

(No Model.)

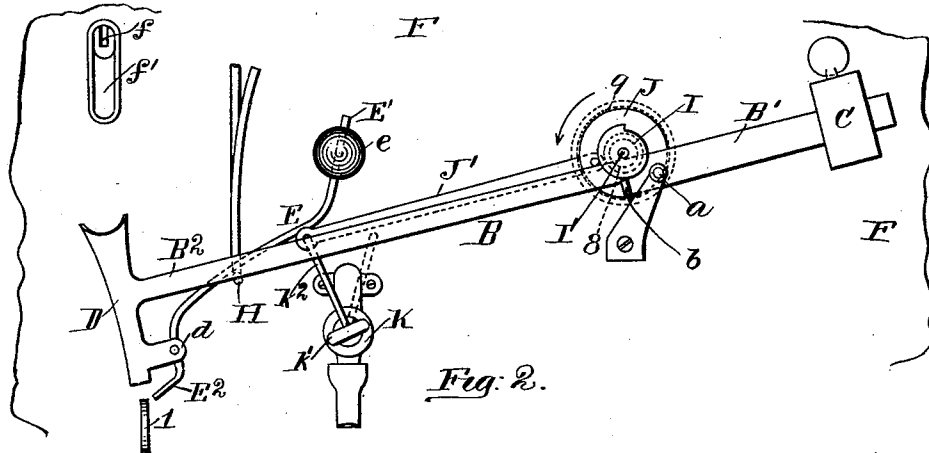
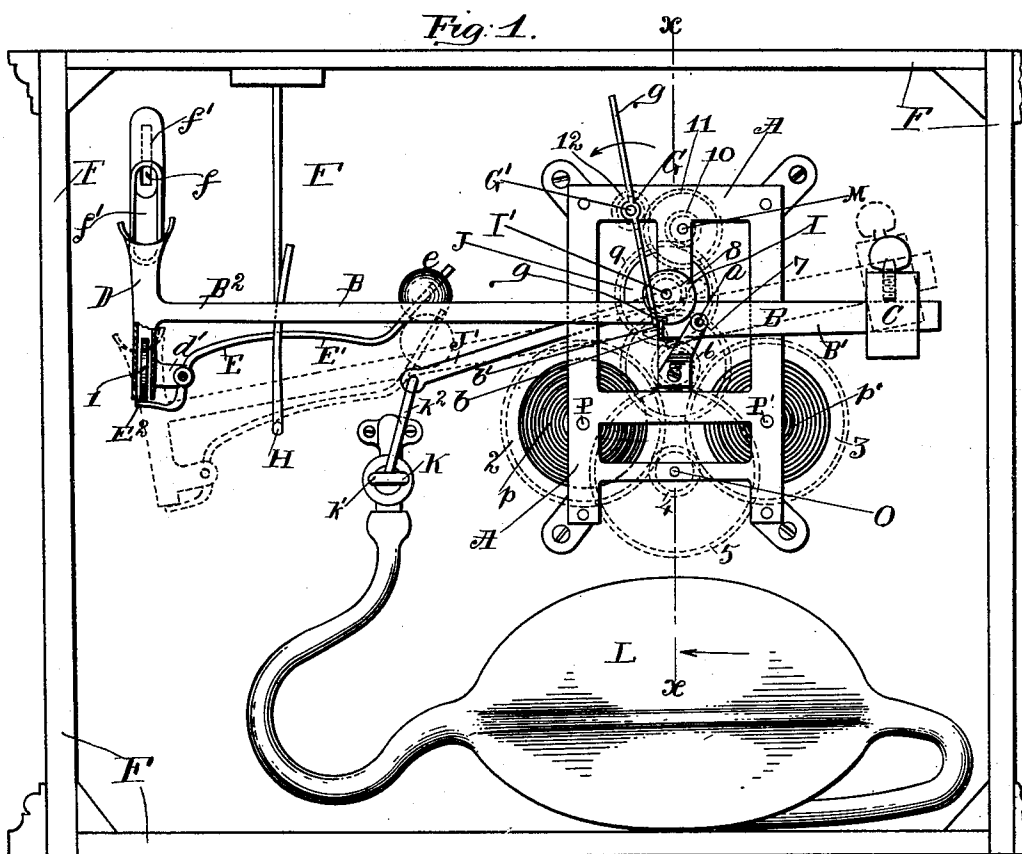
2 Sheets—Sheet 1.

E. B. LUNDY.

AUTOMATIC LIQUID DISTRIBUTING MACHINE.

No. 480,598.

Patented Aug. 9, 1892.



Witnesses

James W. Lindsay.
Geo E. Knight.

Inventor

Everett B. Lundy

By Thomas H. Holiday
his Attorney

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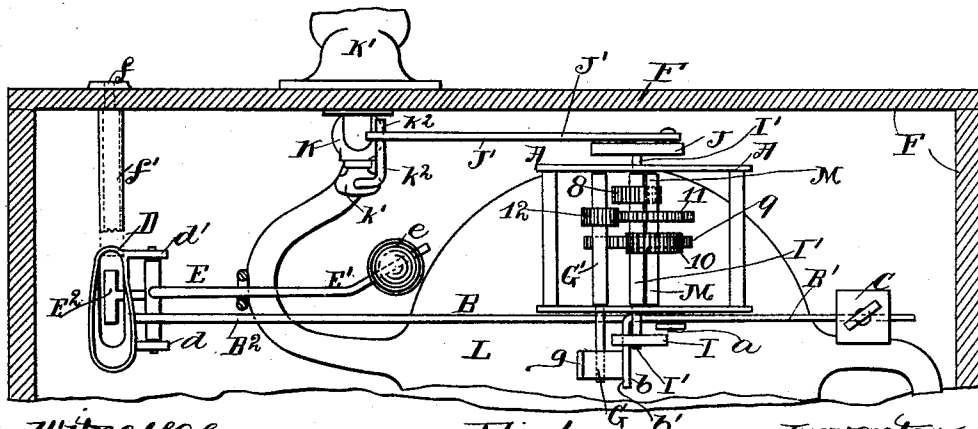
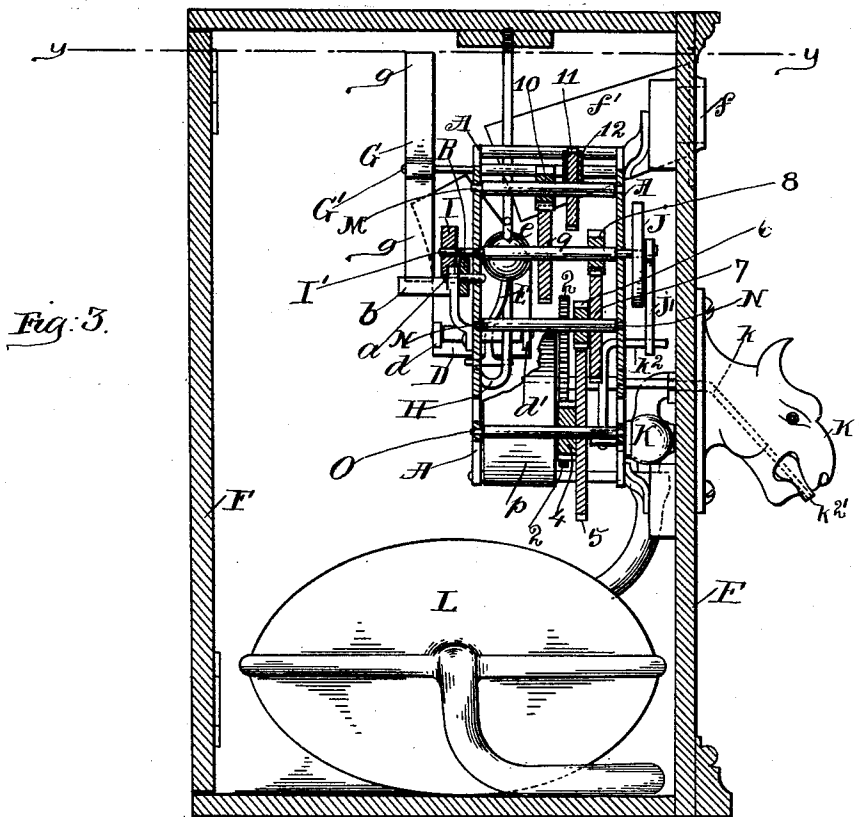
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Fig. 4

Inventor

Everett B. Lundy

By Thomas W. Hodge
his Attorney

UNITED STATES PATENT OFFICE.

EVERETT BELL LUNDY, OF BOSTON, MASSACHUSETTS.

AUTOMATIC LIQUID-DISTRIBUTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 480,598, dated August 9, 1892.

Application filed January 7, 1892. Serial No. 417,316. (No model.)

To all whom it may concern:

Be it known that I, EVERETT BELL LUNDY, a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Automatic Liquid-Distributing Machines, of which the following is a specification.

This invention relates to that class of machines that discharge a limited amount of suitable fluid when a suitable coin has been deposited therein and to that class of machines that work automatically.

This invention consists, essentially, in the peculiar construction and operation of a coin-discharging and coin-balancing lever and the means employed to perform their function.

In the drawings, Figure 1 is a rear side elevation of my invention in mesh with an ordinary clockwork mechanism and drawn in accordance therewith, the door being removed from off the cabinet. Fig. 2 is a detail side elevation. Fig. 3 is a transverse section on line *x x*, Fig. 1. Fig. 4 is a detail plan section on line *y y*, Fig. 3.

Referring to parts, A denotes the framework, upon which is fulcrumed at *a* my balance-lever B, that has provided upon its arm B' an adjustable counterbalance-weight C to offset the weight of the mechanism sustained upon the opposite arm B².

D represents the coin-receiver, that has two lugs or projections *d* and *d'* protruding therefrom, which acts as a fulcrum for the coin-discharging lever E. This coin-discharging lever is designed to pass under the receiver D to prevent any coin dropping therethrough until weighed by the balance-lever B. To the arm E' of the discharging-lever E is adjusted a counterbalance-weight *e* to support the arm E², upon which the said coin *1* falls and remains until disposed of by the formal operation of the machinery. The aforesaid coin-receiver, coin, and coin-discharging lever are carried upon the arm B² of the balance-lever B. The arm B' of the balance-lever B, which carries the aforesaid counterbalance-weight C, is designed to just yield to the force or weight of the opposite arm B² when the standard coin has been deposited within the receiver.

What I mean by the "standard coin" is

this: the coin that I may use to balance my balance-lever B, as I have just described.

When the standard coin *1* has been fed through the slot *f* on the cabinet F, it rolls down the chute *f'* and drops into the receiver D upon the arm E² of the discharging-lever E, which, not yielding to its force, adds the burden to the arm B² of the balance-lever B, which, being sensitive to the additional weight, yields to the greater force and the balance-lever tilts lightly with the aforesaid coin. While the balance-lever is being tilted by its burden the projection *b* on said lever is receding from the blade *g* of the escapement G, and when the lever B is interrupted in its fall by the arm E' of the discharging-lever E coming in contact with the surface H, upon which the said arm E' rests and supports the arm B² of the balance-lever, as illustrated by the dotted lines in Fig. 1, the escapement G becomes out of contact with the side *b'* of the projection *b* and quickly yields to the force transmitted by the clock-springs through the respective gearing 2 3 4 5 6 7 8 9 10 11 to its own shaft. After a brief action sufficient to take up the lost motion the spiral cam I comes in contact with the upper edge of the projection *b* on the balance-lever and gradually drives the arm B² of the lever farther downward in accordance to the throw of the cam I, while in the same degree of movement the discharging-lever E is being tilted, as represented in Fig. 2, which illustrates the arm E' of the coin-discharging lever as being supported by the surface H, upon which the arm E' slides, and becomes more vertical in ratio to the fall of the balance-lever B, consequently withdrawing the arm E² from under the receiver D and permitting the coin to fall. When the cam-shaft I' has traversed about half a revolution, as illustrated in Fig. 2, upon which is secured the crank-disk J, the valve K becomes open, which permits of a limited amount of perfume or liquid being ejected through the passage *k* in the figure-head K' by the contraction of the distended receptacle L, in which the said fluid is held. To the valve-handle *k'* is secured a suitable arm *k*², which is connected to one end of the connecting-rod J', and the other end of the connecting-rod J' is connected to the crank-disk J, through which the aforesaid

valve is actuated. After the perfume has been discharged and the coin deposited within the cabinet from the receiver the cam-shaft I' has about completed its revolution and the balance-lever its lowest fall. The latter, being released from the weight of the coin, immediately rebounds to its primary position, as illustrated in Fig. 1, when the spiral cam I completes its revolution, for it will be observed in the drawings that when the cam I reaches its greatest throw it immediately assumes the position of the lesser throw, which is peculiar to spiral cams, thus causing the projection *b* on said balance-lever to cross the path of the rotary escapement G and instantly stop further action of the same, bringing the entire machinery to rest.

My balance-lever mechanism comprises three properties. First, if the coin deposited within the receiver should be lighter in weight than that of the standard it would only act upon the balance-lever B as a force to form equilibrium of forces upon the respective arms B' and B² of said lever, respectively; second, should the coin or weight be that of the standard it would successfully operate my mechanism; third, if the coin or weight is heavier than that of the standard it will drive the balance-lever downward with such velocity as to trip the coin-discharging lever E upward by its striking the rigid surface H with such force and at a much greater leverage than that which supports the burden that the lever E swings readily upright until the coin has been discharged from the receiver D, upon which action the arm B' of the balance-lever becomes the leading force and immediately returns the balance-lever to its normal position, for the aforesaid operation is too rapid to admit of any serious action on the part of the escapement G. Thus whatever movement the cam I had attained it would be involved within the before-mentioned lost motion.

To the valve K is connected the neck of the liquid-receptacle L, which consists of an expandible vessel, it being made from a rubber material, thus producing a contracting element upon the inclosed liquid when forced therein, and thus driving the same through the opening K² when the said valve is opened. I do not claim the specific construction of the vessel L, for it is optional how the aforesaid vessel is constructed so far as it efficiently drives the liquid out of the same.

The escapement-shaft G' is driven by the intermediate shaft M, which is actuated by the driving or cam shaft I', and the said shafts are provided with suitable speed-gearing 8 9 10 11 12, respectively, to successfully operate the mechanism attached thereto. To the cam-shaft I' is provided suitable gearing 8 and 9, the former being in mesh with the gear 7, compounded with 6 on shaft N, that receives its motion from the respective spring or main gears 2 and 3 on shafts P and P', that are

connected to clock-springs *p* and *p'*, respectively, and which are wound as with ordinary clock-springs. From the cam-shaft I' to the main gears 2 and 3, inclusively and respectively, can be arranged any amount of gearing, as the case may desire, to successfully operate the entire machinery.

Having thus described my invention, I claim—

1. In a coin discharging and balancing mechanism, the combination, with an ordinary clockwork mechanism, of the rotary escapement or blade on its highest-speed spindle and the cam and crank-disk secured to the spindle I', the latter being connected to the arm of the valve by a connecting-rod and the former being engaged with a horizontal projection at right angles with the balance-lever and a part thereof, said lever being fulcrumed to the framework of the mechanism and provided with a similar horizontal projection to engage with the escapement and having one arm provided with a counterbalance-weight and the other with a suitable coin-pocket at its end, that is provided with lugs that fulcrum the coin-discharging lever, which has one of its arms provided with a counterbalance-weight and the other covering the under part of the coin-pocket, which said coin-discharging lever is actuated by the movement of the balance-lever and by the rigid arm H, all substantially as set forth.

2. A suitable cabinet provided with a coin aperture and chute and with a figure-head provided with a liquid-passage that is directly communicated with a liquid-receptacle, said passage provided with a valve that has an arm vertically projecting from the stem thereof, in combination with a coin discharging and balancing mechanism consisting of an ordinary clockwork mechanism provided with a rotary escapement or blade on its highest-speed spindle and with a cam and crank-disk secured to the spindle I', the latter being connected to the arm of the valve by a connecting-rod and the former being engaged with a horizontal projection at right angles with the balance-lever and a part thereof, said lever being fulcrumed to the framework of the mechanism and provided with a similar horizontal projection to engage with the escapement and having one arm provided with a counterbalance-weight and the other with a suitable coin-pocket at its end, that is provided with lugs that fulcrum the coin-discharging lever, which has one of its arms provided with a counterbalance-weight and the other covering the under part of the coin-pocket, which said coin-discharging lever is actuated by the movement of the balance-lever and by the rigid arm H, all substantially as and for the purpose set forth.

EVERETT BELL LUNDY.

Witnesses:

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JAMES W. LINDSAY.