Nov. 17, 1942. D. H. SCHWEYER 2,302,062

LIQUID PRESSURE MARKING DEVICE

Filed Sept. 26, 1941

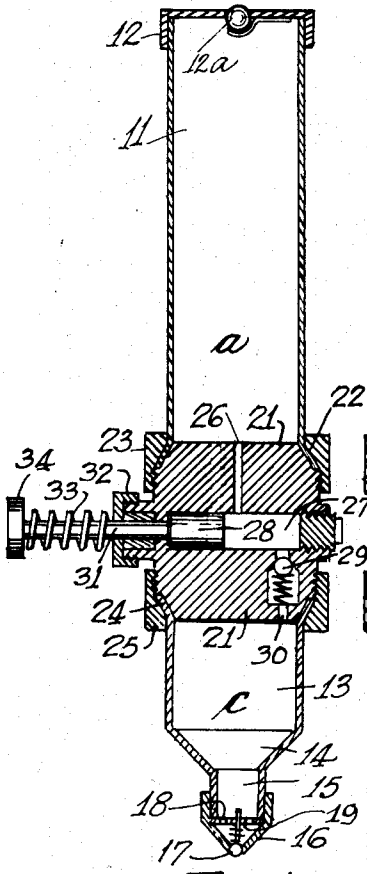


Fig. 1

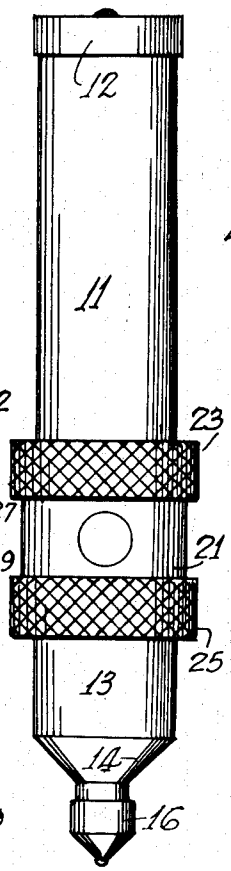


Fig. 2

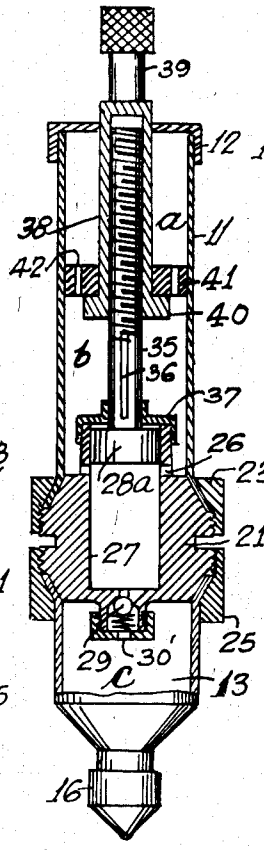


Fig. 3

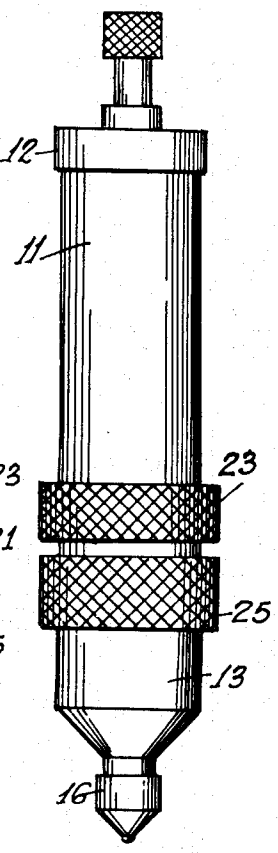


Fig. 4

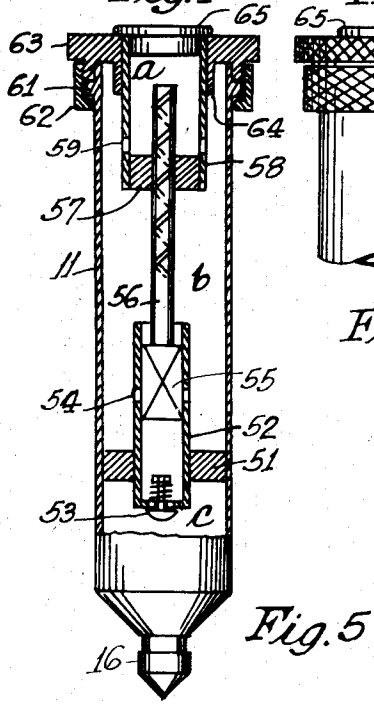


Fig. 5

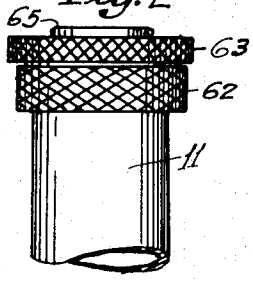


Fig. 6

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Patented Nov. 17, 1942 2,302,062

UNITED STATES PATENT OFFICE

2,302,062

LIQUID PRESSURE MARKING DEVICE

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Application September 26, 1941, Serial No. 412,523

3 Claims. (Cl. 120—43)

This invention relates to a liquid marking device such as is used to apply a marking fluid to fabrics and the like and it has for an object to provide a holder or container for the fluid and a pressure chamber or reservoir connected with the marking orifice. Between the holding container and the pressure reservoir a compressor is provided whereby the operator may apply pressure to the pressure chamber as the device is used. Another object of the invention is to provide a body with a compression cylinder therein having a holding reservoir secured at one end and a compression reservoir secured at the other end connected to a marking nozzle; the complete device forming a handle for guiding the marking point and having means for applying pressure to the marking nozzle as the device is used. Other objects of the invention reside in the details of construction as more particularly described in the following specification and shown in the accompanying drawing, in which:

Fig. 1 is a sectional elevation of one form of the marking device having the compression cylinder located at right angles to the longitudinal axis;

Fig. 2 is a front elevation of the device shown in Fig. 1;

Fig. 3 is a sectional elevation of a modified form of the device in which the compression cylinder is operated from the top end;

Fig. 4 is a front elevation of the device shown in Fig. 3;

Fig. 5 is a sectional elevation of another modification of the device in which the compression cylinder is operated by a knurled head, and

Fig. 6 is a front elevation of a portion of Fig. 5.

The marking device of the present invention is intended for applying a marking fluid through a nozzle which is air drying and which has to be protected from the atmosphere when the device is in use. It comprises a holding reservoir at the top where the liquid is stored and a pressure reservoir at the bottom connected with the valve of the marking nozzle so that as the valve is released the fluid is forced from the pressure chamber by the operation of the compressor as required by the operator.

The structure comprises a central body supporting the compression cylinder and to this body the holding reservoir is connected by a flared connection, also the compression reservoir is connected by a flared connection to the opposite end of the body. This makes an axially aligned cylindrical body forming the handle of the device and from which the reservoirs are readily disconnected for cleaning and other purposes. In one form of the device the compression cylinder is located in the body at right angles to the longitudinal axis of the device and the plunger for operating this cylinder projects from the side of the body and stands clear of the reservoirs so that it does not interfere with the removal of the reservoirs. The plunger of this cylinder is in a convenient location for operation by the finger of the hand which manipulates the device.

The compressor is provided wtih a check valve so that pressure may be accumulated in the delivery reservoir, or it may be operated as pressure is required in the manipulation of the device.

In the drawing, 11 is the holding reservoir provided with a cap at 12 and connected by the flare 22 and the flare nut 23 with the body 21. 13 is the compression or delivery reservoir which is tapered at 14 and terminates in the orifice 15 provided with the conical ended cap 16 having a central orifice closed by the ball valve 17 which is normally seated by the spring and held in place by the washer 18, which is provided with apertures 19, to provide for the flow of the fluid from the chamber c through the nozzle 17 when pressure is applied to the nozzle. The reservoir 13 is flared at 24 and connected by the flare nut 25 to the body 21.

A transverse cylinder 27 is provided in the body 21 and has the piston 28 connecting by stem 31 with the button 34 and normally held in the outward position by spring 33. A stuffing box is provided at 32 for the plunger 31.

In operation the marking fluid stored at *a* in the holding reservoir 11, through the port 26, enters the cylinder 27 and by the operation of 34 is forced through the spring seated ball valve 29 and port 30 into the pressure reservoir c. As the operator manipulates the device he maintains pressure on the button 34 to supply the pressure required for discharging the fluid through the nozzle 17.

The construction in Figs. 1 and 2 shows the compression cylinder located in the body at right angles to the reservoirs and free from the reservoirs. In Fig. 3, the compresssion cylinder is located in the body and in axial alignment with the reservoirs and is operated by a projecting stem at the top of the device.

In this construction the plunger 28*a* in the compression cylinder 27 connects by a screw stem 35 with the socket 38 which terminates in stem 39 by which the screw is operated to advance the piston 28. The stem 35 is splined at

36 in the cap 37 to secure a non-turning engagement and the socket 38 is provided with a flange at 40 engaging the fixed collar 41 secured in tube 11. In operation the marking fluid is stored at *a* and through the ports 42 passes into chamber *b*. From this chamber, through ports 26, it connects with the cylinder 27 and is forced by piston 28*a* through the spring seated ball valve 29 and orifice 30' into the delivery chamber *c* to feed the marking nozzle at 16. The required pressure is obtained by rotating stem 39 to feed the piston 28*a* forward.

In the construction in Fig. 5 a single tube 11 is used, provided with a fixed collar 51 supporting the compression cylinder 52, which, as indicated, may be square in section to receive the square piston 55 connecting to the stem 56 which is threaded in collar 57 in tube 58 which is rigidly secured to the top flange 63. An exterior collar 61 is provided on tube 11 and is engaged by the screw collar 62 to hold a top flange 63 in place and permit it to turn freely. In operation the friction cover 65 is removed and the liquid is supplied to chamber *a* and through ports 59 to chamber *b* and from chamber *b* through ports 54 when the plunger 55 is raised to the compression cylinder 52 and through the spring seated valve 53 to the delivery chamber *c*. The flange 63 is provided with an extension 64 to which the tube 58 is secured. Pressure is applied to the marking fluid in chamber *c* by rotating flange 63.

Having thus described my invention, I claim:

1. A pressure marking device for applying a liquid marking fluid, comprising a body with a cylindrical aperture therein, a holding reservoir for holding the marking fluid connected to one side of said body, a pressure reservoir having a marking orifice connected to the other side of said body and supplying the marking fluid to the marking orifice, a conduit connecting said holding reservoir to said cylindrical aperture, a second conduit connecting said cylindrical aperture to said pressure reservoir, a piston for said cylinder for forcing the liquid from said holding reservoir into said pressure reservoir under pressure and means external to said body for operating said piston.

2. A pressure marking device for applying a liquid marking fluid, comprising a body with a cylindrical aperture therein having a beveled section at each end, a holding cylindrical reservoir for the marking fluid flared at the end and secured to the beveled end of said body, a pressure reservoir having a marking orifice and flared at the end to engage the opposite beveled end of said body and detachably secured thereto, a conduit connecting said holding reservoir, with said cylinder and a second conduit with a check valve therein, connecting said cylinder with said pressure reservoir, a piston in said cylinder for pumping the fluid from said holding reservoir to said pressure reservoir and means exterior to said body and clear of said reservoirs to operate said plunger.

3. A pressure marking device for applying a liquid marking fluid comprising a body with a holding reservoir attached to one end and a pressure reservoir with a marking nozzle attached to the other end, said body and said reservoirs forming a handle for the marking device, a cylindrical aperture in said body transverse to the axis of said reservoirs, conduits connecting said cylinder with said reservoirs, a piston in said cylinder for pumping the fluid from said holding reservoir to said pressure reservoir and a plunger exterior to said body for operating said piston and located to be operated by thumb pressure of the hand manipulating the marker.

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