Sept. 15, 1959 L. B. JENNINGS 2,904,231

DELIVERY SPOUT

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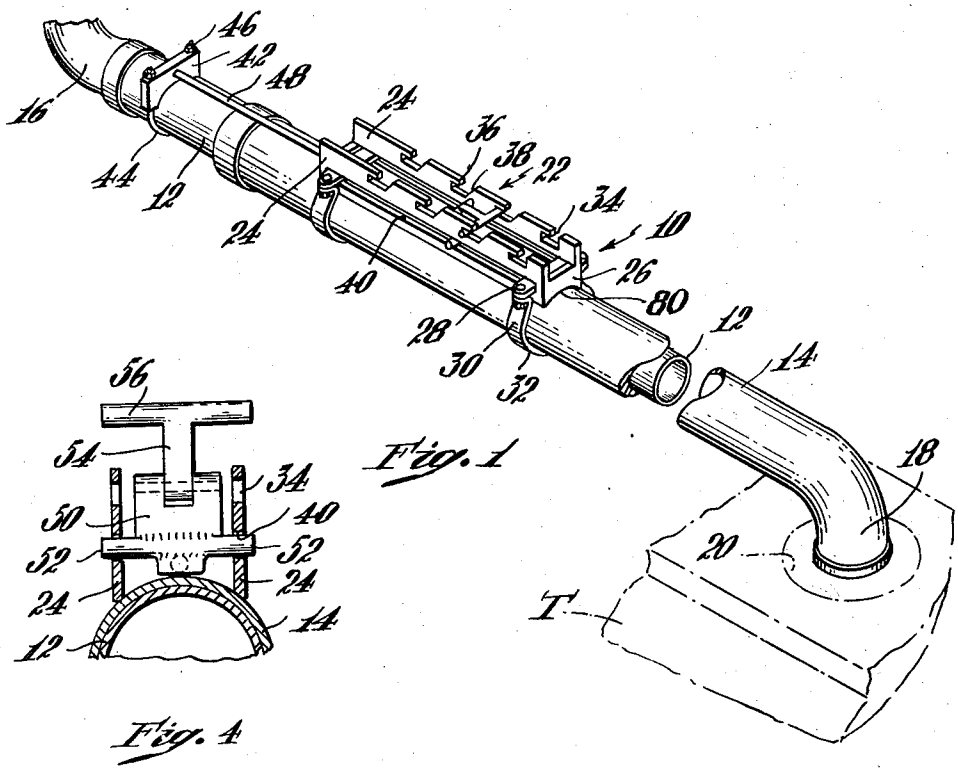


Fig. 1

Fig. 4

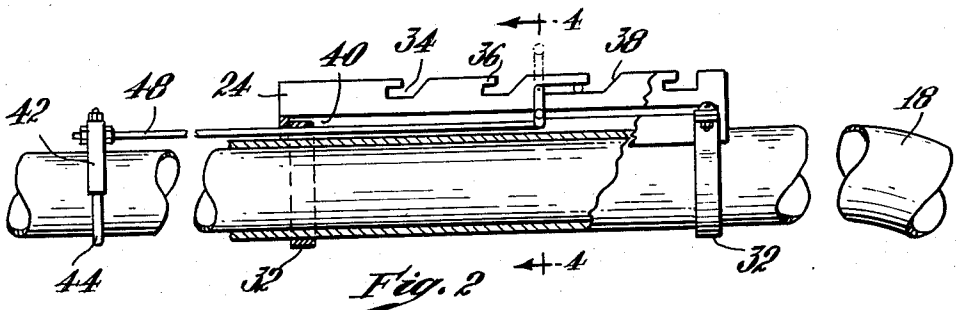


Fig. 2

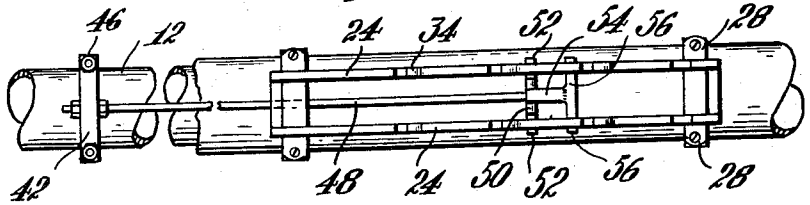


Fig. 3

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DELIVERY SPOUT

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4 Claims. (Cl. 222—523)

This invention relates to delivery spouts for transferring a liquid from a place of storage to vehicles for transportation and more especially to filling oil trucks from a storage tank at a depot for local delivery.

At most depots oil is supplied to an overhead pipe located at such a height above the ground that a tank truck may be driven under it and from thence to a nozzle into the truck. The overhead pipe may be supplied by gravity from an elevated tank or have oil pumped thereto from an underground tank. The nozzle is pivotally connected to the overhead pipe and when not in use is held in a position such that oil will not run out of its open end. For use the nozzle is swung downwardly and if necessary laterally into a position above the filling hole at the top of the truck tank. The drivers are not always careful to stop the truck close enough to the nozzle to be sure that it will reach the hole, moreover, most trucks have several holes at different distances lengthwise thereof and hence it is usual to make the nozzle in two freely telescoping sections, one of which is pivotally connected to the overhead pipe and the other of which is a spout which may be extended or retracted relative to the pivoted section to bring its open end into registration with a hole at the top of the tank to be filled. The telescoping sections are heavy and when the nozzle is depressed the spout sometimes slips off the swivel section with the result that much oil is lost before the shut-off valve can be manipulated to stop the flow. Moreover, as thus constructed, the driver or attendant must hold the nozzle in position throughout the operation of filling the truck, a duty which is onerous during inclement weather and one which takes up time which could be used for other purposes. Objects of this invention are to provide means for controlling the telescoping sections so that one cannot slip from the other when the nozzle is lowered into operative position, in which the sections can be adjusted relative to each other to increase or decrease the overall length of the spout to provide for supplying oil to the tops of tanks at different distances from the overhead pipe, to provide an adjusting structure for locking the sections in a given position of extension so that it is no longer necessary to hold the parts during filling, and to provide locking means which is automatically disengaged by retraction of the parts or by raising the nozzle to its inoperative position. Other objects are to provide a device which is relatively easy to operate, is reliable and does not add materially to the cost of installation.

As herein illustrated the sprout has telescoping sections, one of which is pivotally connected at one end to an overhead oil delivery pipe and the other of which is telescopingly slidable on the pivoted section for movement relative thereto in extension and retraction. In accordance with the invention there are interengageable lockable elements carried by the sections, which elements are relatively movable into locking engagement

by movement of the spout into a position which tends to extend the sections, and are automatically disengaged by movement of the spout into a position which tends to retract the sections. The elements are in the form of a ratch bar on the nozzle section and a pawl or ratchet fast to the pivoted section. The pawl when not in a notch of the ratch rides along the smooth surfaces between notches and unless withheld by means provided for this purpose gravitates into engagement with a notch by depression of the spout into operative position. The ratch carries means which locks the pawl in position as long as the forces exerted on the spout are such as to tend to extend the sections. The means for automatically disengaging the elements is a cam on the ratch which ejects the pawl from the notch by movement of the spout to a position which tends to retract the sections or by manual retraction of the sections.

The invention will now be described in greater detail with reference to the accompanying drawings wherein:

Fig. 1 is a perspective view of the spout shown in a downwardly inclined position such as it would be when in use for the purpose of delivering oil from an overhead oil pipe to the oil hole at the top of a tank truck;

Fig. 2 is an elevation as viewed from the left-hand side of Fig. 1, partly in section;

Fig. 3 is a plan view of Fig. 2; and

Fig. 4 is a transverse section taken on the line 4—4 of Fig. 2.

The main or supply spout **10**, as shown in Fig. 1, is comprised of telescoping sections **12** and **14**. The section **12** is connected to an elbow **16** which in turn is pivotally connected to an overhead oil delivery pipe so that the spout may be swung up or down and from side to side, thereby to permit moving its discharge end into a position above an oil truck, such as shown in dot and dash lines at T. The nozzle section **14** is slidable longitudinally on the section **12** and has at its lower end a bent nozzle portion **18**, adapted to be inserted into the oil hole **20** in the top of the tank.

Formerly the sections **12** and **14** were freely slidable relatively to each other and an attendant desiring to fill an oil truck was required to swing the spout downwardly from an elevated position where it was usually supported by a hook or other equivalent means and to slip the nozzle end **14** along the swivel portion **12** until the nozzle was engaged in the hole **20** and then hold the spout throughout the filling operation. The spout sections are made up of heavy pipe, consequently the spout is difficult to handle and sometimes gets out of control particularly when there is a rush of oil through it which makes it unmanageable. Frequently the nozzle section became entirely disengaged from the swivel section and large quantities of oil are spilled. In accordance with this invention locking means is provided for holding the sections in any desired position relative to each other so that it is not necessary for the attendant to do this, which means is also adjustable so that the overall length of the spout may be varied by extension or retraction to reach the particular tank opening desired without having to move the truck beneath it. As herein illustrated this means comprises a rack **22** in the form of a pair of spaced parallel ratch bars **24—24** rigidly connected at their ends by webs **26—26** which are concave along their lower edges **80** so as to embrace the curved wall of the section **14**. Extending from opposite sides of the bars at opposite ends thereof, are ears **28—28** for receiving bolts **30** for clamping the opposite ends of straps **32** placed about the nozzle section **14** to the ears. The upper edges of the ratch bars **24** are smooth and parallel to the axis of the section **12** but each of the edges is divided into spaced sections

by a plurality of regularly spaced notches **34** which are undercut at their rear ends and forwardly inclined at their forward ends thus forming re-entrant notches. The undercut portions of the notches provide locking recesses within which a pawl, which will be described hereinafter, is retained by keepers **36** which in fact are portions of the bar extending forwardly over the recess. The inclined forward end of the notch provide cams **38** for ejecting the pawl, as will appear. Below the line of notches in each bar **24** there is an elongate slot **40** which is parallel to the smooth upper edge of the bar.

A block **42** having a concave lower edge to fit the curved wall of the supply section **12** is fastened thereto near the elbow **16** by a U-shaped strap **44** which surrounds the section and has threaded portions extending through the block on which are placed nuts **46**. A rod **48** is attached at one end to the block **42** and extends forwardly therefrom parallel to the center line of the spout and midway between the ratch bars **24**. At the forward or distal end of the rod **48** there is fixed a carriage or head **50** which has extending laterally therefrom at opposite sides slides or trunnions **52—52** which are engaged respectively, with the slots **40—40** in the bars **24** so that the rod **48** is held rigidly in place parallel to the axis of the spout throughout movement of the section **12**. A T-shaped latch **54** is pivotally mounted on the head **50** so as to be movable about a horizontal axis at right angles to the axis of the rod **48**. The latch **54** has oppositely extending pawls **56—56** which are adapted either to engage the smooth upper edges of the ratch bars or to drop into the notches along the ratch bars. The pivotal mounting of the latch permits the pawls to slide freely along the smooth upper edges of the ratch bars as the nozzle section **14** is extended until they are brought opposite a pair of notches and then to drop thereinto by gravity. As the pawls drop into the notches further extension of the sections moves them beneath the keepers **36—36** so that they became locked in place and keep the sections in a relatively extended position. If forces be applied to retract the nozzle section **14** relative to the supply section **12**, the pawls are moved along the notches until they engage the cam surfaces **38—38**, which automatically lifts them out of the notches thus allowing the sections to be retracted.

The pawls provide a convenient finger hold so that an attendant may hold the latch elevated above the notches and manipulate the sections to his satisfaction and then drop them into locking position.

In using the device the spout is lowered from an elevated position in which it is lashed or held for example by a hook or the like with the pawls engaged so that there is no chance for the sections to become accidentally disengaged during the lowering. When the attendant gets the spout into substantially the position he wants he can then by pulling back on the nozzle disengage the pawl, hold it disengaged and then manipulate the sections by further retraction or extension to the desired length and drop the latch back into the correct notch thus fixing its length.

It should be understood that the present disclosure is for the purpose of illustration only and that this invention includes all modifications and equivalents which fall within the scope of the appended claims.

I claim:

1. A delivery spout comprising hollow telescoping sections slidable in extension and retraction, one of said sections being adapted to be swivelly connected to a source and the other being a nozzle having an end adapted to be inserted in an oil hole, a ratch bar fast to the nozzle section, said bar containing a plurality of spaced re-entrant notches separated by smooth surfaces, a pivotally supported pawl carried by the swivel section, means slidably guiding the pawl linearly and in parallel relation to the ratch bar, said pawl being movable on its pivot to ride along the smooth surfaces of the ratch intermediate adjacent notches and gravitationally to drop into the first notch it comes into registration with, means for retaining the pawl in the notch it falls into and means for automatically ejecting the pawl from the notch by retraction of the sections.

2. A delivery spout comprising hollow telescoping swivel and nozzle sections slidable in extension and retraction, a ratch bar fast to the nozzle section, said bar containing a plurality of spaced re-entrant notches and an elongate slot running parallel to the said notches, a rod fast at one end to the swivel section, said rod having fixed to its distal end a carriage slidably engaged with the elongate slot, and a latch member pivotally mounted on the carriage for movement about an axis at right angles to the axis of the rod so that its free end may slide along the smooth parts of the notched edge of the ratch, and gravitationally fall into that one of the notches it first comes opposite, each notch being so shaped as to prevent escape of the latch until force is applied for retracting the nozzle section, means for locking the latch in the notch as long as the sections are subjected to forces such as to hold them distended, and means automatically operable to eject the latch from the notch when force is applied for retracting the sections.

3. An extensible spout for delivering fluent material from a supply to a receptacle, said spout comprising coaxial supply and delivery sections both sloping downwardly in the direction of fill during the filling operation, one of said sections telescoping within the other, whereby the delivery section tends, by gravity, to slide downwardly and separate from the supply section, a ratch fast to the top of one of the sections and provided with a plurality of notches with means spacing the adjacent notches, a pawl movably carried by the other section, said pawl being selectively engageable with the ratch notches upon extension of the sections for preventing further extension of the sections, and means connected with each notch for automatically releasing said pawl from said selected ratch notch when force is applied tending to retract the sections.

4. An extensible spout for delivering fluent material from a supply to a receptacle, said spout comprising coaxial supply and delivery sections, both sloping downwardly in the direction of fill during the filling operation, one of said sections telescoping within the other, whereby the delivery section tends, by gravity, to slide downwardly and separate from the supply section, a ratchet bar fast to the top of the nozzle section, said bar having a series of spaced elements with intervening notches, a pawl movably attached to the supply section, said pawl being selectively movable along said series of elements in response to relative motion of the supply and nozzle sections and dropping, gravitationally, into the first notch with which it may register, each element having a portion that, when engaged with the pawl, positively limits downward motion of the nozzle section relatively to the supply section, and means connected with each notch operative automatically to release the pawl from its selected notch by the application of force tending to move the nozzle section toward the supply section.

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