March 5, 1963 C. E. MAYS 3,079,960

FLUID DISPENSING SYSTEMS FOR GASOLINE AND THE LIKE

Filed Sept. 30, 1958 3 Sheets-Sheet 1

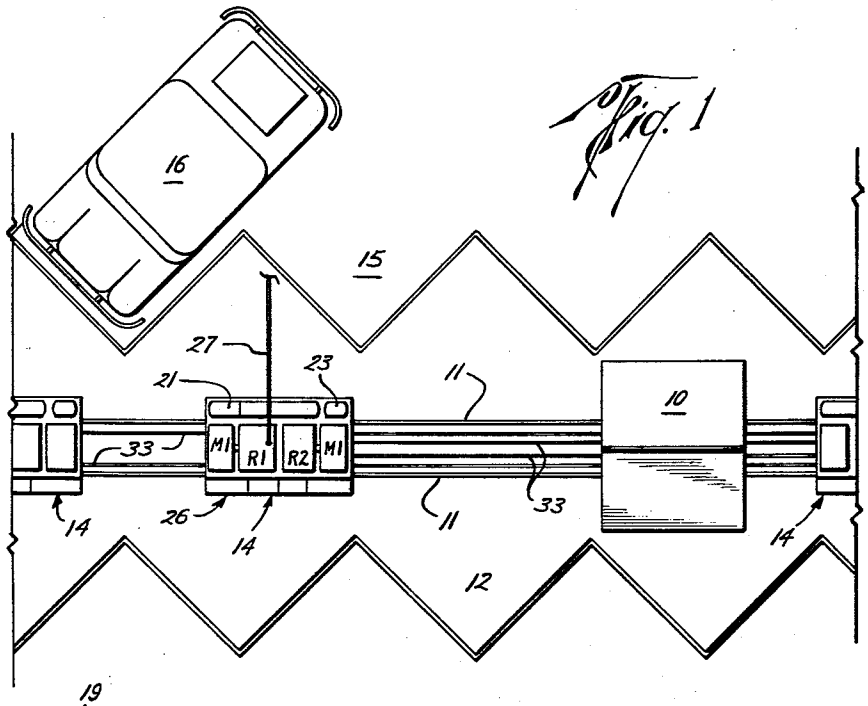


Fig. 1

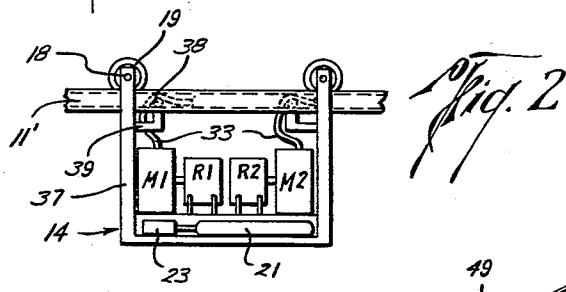


Fig. 2

Fig. 3

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Fig. 4

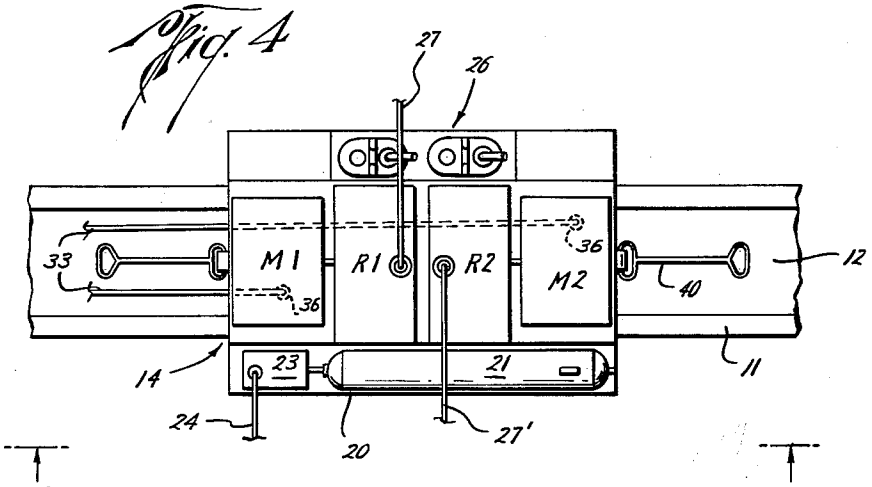


Fig. 5

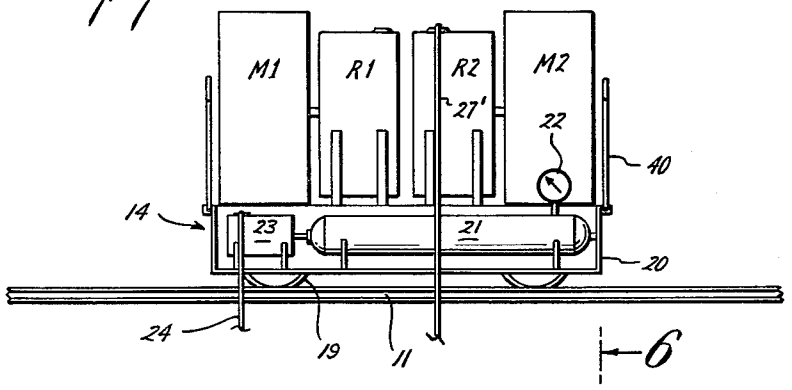
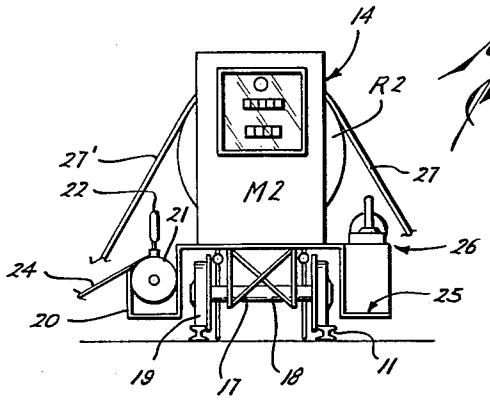


Fig. 6



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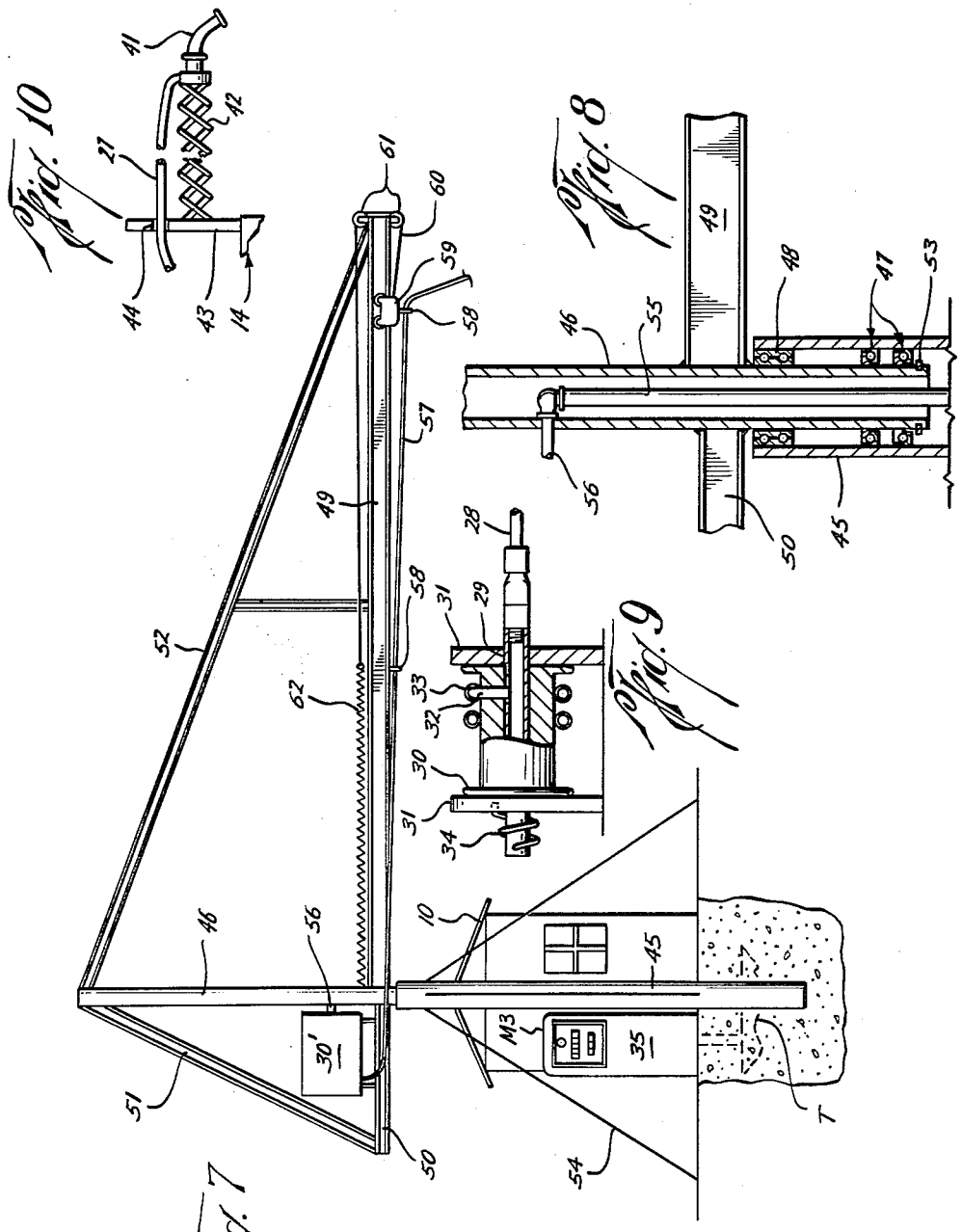
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FLUID DISPENSING SYSTEMS FOR GASOLINE AND THE LIKE

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FLUID DISPENSING SYSTEMS FOR GASOLINE AND THE LIKE

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3 Claims. (Cl. 141—232)

This invention relates to fluid dispensing systems for gasoline and the like of the type in which the means which delivers the gasoline to the customer is movable in a predetermined path of movement with relation to the source of supply thereby permitting the servicing of automobiles which occupy stations at predetermined points designed to receive such automobiles thereat for parking. Thus it is possible to design gasoline dispensing systems to serve a multiplicity of automobiles from a single supply source with efficiency, as the movement of the means effecting ultimate delivery can be tracked or directed in movement by structures in predetermined spaced association with relation to the architecture of the parking stations.

It is therefore a primary object of this invention to provide fluid dispensing systems and methods of fluid dispensing of the type in which the means effecting final delivery of the gasoline to the automobile is movable in a predetermined path of movement with relation to the source of gasoline supply.

It is also an object of this invention to provide fluid dispensing systems and methods of fluid dispensing of this class in which a plurality of ultimate delivery means together with the metering means therefor may be moved on track means extending from a single, fixedly positioned source of supply, the conduit means feeding the dispensed fluid being extendable from such source of supply.

It is also another object of this invention to provide fluid dispensing systems and methods of fluid dispensing in which the means from which the ultimate fluid dispensing means is extendable is mounted on boom means swingable with relation to the fixedly positioned source of supply.

Other and further objects will be apparent when the specification herein is considered in connection with the drawings in which:

FIG. 1 is a plan view of structure entailed in one form of the invention;

FIG. 2 is a fragmentary elevational view showing carriage structure entailed in another form of the invention;

FIG. 3 is a plan view of structure entailed in still another form of the invention;

FIG. 4 is an enlarged plan view of the carriage shown in FIG. 1;

FIG. 5 is a side elevational view taken along line 5—5 of FIG. 4;

FIG. 6 is an end elevational taken along line 6—6 of FIG. 5;

FIG. 7 is an enlarged elevational view of one of the boom structures shown in plan view in FIG. 3;

FIG. 8 is an enlarged fragmentary elevational view showing details of swivel construction of the boom shown in enlarged elevational view in FIG. 7;

FIG. 9 is an elevational view showing details of an arrangement whereby fluid from supply source is deliverable to a hose paid out from a rotated reel or winch; and

FIG. 10 is a fragmentary elevational view of a form of fluid delivery means extension.

Referring in detail to the drawings in which like reference numerals are applied to like elements in the various views, a source of supply 10, for a fluid, as gasoline, is shown in FIG. 1 from which tracks 11 extend from opposite side thereof as carried on an elongated island 12, as of concrete, the source of supply or gasoline dispensing guilding 10 being located centrally along the island 12.

A plurality of carriages 14 are provided to ride upon the tracks 11 on either side of the supply house 10, and the island forms bays 15 therealong on either side thereof to receive automobiles 16 therein to park with axes generally at substantially forty-five degrees to the longitudinal axis of the island 12.

Carriage details and the equipment carried thereby can best be seen in FIGS. 4, 5, and 6, the carriage frame 17 at the forward and rear ends thereof providing journals for an axle or shaft 18 having wheels 19 on either end thereof to engage with and roll upon the track rails 11. On one side the frame 17 provides a side bay 20 carrying a compressed air receiver 21 having a pressure gauge 22 connected thereinto to indicate the air pressure, and an air hose coil reel 23 about which an air hose 24 is reeled, the inner end of the air hose being in fluid communication with the receiver 21 as will be hereinbelow described, while the outer end of the air hose 24 has a delivery nozzle thereon to deliver compressed air to the automobile tires. On the side of the carriage 14 opposite the side bay 20 the carriage provides a side bay 25 which carries oil cans, water cans, and miscellaneous service equipment designated generally by the reference numeral 26.

The carriage 14 is shown as having mounted successively from left to right, a fluid metering device M1, a gasoline hose reel R1 connected thereto to receive fluid therefrom into the inner end of the gasoline hose 27 reeled thereon, a second gasoline hose reel R2 having a gasoline hose 27' reeled thereon and a metering device M2 connected to deliver fluid into the inner end of the gasoline hose 27' on the reel R2.

Wherever in this invention it becomes necessary to transfer fluid, either air or gasoline, from a stationary source of supply to a means that is rotated, as the inner end of a hose is rotated with the reel to which it is connected, various conventional arrangements are possible, and one such arrangement is shown in FIG. 9 in which the hose 28 from the fixed source is connected to a conventional swivel SW which in turn is connected into a hollow shaft 29 providing the axle for a reel 30 which is rigidly connected to such shaft 29, such shaft being shown journalled in uprights 31. An axial passage 32 extends from the hollow shaft 29 to the reel periphery where it communicates with the inner end of a hose 33 which terminates about such passage, the hose 33 being wrapped around the drum of the reel 30 to be payed out therefrom by reel rotation. A torsion spring 34 connected to one end to an upright 31 and at the other end to an end of the shaft 29 is provided to insure that after the hose 33 is unwound and then released it is returned to wound up position.

Hose 33 on reels 30 are provided at a supply house 10, such as the supply house shown in FIG. 7, hoses 28 extending from pumps at such supply house such as the pump 35 supplied from a source as a buried reservoir T, the hose 28 connecting into swivels SW as hereinabove described whereby fluid can be delivered from stationary conduits by means of such swivels into rotated elements as the shafts 29. Referring again to FIG. 4, hose 33 from the reels 30 hereinabove described are shown extending along the island 12 to connect into the bottoms of the meters M1 and M2 by means of conventional swiveled connections designated by the reference numeral 36.

Although only two metering devices with reels for the hose therefrom are shown in FIG. 4, as for metering "ethyl" gasoline and "regular" gasoline, a single such arrangement or other pluralities of such arrangement may be provided for each carriage 14. As regards the reels R1 and R2 shown in FIGS. 4 and 5 a conventional device for taking fluid from the meter through the rotated shafts of the reels R1 and R2 into the inner ends of the hose corresponds with that shown in FIG. 9, as does the device for taking air from the compressed air receiver 21 into the inner end of the air hose 24 on the air hose reel 23.

As shown in FIG. 2, a modification of tracked carriage 14' is shown which is supported from overhead tracks 11' by upright supports 37 which at the top provide journals for the shafts 18 of wheels 19 which roll upon the overhead tracks 11'. In such cases the hose 33 can extend over casters 38 which roll on the lower flange of the track 11', such casters being supported on brackets 39 which supply the journals for the caster shafts and connect to the uprights 37. In this form of the invention the connection of the hose 33 into the metering devices is from below and correspondingly as described for the form of invention shown in FIGS. 4, 5, and 6. As shown in FIGS. 4 and 5 a handle 40 is provided on either end of the carriage 14 whereby the carriage 14 may be pulled along to a bay 15 at which an automobile awaits to be serviced, and although not shown, a suitable means may be provided to manually traverse the carriage 14 along the overhead trackways shown in FIG. 2.

In cases where the length which the delivery hose 27 or 27' does not require too great extension for the service exacted of it, an arrangement as shown in FIG. 10 may be employed in which case the nozzle 41 is supported by a pantagraph 42 extendable from an upright 43 carried by the carriage 14, the hose 27 extending through a guide bushing 44 in the upright.

As an optional form of construction for both the overhead and island supported trackway constructions, the hose 27, 27' may extend from the metering devices M1, M2, respectively, and can be of length to reach to the outermost position an automobile may be expected to take with relation to the island 12 and still be served. In such cases the hose is folded or doubled up and the nozzle hung up on the carriage when not in use.

Also, as an optional form of the invention, for both the overhead and island supported trackway constructions, the carriages 14 may be motorized and translated up and down the tracks by push button control of motors carried thereby and provided with conventional means connecting them to drive the carriages with relation to the tracks.

Referring in detail to FIGS. 3, 7, and 8, a form of the invention is shown in which a tubular column 45 extends upwardly on opposite ends of the supply or service house 10. Each column has a swivel 46 connected thereinto which turns in axially spaced apart ball bearing assemblies 47 spaced below the top of the column and in radial ball bearing assemblies 48 assembled into the top of the column 45. A slip ring 53 is provided on the lower end of the swivel 46 to secure it against being displaced upwardly.

The swivel 46 has the end of a beam 49 rigidly connected thereto, such beam being of substantial length to serve as a boom. Also on the opposite side of the swivel from the boom 49 a cantilever platform 50 is provided braced from the top of the swivel 46 by a diagonally extending brace member 51. Also the boom 49 is likewise braced, as by a truss frame 52. At the same time guy wires 54 are provided to brace the column 46.

From the pump 35 at the supply or service house 10, which also includes a metering device M3, the metered fluid, as gasoline, is delivered through a conventional swivel connection, such as the swivel connection SW indicated in FIG. 9, into a riser pipe 55 which has a horizontal pipe 56 connected through the top thereof to extend through the swivel shaft 46, for connection into the hollow axle of a reel 30' mounted on the cantilever platform 50. From the hollow axle the fluid communicates with the inner end of a hose 57 which is reeled on the reel 30' from which the hose 57 extends through a support loop 58 connected upwardly to the lower flange of the boom 49, and through a loop on the lower side of a trolley which rides upon the lower flange of the boom 49.

The trolley 59 has a cable 60 dead-ended thereto which extends over pulleys 61 mounted on the end of the boom 49, one above the other, and from the upper pulley such cable 60 extends for connection to an end of a spring 62, the other end of such spring being connected to the swivel 46. The spring 62 thus normally draws the trolley 59 outwardly toward the end of the boom 49 to the fullest extended position, whereas when it is desired to service an automobile in a bay spaced nearer the service house 10 than this normal position, the hose may be pulled upon manually so that the trolley 59 rolls along the boom 49 in direction of the column 45, as the spring 62 is extended toward the outer end of the boom.

This invention is not limited to the method steps disclosed nor to the structures shown and described, but other methods and sequences of method steps, and other structural forms are included, as such may fall within the broad spirit of the invention and within the broad scope of interpretation claimed and merited for the appended claims.

What is claimed is:

1. A fluid dispensing system for gasoline and the like comprising a fixedly positioned source of fluid supply, a fixedly positioned pump connected to said fluid supply to draw fluid therefrom, a fixedly positioned track, a carriage mounted by said track to move therealong, a reel means having hose means thereon with one end connected to said reel means, said reel means being carried by said carriage, a meter, a conduit swivelly connected to said meter to deliver metered fluid to said reel means and therefrom to the reel means connected end of said hose means and with said hose means being retractably extendable as paid out by said reel means, a second reel means fixed adjacent said pump, a second hose means wound on said second reel means and connected at one end to receive fluid therefrom into from said second reel means, a conduit hose swivelly connected to said pump for receiving fluid from said pump and to deliver said fluid into said second reel means to be delivered in turn into said reel means connected end of said second hose means, said system providing stations along said track at which fluid may be delivered, and said carriage being movable along said track and with relation to said pump to selected positions adjacent selected stations at which fluid is to be delivered, the other end of said second hose means being connected to deliver fluid into said meter and said second hose means being retractably extendable as paid out by said second reel means whereby said first hose means may be positioned within the area of a selected station.

2. A fluid dispensing system for gasoline and the like,

as claimed in claim 1, in which said track is at substantially ground level to support said carriage thereabove.

3. A fluid dispensing system for gasoline and the like as claimed in claim 1, in which said track is an overhead track and supports said carriage therebelow.

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