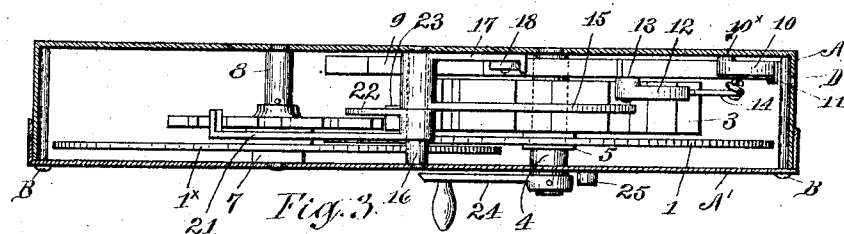
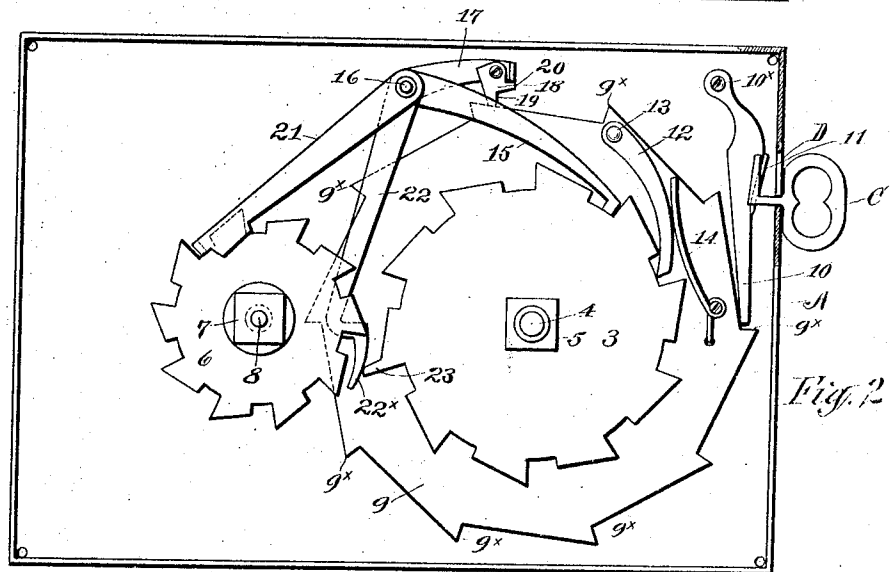
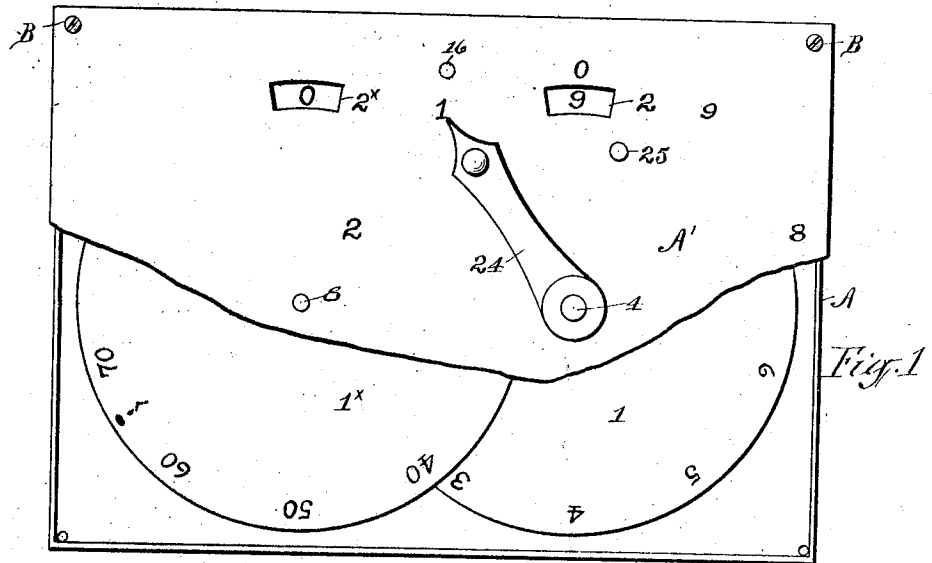


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MILK REGISTERING MACHINE.
APPLICATION FILED FEB. 23, 1909.

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Patented Oct. 19, 1909.



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UNITED STATES PATENT OFFICE.

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MILK-REGISTERING MACHINE.

937,389.

Specification of Letters Patent.

Patented Oct. 19, 1909.

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To all whom it may concern:

Be it known that I, CHARLES F. SNYDER, a citizen of the United States, and resident of Camillus, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Milk-Registering Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention resides in the construction of a simple, reliable and inexpensive machine which is designed to be operated by a milk-dealer and customer for accurately registering the amount of milk purchased from time to time, the object of the invention being to avoid the handling of tickets used by milk-dealers and purchasers, which is a very unsanitary practice, it being well known that, in many instances, persons have acquired the habit of placing the tickets in the milk-receptacle, which of course is most objectionable.

The present invention consists in the novel arrangement and combination of the component parts of the registering-machine hereinafter fully described and claimed.

In the accompanying drawings Figure 1 is a front elevation of the milk-registering machine embodying my invention, a portion of the inclosing case being broken away; Fig. 2 is an elevation with the front of the case and dial-wheels removed to show the mechanisms which actuate said wheels; and, Fig. 3 is a horizontal sectional view of the inclosing-case showing more clearly the arrangement of the parts of the machine.

Like characters of reference indicate like parts in the several views.

—A— denotes an upright rectangular-shaped case in which the registering-mechanisms are inclosed. Said case is preferably formed of sheet metal and is provided with a removable front-wall —A'— fastened in place by means of screws —B—B— or otherwise. This case is designed to be attached to any suitable and convenient support by means of screws or other fastening devices, or the screws —B—B— may serve for the purpose.

The registering-mechanism comprises essentially two upright dial-wheels or disks —1—1* each provided on its front face with

numerals, those of one wheel being arranged to be brought to view, one at a time at an opening —2— in the front-wall of the case, and those of the other wheel arranged to be brought to view at a like opening —2* in said front wall. These wheels may be so numbered as to adapt the machine to register almost any amount or amounts. However for all practical purposes, the numbering shown will suffice for a clear understanding of the machine, the wheel —1— bearing "zero", 1, 2, 3, 4, 5, 6, 7, 8, 9, and the other wheel —1* bearing "zero", 10, 20, 30, 40, 50, 60, 70, 80, 90, the latter wheel adapted to be turned to bring its numerals successively into registry with the opening —2* incident to the complete revolutions of the wheel —1— as will be shortly more fully explained.

The wheel or disk —1— is carried on the front of a ratchet-wheel —3— mounted loosely on a shaft —4— suitably journaled at its ends in the front and rear walls of the inclosing-case. To fasten said wheel —1— to the ratchet-wheel I prefer to provide the former with a square central opening which is fitted to a correspondingly shaped hub —5— formed on the ratchet-wheel. The other wheel or disk —1* is supported on a ratchet-wheel —6— by providing the same with a square central opening which receives correspondingly shaped hub of a ratchet-wheel as indicated at —7—, and is thus rotated by said ratchet-wheel, said ratchet-wheel being mounted loosely on a shaft —8— supported at its ends in the front and rear walls of the case as shown in Fig. 2. Back of the aforesaid ratchet-wheel —3— is disposed the main operating-wheel —9— suitably fastened to the shaft —4— and provided with ratchet-teeth —9* with which a retaining-pawl —10— normally engages to prevent the turning of the wheel —9— to the left for the purpose hereinafter explained.

The retaining-pawl —10— is pivoted to the rear wall of the case as indicated at —10* and is adapted to be thrown out of engagement with the ratchet-wheel —9— by means of a key —C— inserted removably through a slot —D— in the adjacent end wall of the case, and formed with an offset which is shaped to engage an inclined flange —11—

formed on the pawl, whereby the latter is forced away from the wheel.

To the front side of the ratchet-wheel —9— is pivoted a pawl —12— as indicated at —13—, which pawl is held in engagement with the ratchet-wheel —3— by a suitable spring —14— carried on the wheel —9— and bearing against said pawl, whereby the wheel —3— is rotated to the right with the wheel —9—.

The ratchet-wheel —3— is provided with a retaining-pawl —15— which is pivotally supported at one end on a shaft —16— secured at its ends in the front and rear walls of the case. Said retaining pawl —15— normally engages the wheel —3— to prevent movement of the dial-wheel —1— either by accident or tampering with the latter wheel through the opening —2—. This pawl —15— is actuated by an arm —17— pivoted at one end to the shaft —16— and formed integral with or securely fastened to the pawl, as shown in Fig. 3, to the free end of which arm is pivoted a dog —18— adapted to be actuated by the ratchet-wheel —9— for lifting the arm whereby the latter is caused to throw the retaining-pawl —15— out of engagement with the ratchet-wheel —3—, so as to release the wheel —3— and allow it to be turned for rotating the dial-wheel carried on said wheel —3—.

The dog —18— is formed with a depending lug —19— for engaging the teeth of the wheel —9—, and with a similar horizontally projecting-lug —20— which is disposed to engage an offset on the end of the arm whereby the latter is lifted when the wheel —9— is turned to the right as clearly illustrated in Fig. 2. By this construction of the dog —18— it is evident that the wheel —9— is turned to the left, the dog will move without lifting the arm —17—.

The ratchet-wheel —6— is provided with a retaining-pawl —21— pivotally supported on and depending from the shaft —16— and is formed integral with or securely fastened to a depending lever —22— pivotally supported on said shaft and having its lower or free end portion formed with a curved offset —22*— disposed in the path of the lug —23— projecting from one of the teeth of the wheel —3—. The engagement of this lug —23— with the offset of the lever —22— lifts the aforesaid pawl —21— out of engagement with the ratchet-wheel —6—, and when the pawl is thus disengaged, the lug —23— engages one of the teeth of the wheel —6— and turns the latter whereby the dial-wheel or disk —1*— is rotated therewith to carry one of its numerals to the opening —2*— in the front of the case.

When a numeral has been brought to the opening —2*— the lug —23— is disengaged from the wheel —6—, whereupon the pawl —21— drops by gravity into engagement

with the said wheel and thus locks the latter against rotation. This locking of the wheel —6— obviously prevents the dial-wheel —1*— from being accidentally turned or moved maliciously by a person inserting an instrument through the opening —2*—.

The described mechanism is operated by means of a crank —24— suitably attached to the projecting front end of the shaft —4—. This crank constitutes a pointer which traverses a dial on the outer face of the front wall of the case, the numbers of which dial correspond with those of the wheel or disk —1—. The said pointer is designed to be moved primarily to the left by the person purchasing milk for the purpose of indicating to the milk-dealer or seller the amount desired, and it is adapted to engage a stop —25— on the case to limit its movement and normally lies against the left side of the stop. The said pointer is to be moved back to its normal position by the dealer after he has delivered to the customer the amount of milk indicated on the dial by the pointer.

To operate the machine, the customer first inserts the key —C— into the slot —D— and turns the key, whereby the engagement of the key with the inclined flange —11— of the retaining-pawl —10— throws the latter out of engagement with the ratchet-wheel —9— to free the said wheel. The customer then moves the pointer to the left, as illustrated, to indicate the quantity of milk desired as before explained, it being understood that the numerals on the traversed dial may indicate either "pints" or "quarts". After moving the indicator to a numeral of the dial, the operator removes the key —C— (which he or she retains), whereby the pawl —10— is caused to automatically move into engagement with the ratchet-wheel —9— to prevent further left-hand rotation thereof, the ratchet-wheel —3— being locked by means of the pawl —15—. The said movement of the wheel —9— obviously causes the spring-pressed pawl —12— to drag over the teeth of the ratchet-wheel —3—, said teeth being caused to strike the depending lug —19— of the pivoted dog —18— which is caused to move without lifting the arm —17—.

When the dealer has delivered the amount of milk indicated by the pointer —24—, he moves the said pointer to the right until it strikes the stop —25—. This right-hand movement of the pointer and resultant corresponding rotation of the shaft —4— and ratchet-wheel —9— causes the latter to actuate the dog —18—, whereby the lug —20— of said dog engages the offset on the free end of the arm —17— to lift the said arm which throws the retaining pawl —15— out of engagement with the ratchet-wheel —3—. When the wheel —3— is thus released it is

permitted to rotate with the ratchet-wheel —9—, motion being imparted to the said wheel —3— by the spring-pressed pawl —12— carried on the wheel —9— as herein-
 5 before stated. This rotation of the ratchet-wheel —3— obviously imparts like rotation to the dial-wheel —1— whereby the latter is caused in the first instance to present to the opening —2— the number corresponding to
 10 that which was indicated by the pointer. For example, if the pointer is set at the numeral "one" in the first operation of the machine, and then moved back to the stop, the numeral "one" will be exposed at the
 15 opening —2—, assuming that, in the next operation, the pointer is set at "four", then by moving it back to the stop the dial-wheel —1— will be rotated to such a degree as to present "five" at the opening —2—. It will
 20 be understood that by then moving the pointer to "one" and back to the stop, the dial-wheel —1— will present "six" at the opening —2—, and so on. When the dial-wheel —1— has made a complete revolution, its highest number will have been brought to
 25 the opening —2—. As the wheel —1— nears the completion of its rotation, the lug —23— on the ratchet-wheel —3— comes in contact with the curved offset —22* of the lever
 30 —22— depending pivotally from the shaft —16—. This engagement of the lug —23— and lever —22— causes the lever to lift the retaining-pawl —21— out of engagement with the ratchet-wheel —6— whereby the
 35 latter is freed so as to allow it to be turned to the left by the lug —23—. This rotation of the ratchet-wheel —6— causes the dial-wheel —1* to turn therewith and thus present in the first instance at the opening —2*
 40 a numeral corresponding with the highest numeral of the dial-wheel —1—. For example, assuming the wheel —1— to have made a complete revolution so as to present "ten" at the opening —2—, then the dial-
 45 wheel will present "ten" at the opening —2*. It is evident that upon the next complete revolution of the dial-wheel —1—, the dial-wheel —1* will present "twenty" at the opening —2* and so on. When the dial-
 50 wheel —1* has made a complete revolution, its highest numeral will obviously appear at the opening —2*.

It will be observed that, following each movement of the pointer back to its stop, the
 55 pawl —15— drops into engagement with the ratchet-wheel —3— and thus locks the dial-wheel —1— carried by the latter, whereby the said dial-wheel is prevented from being maliciously tampered with by the insertion
 60 of an instrument through the opening —2—, and at the same time the pawl —10— engages the ratchet-wheel —9— and locks the same to prevent movement of the pointer, which latter can only be operated when the
 65 pawl —10— is actuated by the key —C— for

releasing the wheel —9—. Furthermore, the dial-wheel —1* is normally locked against rotation by the engagement of the pawl —21— with the ratchet-wheel, which pawl
 70 drops by gravity onto the wheel when its actuating lever —22— is freed from the lug —23— on the ratchet-wheel —3—.

By the described machine, it will be seen that the amount of milk purchased during a week, month or longer period, can be accu-
 75 rately registered, thus dispensing with tickets which are commonly used by milk-dealers and their customers.

What I claim as my invention is:—

1. In a registering-machine for the pur-
 80 pose stated, the combination of an inclosing-case provided with sight-openings, a pair of ratchet-wheels of different sizes supported in said case and each having secured to it a wheel provided with numerals to be con-
 85 secutively exposed at one of the openings, the larger ratchet-wheel provided with means for turning the smaller ratchet-wheel for a partial revolution at each complete revolution of said larger ratchet-wheel, re-
 90 taining-pawls holding said ratchet-wheels against rotation in one direction, a main wheel provided with ratchet-teeth, a pawl carried on said main wheel and adapted to engage the larger of the pair of ratchet-
 95 wheels to rotate the same in opposite direction, said main wheel being rotatable in both directions, a key released pawl normally locking the main ratchet-wheel against rota-
 100 tion, means for moving the aforesaid retaining-pawls out of engagement with the pair of ratchet-wheels to permit the latter to rotate with the main ratchet-wheel, and indi-
 105 cating means including a pointer for rotating said main ratchet-wheel as set forth.

2. In a machine for the purpose stated, the combination of two suitable journaled wheels each bearing numerals, means for
 110 consecutively exposing the numerals of each wheel, a pair of different sized ratchet-wheels rotatable in opposite directions, and imparting motion to the numeral wheels, a shaft, retaining-pawls supported on said shaft for locking said ratchet-wheels against
 115 reverse rotation, the larger ratchet-wheel provided with a projection adapted to impart a partial rotation to the smaller ratchet-wheel during each complete rotation of the
 120 larger ratchet-wheel, a main wheel disposed concentric with the larger ratchet-wheel and adapted to rotate independently thereof in one direction, a spring-pressed pawl carried on said main wheel and engaging the larger
 125 ratchet-wheel to cause the latter to rotate with the main wheel in one direction, a key-controlled locking device for the main wheel, an arm connected to the retaining pawl of the larger ratchet-wheel, a dog pivoted to said arm and engaging the main wheel and
 130 operating said arm for moving the retain-

ing-pawl out of engagement with the larger
ratchet-wheel to permit the latter to rotate
with the main wheel, a lever disposed to be
actuated by the projection on the larger
5 ratchet-wheel for moving the retaining-pawl
of the smaller ratchet-wheel out of engage-
ment, and an indicator including a movable

pointer for rotating the aforesaid main
wheel as set forth.

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