Aug. 5, 1952 E. S. SCANNELL ET AL 2,605,931

BEVERAGE CONTROL SYSTEM AND DISPENSING MEANS

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Fig. 9.

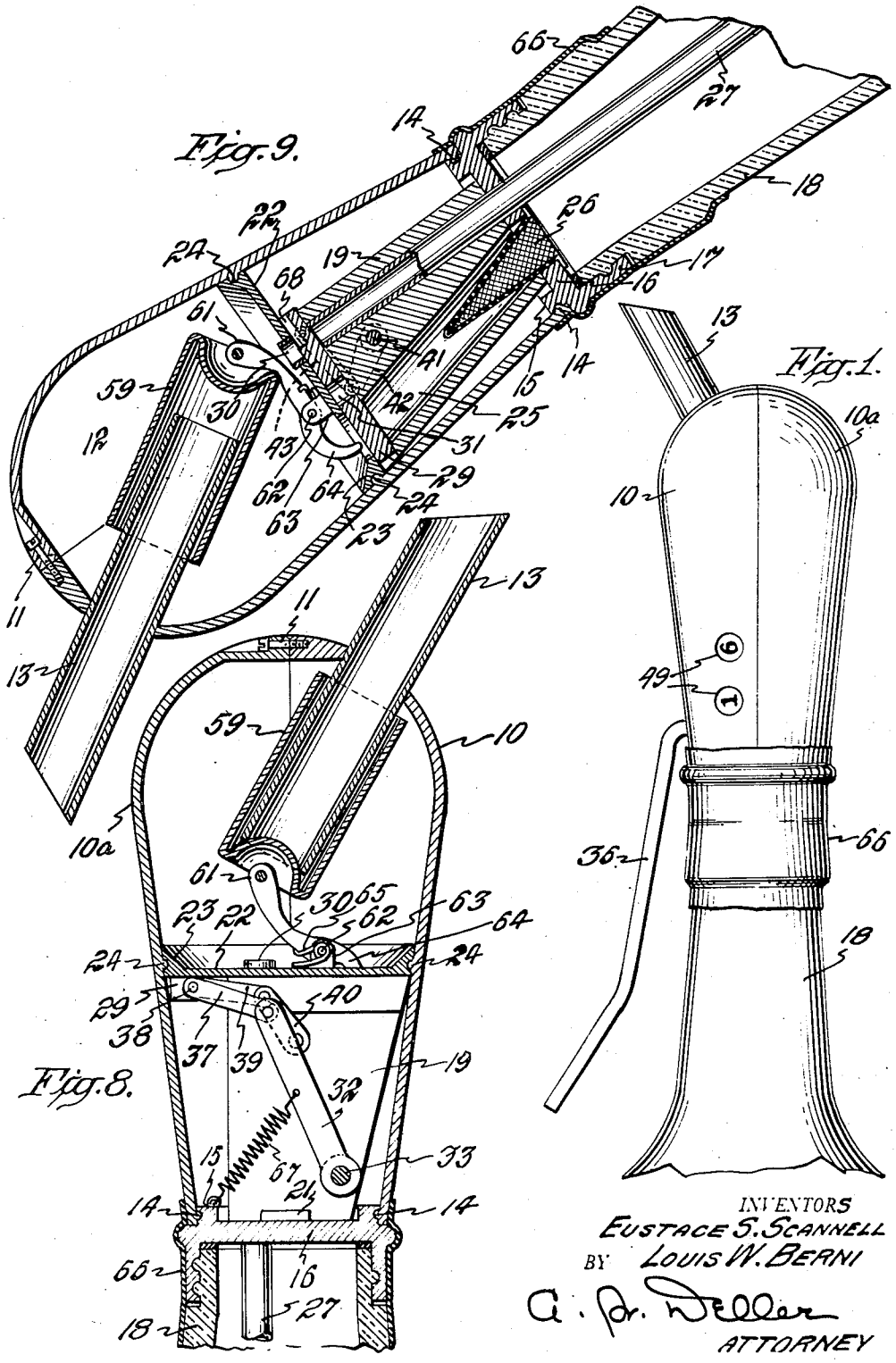


Fig. 8.

Fig. 1.

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BEVERAGE CONTROL SYSTEM AND DISPENSING MEANS

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Fig. 2.

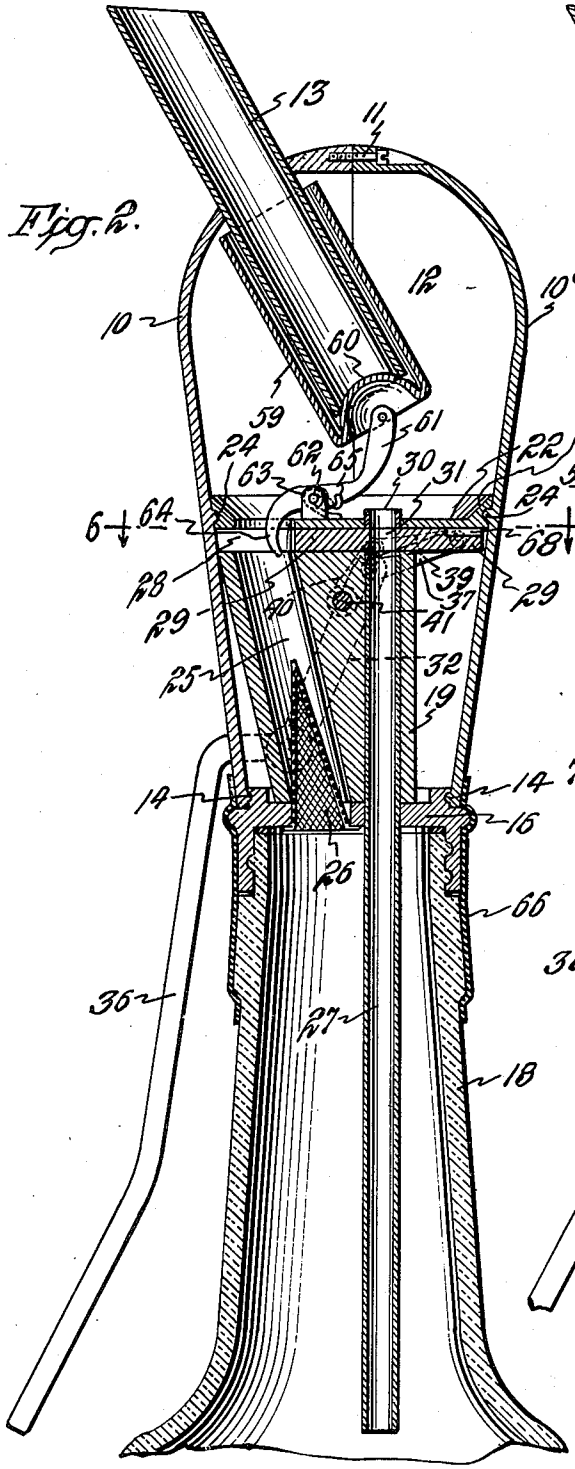
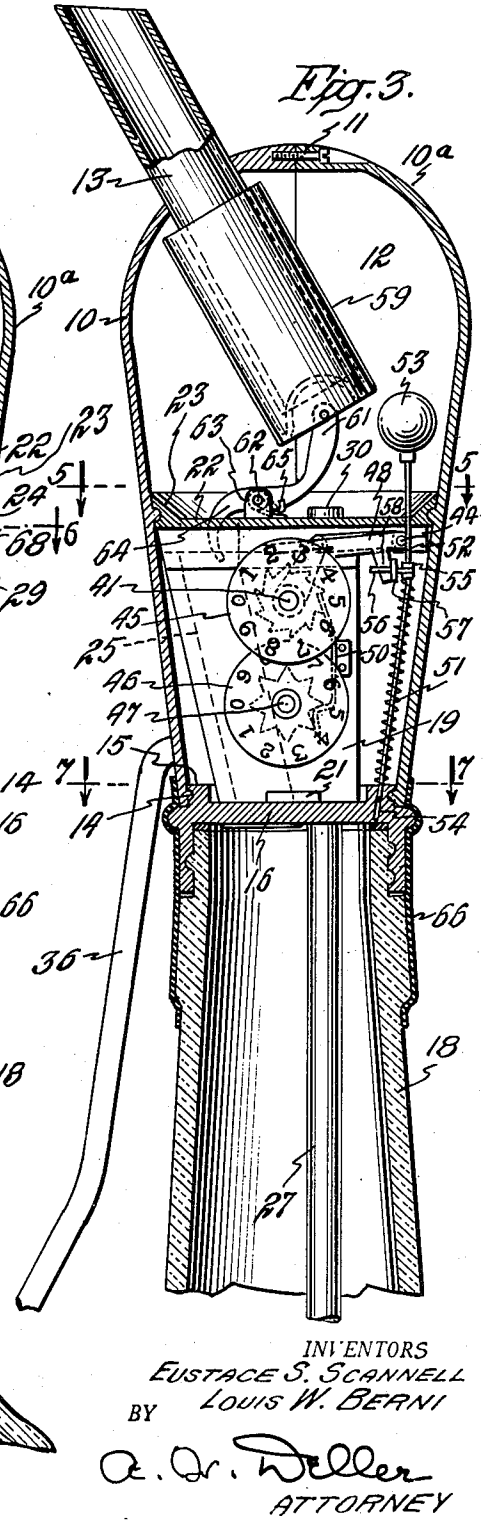


Fig. 3.



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BEVERAGE CONTROL SYSTEM AND DISPENSING MEANS

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Fig. 4.

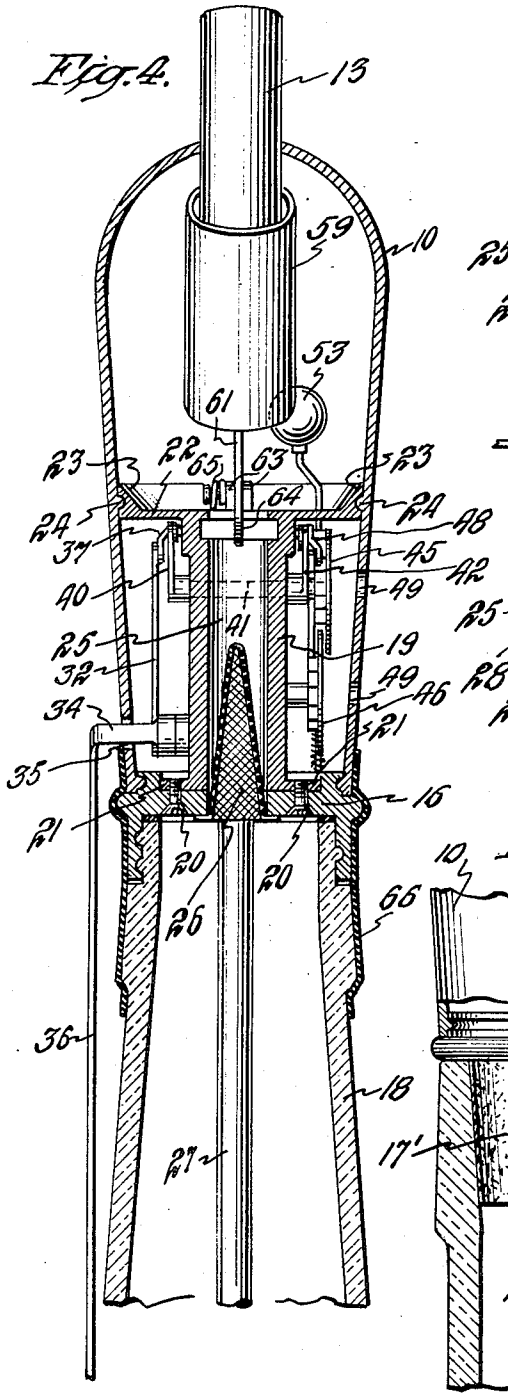


Fig. 5.

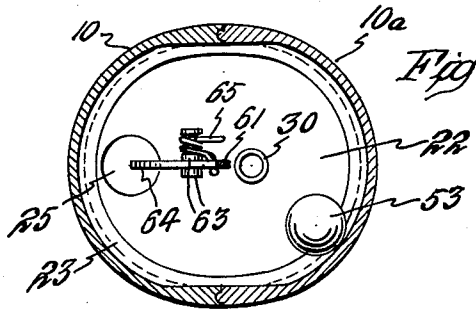


Fig. 6.

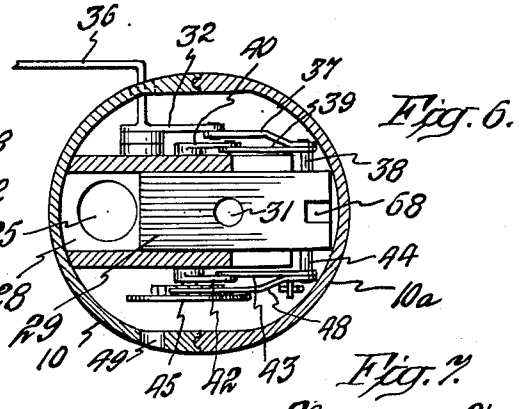


Fig. 7.

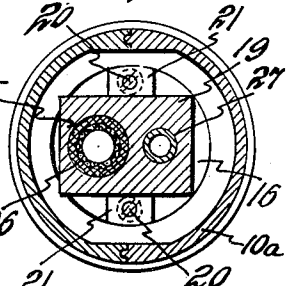
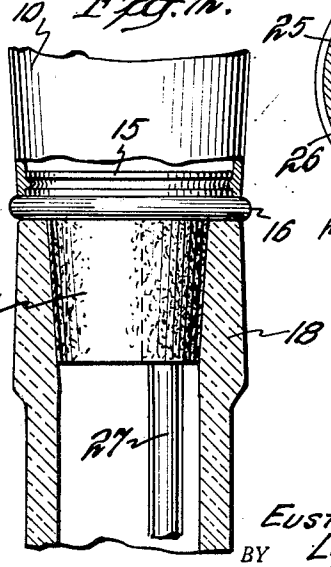


Fig. 1R.



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BEVERAGE CONTROL SYSTEM AND DISPENSING MEANS

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Fig. 10.

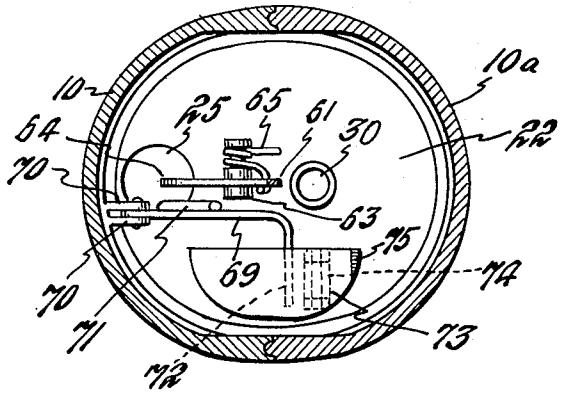
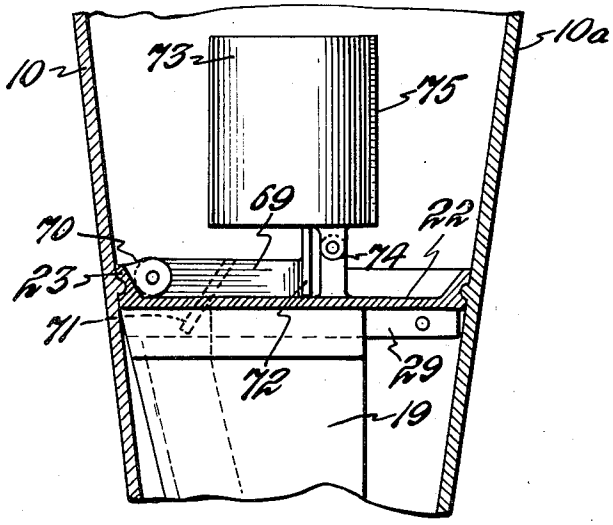


Fig. 11.



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Patented Aug. 5, 1952

2,605,931

UNITED STATES PATENT OFFICE

2,605,931

BEVERAGE CONTROL SYSTEM AND DISPENSING MEANS

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Application March 17, 1949, Serial No. 81,944

11 Claims. (Cl. 222—36)

1

Our invention relates to a control system and dispensing means for use in the merchandising of bottled beverages in establishments serving a number of individual drinks from each bottle. It is designed, primarily, to provide management with a complete running inventory and check on the stock and disposition of bottled liquors.

The liquor control system in general use at present requires six books and entails a very considerable amount of bookkeeping. Our invention provides a greatly simplified accounting system in which only a single book of two forms is employed, in connection with a register attached to each bottle from which drinks are dispensed.

An object of the invention is to provide an improved dispensing means attachable to a bottle to receive and subsequently discharge a predetermined measured quantity of the bottle contents.

Another object is to provide a bottle attachable dispensing container adapted for filling with a measured quantity of the bottle contents, and having manually controlled discharge means associated with means for registering the amount of contents dispensed.

Another object is to provide, in a dispensing register of the character stated, means rendering the register inoperative in the absence of a predetermined measured quantity of the bottle contents in the container.

Other objects will be apparent to those skilled in the art.

In the drawings:

Figure 1 is an elevation of our dispensing register sealed in service position in the neck of a bottle.

Figure 2 is substantially a central vertical section through the assembly of Figure 1.

Figure 3 is a view similar to Figure 2, with the register and other details shown in elevation.

Figure 4 is substantially a central vertical section through Figure 3 viewed from the left thereof.

Figure 5 is a horizontal section taken substantially on the line 5—5 of Figure 3.

Figure 6 is a horizontal section taken substantially on the line 6—6 of Figure 2.

Figure 7 is a horizontal section taken on the line 7—7 of Figure 3.

Figure 8 is substantially an elevation of the interior of the device viewed from the rear side with respect to Figure 3.

Figure 9 is substantially an axial section through the dispenser in tilted discharge position.

Figure 10 is a view substantially similar to

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Figure 5, illustrating an alternative embodiment of means for preventing register operation unless a full charge of liquid is in the trap chamber.

Figure 11 is substantially a front elevation of the embodiment shown in Figure 10.

Figure 12 is an elevation, partly in section, of an alternative form of the bottle attaching means.

Viewed externally, as in Figure 1, the dispensing register appears as an irregular spheroid shell casing formed of two half-sections 10 and 10a. The edges of the halves meet in face contact over their full extent in a plane which intersects the longitudinal axis of the assembly. Securing means 11 bind the halves tightly together in detachably connected engagement. The outer end of the shell is pear shaped and closed to encompass a trap chamber 12 for receiving a charge of liquid to be dispensed. A discharge spout 13 in the form of a tube open at both ends is carried by one of the shell sections and extends through the section wall in sealed supported engagement therewith. The tube is inclined relative to the longitudinal axis of the shell and has internal guard means, not shown, for preventing the insertion of an opening tool without obstructing pouring.

The inner end of the shell is circular and open and is provided with an internal annular bead 14 which seats in a complemental receiving groove formed in the peripheral face of an annular mounting flange 15 integral with a bottle closure cap 16; thus securely locking the cap and shell against relative axial movement. The cap has a depending skirt portion 17 adapted for detachable connection, here shown as a threaded engagement, with a bottle 18 in the usual manner of closure caps. In an alternative form, as shown in Figure 12 the closure has a conventional cork stopper 17'.

A center section 19 is mounted within the shell between the trap chamber 12 and bottle cap 16. This section is here shown as a block rectangular in cross section axially of the shell and rigidly secured at its base to the cap 16 by attaching elements 20 headed in the body of the cap and threaded into laterally directed lugs 21 integral with the base of the block. The cross sectional area of the block is appreciably less than that of the portion of the shell in which it is located, and three side faces of the block occupy planes parallel to its longitudinal axis. The fourth side face, on the left in Figures 2 and 3, is inclined outwardly toward the shell wall from the base of the block to its outer end, thereby providing a longitudinal progression in the cross sectional

area of the block. At its outer end, the body of the block 19 is laterally enlarged to provide an integral head 22 of oval form and dimension corresponding to the internal configuration of the shell at that point. The peripheral face of the head tightly engages the wall of the shell and is formed with an axially directed flange 23 that is externally grooved to seat over a complemental annular bead 24 on the interior of the shell, whereby the head and shell are locked against relative axial movement. The head constitutes a partition between the liquid trap chamber 12 and the register mounting portion of the assembly, and the oval configuration of the shell and partition prevents relative twisting of the parts.

Both the cap closure 16 and center section block 19 are bored to establish liquid flow and air passage communication between the bottle interior and the trap chamber 12. A bore 25 through the body of the block 19 substantially parallel to its inclined face opens to a registering aperture in the cap 16 and provides for flow of liquid from the bottle into the chamber 12 when the bottle is inverted. A filter 26 is mounted in the cap aperture and seats within the bore. Air passage between the interior of the bottle and the chamber 12 is accomplished through an air tube 27 passed through the body of the cap and press fitted in a receiving bore in the block. The lower end portion of the air tube extends well into the bottle neck, and at its upper end the tube terminates flush with the planar bottom of a valve guide channel 28 which extends diametrically through the block head 22 across the tube end and the liquid flow bore 25. A reciprocable slide valve 29 is housed within the guide channel. The roof of the channel is apertured in alignment with the air tube, and mounts in the aperture a tubular conduit 30 which projects a short distance into the chamber 12.

Normally the valve 29 is seated in retracted open position as shown in Figures 2, 3 and 6. In this position its rear edge abuts the shell casing wall and its forward edge is retracted clear of the liquid flow bore 25. Also, in this position, a port 31 in the valve body registers with the air tube 27 and the conduit 30 to establish communication therebetween. When the valve is projected forwardly to closed position, as shown in Figure 9, the port 31 is shifted laterally to cut off communication between the air tube and conduit, and the valve body moves entirely across the bore 25 to cut off the flow of liquid from the bottle to the trap chamber and vice versa.

Operating movement of the valve 29 is effected by means of a lever 32 fulcrumed intermediate its ends on a pivot stud 33 on the center block 19 and extending laterally therefrom. The lever is formed with an outwardly directed portion 34 coaxial with its pivot axis and which projects laterally through an aperture 35 in the wall of the shell. At the outer end of the portion 34 the lever is directed laterally to extend in spaced relation alongside the bottle 18 as a handle 36 offset with respect to the inner end portion of the lever housed within the shell. The terminal of this inner end portion has pivotal connection with one end of a link 37 that is pivotally connected at its other end to a stud 38 carried by and extending laterally from the rear end portion of the valve 29. The stud 38 also is pivotally connected with one end of a forwardly directed link 39 which pivotally connects at its other end to a crank 40 fixed to one end of a shaft 41 journalled transversely through the block 19 beneath the slide valve. The other end of this shaft extends laterally from the block 19 and has fixed thereon a second crank 42 which is in pivotal end connection with a second link 43 that is pivotally connected at its other end to a fixed stud 44 on the slide valve. The stud 44 is coaxial with the stud 38; and the crank and linkage arrangement described is evenly balanced at opposite sides of the mounting block 19, thus assuring smooth operation of the slide valve in its guide channel.

The center section block 19 also mounts metering means operative by the slide valve 29 to register the number of drinks dispensed from the bottle. This means comprises a conventional assembly of a digit wheel 45 freely rotatable on one end of the shaft 41 in pawl and ratchet driving connection with a tens counter wheel 46 rotatable on a stub shaft 47 carried by the block. A pawl 48 pivoted on the slide valve stud 44 engages a ratchet on the digit wheel 45 to rotate the wheel one step each time the valve 29 is actuated to close the liquid flow bore 25 when the container comprising the trap chamber 12 is filled. Numbers on the counter wheels are visible through sight apertures 49 in the shell wall. A leaf spring 50 suitably mounted on the block 19 is tensioned against elements of the counter wheels to maintain their alignment and to prevent backward rotation.

Means are provided to render the register inoperative in the absence of a proper amount of liquid in the chamber 12. Normally, with the bottle in upright position, the slide valve actuated pawl 48 is held out of driving engagement with the digit wheel rack by the bias of an expansion spring 51 coiled about a float stem 52 mounted for reciprocatory movement in the closure cap 16 and through the partition head 22 of the center section block. At its upper end the stem 52 extends into the chamber 12 and carries a float 53, and at its lower end it is guided in a receiving socket 54 provided in the closure cap flange 15. One end of the expansion spring 51 bears on the cap flange and the other end bears against a fixed abutment 55 carried by the float stem. An arm 56 extends laterally from the abutment 55 into operative connection with an apertured ear 57 that projects from a lug 58 depending from the pawl 48 forwardly of its point of connection with the slide valve stud on which it is pivotally mounted. The force of the spring 51 acting against the under face of the stem abutment 55 lifts the arm 56, and through it the pawl 48, and holds the pawl out of engagement with the rack of the digit wheel 45. When the bottle is inverted, liquid fills the trap chamber 12 and buoys the float 53 to move toward the partition 22. This movement is transmitted to the stem 52, which moves at its lower end deeper into the socket 54, thus shifting the abutment 55 away from the partition 22 and pulling the pawl 48 into operative engagement with the rack of the digit counter wheel. The buoyant force of liquid rising in the trap chamber 12 when the bottle is inverted is sufficient to overcome the bias of the stem carried spring 51.

The discharge spout 13 is controlled by a valve comprising a sleeve 59 closed at its inner end and telescoped over the inner end of the discharge spout. The sleeve has an internal diameter greater than the external diameter of the discharge spout whereby to provide a clearance

space between the two. At its closed inner end the sleeve is formed with a semispherical axial depression 60 which constitutes a valve that seats in the adjacent end of the discharge spout to close the same. The sleeve moves axially of the discharge spout to open and close, and is actuated from the slide valve 29 by means of an S-shaped lever 61 fulcrumed intermediate its ends on a pin 62 mounted transversely between two spaced parallel lugs 63 integral with the partition head 22. One end of the lever has pivotal connection with the closed inner end of the sleeve 59 while the other end is curved to provide a cam portion 64 which projects through the partition head well into the liquid flow bore 25 in the path of movement of the forward edge of the slide valve 29. In the normal position of the parts, with the slide valve in retracted open position, the lever 61 is held by a spring 65 so that its cam end portion 64 is disposed in the path of movement of the slide valve 29 and its other end holds the discharge valve 60 closed against its seat in the end of the discharge tube. The spring 65 is mounted on the lever fulcrum pin between one of the lugs 63 and a head on the pin, and bears at its ends against the partition head and the lever.

In service, the dispensing register is attached to a bottle as described, with the air tube 27 extending well down into the bottle, and is sealed in position by an airtight band 66 of suitable plastic material, such as "Celloseal," which has airtight and tamperproof connection as well as longitudinal anchorage with the external annular bead of the casing and the bead of the bottle top. With the bottle in upright position the slide valve 29 is held in open retracted position, as seen in Figure 2, by the bias of a retracting spring 67 connected between the arm of the lever 32 withing the shell and an attaching lug on the closure cap flange 15, as in Figure 8. In this position of the lever its handle portion 36 is angled outwardly away from the bottle neck. When a drink is to be dispensed the bottle is inverted or tilted as shown in Figure 9, with the spout 13 in pouring position, whereupon liquid flows by gravity through the flow bore 25 into the trap chamber 12 displacing air which passes through the conduit 30, slide valve port 31, and tube 27 to the interior of the bottle. During this operation the slide valve 29 remains open and the discharge valve 60 remains closed. Also, the register actuating pawl 48 is disengaged.

Liquid from the bottle continues to fill the chamber 12 until the level rises sufficiently to close off the air conduit 30, at which point the liquid ceases to flow as no more air can enter the bottle from the chamber. The liquid also rises above the inner end of the tube 13 and in the space between the discharge spout and the sleeve 59. At the same time, the rise of liquid within the trap chamber lifts the float 53 in the direction of the partition 22. Movement of the float correspondingly moves the stem 52 with its abutment 55 against the tension of the spring 51 and shifts the arm 57 to pull the pawl 48 into driving engagement with the digit wheel rack. The trap chamber is now filled with a definite predetermined measure of the bottle contents ready to be dispensed.

Under these conditions, when the handle 36 is pulled in toward the bottle the linkage system previously described moves the slide valve 29 forwardly to cut off the liquid flow bore 25 and also to block communication between the air tube 27 and air conduit 30. Thus no air can enter the bottle interior and no liquid can flow from the bottle into the trap chamber. At the same time the forward edge of the slide valve engages the cam end 64 of the S-shaped lever 61 and rocks the lever on its fulcrum to pull the valve 60 from its seat and open the discharge spout. The sleeve 59 sets up a siphon action which empties the trap chamber contents through the discharge spout to dispense one measured drink from the bottle. Air from the siphon action is supplied above the liquid in the trap chamber through a shallow air channel 68 in the partition abutting face of the slide valve 29. This air channel opens at one end to the rear edge of the slide valve and extends longitudinally of the valve a sufficient distance to dispose its other end in registry with the partition air conduit 30 when the slide valve is in projected closed position, as seen in Figure 9. Air supplied through the channel 68 enters the shell through the lever aperture 35, and through the sight apertures 49 unless they are covered by transparent window panels.

As the slide valve moves forward under actuation from the handle lever it carries with it the register actuating pawl 48 which rotates the digit wheel through one step to bring the appropriate number in alignment with its sight aperture in the shell. The digit wheel in turn drives the tens wheel in the conventional manner of counters. It is an important feature of our invention that the register cannot be actuated by operation of the slide valve unless and until the proper measured quantity of liquid is present in the trap chamber 12. The bias of the spring holds the pawl 48 disengaged until it is overcome by movement of the trap chamber float.

At the conclusion of a dispensing operation the bottle is restored to upright position and the handle is released, whereupon the handle lever spring 67 acts through the mechanism as described to return the parts to their original position. The upper face of the partition 22 is dished to a low point at the bore 25 so that complete drainage of the trap chamber is effected when the bottle is upright. If drinks are to be poured in quick succession from the same bottle, the bottle may be continued in its pouring position while the handle is released to permit reopening of the slide valve and refilling of the trap chamber.

In the normal upright position of a bottle with the dispensing register attached the discharge control valve 60 is held firmly in closed position. This prevents the entry of fruit flies and other insects; it also prevents evaporation of the bottle contents and refilling or adulteration. Another feature of the invention is the high degree of accuracy obtainable with regard to the exact quantity of liquid to be delivered to the trap chamber at each filling. This is determined by the location of the air conduit 30; a deeper extension into the chamber makes the quantity delivered smaller, and a shorter extension makes the quantity larger.

Figures 10 and 11 illustrate another embodiment of the means for preventing operation of the register in the absence of a full charge of liquid in the trap chamber. In this embodiment, the float 53 and its associated stem 52, spring 51, and arm 56 are eliminated, and the register actuator pawl 48 is biased into driving connection with the register in a conventional manner; so that the register is operated each time the

slide valve 29 is moved into closed position. Instead of the float 53 and its associated parts we employ a positive lock which holds the slide valve against closing at all times and in all positions of the assembly, except when the trap chamber is fully charged with a predetermined proper quantity of liquid delivered from the bottle.

The lock comprises a lever 69 pivotally connected at one end to a mount 70 fixed on the flange 23 of the partition 22. This lever normally rests against and parallel to the face of the partition within the trap chamber at one side of the major axis of the partition. A rigid lock pin 71 fixed on the lever extends laterally therefrom into the mouth of the liquid flow bore 25 in the path of closing movement of the slide valve 29, where it functions as a stop member that prevents closing of the slide valve. The lever 69 extends substantially midway across the face of the partition parallel to its major axis and, at its inner end, is provided with an enlargement 72 directed laterally toward the casing wall. This enlarged portion extends beneath the bottom of a substantially rectangular float 73 that is pivotally connected to a stud 74 integral with the partition. Normally, in non-dispensing position of the parts, the float seats on the lever portion 72 and holds the lever against the face of the partition. The axis on which the float pivots is off center so that the major area of the float bottom overlies the lever portion 72 in the direction of the pivoted end of the lever and biases the float in holding engagement against the lever. The float also is biased by the provision of a weighted portion 75 along its side that is disposed beyond the end of the lever and so arranged that when the device is in inverted position the float hangs from its pivot to override and hold the lock lever against the partition in the absence of a full measure of liquid in the trap chamber.

When the assembly is tilted to dispensing position liquid is delivered to the trap chamber through the flow bore 25. As the level rises within the chamber the float 73 is buoyed to swing on its pivot against the bias of its weight 75, which is overcome. This movement continues until the rising liquid closes off the air conduit 30, at which point the chamber is filled with the proper amount and no more liquid can flow from the bottle. Also at this point, the float will have swung sufficiently to permit the lever 69 to drop away from the partition far enough to remove the stop 71 from the path of travel of the slide valve 29. As soon as the stop 71 clears the slide valve it may be closed to cut off the flow bore, actuate the register, and open the dispensing outlet valve in the manner previously described herein.

In another aspect the invention is a dispensing register in which the operating lever has a dual function: (1) it serves through the previously described linkage primarily to actuate the register, and (2) by virtue of its register actuating movement it operates a chain of elements that constitute means responsive to such movement to effect simultaneous closing of the liquid cut off valve 29 and opening of the dispensing outlet valve 60. This latter means is effective to hold the outlet valve open and at the same time to hold the liquid cut off valve closed. The float 53 and its associated spring acting on the pawl 48, or the float 73 and its associated slide valve lock lever 69 and stop 71, constitute, broadly stated, means preventing actuation of the register while the device occupies any position other than that of tilt or inversion for pouring.

Our dispensing register forms part of an accounting system which makes use of a book of the looseleaf type having two forms. It has been determined, since liquor is purchased at the bar by type and brand, since it is requisitioned from stock for the bar by type and brand, and since it is purchased from the wholesaler by type and brand, that the inventory should be kept by type and brand. Accordingly, the two forms, designated A and B, are kept for each type and brand.

Form A is concerned with the stockroom inventory, final disposition and analysis of bottled goods. It is a printed form and is provided with headings denoted Brand, Type, Size and Proof, which are necessary to establish identity of the product. The form also is provided with headings denoted Wholesaler, Address, Serial Numbers, Invoice Number and Date. These tell the origin of the merchandise. Other headings denoted Number of Cases, Unit Value, Unit Price and Invoice Amount are utilized to provide a quick survey and the necessary information for recording or analyzing the sales. Another heading denoted Number of Bottles is for the purpose of a running inventory. The form also is provided with columns across the chart headed, respectively, Date, Bar, Bar, Bar, Special, Total Issued, Number of Bottles on Hand and Remarks. These columns are all given a general heading entitled Issues. The back of the form contains an analysis chart having a number of columns headed respectively, Disposition, Number of Bottles, Invoice Price, Value, Estimated Spread, Actual Return, Actual Spread and Remarks. Under the heading Disposition the columns contain subtitles which are Purchased, Sold—Bar, Bar, Bar, Charged Off.

When liquor is received from the wholesaler a Form A is made out for each type and brand. When the stock is issued to the bar, a notation of the number of bottles is made on Form A against the proper date, under the Issue column designating the particular bar. This Bar column is made purposely large so that subsequent entries on the same date may be added: 2 & 2 & 3. The columns Special and Remarks are meant to take care of any disposal of merchandise out of the usual procedure, such as through breakage, spoilage, leakage, gratuities or seizure by government officers. In the Special column is placed the number of bottles, and in the Remarks column is placed the explanation. At the end of the day, the total issuances, including those of the Special column, are recorded in the Total Issued column for the day. This figure is subtracted from the previous day's entry under No. of Bottles on Hand column to give the present day's entry in this column. The Remarks column highlights all irregularities. By comparing the issues from day to day, the proprietor will be able to notice instantly any unreasonable fluctuation as is sometimes caused by salesmen and missionary men, etc.

Every bottle issued to the bar is opened by the steward and a dispensing register as previously described is affixed to the bottle. Each register is provided with a serial number by using letters of the alphabet instead of numerals so that a spread of 26 characters instead of 10 is given in each integer column.

Form B provides a running inventory and check of bars for placing of dispensers. This also is a printed form provided with headings denoted

Brand, Type, Size and Proof which establish the identity of the product. It has a heading entitled Bar to show the location; a heading entitled Par to show the number of bottles of the particular type and brand kept as inventory on the bar; and headings entitled, respectively, Unit Value and Drink Value for aid in checking the contents and sale of the bottles of liquor.

Form B also is provided with a number of columns headed, respectively, Meter Serial, Meter Reading, Sales of (seven), Remarks and Invoice. The Sales of columns have subcolumns, respectively, entitled Inventory Reading, Value and Off on Bar. The serial number and meter reading of the liquor register is entered on Form B. In the column Invoice is put the invoice number of the stock from which the bottle was taken. The meter runs from a reading of 00 to 99 and begins at 00 again. It has no provision for a set back because it was felt that if each bottle had a different reading it would be harder for the actual dispenser to keep track of the readings. The largest size bottle commonly used on a bar is ½ gallon. This contains 64 ounces. We felt that 100 units would easily register the drinks poured from any one bottle.

When the management desires to check the quantity of liquor sold against the cash receipts, they enter in the Sale Of column of Form B the date. The meter readings of all bottles empty or full delivered to that bar are placed in the Inventory Reading column and whether the bottles are removed from or still on the bar is designated in the Off on Bar column by X for off and a V for on the bar.

The entry for the Value column is the difference between the Meter Reading column and the Inventory Reading column multiplied by the Drink Value. This value is usually found by using a dial calculator of the concentric disc type, in which three discs are employed and mounted for rotation on a common axis. The discs are progressively smaller in diameter from the bottom disc upward. On the rim of the lower disc there are 100 numbers reading 00 to 99. The middle disc is provided with an arrow which is set at the Meter Reading column figure denoted on the dial of the bottom disc. The middle disc also bears a printed scale arranged in radial lines for reading through radially disposed slots in the uppermost disc. The scale of the middle disc gives printed values for individual drinks, and the margins of the slots in the outer disc have indicia denoting drink price. With the arrow of the upper disc positioned at the Inventory Reading figure, the value printed on the middle disc may be instantly read through the appropriate slot for the Drink Value in the upper disc. This calculator provides a means of taking a quick inventory. It is easy to operate and prevents mathematical errors.

By adding the entries in the Value column of a certain date, the value of all liquor sold is obtained and may be compared with the cash receipts of the same period. Any discrepancy is immediately evident and a positive knowledge of operation is obtained. By adding the entries in the Value column of a certain invoice, the actual return is obtained. This is entered under the Analysis section of Form A. In this section the No. of Bottles is the addition of the Issues columns; the Invoice Price is the Unit Price multiplied by the No. of Bottles. The Value is the Unit Value multiplied by the No. of Bottles. The Est. Spread is the difference between the Value and the Invoice Price and the Actual Spread between the Actual Return and the Invoice Price. This will enable the management to formulate a realistic price policy.

On Form B a comparison of the Value entries and the Unit Value enables the management to determine whether the bottles purchased have been properly filled. A fill of 25 instead of 25.6 ounces in a fifth can be easily detected. After the inventory of the bar has been completed, the steward, by looking at the Off On Bar column and the Par entry will know how many bottles to issue to the bar. Form B precludes any requisition slips and saves time and effort. It gives a quick, easy, complete running inventory of the bar. During an inventory period, as soon as a bottle has been emptied and removed from the bar, the steward records the reading of the meter under Inv. Reading, makes an X in the Off On Bar column and through the dial gets entry for Value column. He then breaks the seal and removes the liquid register. It is then ready to be placed on another bottle.

Although we have illustrated and described certain details of structure and arrangement of parts which enter into the disclosed embodiment of our invention, it is to be understood that the structure disclosed is illustrative and not restrictive and that within the scope of the invention as claimed any desired modifications and changes may be made in the details and arrangement of parts in the construction illustrated.

We claim:

1. A dispensing register for bottled liquids comprising, a bottle attachable casing, a partition dividing the casing interior in two compartments one of which provides a liquid trap chamber, a dispensing outlet for the trap chamber through a wall of the casing, a valve controlling the outlet and biased to closed position, said partition having an aperture for the delivery of liquid to the trap chamber, a valve controlling said aperture and biased to open position, means operative by the aperture valve in closing to open the dispensing outlet valve, a register in the other compartment, means operative by the aperture valve in closing to actuate the register, and operating means for said aperture valve having a portion disposed externally of the casing for manual operation.

2. A dispensing register for bottled liquids comprising, a bottle attachable casing, a partition dividing the casing interior in two compartments one of which provides a liquid trap chamber, a dispensing outlet for said chamber through a wall of the casing, a control valve for the outlet biased to closed position, said partition having an aperture for the delivery of liquid to the trap chamber and having also a passage for the relief of air from the trap chamber, a slide valve controlling both said aperture and the passage and biased to open position, a lever fulcrumed intermediate its ends on said partition, an operating connection between one end of said lever and the outlet valve in the trap chamber, means biasing the other end of the lever into camming relation with said slide valve whereby the lever is rocked to open the outlet valve upon closing movement of the slide valve, means for operating said slide valve to open and closed positions, a register in the other compartment, and a register actuator operative by the slide valve operating means.

3. A dispensing register for bottled liquids comprising, a bottle attachable casing, a partition

dividing the casing interior in two compartments one of which provides a liquid trap chamber, a dispensing outlet for said chamber through a wall of the casing, a control valve for the outlet biased to closed position, said partition having an aperture for the delivery of liquid to the trap chamber and having also a passage for the relief of air from the trap chamber, a slide valve controlling both said aperture and the passage and biased to open position, means cooperative with both said valves to open the outlet valve on closing of the slide valve, a register in the other compartment, joint operating means for the slide valve and register, said slide valve having an air passage therein open to said other compartment and registering with the partition air passage when the slide valve reaches fully closed position whereby to admit air to the trap chamber when its outlet valve is open.

4. A dispensing register for bottled liquids comprising, a bottle attachable closure, a casing thereon, a mounting member in the casing, a partition on said mounting member extending across the casing to provide a trap chamber in one end thereof, said mounting member having a liquid flow bore open at one end through the closure and at its other end through the partition to the trap chamber, a valve on said mounting member and controlling the flow bore, a register on said mounting member, valve carried means for actuating the register upon operation of the valve, means holding said actuating means inoperative in the absence of a full measure of liquid in the trap chamber, a dispensing outlet for the trap chamber, a control valve in the outlet and biased to closed position, means controlled by said first named valve on operation thereof to open the outlet valve, and operating means for said first named valve having a portion disposed through a wall of the casing for manual actuation externally of the casing.

5. In a dispensing register having a bottle attachable casing enclosing a liquid trap chamber, and a dispensing outlet therefor through a wall of the casing; a conduit in the casing for delivering liquid to the trap chamber, a valve controlling said conduit, an operating lever fulcrumed in the casing and having a handle portion passed through a wall of the casing, a link conecting the inner end of the lever and said valve, a register in the casing, a pawl pivotally connected to said valve for driving engagement with the register to actuate the same on operation of the valve, a spring biasing said pawl out of engagement with the register, and liquid level responsive means in the trap chamber and in operative connection with said pawl for moving the pawl into driving engagement with the register against the bias of the spring when the trap chamber is filled to capacity.

6. In a dispensing register having a bottle attachable casing, a partition dividing the casing interior in two compartments one of which provides a liquid trap chamber, a bottle closure in the casing and providing an end wall of the other compartment, a mounting member extending axially of the casing between said closure and the partition, the mounting member having therethrough a liquid flow bore open at one end through the closure and at the other end through the partition for delivery of liquid to the trap chamber, a slide valve in the mounting member and reciprocable therein across the liquid flow bore to control the same, an operating lever fulcrumed in the casing on one side of the mounting member and having a handle portion passed through the casing wall for exterior manipulation, a stud extending laterally from a side edge of the slide valve, a throw link pivotally connected at its ends to the valve stud and the inner end of the operating lever, a second stud extending laterally from the opposite side edge of the slide valve, a shaft journalled through the mounting member beneath the slide valve, a crank fixed to each end of the shaft, a throw link pivotally connected at its ends to the first named stud and the adjacent shaft crank, a throw link pivotally connected at its ends to the second stud and the adjacent shaft crank, a register on the mounting member on the side opposite that of the operating lever fulcrum, and a register actuating pawl pivotally mounted on said second stud for driving engagement with the register.

7. In a dispensing register having a bottle attachable casing enclosing a liquid trap chamber, a dispensing outlet for the chamber through a wall of the casing, a conduit in the casing for delivering liquid to the trap chamber, a slide valve controlling said conduit and movable between open and closed limit positions, means for operating the slide valve, a rocker lever pivoted in the casing, means biasing a portion of said lever into the path of closing movement of the slide valve for displacement thereby to rock the lever, a valve in the trap chamber controlling the dispensing outlet, and a pivotal connection between said outlet valve and the lever whereby rocking of the lever on displacement by the slide valve moves the outlet valve to open position.

8. In a dispensing register having a bottle attachable casing enclosing a liquid trap chamber, a dispensing tube extending through a wall of the casing with its inner end projecting well into the chamber, a sleeve telescoped over the inner end of said tube and of an internal diameter appreciably larger than the external diameter of the tube, said sleeve having its inner end closed and axially depressed to provide a valve for seating in the inner end of the tube to close the same, means biasing the sleeve to valve closed position, the length of the sleeve being substantially the same as the length of the dispensing tube within the trap chamber, means for delivering liquid to the trap chamber, and means operative to move the sleeve axially of the dispensing tube to valve opened position.

9. A dispensing register for bottled liquids comprising, a bottle attachable casing, a partition dividing the casing interior in two compartments one of which provides a liquid trap chamber, a dispensing outlet for said chamber through a wall of the casing, a control valve for the outlet and biased to closed position, said partition having an aperture for the delivery of liquid to the trap chamber and having also a passage for the relief of air from the trap chamber, a slide valve controlling both said aperture and the passage and biased to open position, means operative by the aperture valve in closing to open the dispensing outlet valve, a register in the other compartment, means operative by the aperture valve in closing to actuate the register, and operating means for said aperture valve having a portion disposed externally of the casing for manual operation.

10. A dispensing register for bottled liquids comprising, a bottle attachable casing, a partition dividing the casing interior in two compartments one of which provides a liquid trap chamber, a dispensing outlet for said chamber through

a wall of the casing, a control valve for the outlet and biased to closed position, said partition having an aperture for the delivery of liquid to the trap chamber and having also a passage for the relief of air from the trap chamber, a valve controlling both said aperture and the passage, means for operating the aperture valve to open and closed positions, means movable by said aperture valve during its manipulation to open said dispensing outlet valve, a register in the other compartment, an actuator for the register operative by the aperture valve operating means, and means in the casing preventing actuation of the register while the casing is in other than dispensing position.

11. A dispensing register for bottled liquids comprising, a bottle attachable casing, a partition dividing the casing interior in two compartments one of which provides a liquid trap chamber, a dispensing outlet for said chamber through a wall of the casing, said partition having an aperture for the delivery of liquid to the trap chamber, a valve slidable on said partition to a position closing the aperture and biased to a position opening the aperture, means for moving said valve to closed position, a register in the other compartment, an actuator for the register operative by said valve in moving to closed position, a lever pivoted in the casing to swing towards and away from said partition and normally engaging the partition in non-dispensing position of the casing, a stop on said lever projecting into the path of closing movement of the valve in non-dispensing position of the casing to block closing movement of the valve, and a float in the trap chamber engaging said lever in the absence of a full measure of liquid in the trap chamber and retaining the lever stop in valve blocking position, said float being responsive to the level of liquid in the trap chamber for movement to release said lever and thereby remove its stop from valve blocking position upon the occurrence of a full measure of liquid in the trap chamber.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,070,917	Ross	Aug. 19, 1913
2,473,462	Wortman	June 14, 1949