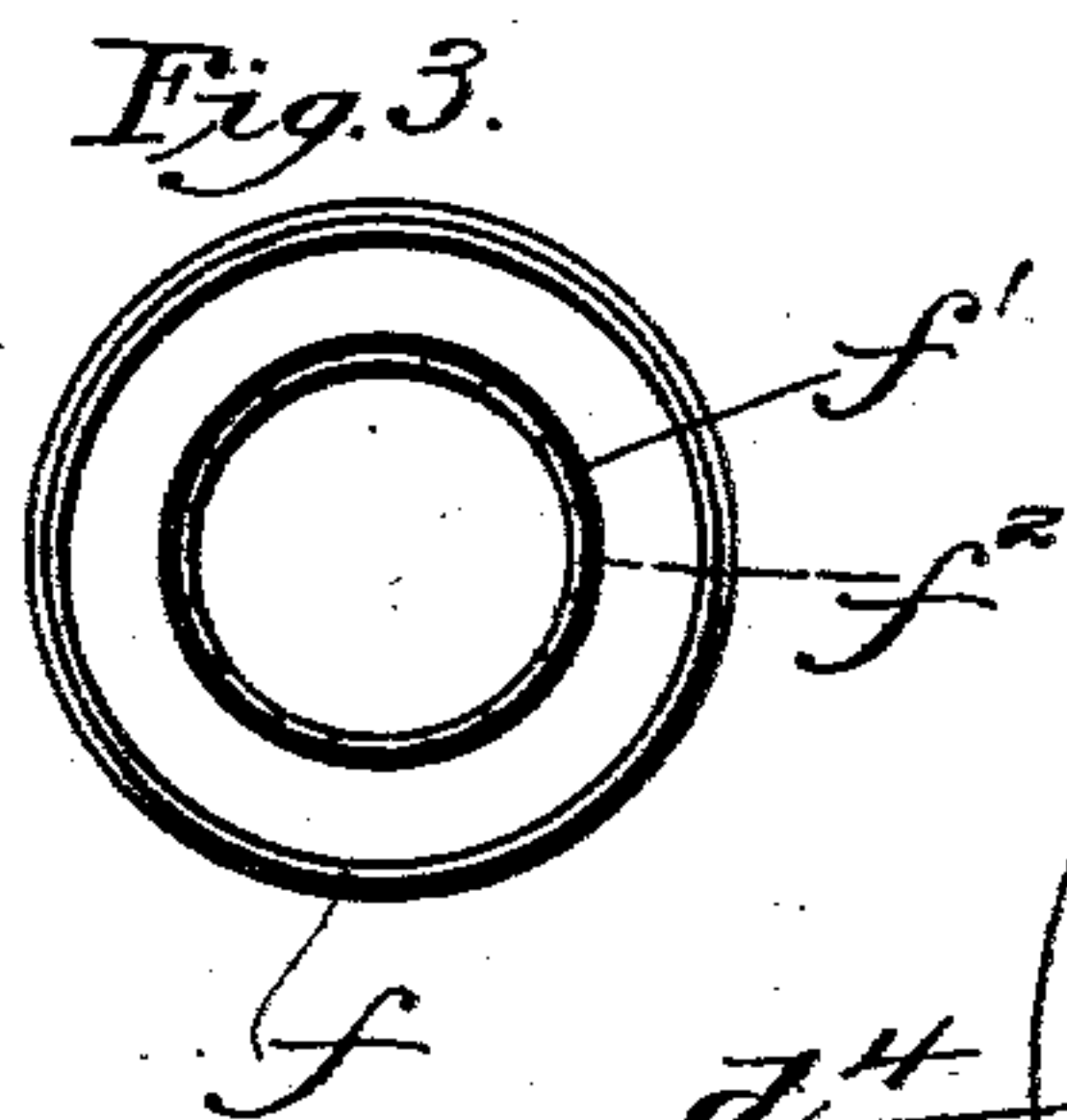
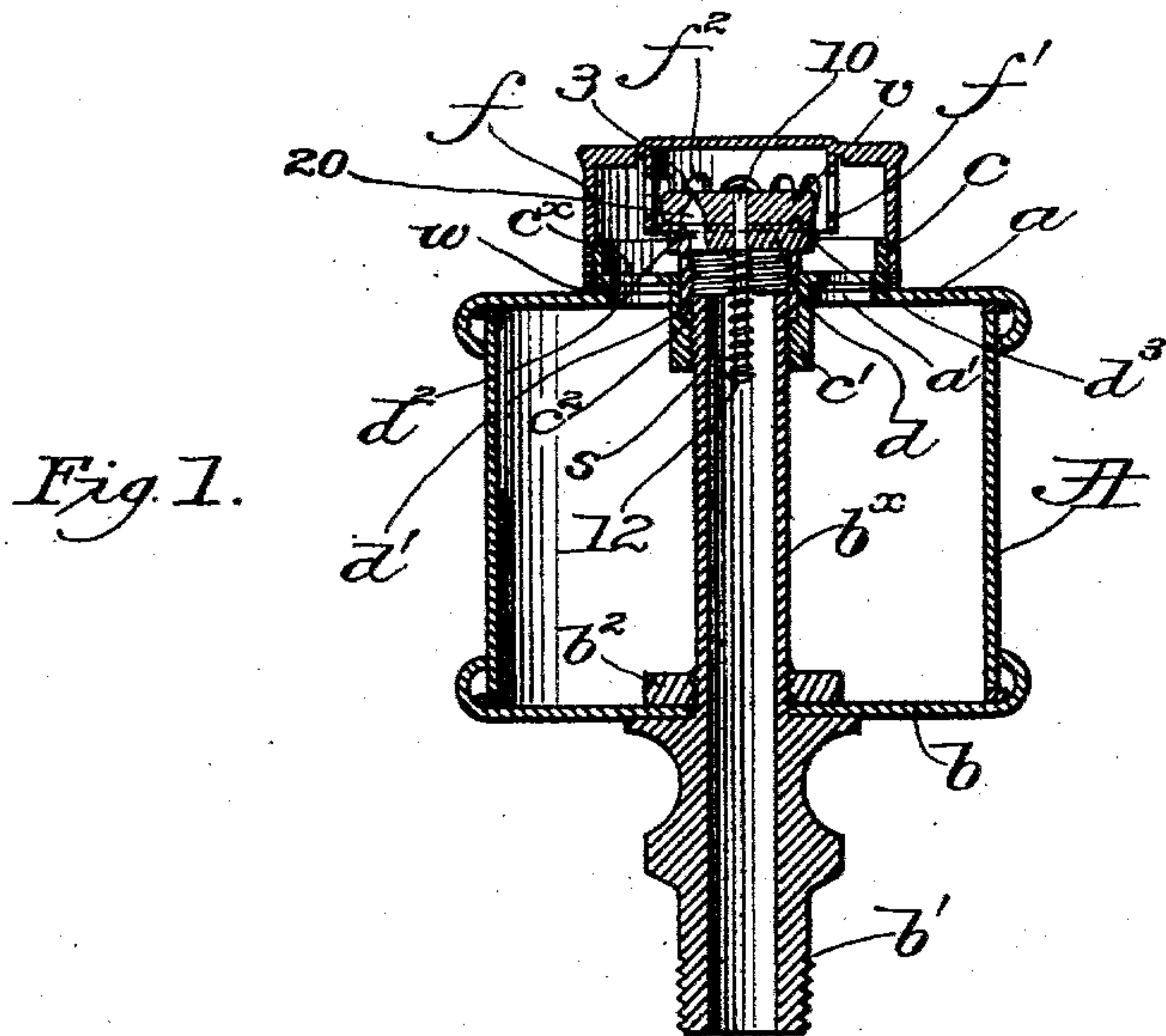
No. 629,091.

Patented July 18, 1899.

W. P. PHILLIPS.
LUBRICATING DEVICE.

(Application filed Mar. 2, 1899.)

(No Model.)



Witnesses:

Fred S. Grunke
Gustav H. Magmuth

Inventor:

William P. Phillips,
by Leroy & Gregory
attys.

UNITED STATES PATENT OFFICE.

WILLIAM P. PHILLIPS, OF BOSTON, MASSACHUSETTS.

LUBRICATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 629,091, dated July 18, 1899.

Application filed March 2, 1899. Serial No. 707,442. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. PHILLIPS, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Lubricating Devices, of which the following description, in connection with the accompanying drawings, is a specification, like letters and numerals on the drawings representing like parts.

10 This invention relates to lubricating devices applied to crank-pin bearings or other moving parts of machinery, and particularly to that type of device sometimes called "traveling oil-cups," the motion imparted to the
15 cup serving to throw some of the lubricant into the duct or passage leading to the part to be lubricated.

My present invention has for its object the production of a lubricating device of the type
20 described provided with means for very accurately and conveniently adjusting the controlling-valve which governs the quantity of lubricant through the delivery duct or passage, the valve being yieldingly connected
25 with and adapted to rest upon a seat, a locking device maintaining the valve in adjusted position on the seat. I have also made provision for retaining a sufficient quantity of the lubricant at the entrance of the delivery-
30 duct to provide for the desired feed, thereby insuring the delivery of the measured quantity at each rotation or reciprocation of the part to be lubricated.

Figure 1 is a vertical diametrical sectional
35 view of a lubricating device, showing one embodiment of my invention. Fig. 2 is a top or plan view of the device with the cap removed. Fig. 3 is an under side view of the cap. Fig. 4 is an under side view of the feed
40 regulator or valve, and Fig. 5 a top view of the valve-seat having the feed-opening communicating with the delivery duct or passage of the device.

The chamber or main reservoir for the lubricant comprises, essentially, a glass or other
45 cylinder A, having metal top and bottom portions a b of usual construction, the bottom having a hollow delivery tube or duct b^x extended therethrough and provided at its external lower end with a threaded nipple b' ,
50 adapted to be attached in usual manner to the part to be lubricated. A suitable collar

b^2 , screwed onto the tube inside of the reservoir bottom b , retains said tube firmly in place.

The upper end of the tube b^x is shown as
55 exteriorly threaded, Fig. 1, to receive the depending boss c' of the cup c , the bottom of which bears tightly upon a suitable washer w and is provided with a series of openings
60 c^x , located above the central opening a' of the reservoir-top, the boss c' passing through such opening a' . The boss is interiorly recessed to leave a shoulder c^2 , and the interiorly-
65 threaded sleeve-like extension d' of a disk-like valve-seat d is screwed upon the projecting end of the tube b^x within the boss c' down to the shoulder, so that the valve-seat projects above the cup c .

A passage d^2 through the valve-seat communicates with the tube b^x , the effective
70 opening of said passage being controlled by a rotatable disk valve v , resting on the valve-seat and connected therewith by a pin 10, extended through said valve and valve-seat
75 and having a spring s interposed between the under side of the valve-seat and the headed lower end 12 of the pin.

The valve-seat is provided with a locking-lug d^3 on its upper side to enter one of the
80 locking-recesses v^3 in the under face of the valve-disk v (best shown in Fig. 4) and thereby lock the said disk in adjusted position. I have herein shown the said disk v as provided with apertures 1 2 3 of different diameters
85 and arranged equidistant from the disk center to register one at a time with the passage d^2 in the valve-seat, as shown in Fig. 1, and in order to prevent clogging of the apertures they are counterbored at the under side
90 of the disk v , as at 20, Fig. 1, leaving practically a thin annular lip-like opening through the disk.

By lifting the disk v against the action of the spring s sufficiently to unlock the disk
95 from the valve-seat the former can be rotated to bring any desired opening 1, 2, or 3 into registry with the passage d^2 , so that the desired quantity of lubricant may pass into the delivery duct or tube b^x and thence to the
100 part to be lubricated. A pointer d^4 on the valve-seat assists the operator in locating the passage d^2 , though the locking-lug d^3 will properly position the valve-disk and valve-seat.

The upright cylindrical wall of the cup *c* is shown as threaded to engage the threaded cap *f* and screw down tightly upon the washer *w*, said cap having an internal depending annular flange *f'*, perforated at *f*² and surrounding the valve and valve-seat when in place.

Supposing that the lubricating device is mounted on a crank-pin bearing, for instance, and the reservoir filled with lubricant, at each downward stroke some of the lubricant will be thrown up through the openings *a'* and *c*^x into the cup *c*, passing thence through the openings *f*² within the flange *f'* of the cap *f* and onto the valve-disk *v*, the narrow clearance-space between the periphery of the disk and the said flange retarding the return of the lubricant to the cup on the upward stroke. This retardation insures the presence of a sufficient quantity of lubricant to pass through the proper valve-opening into the passage *d*² and thence to the delivery tube or duct *b*^x, and with the small valve-openings this retardation is necessary to insure the feed at each stroke. The lubricant passes comparatively slowly through the valve-opening, and unless it is retained about the valve for an appreciable time it will return to the cup and

reservoir without properly feeding. This is especially true if the lubricating device is moving at a low speed. When the feed is to be regulated, the cap *f* is removed and the valve-disk *v* is rotated to bring the desired feed-opening into registry with the passage *d*² in the valve-seat.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A device of the class described, comprising a reservoir having a delivery-duct, a valve-seat having an inlet-passage communicating with said duct, a rotatable controlling-valve yieldingly connected with and adapted to rest upon the seat, a locking device to maintain the valve in adjusted position on the seat, and means to intermittently deliver a surplus of lubricant to the valve and to retard its return to the reservoir.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM P. PHILLIPS.

Witnesses:

AUGUSTA E. DEAN,
FREDERICK L. EMERY.