M. KRAUT.

OIL FEEDER.

APPLICATION FILED AUG. 12, 1918.

1,358,857.

Patented Nov. 16, 1920.

2 SHEETS—SHEET 1.

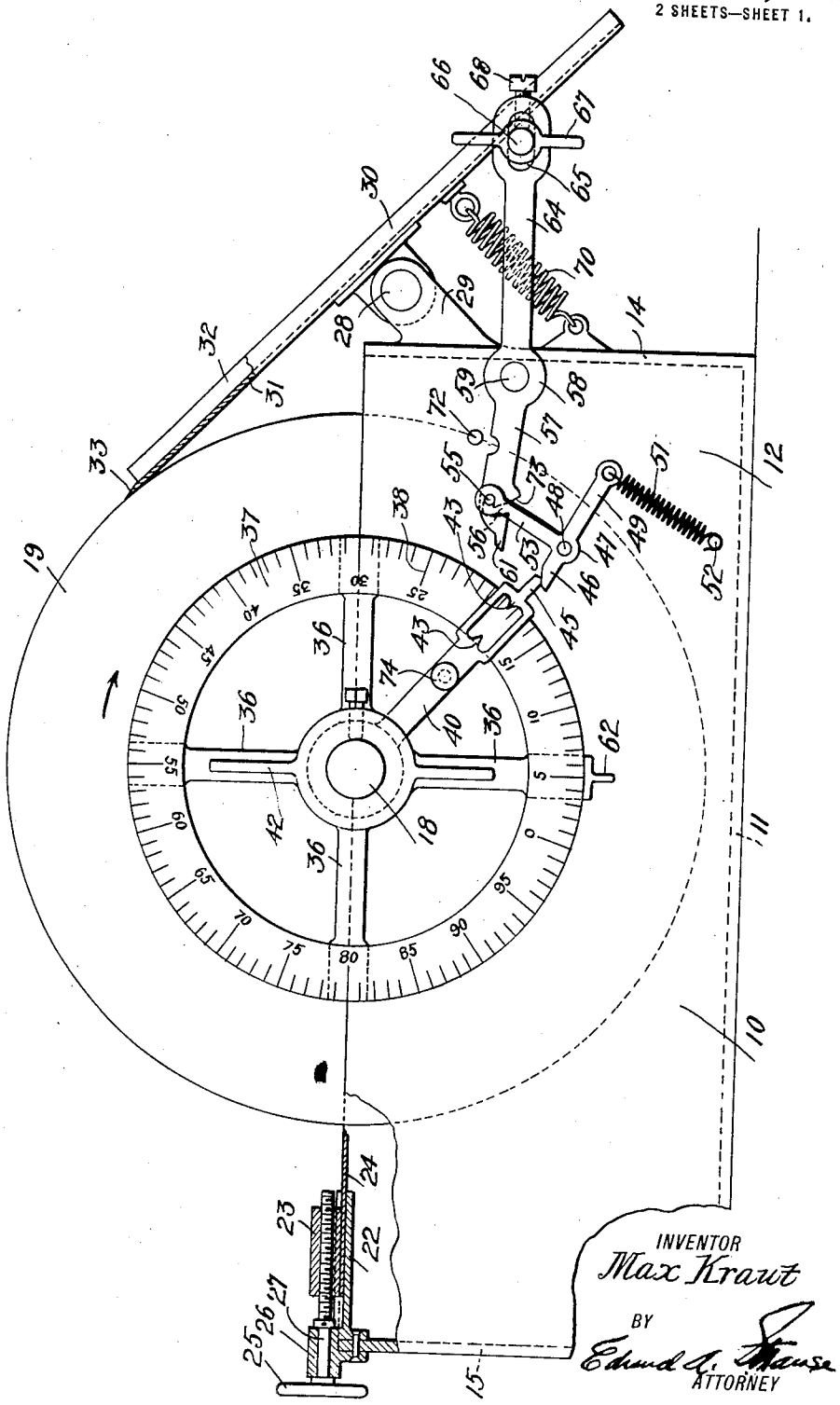


Fig. 1.

INVENTOR
Max Kraut
BY
Edmund A. Krause
ATTORNEY

M. KRAUT.

OIL FEEDER.

APPLICATION FILED AUG. 12, 1918.

1,358,857.

Patented Nov. 16, 1920.

2 SHEETS—SHEET 2.

Fig. 2.

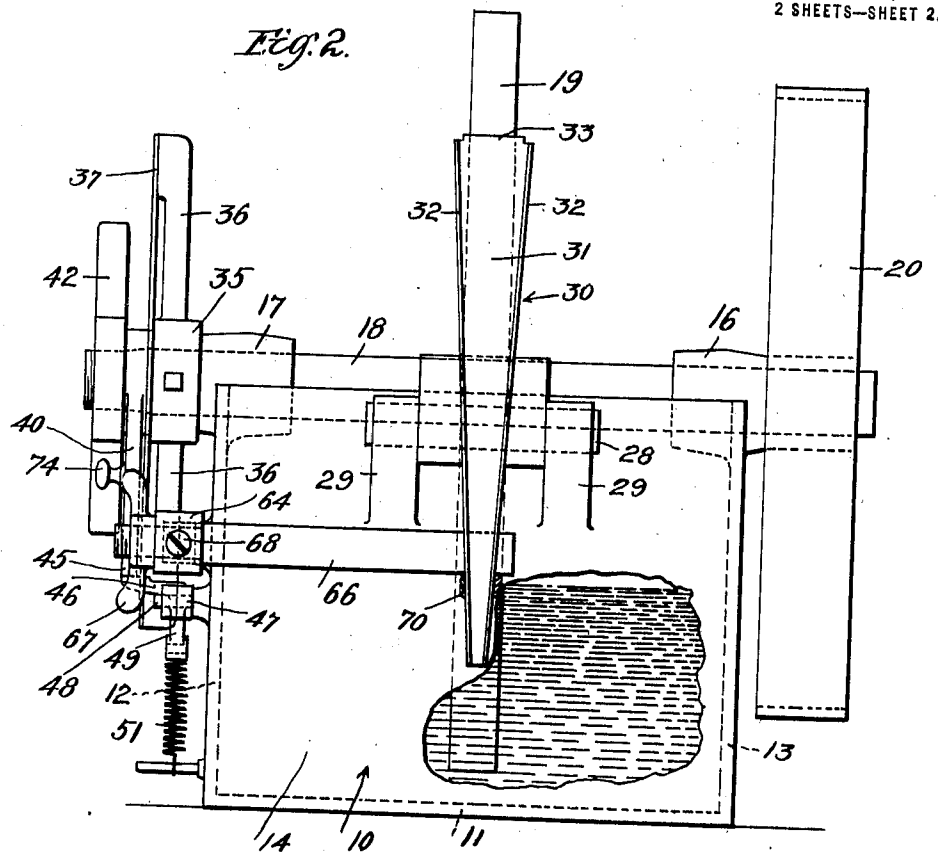


Fig. 3.

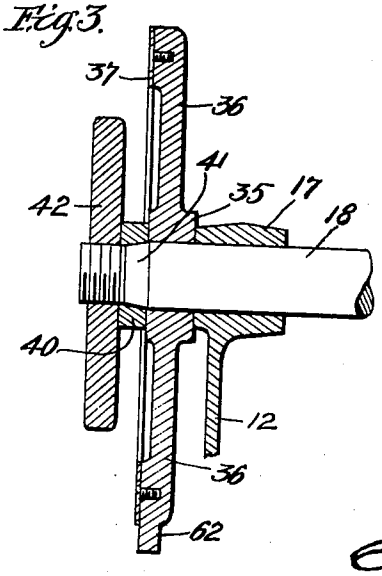


Fig. 4.

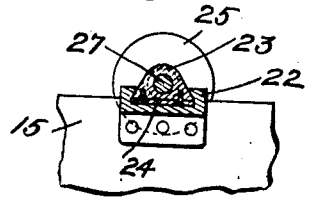
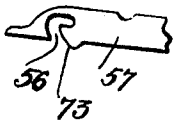


Fig. 5.



INVENTOR

Max Kraut

BY

Edmund A. Strauss

ATTORNEY

UNITED STATES PATENT OFFICE.

MAX KRAUT, OF LOS ANGELES, CALIFORNIA, ASSIGNOR TO SOUTHWESTERN ENGINEERING COMPANY, OF LOS ANGELES, CALIFORNIA, A CORPORATION OF CALIFORNIA.

OIL-FEEDER.

1,358,857. Specification of Letters Patent. Patented Nov. 16, 1920.

Application filed August 12, 1918. Serial No. 249,599.

To all whom it may concern:

Be it known that I, MAX KRAUT, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Oil-Feeders, of which the following is a specification.

My invention relates to oil or other liquid feeders, and is particularly adapted for use in connection with mineral flotation processes to deliver all kinds of liquid reagents, such as vegetable and mineral oils, acids, alkalis, and sodium sulfids, to ore grinding machines or directly to flotation apparatus.

The object of my invention is to provide a means for feeding oil or other liquids regularly and uniformly.

Another object is to provide a device whereby oil or other liquids may be delivered intermittently to any desired receptacle in measured quantities.

A further object of my invention is to provide a device which may be readily adjusted, whereby a predetermined quantity of oil or other liquids may be delivered at predetermined intervals.

A still further object of my invention is to provide a device which will be simple and durable in construction and efficient in operation.

Other objects will appear in the detailed description of my device.

Referring to the accompanying drawings,

Figure 1 is a side elevation of my device, parts being broken away and shown in section in order to illustrate more clearly the details of construction.

Fig. 2 is an end view of the same.

Fig. 3 is a sectional view showing one end of the disk shaft and the means for adjusting the tripping member.

Fig. 4 is a section taken on line 4—4 of Fig. 1.

Fig. 5 is a detail view of one end of one of the lever members.

In carrying out my invention, 10 represents a reservoir of any suitable material, preferably rectangular in shape, adapted to hold oil or other liquids, having the bottom 11, the sides 12 and 13, and the ends 14 and 15. Bearings 16 and 17 are secured to the side walls 12 and 13 in which is journaled the transverse shaft 18 having keyed thereto the annular disk 19 arranged approximately midway between the walls 12 and 13, and adapted to project into the tank 10. Secured to the end of shaft 18 is the pulley 20 adapted to be driven at any suitable speed by means of a belt connection to a source of power (not shown).

Secured to the wall 15 of the reservoir 10 is the guideway 22 in which is adapted to slide the block 23 carrying the gage blade 24. A stem 27 provided with the hand wheel 25 is journaled in the bearing 26 and is threaded on its free end to engage with a threaded aperture in the nut 23. By this arrangement it will be seen that the gage blade 24 may be minutely adjusted toward and from the periphery of the disk 19 in order that the thickness of the film of liquid adhering to the periphery of said disk may be regulated.

Pivoted at 28 to the ears 29 extending from the wall 14 of the reservoir is the delivery trough 30, provided with the bottom 31 and the side walls 32. The bottom 31 of the upwardly extending end of said trough is provided with a knife blade edge 33 adapted to engage with the periphery of the disk 19 at predetermined intervals and scrape therefrom the film of liquid, and direct the same into the trough 30, whereby it is delivered to the desired place.

In order that the knife blade 33 may be projected toward and from the periphery of the disk 19 to remove the liquid at the desired intervals as well as to regulate the degree of projection of the knife blade toward said disk, the following mechanism is employed:

Keyed to the shaft 18 and adapted to rotate therewith is the hub 35 provided with the radial arms 36 to which is secured the ring 37 having provided on its face the graduated marks 38. A radial arm 40 is loosely pivoted on the shaft 18, it being provided with a tapered bore adapted to engage with the tapered portion 41 of the shaft 18 and clamped thereon in adjusted position by the butterfly nut 42 threaded on the end of said shaft. The end of the arm 40 extends outwardly adjacent the ring 37 and is provided with the pointers 43 adapted to register with the graduated marks 38 on said ring. The end of arm 40 also carries a projecting finger 45 adapted to engage with the projection 46 of the bell crank lever 47 pivoted at 48 to the side of the reservoir 10. Secured to the end of the

arm 49 of the bell crank lever 47 is one end of a tension spring 51 which is secured at its opposite end to a pin 52 projecting from the side of the reservoir.

The arm 53 of the bell crank lever 47 is provided on its outwardly extending end with a pin 55 adapted to project into a notch 56 formed adjacent to the inwardly extending arm 57 of a lever 58 pivoted at 59 to the side of the reservoir.

The extreme end of arm 57 is provided with a finger 61 adapted to be engaged at intervals by the finger 45 and a finger 62 formed on the end of one of the radial arms.

The lever 58 is provided with an outwardly extending arm 64 having formed therein a slot 65 adapted to receive the pin 66 which is adjustably mounted in said slot, a shoulder on said pin engaging with one side of the arm 64 and a butterfly nut 67 threaded on the pin engaging with the opposite side of said arm for this purpose. In order that the pin 66 may be delicately adjusted in the slot 65, a set screw 68 is threaded in to the end of the arm 64 and engages with the pin 66.

The downwardly projecting end of the trough 30 is adapted to rest upon the pin 66 and is held yieldingly thereagainst by the spring 70 interposed between the trough and the reservoir 10. It will be seen by the foregoing mechanism that the knife blade 33 of the trough 30 may be minutely adjusted toward and from the periphery of the disk 19 in order that a selected quantity of the liquid may be removed therefrom, it being only necessary to loosen the butterfly nut 67, adjust the set screw 68, and then tighten the butterfly nut for this purpose.

The operation of the device is as follows: Rotary motion in the direction indicated by the arrow is imparted to the disk 19 which carries a film of the liquid upon its periphery, the thickness of said film being regulated by the knife blade 24. When the finger 45 engages the projection 46 on the bell crank lever 47, said lever is caused to rock and release the pin 55 from engagement with the slot 56, thus permitting the spring 70 to act upon the trough 30 and draw the blade 33 away from the periphery of the disk 19, whereupon no liquid will be removed from the surface of the disk. At this time the lever 57 rests upon the stop pin 72 and the finger 61 projects in the path of the finger 62, and the pin 55 rests on the edge 73 of the slot 56. Upon continued revolution of the disk 19 the finger 62 engages with the finger 61 and causes the lever 58 to rock and force the blade 33 again into operative relation with the periphery of the disk and the pin 55 to ride in the slot 56 to lock the blade into said operative position.

It will be observed that the length of time during which liquid is being removed from the periphery of the disk 19 is governed by the distance between the fingers 45 and 62, which distance can be varied, it being only necessary to loosen the butterfly nut 42 and grasp the handle 74 on the arm 40, and adjust the pointers 43 in the desired relation to the graduation marks, and then tighten up on the butterfly nut 42 for this purpose.

What I claim is:

1. A device of the class described, comprising a liquid reservoir, a rotatable element mounted in said reservoir and adapted to collect a film of the liquid on its periphery on its rotation, and means for regulating the thickness of the liquid film.

2. A device of the class described, comprising a liquid reservoir, a rotatable element mounted in said reservoir, and means for removing a predetermined quantity of said liquid from said rotatable element at timed intervals.

3. A device of the class described, comprising a liquid reservoir, a rotatable disk mounted in said reservoir and adapted to collect a film of liquid on its periphery, means for regulating the thickness of said liquid film on said periphery, and means for removing a selected quantity of said film from the periphery at timed intervals.

4. A device of the class described, comprising a liquid reservoir, a rotatable disk mounted in said reservoir, a scraper pivoted adjacent the periphery of said disk, a lever for rocking said scraper, and means associated with said disk for actuating said lever at predetermined intervals.

5. A device of the class described, comprising a liquid reservoir, a rotatable disk mounted in said reservoir, a scraper pivoted adjacent the periphery of said disk for removing liquid therefrom at timed intervals, a graduated dial carried by said disk and having an adjustable pointer associated therewith for determining said intervals, a lever associated with said scraper for rocking the same toward and away from said periphery, a locking member associated with said lever for holding the scraper in operative relation with said periphery, a tripping finger carried by said dial adapted to engage with said lever to project it toward said periphery, and a tripping finger carried by said adjustable pointer adapted to engage with the locking member to release the same from engagement with said scraper lever.

In witness that I claim the foregoing I have hereunto subscribed my name this 12th day of July, 1918.

MAX KRAUT.