Jan. 9, 1968 W. W. FRANTZ 3,362,306

DISPENSER

Filed May 31, 1966

FIG. 1

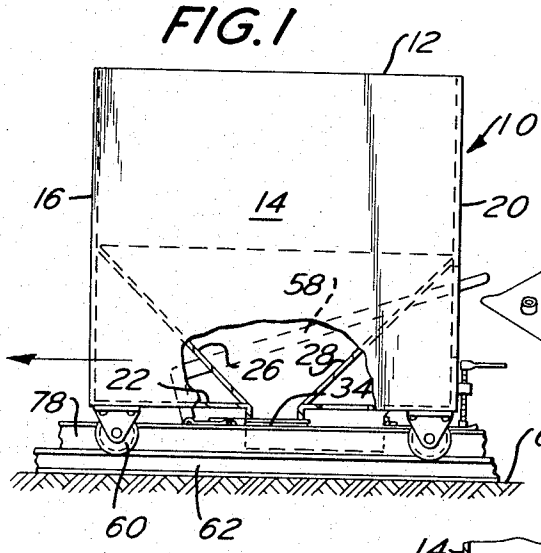


FIG. 4

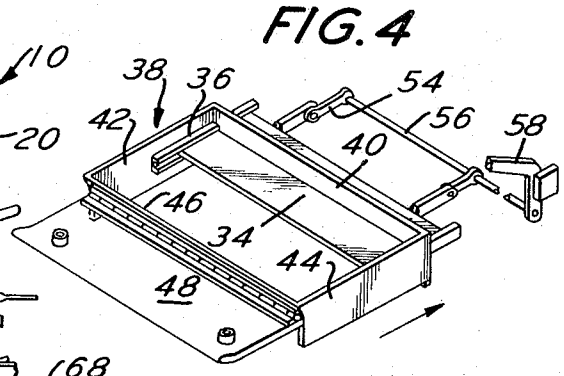


FIG. 2

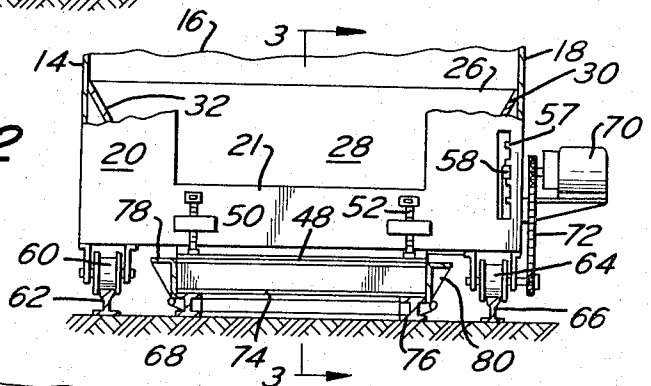
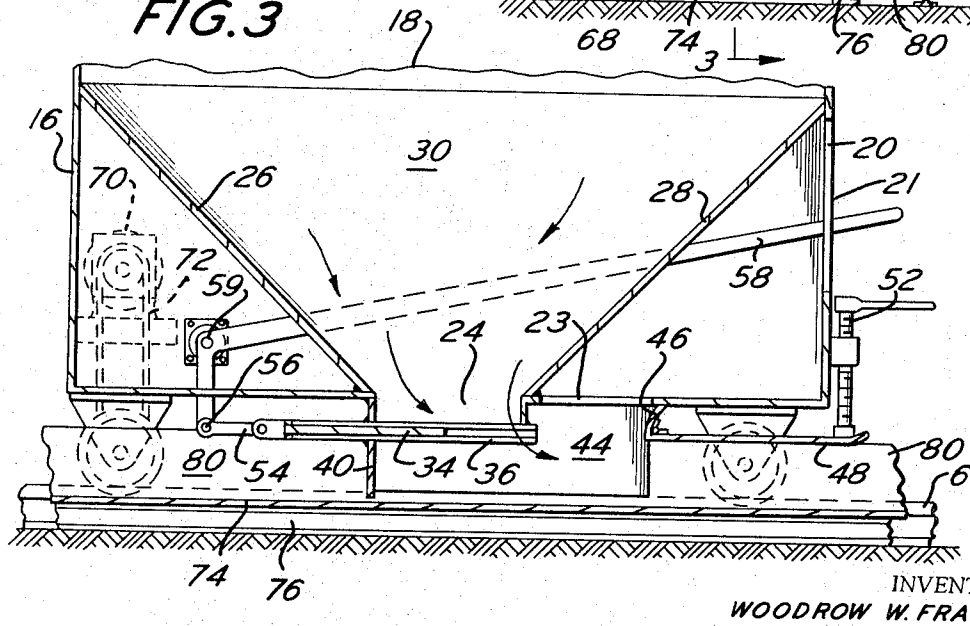


FIG. 3



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DISPENSER

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5 Claims. (Cl. 94—44)

ABSTRACT OF THE DISCLOSURE

A dispenser including a supply housing having an opening in the bottom thereof which dispenses material into a bottomless discharge housing. A movable valve member is provided for controlling the flow through the opening. A leveling member is attached to the dispenser to level off the upper surface of the cement slabs. Openings in the dispenser are provided so that the level of cement within the discharge housing is visible.

This invention relates to a dispenser, and more particularly, to a wheeled dispenser for dispensing flowable materials such as cement and concrete.

The dispenser of the present invention is particularly useful in connection with a process for making reinforced concrete slabs disclosed and discussed in detail in my copending application Ser. No. 372,796, filed on June 5, 1964, and entitled, "Method and Apparatus for Forming a Pre-Fabricated Truss", now Patent No. 3,305,612. The wheeled dispenser of the present invention is constructed in a manner so that the height of the supply housing can be increased over those utilized heretofore without the disadvantages associated wtih the devices used heretofore. Heretofore, the amount of concrete within the supply housing was limited due to the fact that a supply above a predetermined amount increased the pressure head to such an extent that the concrete would squirt out through the discharge opening in sufficient volumes so as to be uncontrolled.

In accordance with the present invention, the wheeled dispenser includes a supply housing capable of receiving and dispensing six cubic yards of cement without requiring a refill. As a result thereof, a substantial number of reinforced concrete slabs can be produced before the wheeled dispenser requires a refill. The supply housing is provided with a discharge opening in the bottom thereof and bottom panels are provided sloping toward the discharge opening. A movable member is provided for selectively controlling the flow through the discharge opening. A discharge housing depends from the lower surface of the supply housing.

The discharge housing is positioned so that discharge through the supply housing discharge opening is directed into the discharge housing. The discharge housing lacks a bottom wall, lacks a top wall, and lacks a rear wall. Adjacent a rear portion of the discharge housing, there is provided a movable leveling member to level off the upper surface of the concrete slabs so that the same need not be troweled. A means is provided so that the level of the cement within the discharge housing is visible through the top of the discharge housing. If the rate of flow of cement or concrete into the discharge housing causes the level therein to rise above a predetermined point, this is easily observed and an actuator means is manipulated so as to control the movable member to close the discharge opening. The discharge housing is provided with a front wall so as to prevent the cementitious material from moving forwardly of the wheeled dispenser.

It is an object of the present invention to provide a wheeled dispenser capable of handling and dispensing cementitious material in larger amounts than those capable

of being accommodated heretofore while having desired control over the discharge of the cementitious material.

It is another object of the present invention to provide a wheeled dispenser for dispensing cementitious material which is simple, easy to construct, and inexpensive while being reliable.

It is another object of the present invention to provide a wheeled dispenser which is easy to operate so as not to require skilled labor, while at the same time capable of containing a larger supply of material to be dispensed than could be obtained heretofore.

Other objects will appear hereinafter.

For the purpose of illustrating the invention, there is shown in the drawings a form which is presently preferred; it being understood, however, that this invention is not limited to the precise arrangements and instrumentalities shown.

FIGURE 1 is a side elevation view of the wheeled dispenser of the present invention with a portion broken away for the purpose of illustration.

FIGURE 2 is a rear elevation view of the lower portion of the wheeled dispenser with portions broken away for purposes of illustration.

FIGURE 3 is a sectional view taken along the line 3—3 in FIGURE 2.

FIGURE 4 is a perspective of the discharge housing.

Referring to the drawing in detail, wherein like numerals indicate like elements, there is shown in FIGURE 1 a side elevation view of a wheeled dispenser in accordance with the present invention designated generally as **10**.

The dispenser **10** includes a housing **12** having opposite side walls **14** and **18**, a front wall **16**, and a rear wall **20**. The rear wall **20** is provided with an opening **21** which will be explained hereinafter. The housing **12** lacks a top wall and is provided with a bottom wall **22**. Bottom wall **22** is provided with an opening **23**, which will be explained hereinafter, spaced from a discharge opening **24**.

The housing **12** is constructed internally with bottom panels **26**, **28**, **30** and **32** which slope downwardly from one of the upright walls of the housing **12** toward the discharge opening **24**. Accordingly, all cementitious material disposed within the housing **12** can be directed to the discharge opening **24** without becoming lodged in a corner or the like which will require special cleaning before the same may be permitted to harden. In addition, the interior of the housing **12** is more easily cleaned and washed down as a result of the provision of the bottom panels. It will be noted that the discharge opening **24** is substantially smaller than the length and width of the housing **12**. The interior of the housing **12** may be of sufficient size so as to accommodate larger quantities of cementitious material as will be explained hereinafter.

Flow through the discharge opening **24** is selectively controlled by means of a gate valve member **34** slidably mounted on tracks **36**. The member **34** is a part of the discharge housing designated generally as **38**. Housing **38** depends from the bottom wall **22** of the housing **12**. Housing **38** includes a front wall **40**, opposite side walls **42** and **44** and a rear brace **46**. Walls **40**, **42** and **44** support the tracks **36**. Brace **46** extends between the side walls **42** and **44**. A leveling member **48** is hinged to the brace **46**.

As will be apparent from FIGURE 4, housing **38** is bottomless, lacks a top wall and lacks a rear wall. The position of leveling member **48** is selectively adjusted by means of elevating screws **50** and **52**. Screws **50** and **52** may be connected to the sockets on the upper surface of leveling member **48** and are supported by the rear wall **20** of the housing **12**. Links **54** are pivotably connected to one end of member **34** and to rod **56**. One end of a bell crank handle **58** is connected to one end of the rod **56**. Handle **58** is pivotably connected in a conventional

manner to the side wall 18 of the housing 12 by pin 59. This connection is of the type whereby rotation of handle 58 causes reciprocation of member 34 in small incremental amounts. A bracket is provided with notches 57 for retaining the setting of the handle where desired.

As shown more clearly in FIGURE 2, the housing 12 is provided with wheels 60 on one side thereof rotatably supported by rail 62. Wheels 64 provided on the opposite side are supported by rail 66. The rails 62 and 66 are supported on the upper surface of a floor 68. A motor means 70 may be provided to cause movement of the dispenser 10 along the rails 62 and 66. The output shaft of motor means 70 is connected to an extension of the shaft for one of the wheels 64 by means of sprockets and chain 72.

A casting bed 74 is provided on I-beams 76 which in turn are supported by the floor 68. The casting bed is provided with pivotably mounted side walls 78 and 80. The hinge for leveling member 48 is positioned so as to be slightly above the upper surface of the side walls 78 and 80. The front wall 40 of the housing 38 is of sufficient height so that its lower edge is juxtaposed and slightly spaced from the upper surface of bed 74. This clearance may be on the order of a sixteenth of an inch. The lower edge of side walls 42 and 44 are spaced from the upper surface of bed 74 by a greater distance.

The dispenser 10 may be utilized in the process for manufacture of reinforced concrete slabs as follows:

The housing 12 will be filled with concrete and handle 58 will have been manipulated to a position corresponding to the uppermost slot 57 wherein member 34 closes opening 24. The dispenser 10 is moved along the rails 62 and 64 to the beginning or front end of the casting bed. The side walls 78 and 80 of the casting bed will be in the position illustrated in FIGURE 2. Thereafter, the handle 58 is manipulated to open the discharge opening 24 and permit the concrete to enter the discharge housing 38. At the same time, the motor means 70 will be actuated to cause the dispenser 10 to start to move along the rails 62 and 66.

The operator will observe the level of the concrete within the discharge housing 38 by looking through the openings 21 and 23. The handle 58 may be manipulated to increase or decrease the rate of flow into housing 38. The leveling member 48 will have previously been adjusted so as to smooth the upper surface of the concrete so as to obviate the necessity of troweling the same. As will be apparent from FIGURE 2, the length of member 48 corresponds generally to the distance between the side walls 78 and 80. The front wall 40 on housing 38 prevents the material from moving forwardly along the casting bed 74. Hence, the concrete can only move rearwardly with respect to the dispenser 10.

If the level of concrete within housing 38 increases beyond a predetermined level as observed by the operator, the rate at which concrete is introduced thereinto through opening 24 is decreased by moving handle 58 out of its notch 57 to a higher one of the notches 57. I have found that a dispenser as described above will require a refilling more infrequently than those proposed heretofore, will provide a smooth upper surface on the concrete slabs, is simple, reliable and requires little skill for operating the same.

The manner in which the concrete slab is thereafter reinforced is described more fully in my above-mentioned application. The dispenser of the present invention may be utilized for other purposes such as laying sidewalks and the like. Other uses will suggest themselves to those skilled in the art to which the present invention pertains.

As will be apparent from the above, the rear portion of housing 38 is in communication at its upper surface with the atmosphere. Housing 12 may be provided with a cover if desired so as to prevent foreign matter from inadvertently being introduced into the housing 12. In such event, such a cover will be provided with vent holes

or the like. If the mechanical actuator nor member 34 fails, the pressure head of cementitious material within housing 12 will not cause the rate of flow to increase. Also, member 34 is accessible for ease of maintenance and to facilitate manual closing if its actuator fails as will be apparent from FIGURE 3.

The present invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof and, accordingly, reference should be made to the appended claims, rather than to the foregoing specification as indicating the scope of the invention.

I claim:

1. A dispenser comprising a supply housing support mounted on wheels, said support having a bottom and upright side walls extending upwardly from said bottom, said support including an upright front wall and an upright back wall extending upwardly from said bottom, a supply housing inside said support, said housing having a discharge opening in the bottom thereof, said support having an open portion in the bottom thereof coincident with said discharge opening, a movable valve member mounted adjacent said opening for selectively controlling the flow through said opening, a single actuator handle connected to said valve member, adjustment of said actuator handle causing movement of said valve member, a discharge housing depending from said supply housing support in a position so that discharge through said opening enters into said discharge housing, said movable valve member being guided for horizontal sliding movement in a pair of trackways, said trackways being mounted on said discharge housing, said discharge housing including a front wall and side walls but lacking a back wall and a bottom, a movable generally horizontal leveling member mounted adjacent the rear portion of said discharge housing and being pivoted to said discharge housing for contacting the upper surfaces of material dispensed through said discharge housing, said discharge opening being located intermediate spaced vertical planes containing the front wall of said discharge housing and said leveling member, said supply housing including walls sloping toward said opening, side walls and the front and back walls of said support abutting the walls of said supply housing and extending a substantial distance beyond said walls to provide an extension of said supply housing and substantially increase the capacity thereof, an opening in one of said upright walls of the support and an aligned opening in the bottom of said support enabling the level of flowable material in said discharge housing to be visible, and the open top of said discharge housing being of greater configuration than said discharge opening.

2. A dispenser as set forth in claim 1 including at least one upright screw actuator having one end connected to a free edge portion of said leveling member for causing said free edge portion to pivot about a horizontal axis.

3. A dispenser as set forth in claim 1 including a bracket mounted on one of the upright walls of said dispenser, means on said bracket for retaining said actuator handle in a desired position.

4. A dispenser in accordance with claim 1 wherein said wheels are railroad wheels for rollingly engaging rails.

5. A dispenser comprising a supply housing supported by a horizontal wall mounted on wheels, said housing having a discharge opening in the bottom thereof, a movable valve member mounted adjacent said opening for selectively controlling flow through said opening, an actuator handle connected to said valve member so that adjustment of said actuator handle at one end of said wall causes movement of said valve member, a discharge housing depending from said wall in a position so that discharge through said opening enters into said discharge housing, said movable valve member being guided for horizontal sliding movement in a pair of trackways, said discharge housing including a front wall and side walls

but lacking a back wall and a bottom, a movable generally horizontal leveling member mounted adjacent the rear portion of said discharge housing and being pivoted to said discharge housing for contacting the upper surfaces of material dispensed through said discharge housing, said discharge opening being located intermediate spaced vertical planes containing the front wall of said discharge housing and said leveling member, said supply housing being provided with walls sloping toward said opening, an observation opening in the bottom wall over said discharge housing for enabling the level of flowable material in said discharge housing to be visible, and the open top of said discharge housing being of greater configuration than said discharge opening.

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