Feb. 4, 1930. L. W. BECK 1,745,972

SPRAY CONTROL APPLIANCE

Filed Jan. 20, 1927 2 Sheets-Sheet 1

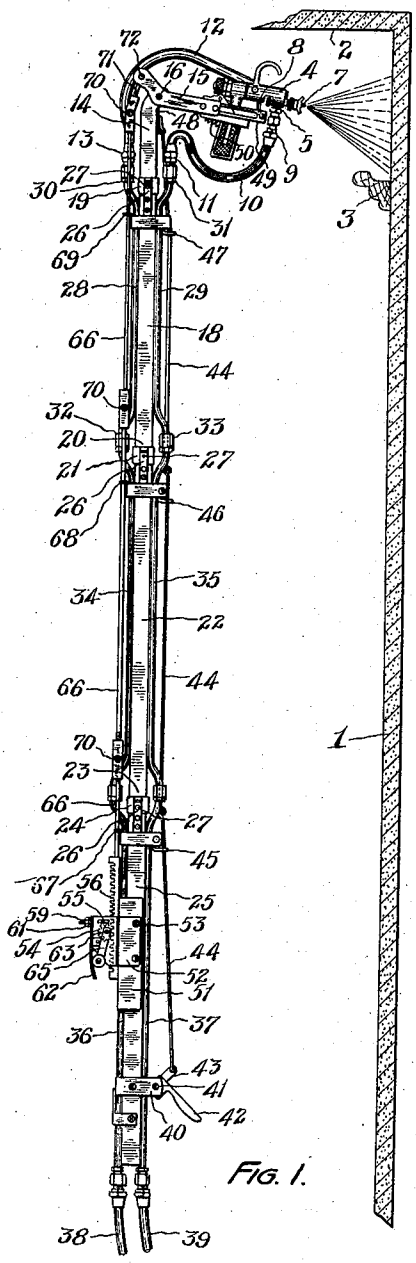


FIG. 1.

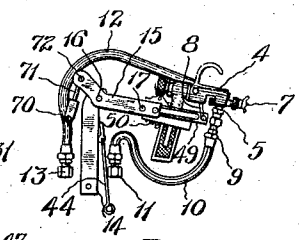


FIG. 2.

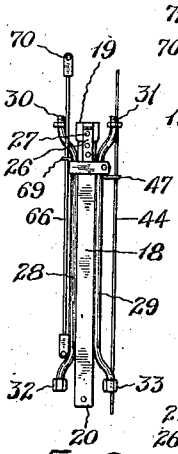


FIG. 3.

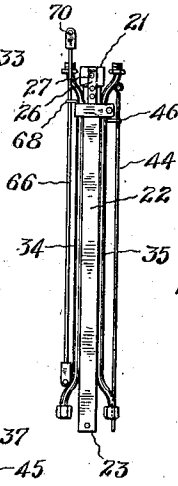


FIG. 4.

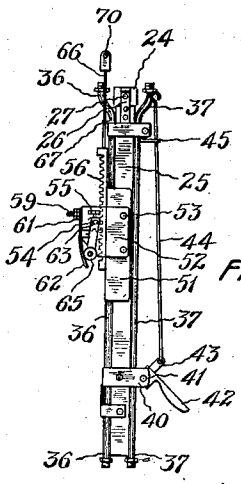


FIG. 5

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SPRAY CONTROL APPLIANCE

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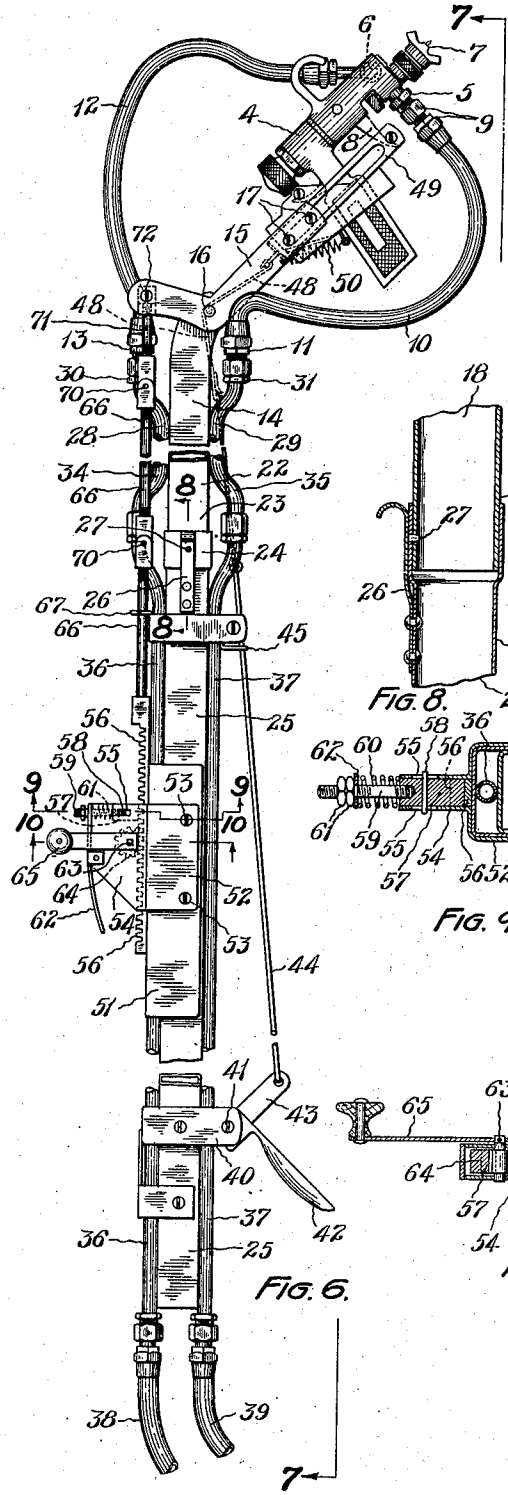


FIG. 6.

FIG. 8.

FIG. 9.

FIG. 10.

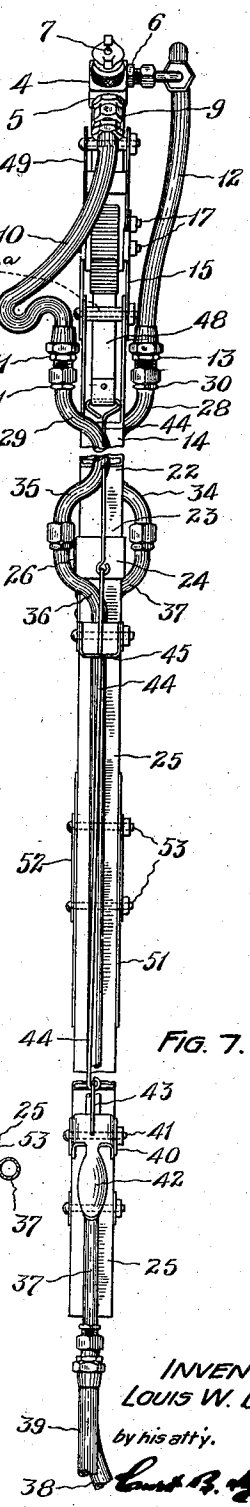


FIG. 7.

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UNITED STATES PATENT OFFICE

LOUIS W. BECK, OF AKRON, OHIO

SPRAY-CONTROL APPLIANCE

Application filed January 20, 1927. Serial No. 162,307.

My invention pertains to a spray control appliance and more particularly refers to an adjustably extensible appliance capable of being disassembled and when assembled adapted to enable a duplex control of certain parts at one end by means of certain other parts at the other end and connections therebetween.

Known prior practice involved the use of many kinds of short spray guns directly held and operated by hand by means of a trigger control, but necessitating a scaffolding in order to permit the operator properly to spray the ceiling, upper wall areas or difficultly accessible upper wall surfaces, as for instance, behind molding or pipes. If a traveling or roller scaffolding was available, an assistant has been employed to move the scaffolding as required by the progress of the work.

Accordingly, one object of my invention is the provision of an extension arm pivotally carrying the spray gun at one end and with suitable connections leading to the lower end which would permit of control and proper application by a single operator while standing on the floor of a room.

A further object is to have the lower end of the appliance, where grasped by the hands, provided with a duplex control, one for adjusting the angle of presentation of the nozzle of the gun from the further end of the holder together with means for automatically locking it in some chosen position of adjustment and the other control consisting of a trigger with suitable connections extending along a support for opening or closing the discharge valve in the gun. Advantages of my conception are to be realized during the repainting of factory walls while machinery and other appliances were in place, which circumstance precludes satisfactory use of supporting scaffolding. Also, the extension removes the gun far enough from the operator to avoid his inhaling obnoxious or injurious fumes.

I realize that the scope of my invention comprehends many equivalent methods and constructions. The showing of the drawings and the particular description are merely specific exemplifications of a plurality of mechanical embodiments and arrangements.

Adverting to the drawings:

Figure 1 illustrates a fragmentary section of a ceiling and an adjoining upright wall, the latter carrying a molding strip showing a spray control appliance, embodying my invention, in operation thereagainst.

Figure 2 is a side elevation of the detached elements carrying the spray gun.

Figures 3–5 are side elevations of three other detached sections of my appliance adapted to be connected end to end.

Figure 6 is an enlarged detailed view of portions of Figure 1 with inconsequential intermediate sections omitted.

Figure 7 is a side elevation view on line 7—7 in Figure 6.

Figure 8 is a longitudinal section taken on line 8—8 of Figure 6, to illustrate a snap connection.

Figure 9 is a further enlarged vertical cross-section on line 9—9 of Figure 6.

Figure 10 is a further enlarged cross-section on line 10—10 of Figure 6.

An upright wall 1 joins with a ceiling 2 and carries some distance below the latter a molding strip 3, all of which is illustrated in Figure 1 in order to show the facility with which my spray control appliance may be caused to functionate above the molding.

Any satisfactory form of spray gun 4 may be employed and since the gun itself forms no part of my invention and for which claim is made, only the structure pertinent to the cooperation of my invention will be described. It is here stated that spray guns, of the type I propose to use, are provided with two inlets, one numbered 5, for the color and the other, numbered 6, for the air current and such inlets may communicate with concentric ducts terminating as a nozzle 7 having a central

opening adjustable as to size and a plurality of converging openings so designed that streams issuing therefrom will meet in the line of the central opening. The discharge of compressed air is subject to the control of a trigger 8 and when released acts to spray the color, as illustrated in Figure 1.

Detachably connected with the inlet 5, by means of a nipple and union combination 9, is a flexible hose 10 the other end of which rotatably carries a threaded collar 11 adapted to establish connection with a composite supply duct to be hereinafter described. Another hose length 12 is similarly connected with the inlet 6 and at its other end 13 with a composite air duct, description of which will follow.

A composite supporting structure or extension includes a member 14 having a bifurcated upper end to which a bellcrank lever 15 is pivoted by means of a pin 16. The lever 15 is also of forked formation and its longer arm embraces an appropriate portion of the gun 4 to which it is secured by means of bolts 17. The lower hollow end of the member 14 is designed for telescopic connection with another supporting section 18, (Figure 3) the upper end 19 of which is designed to enclose the lower end of the member 14. The lower end 20, of the section 18, is to be similarly connected with the upper end 21 of another section 22, (Figure 4) and the lower end 23, of the section 22, is in the same manner to be connected with the upper end 24 of another section 25, (Figure 5). The three connections just referred to as being identically effected are in fact, by means of the construction illustrated in Figure 8, where it will be observed, for instance, that the upper end 21 carries an upwardly directed leaf spring 26 carrying a lug 27 adapted to intersect registering holes in the ends 20 and 21 to effect an interlock thereof.

Each of the sections 18, 22 and 25 must necessarily carry sections of correspondingly composite color and air ducts, wherefore the section 18 carries an air duct section 28 and a color duct section 29, the upper ends 30 and 31 of which are threaded and adapted for detachable connection with the collars 13 and 11, respectively. The lower ends of the ducts 28 and 29 carry collars 32 and 33 for connection with the upper ends of the two duct sections 34 and 35 which are clamped to the section 22 and the lower ends of which are in turn to be connected with the upper ends of the ducts 36 and 37, which in Figure 5 appear clamped to the section 25. The lower ends of the ducts 36 and 37 are detachably connected, as shown in Figure 1, with flexible tubing 38 and 39, which are to be considered as leading to a compressed air tank and a color containing receptacle, respectively.

A bracket 40 embraces the section 25 near its lower end and has pivoted on it at 41 a bellcrank lever, one arm of which is fashioned as a handle 42, whereas the other arm 43 articulates with the lower of three linked rods 44 which pass through a guiding ear 45 carried near the upper end of the section 25, and similar ears 46 and 47 carried near the upper ends of the sections 22 and 18, respectively. The upper end of the upper rod is connected with a strap 48 which passes over a loose collar 16^a on the pin 16 and is attached to one end of a member 49 reciprocably connected with the arm 15 and the upper end of which is looped around the trigger 8. The movement of the member 49 in a downward direction is against the action of a spring 50 whereby, as will be readily understood, a drawing of the handle 42 toward the section 25 by the fingers of an operator will pull the trigger 8 and cause the spray gun to function.

Directing attention to Figure 9, it will be observed that the section 22 and duct 36 are enclosed by a U shaped plate 51 which is in turn embraced by a U shaped bracket 52 and both are secured to the section 22 by means of a pair of bolts 53. The plate 52 carries a laterally extending bracket 54 provided with oppositely disposed slots 55. Movable, for a purpose hereinafter explained, within the extension 54 along the exposed side of the plate 51 is a rack 56 which a single toothed member 57 is adapted to intersect. A pin 58 is passed through the toothed plunger and through the slots 55 whereby to prescribe the limit of its reciprocal movement. A threaded rod 59 is adjustably connected end to end with the plunger 57 and is surrounded by a coil spring 60 adjustably compressed by nuts 61 and normally active to hold the tooth on the plunger 57 in one of the spaces of the rack. The plunger tooth may, however, be withdrawn in opposition to the force of the spring 60, by means of a control lever 62, shown in Figure 6. Also associated with the bracket 52, in the manner disclosed in Figure 10, is a squared shaft 63 on which is carried a pinion 64 so as to be in mesh with the rack 56. A projecting end of the shaft 63 carries a handled crank 65, whereby the pinion may be turned to reciprocate the rack whenever the lever 62 has withdrawn the lock-tooth of the plunger 57 from its functioning position. One end of the rack 56 is connected with a series of detachably articulated rods 66, each of which is guided by passing through ears 67, 68 and 69, which project from the sections 25, 22 and 18, respectively. The rods 66 are linked together through the agency of pins 70, as shown in Figure 1. The uppermost rod 71 is very short and is pivotally connected at 72 with the other arm of the bellcrank lever 15. As should now be manifest, reciprocation imparted to the rack 56 will rock the lever 15 and vary the angle of presentation of the gun 4 through an arc of movement in excess of 90°.

It will be observed that my appliance is

composed of sections connected end to end, as shown in Figure 1, which sections may be detached, as shown in Figures 2–5 inclusive, whereby the parts may be more easily transported or more compactly confined. It should be understood that the number of intermediate sections, like those shown in Figures 3 and 4, might be varied to suit the conditions of different jobs, for the height of rooms the walls of which are to be spray coated. After the desired number of sections have been assembled and connections made with the duplex source of supply through the hose connections 38 and 39, the lever 62 is depressed to withdraw the plunger tooth, after which the crank 65 may be turned to move the rack and to shift the angle at which the gun is carried, according to preference. For instance, if a ceiling is to be sprayed the access of the nozzle 7 would be adjusted substantially parallel with the longitudinal dimension of the composite support, whereas, when it is desired to spray behind moldings or pipes the gun would be swung to the position in which it is shown in Figure 1. Directly the desired angle of presentation has been effected, a release of the lever 62 will cause the plunger tooth to lock the rack against movement. Thereafter, the nozzle outlet 7 is opposed at the most effective distance from the surface to be sprayed and the handle 42 grasped and pulled toward the section 25 to pull the trigger 8 and to discharge color until the handle 42 is again released and the spring 50 permitted to release the pressure of the member 49 against the trigger.

I claim:—

1. In a device of the character described, the combination for use in supporting and controlling a gun fashioned with a trigger, of an extension connected with said gun, a collar loosely carried by said extension, and a trigger pulling device extending to the further end of said extension including a flexible part adapted to contact said collar.

2. In a device of the character described, the combination for use in supporting and controlling a spray gun fashioned with a trigger, of an extension, a lever pivotally connected thereto for supporting said gun, a trigger pulling device subject to operation near the other end of said extension and a lever adjusting mechanism including an element reciprocally connected with said extension for varying and for fixing the operating angle of the gun.

3. In a device of the character described, the combination for use with a gun and comprising an extension composed of a plurality of detachable sections, one of which is connected with said gun, a gun-operating device extending along all of said sections to permit of control of the function of the gun at the section furthest removed therefrom, and separate and distinct means extending along a plurality of said sections and adapted bodily to adjust the gun.

4. In a device of the character described, the combination for use with a gun including a trigger, an elongated support composed of a plurality of sections detachably connected end to end and one of which sections is pivotally connected with said gun, and gun-adjusting and trigger-pulling devices extending along said sections to permit of both bodily adjustment and functioning of the gun at a section remote thereto.

5. The combination for use in controlling the angle of presentation of a spray gun, comprising, an extension, a bell crank lever pivotally connected with said extension and secured to said gun, a composite operating structure including rods detachably connected end to end and one thereof with said lever and mechanism carried by said extension for actuating said structure endwise.

6. The combination for use in controlling the angle of presentation of a spray gun, comprising, an extension, a bell crank lever pivotally connected with said extension and having one arm fashioned as a forked section embracing and secured to said gun, an operating structure including a rod and a rack connected together end to end, and the rod being also connected with the other arm of said lever, mechanism including a pinion in mesh with said rack for actuating said structure endwise and means for locking said structure in any chosen position.

7. The combination for use in controlling the angle of presentation of a spray gun, comprising, an extension, a lever pivotally connected with said extension and secured to said gun, a composite operating structure including a rack and connected with said lever, mechanism for reciprocating said rack and a spring controlled plunger adapted to cooperate with said rack to lock said structure in any chosen position.

8. In a device of the character described for use with a spray gun, comprising an extension structure including pivotally connected elements on one of which the gun is carried, a gun trigger-operating member reactingly connected with that one of said elements which carries the gun and means for actuating said member.

9. In a device of the character described for use with a spray gun, comprising an extension structure including pivotally connected elements on one of which the gun is carried, a gun trigger-operating member reciprocably connected with the gun-carrying element, a spring normally active to hold said member in its inutile position, and means including a flexible element and connected with said member for pulling it against the action of said spring.

10. In a device of the character described

for use with a spray gun, comprising an extension structure including pivotally connected elements on one of which the gun is carried, a gun trigger-operating member movably connected with one of said elements, means for actuating said member and separate and distinct means for rocking the gun-carrying element and for fixing it in any chosen position.

Signed by me, this 29th day of December, 1926.

LOUIS W. BECK.