June 21, 1932. H. E. DUNN 1,863,924

SPRAYING DEVICE

Filed April 28, 1930

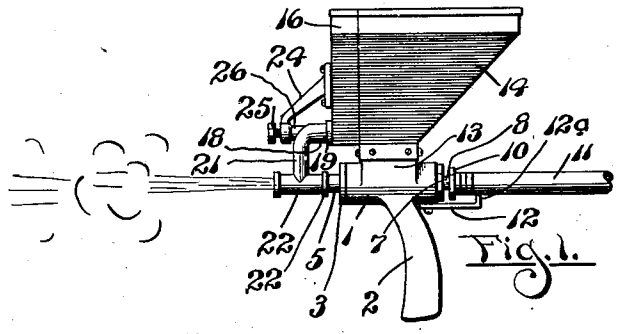


Fig. 1.

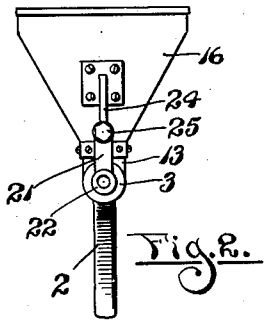


Fig. 2.

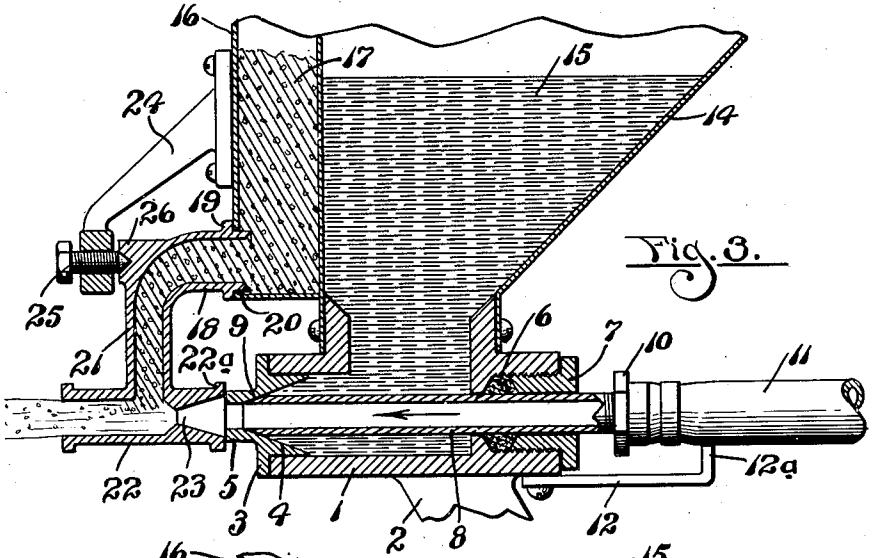


Fig. 3.

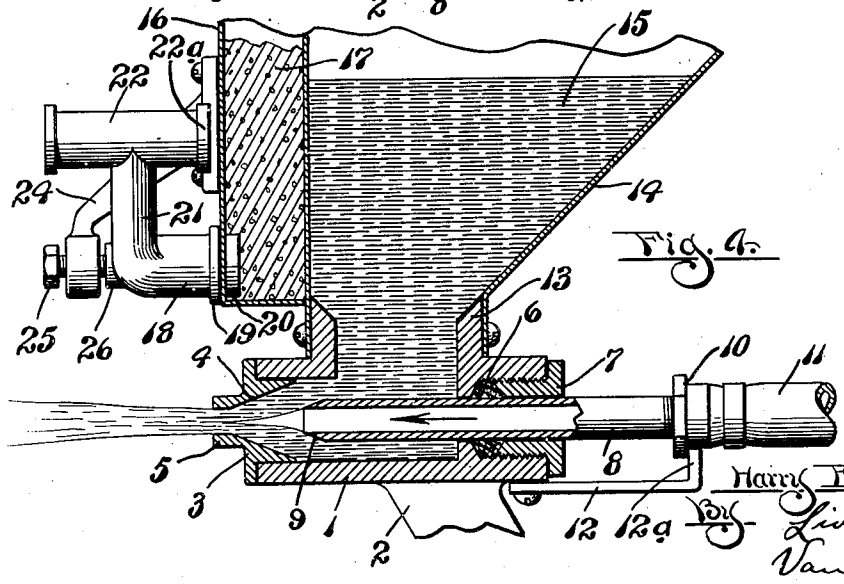


Fig. 4.

Inventor
Harry E. Dunn
By Liverance & Van Antwerp
Attorneys

Patented June 21, 1932 1,863,924

UNITED STATES PATENT OFFICE

HARRY E. DUNN, OF HOLLAND, MICHIGAN, ASSIGNOR TO W. E. DUNN MANUFACTURING COMPANY, OF HOLLAND, MICHIGAN, A CORPORATION OF MICHIGAN

SPRAYING DEVICE

Application filed April 28, 1930. Serial No. 447,839.

This invention relates to a spraying device for the projecting of a liquid cementitious coating followed by facing dash material upon the surface of building blocks, walls or the like.

In the art of building, particularly masonry buildings, which involve building blocks, masonry walls and the like of various characters, it is desirable in a great many instances to apply dash material, so-called, to the blocks either before or after the same are laid in a masonry wall or to apply the dash material to solid walls, both for appearance purposes and for protection of the walls or blocks from moisture absorption, effloresence or the like. And it is a primary object and purpose of the present invention to provide a spraying device or gun by means of which this process may be very readily carried out.

In the process of applying the dash material, which may be of various characters and of different colors as desired, a liquid cementitious composition is first sprayed onto the wall followed by projecting the dash material onto and against the liquid cementitious coating first given to the wall or block. And with my invention a novel construction is provided with which both steps of the process may be readily accomplished, through very minor and quickly changed adjustments of the device by which it is changed from a liquid cementitious sprayer to a dash projector. My invention comprises many novel constructions and combinations and arrangements of parts for effectively attaining the ends stated in a simple and efficient manner.

An understanding of the invention may be had from the following description, taken in connection with the accompanying drawing, in which,

Fig. 1 is a side elevation of the spraying device of my invention.

Fig. 2 is a front elevation thereof.

Fig. 3 is a fragmentary enlarged longitudinal vertical section of the device showing the parts in position for projecting the dash material from the device, and

Fig. 4 is a view similar to Fig. 3 showing the parts of the device in position for projecting or spraying the liquid cementitious composition.

Like reference characters refer to like parts in the different figures of the drawing.

In the construction, a barrel 1 adapted to be located horizontally is provided, which has a downwardly extending pistol like handle 2 integral therewith. In the front end of the barrel a projecting nozzle 3 is secured which has a passage therethrough, the inner portion of which has conical sides, indicated at 4, while the immediate projecting nipple 5 has a passage of smaller diameter than the opening through the barrel, as fully shown in Fig. 3 and Fig. 4.

At the rear end of the barrel the passage is reduced in size and the rear end is interiorly threaded so that packing 6 may be placed therein to be compressed by a gland 7, of the usual stuffing box construction, a tube 8 passing through the gland, the packing and the reduced portion of the passage or opening through the barrel 1.

The tube at its front end is tapered, as indicated at 9, so as to fit snugly against the tapered walls 4 previously described with reference to the passage through the projecting nozzle 3. A suitable connector 10 is threaded onto the rear end of the pipe 8 to which a hose 11 for carrying compressed air is attached. A bar 12, secured to the underside and rear end portion of the barrel 1, extends rearwardly and has an upturned finger 12*a* which extends into the path of movement of the outwardly extending hexagonal flange on the connector 10 so that the pipe 8 may be withdrawn only until said flange engages against the finger. That is, the pipe 8 may occupy either of two extreme positions; the first, shown in Fig. 3, wherein the tapered end 9 of the pipe seats snugly against the tapered sides 4 of the nozzle and second, as shown in Fig. 4, where the pipe is withdrawn until stopped by the stop finger 12*a*.

At the upper side of the barrel 1 and between its ends is an integral neck 13 with an opening therethrough to the interior of the barrel, to which a hopper 14 is secured in which the liquid cementitious material 15

is contained. At the front side of the hopper 14 a receptacle 16 for the dash material 17 is permanently secured. This dash material is dry and may consist of sand, finely crushed stone with or without coloring matter, or any other suitable material for the purpose.

At the lower end and front side of the receptacle 16 an outlet member 18 is located, having an annular flange 19 near its free end portion 20 which extends through the front wall of the receptacle 16 until stopped by the flange 19 coming thereagainst. The tubular conduit 18 has a hollow arm 21 integral therewith located at right angles thereto which, at its free end, joins with an integral tubular nozzle member 22. This nozzle member 22 has a passage therethrough from its front or outer end connecting with the passages through the parts 21 and 18 and leading to the bottom of the receptacle 16 for the free passage of the dash material, and back of the point where the nozzle member 22 joins with the arm 21 the passage is of Venturi form, as indicated at 23. The inner end 22*a* of the nozzle member 22 is adapted to come directly in front of the outlet nipple 5 of the nozzle 3 previously described when the dash outlet member and nozzle are in lower position as shown in Fig. 3.

A bracket 24 is permanently secured at its upper end to the front side of the receptacle 16 and extends downwardly and forwardly, having a pointed screw seating in a conical recess made in a boss 26 cast integral with and projecting from the front end of the member 18 of the outlet where it joins with the arm 21. By adjusting the screw 25 the rear end of the member 18 of the outlet is held snugly in position with reference to the receptacle 16. It is evident that this outlet nozzle member for the dash material may be turned to either the lower position, as in Fig. 3, or to an upper position, as shown in Fig. 4, and will be frictionally held in either position to which turned.

In using the spraying device of my invention with the dash outlet nozzle member in upper position, as in Fig. 4, the pipe 8 is withdrawn so as to permit a flow of the liquid cementitious material 15 to the outlet nozzle 3, and such material is projected against a building block, wall or the like by the pressure of compressed air escaping from the end of the tube 8. The pressure of the air is not high, usually about three pounds per square inch, but is effective for projecting the liquid cementitious material from the hopper against a wall and breaking it up and spraying it on the wall or block.

After such step of the operation is completed, the tube 8 is moved forward to the position shown in Fig. 3, thereby cutting off any flow of the liquid cementitious material and the dash outlet member turned to lower position to bring the nozzle 22 into alinement with the first nozzle 3. The dash material will drop downwardly partly by gravity and partly due to the injector action of compressed air passing and the dash material 17 be projected against the block, blocks or wall previously coated with the liquid cementitious material. The structure illustrated shows no way for controlling the passage of compressed air but this, obviously, may be done by any suitable valve means in the length of the conduit 11 leading to the tube 8.

The construction described is very practical and efficient and with it, with the use of one device, both steps of a dash applying process may be readily carried out. When the dash nozzle outlet member is turned to upper position the dash material is held from escaping from its receptacle 16; and after operation on a wall or building block is completed, the dash outlet nozzle member is turned to upper position and the tube 8 moved to its closed position, shown in Fig. 3, thereby preventing any escape of either the dash material or the liquid cementitious material. The invention is defined in the appended claims and is to be considered comprehensive of all forms of structure coming within their scope.

I claim:

1. In a device of the class described, a barrel, an outlet nozzle at one end of the barrel, a hopper carried by the barrel in which liquid material may be contained to pass to said nozzle, a tube slidably mounted lengthwise of the barrel and movable into one position to close the outlet nozzle and into another position to open it, means for conducting compressed air to the tube to pass therethrough, a receptacle for holding dash material mounted at the front of said hopper, and an outlet nozzle member connected with the lower end of said receptacle and rotatable to an upper or a lower position, in the latter of which positions it is in alinement with said outlet nozzle to the barrel.

2. In a device of the class described, a barrel, an outlet nozzle at one end of the barrel, said barrel being adapted to receive liquid material, a tube movably mounted in said barrel and movable into one position to close the outlet nozzle and into another position to open it, means for conducting pressure fluid to the tube to pass therethrough, a receptacle for holding dash material, and an outlet nozzle member connected with the receptacle and movable to an upper or a lower position, in the latter of which positions it is in alinement with said outlet nozzle to the barrel.

3. In a device of the class described, a tubular barrel having a passage therethrough and a neck at its upper side having a passage to join with the passage to the barrel, a hopper secured to said neck, a tube extending into the barrel through one end thereof, packing means around the tube and in said end of the

barrel through which a tube passes and through which it may be longitudinally moved, a nozzle member at the outer end of the barrel, said tube being movable to engage with said nozzle member to close it against passage of material from the hopper or to another position in which the nozzle is open for the passage of material from the hopper, means connected to the outer end of the tube for carrying compressed air thereto for passage therethrough, a receptacle located in front of said hopper, an outlet including a hollow horizontal arm and a second hollow arm located at right angles thereto with a horizontal nozzle member connected with said second arm, there being a continuous passage through said second nozzle member and arms of the outlet member, the first arm of the outlet member being rotatably mounted on the receptacle near its lower end and communicating therewith, said outlet member for said receptacle being movable about the horizontal axis of the first arm to upper and lower position, in the latter of which it is disposed in direct alinement with the first nozzle member.

4. In a structure of the class described, means for holding a quantity of liquid cementitious material, an outlet nozzle therefor, a tube movably mounted with reference to said nozzle adapted to be moved to a position to close the nozzle against the passage of liquid cementitious material or to open it therefor, means for carrying compressed air to said tube to pass therethrough in either position of the tube, a receptacle for dash material and an outlet member including a second nozzle rotatably mounted on said receptacle to be turned about a horizontal axis from an upper to a lower position or vice versa, the second nozzle lying in alinement with the first outlet nozzle when said outlet member is turned to lower position.

In testimony whereof I affix my signature.

HARRY E. DUNN.