May 6, 1952 J. L. KEMPTHORNE 2,595,528

PORTABLE INSULATION SPRAYING DEVICE

Filed April 28, 1950

Fig. 1

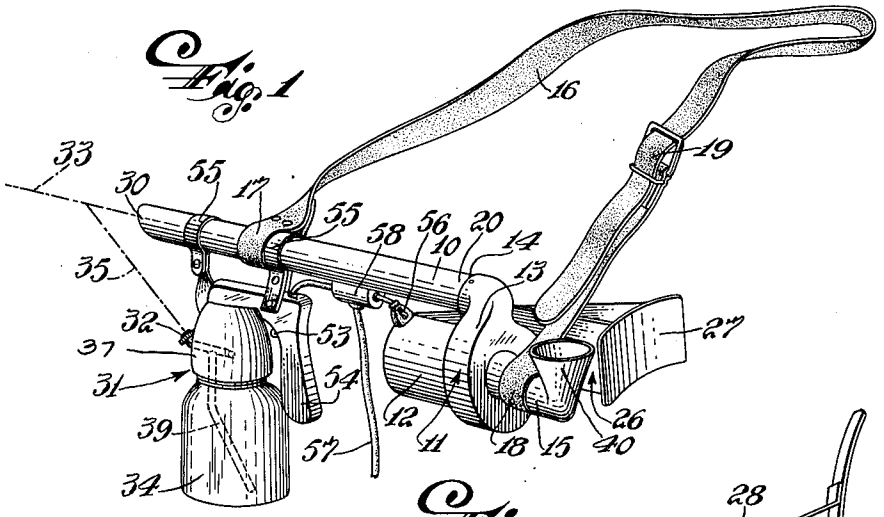


Fig. 2

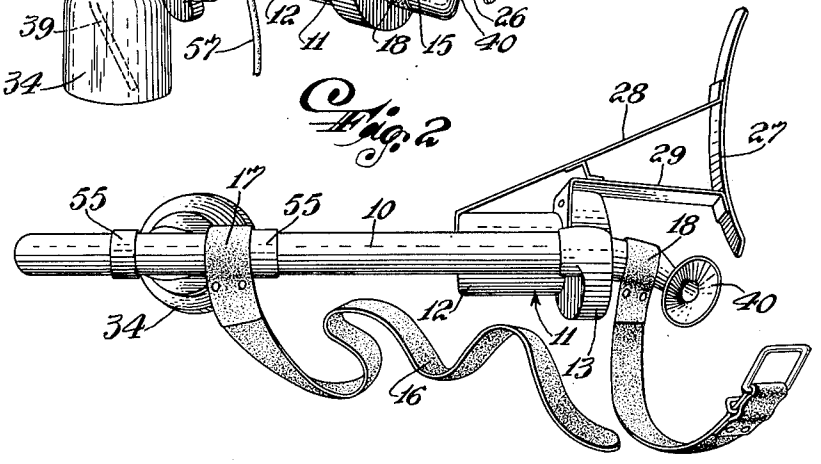
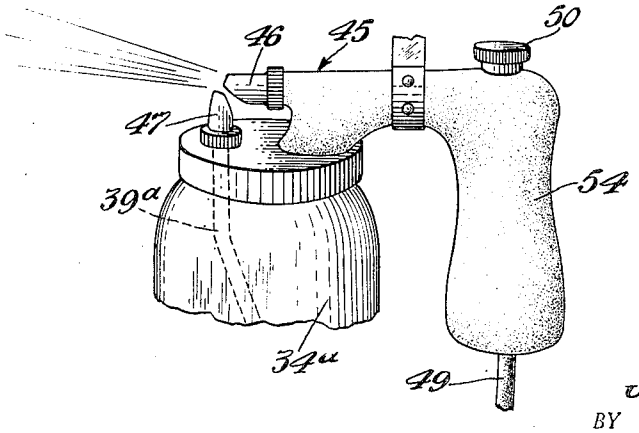


Fig. 3



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PORTABLE INSULATION SPRAYING DEVICE

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3 Claims. (Cl. 299—86)

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This invention relates to devices used for spraying insulation and acoustical materials onto walls and ceilings. Equipment conventionally used for the purpose is bulky, consisting of air compressors, tanks, large hoppers, blowers, hoses, and the like, requires considerable time to set up and operate, and involves substantial trucking costs.

After a spraying job has been completed and the conventional bulky equipment has been removed, it is frequently found that some small spray, patch work is required, because of smudging or other damage by workmen and others, or for alterations or other reasons. The present invention provides a portable device well suited to meet these special needs, adapted to perform small or very special work in an accurate, convenient and highly satisfactory manner and at low cost.

The invention provides an effective and practical portable insulation spraying, patching device which is suspended by a strap on the workman's body, leaving his right hand free for operation of the spray gun and his left hand for feeding the insulation material into the device. The device enables the operator to synchronize relative application of liquid adhesive and fiber, placing the material exactly where needed and enabling the accurate matching of the texture of work previously done. After the area has been properly patched, the device may be used for applying a spray paint finish thereto.

The device is believed to be highly novel in the field of sprayed insulation materials, filling a need which has existed for many years in the field.

These and other advantageous objects, which will appear from the drawings, and from the description hereinafter, are accomplished by the structure of my invention, of which embodiments are illustrated in the drawings. It will be apparent, from a consideration of said drawings, and the following description, that the invention may be embodied in other forms suggested thereby, and such other forms as come within the scope of the appended claims are to be considered within the scope and purview of the instant invention.

In the drawings:

Fig. 1 is a perspective view of a device embodying the invention,

Fig. 2 is a top plan view thereof, and

Fig. 3 is a fragmentary, perspective view of another form of liquid projection unit which may be used in the device.

As shown in the drawings, the spraying, patching device of my invention comprises an elongated, hollow tube 10, through which the insulation material may be projected under pressure and onto the surface to be coated. The tube is of sufficient length and the material projected therethrough at such velocity that said material will continue in a substantially straight line after leaving the tube and onto the surface to be coated. The tube has an intake or rear end 20 connected to the motor driven pump unit 11, and a discharge or free front end 30. The motor driven pump unit comprises a motor 12 and a blower or pump 13 driven thereby, the discharge end 14 of said pump being connected to the rear (intake) end of tube 10. The pump has an intake port 15 disposed beyond the end 20 of tube 10.

A suspension strap 16 is connected at its opposite ends 17, 18 to the insulation projection tube 10 and pump intake port 15 and is provided with buckle or other suitable adjustment means 19 to vary the length thereof. Said device has a brace unit 26 comprising a body brace plate 27 connected to the pump unit by brackets 28, 29 or the like. The brace plate 27, which is preferably of arcuate cross-section, (Fig. 2) is disposed past the pump end of the device, so that it may be positioned against the user's body to stabilize the device and facilitate manipulation and operation thereof.

A liquid adhesive projection unit 31 is suspended from the insulation projection tube 10 adjacent the front end 30 thereof and is provided with a discharge nozzle 32 disposed at an acute angle to the axial plane of tube 10, being directed to the projected path 33 of the insulation material discharged from end 30 of tube 10. Unit 31 includes a liquid reservoir 34, Fig. 1, 34a, Fig. 3, and means for spraying said liquid through a nozzle in a discharge path 35 at an acute angle directed past the front end 30 of the insulation projection tube 10 tangential to the projected path 33 of the material discharged from tube 10. The liquid reservoir 34 may be in the form of a jar adapted to be filled with an adhesive suitable for wetting the insulation material to cause the same to adhere to the surface to be coated, the jar being removably secured to the unit—for example, being removably secured to the head 37 which has the nozzle 32 connected to the tube 39 depending from the head 37 into reservoir 34.

The head 37 is provided with means, such as a motor-driven rotary or reciprocating means, connected to the nozzle-tube 39 arrangement, for siphoning the liquid from the reservoir 34 and out of the nozzle 32. The unit 31 includes

a pistol grip **54** having a trigger switch **53** cut into the circuit between the current cable **57** and the motor in head **37**.

Other means may be substituted for that shown in Fig. 1 for the projection of the liquid from the nozzle **32**. For example, as shown in Fig. 3, a compressed air head **45** may be used, including a nozzle **46** through which the compressed air stream may be projected past the nozzle or open cap **47** of tube **39***a* in reservoir **34***a*. The head **45** may have a compressed air line **49** and switch or valve means **50** for control thereof.

In the operation of the device in the form shown in Fig. 1, the operator loops the strap **16** over his body, with the plate **27** positioned against his body; his right hand grasps the pistol grip **54** and he operates the control such as trigger **53** of Fig. 1 or valve **50** of Fig. 4 to actuate the mechanism for discharge of fluid through the nozzle **32**. With the other hand, the operator may feed the insulation material into the intake tube **15** of the pump, preferably by dropping the material into the funnel **40** vertically disposed relative to the axial plane of tube **10** connected to tube **15**. The liquid in the reservoir **34** may be an adhesive or similar material to wet the fibers of insulation material projected through the tube **10** for patching or small job purposes. The reservoir **34** may be filled with a paint material for finishing purposes.

The pistol grip **54**, which is preferably adjacent and below the front end of the tube **10** and connected thereto by brackets **55** or the like, facilitates manipulation of the device by the user.

The device may be provided with suitable speed and other controls found desirable, such as on-off switches, rheostats and the like, as generally indicated by the reference character **56**. Cable **57** is secured to the device as at **58** for connection with the liquid reservoir and pump units **31**, **11**. The other end of the cable (not shown) may be connected to any suitable electric outlet. A small compressor and adhesive or paint tank may be used in connection with the device and connected thereto by flexible lines, if desired.

The device of the invention is portable, highly maneuverable and efficient in operation. It is adapted for use particularly for application of asbestos and similar materials in patching and for small or special jobs. The device enables the operator to accurately control the relative amounts of asbestos and adhesive and to accurately train the device to the surface to be coated.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A portable manually carried spraying device comprising an elongated tubular barrel straight throughout its length and open at its front and rear ends, a motor driven pump unit, said pump having a forwardly disposed discharge spout connected with the rear end of said barrel, an intake tube extending rearwardly from said pump and having an open top hopper at its rear end, a body engaging brace consisting of a horizontal longitudinally curved chest engaging plate extending transversely of said barrel and said pump unit and being offset to one side of the barrel for its entire length, said plate having forwardly extending supporting arms secured at their front ends to the pump and the motor at the adjoining side of the pump unit, and a suspension strap of a length adapting it to be passed about the neck of the person and having one end connected with said intake tube and its other end connected with said barrel, the upper open end of the hopper lying in substantially the same horizontal plane as the top edge of the chest engaging plate, so that the suspension strap will not interfere with the feeding of material into the hopper and to said intake tube.

2. A portable spraying device as set forth in claim 1, the motor of said unit being disposed in front of the pump and extending longitudinally of the barrel directly under the same.

3. A portable spraying device as set forth in claim 1, an auxiliary sprayer positioned directly under the forward portion of the barrel and suspended therefrom for discharging material forwardly and having a rearwardly disposed hand grip constituting means for imparting movement to the barrel and the pump unit when gripped and actuated by the operator to thereby control the discharge of the material forwardly from the barrel.

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