April 27, 1937. C. E. HOWETT 2,078,326

LIQUID PROJECTING DEVICE

Filed Dec. 4, 1935 2 Sheets-Sheet 1

Fig. 1.

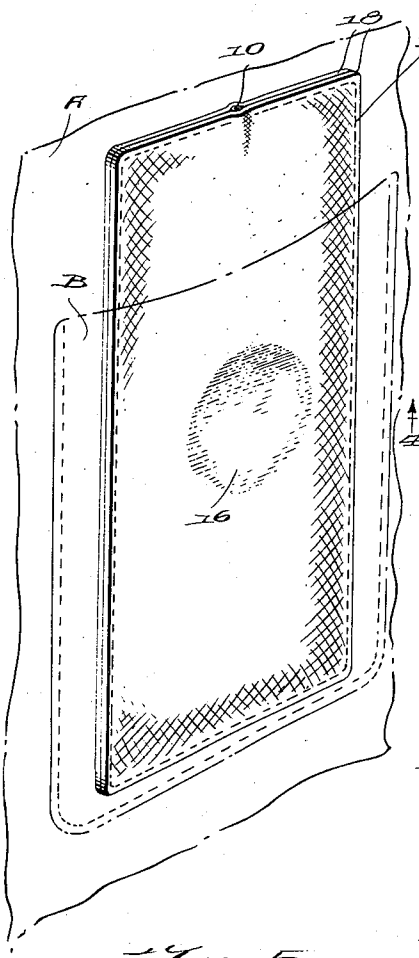


Fig. 2.

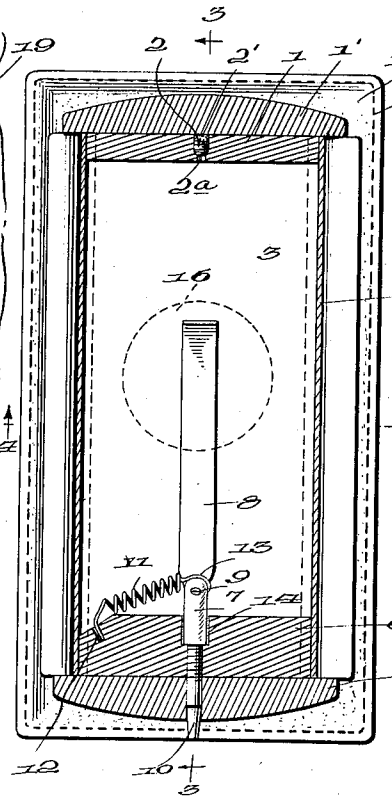


Fig. 3.

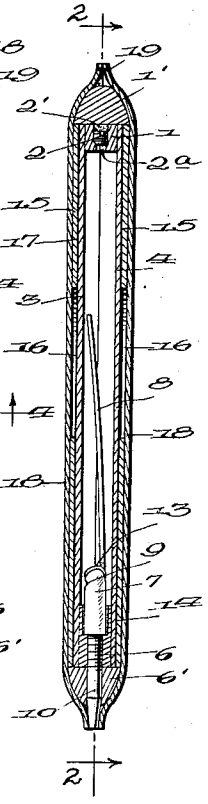


Fig. 4.

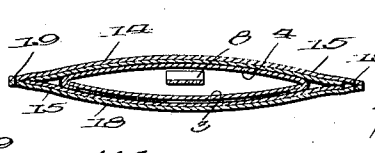


Fig. 7.

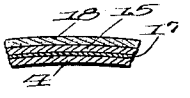


Fig. 5.

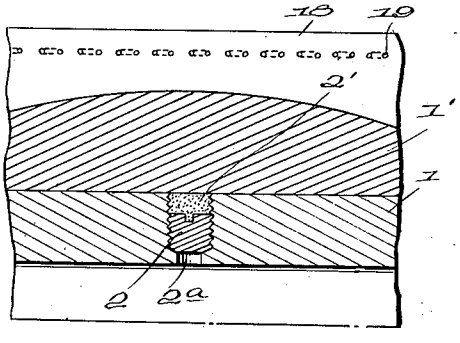
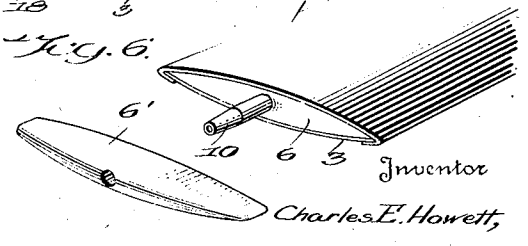


Fig. 6.



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Fig. 8.

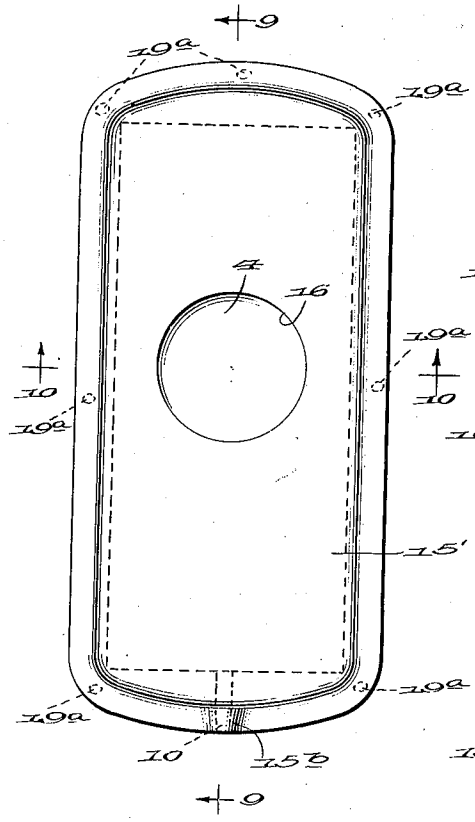


Fig. 9

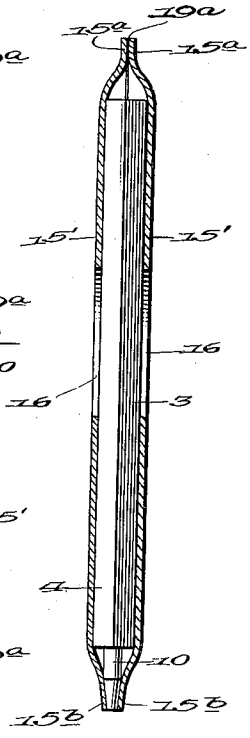


Fig. 11.

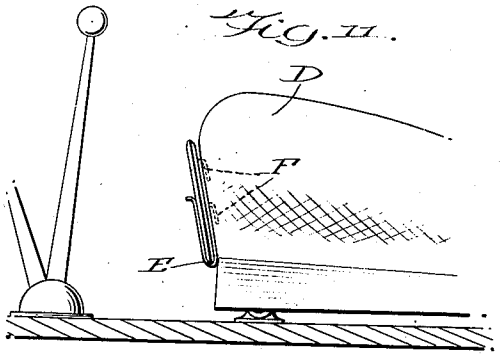
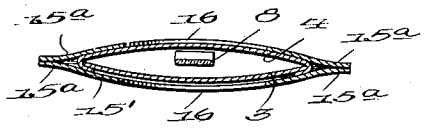


Fig. 10



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UNITED STATES PATENT OFFICE

2,078,326

LIQUID PROJECTING DEVICE

Charles E. Howett, Lancaster, Pa.

Application December 4, 1935, Serial No. 52,909

4 Claims. (Cl. 299—90)

The present invention relates to the same general subject matter as my Patents No. 1,923,979 and No. 1,983,461 respectively granted August 22, 1933 and December 4, 1934, for Liquid projecting devices.

The devices of both said patents are rather sensitive and easily set off or discharged by application of pressure to the body practically at any point between the ends thereof and thus are not of such nature that they may be confidently carried about the person, as in a vest or coat pocket or carried loosely in a vehicle or truck, or carelessly handled without risk of accidental discharge. While the above mentioned fact suits them admirably for the particular uses described in said patents, it limits the useful field of such devices, and prevents their use by truck drivers, pedestrians, individual passenger car operators and the like who, except for such risk of accidental discharge, would prefer to carry such a device in a suitable clip or holder arranged at a suitable position in the truck or car or in a coat or vest pocket about their persons.

This invention has for its primary objects to provide a liquid projecting device of the general construction above referred to which is safely portable about the person and which will withstand careless handling and yet be extremely sensitive to be discharged by pressure applied at the right point; to provide a projecting device, corresponding in construction to either of the above referred to patents, with a strong protective casing protecting it against accidental discharge by the accidental application of pressure, said casing being so formed as to leave openings therethrough whereby pressure may be intentionally applied directly to the sides of the liquid containing casing; to provide a primary liquid projecting device which may be used with paper currency or simulation of currency in the manner described in said patents or may be used in association with the protective casing herein described so standardizing the size of the device in manufacture, though this is not essential to my invention in its broader aspects; to provide a liquid projecting device of the character and attributes mentioned with a protective casing and, as so associated with said casing, of such size, form and construction that it may at will selectively be used in a bundle of money or between paper currency or papers simulating currency as described in my said patents or may be safely carried in a coat or vest pocket about the person or may be carried in a spring clip or other holder located at a desired point in a truck or car, though this also is not essential to my invention considered in its broader aspects; to provide a liquid projecting device of the general construction referred to with a protecting casing and of such size, shape and finish or outer covering as to closely simulate one well-known form of pocket-book or wallet.

Merely for purposes of illustration of my present invention I have elected to show in the embodiment of my invention herein illustrated the specific frangible closure and cooperating construction disclosed in my Patent No. 1,983,461 granted December 4, 1934, it being understood, however, that my present invention is not limited thereto, but may equally well be used with any other pressure operated valve or closure construction capable of serving the function.

In the accompanying drawings:

Figure 1 represents a perspective view of the present preferred embodiment of my invention as carried about the person in a coat or vest pocket;

Figure 2, a sectional view on the line **2—2** of Fig. 3, looking in the direction of the arrows, the screw-plug, frangible closure, spring and projecting tube being shown in elevation;

Figure 3, a sectional view on the line **3—3** of Fig. 2, looking in the direction of the arrows;

Figure 4, a sectional view on the line **4—4** of Fig. 2, looking in the direction of the arrows;

Figure 5, an enlarged fragmentary detail view taken in the plane of the section of Fig. 2 of the rear end of the device;

Figure 6, a perspective "exploded" view of the front end portion of the liquid or gas containing element and the front supplemental molding or block;

Figure 7, a fragmentary greatly enlarged cross-section through one wall of the liquid container with its superimposed or laminated arrangement of paper or other rattle preventing and preferably friction creating material **17**, protecting metal plate **15** and leather, rubber, textile or composition coating **18**;

Figure 8, a top plan view of a modified form;

Figure 9, a sectional view on the line **9—9** of Figure 8 showing the modified form of protective casing in section and the liquid containing and projecting element or member in side elevation;

Figure 10, a sectional view on the line **10—10** of Figure 8, looking in the direction of the arrows; and

Figure 11, a side elevation of the device according to either embodiment as held in a spring clip or other holder E secured by hooks F to the front of a truck or passenger car seat D in posi-

tion for convenient withdrawal for use in an emergency.

In Figures 2 and 3 of the accompanying drawings the present preferred form is drawn to actual full-size scale, with the exception that the thickness of the walls of the liquid containing and projecting element, the paper 17, the protective plates 15 and the outer covering 18 are greatly exaggerated in order to show the same clearly.

Referring now in detail to the drawings, the liquid containing and projecting device or element per se will preferably be constructed in accordance with my Patent No. 1,983,461, and thus will have a rear end plate 1, side members 3 and 4, a front end plate 6 and closure means associated with the latter.

The rear end plate 1 will be formed with an internally screw-threaded bore extending from its rear face and communicating with a reduced diameter smooth bore 2a to form a charging opening through said plate 1, which opening is closed, after the device has been filled with the liquid or gas, by screwing in a plug 2 until its front end seats against the conical seat at the juncture of the two bores and its rear end lies inward of the rear face of plate 1, after which the rear end of said screw-threaded bore is to be filled with solder or other suitable filler to make a perfectly gas-tight closure, and thereafter the solder or filler is preferably ground or filed down flush with the rear face of plate 1.

The block or front end plate 6 is preferably formed with a centrally disposed cylindrical socket extending from its rear face partially through said plate 6 to preferably snugly receive the tubular portion 7 of the frangible closure means which has integral therewith a long curved tail or shank 8, the tubular portion 7 being partially cut through or nicked near its rear end as at 9 from its exterior face.

An internally screw-threaded bore concentric with said cylindrical socket extends from the front face of the block or plate 6 to the said cylindrical socket and an externally screw-threaded discharge or projecting tube 10 screwed into said screw-threaded bore has its interior in communication with the interior of the tubular part 7 of said frangible closure means.

The tubular portion 7 will be secured in its cylindrical socket in any suitable liquid and gas-tight manner, as for instance by applying to the exterior of said portion 7 or to the wall of said socket, or both, any suitable cement that will stand the heat incident to the soldering of the block or front end plate 6 in the front end of the casing and will resist the action chemically of the chemicals employed in the contained liquid or gas selected.

The spring 11 of such material as will resist the action of the chemicals employed in the liquid or gas used is normally under tension with its outer end anchored in a recess or socket 12 in the front plate 6 and its inner end 13 hooked or looped around the flattened shank 8 of the frangible closure element immediately to the rear of tubular portion 7 and by the somewhat flattened form of the loop 13 serves to prevent any tendency of the frangible element to turn about the axis of its tubular portion 7 and to pull the fractured part of the closure means out of alignment with the part of the tubular portion 7 retained in the cylindrical socket. While it is preferred to provide such a spring 11 serving the above functions or the latter function, even where a frangible closure is employed the provision of the spring 11 or other means serving one or both of the functions mentioned is not essential.

The end plates or blocks 1 and 6 are to be of the same size and shape, being elliptical in shape transversely of the liquid containing element as a whole, and are to be soldered in the rear and front ends respectively between the respective opposed faces of the respective end portions of the sides 3 and 4, and the side edge portions of the side 4 are lapped over against and soldered or welded to the opposed outer faces of the marginal portions of side 3.

As thus constructed the liquid or gas containing and projecting element is preferably wrapped or covered with preferably but one layer of thin paper, textile or other friction producing and rattle or noise preventing covering 17, after which the protecting plates 15, preferably of relatively thick stiff tempered steel capable of withstanding sharp blows and great pressure without being deformed and without transmitting such blows or pressure to the sides 3 and/or 4 of the liquid or gas container per se are applied over the sides thereof and secured in such position in any suitable manner.

Such plates 15 are to be as long as the portions of the sides 3 and 4 between the opposed faces of the end blocks or plates 1 and 6 and preferably will be of such length as to receive between their respective opposed end face portions said plates 1 and 6.

As arranged about said liquid container the two opposed plates 15 will have marginal substantially straight or flattened flanges or portions lying in engagement with each other and from said marginal flanges will define between them in cross section an ellipse corresponding in shape to the elliptical cross section of the liquid container and of such size in cross section as to snugly receive the body of the liquid container with a sufficiently tight or snug fit to set up a frictional contact with the rattle preventing covering 17 to prevent rattling or loose relative movement, while at the same time not exerting substantial compression on the sides 3 and/or 4 of the liquid container.

In the embodiment illustrated in Figures 1 to 7 a rear molding block 1' having a flat front face and being slightly wider and thicker than rear plate 1 and a front molding block 6' bored to fit over the projection tube 10 and corresponding in size and shape to rear molding 1' are applied respectively to the rear and front faces of the end blocks 1 and 6 respectively. The protecting plates 15 are then applied to the respective sides of the liquid container with their end edges in engagement with the opposed faces or shoulders of the molding blocks 1' and 6', which preferably are of metal, and said end edges and opposed faces or shoulders may be soldered or welded together, as may the opposed engaging flattened marginal flanges or portions of the plates 15, and thereafter the outer covering or camouflage dress, preferably a suitable leather such as sealskin or some such similar material 18, or simulation thereof, as is commonly used for wallets or pocket-books is smoothly and preferably tightly applied over each face of the device as thus assembled, that is, over the outer faces of the plates 15 and moldings 1' and 6' and has its marginal portions secured together in any strong secure suitable manner, as by cementing or by stitching as

indicated at 19, the projecting nozzle 10 projecting beyond such securement means with its front end unobstructed.

If desired, in the embodiment immediately above described, the soldering or welding of the plates 15 to the molding plates or blocks 1' and 6' and to each other may be dispensed with, in which case reliance will be had on the covering material 15 and its connecting or securing stitching 19 or cement or other connecting means to hold the plates 15, and blocks or moldings 1' and 6' if employed, in proper relation to each other and to the liquid or gas container.

Each plate 15 is formed with a large substantially central opening 16, which may be circular in shape as shown and which preferably as applied to the liquid container will be substantially in transverse registry and will extend about the rear end of the shank 8 and that portion of the side 3 of the liquid container most closely approached by the shank 8, leaving the sides 3 and 4 uncovered for the intentional application of pressure for the full area of the openings 16, but such uncovered portions of the sides 3 and 4 will lie laterally inward of the outer faces of the plates 15 and be protected against direct blows or deformation as a result of any except the most unusual accident, so that even though the device be accidentally dropped and stepped on or run over it will not be discharged.

The device as thus provided with its protecting plates 15 and outer covering 18 will preferably be made of a width not substantially exceeding the width of paper currency and of an overall length preferably slightly less than the length of paper currency and will be of flattened elliptical shape in cross section so as to be relatively thin whereby it may be either used in association with a bundle, or a plurality of bills of currency to constitute a camouflaged defensive weapon in simulation of the usual "unloaded" bundle of currency or may be slipped in a pocket by itself or in a spring clip or other holder and used as a defensive weapon, either with the added element of surprise when handled or treated as a wallet in case of a surprise hold-up, or as a straight out weapon where there is sufficient warning to get it out and ready for action.

Preferably the arc of each of the sides 3 and 4 will be struck on a four inch radius and the width of said sides as arced and assembled will be one and seven-eighths inches and the greatest width between the opposed inner faces of said sides 3 and 4 will be approximately one-fourth of an inch and the sides 3 and 4 will be of very thin but relatively stiff resilient sheet metal whereby when pressure is applied to the area uncovered by the walls or plates 15 as defined by the openings 16 in said plates 15 the pressure will be exerted over a wide area of said walls 3 and 4, resulting in putting the contents of the container under very high compression.

In the modification illustrated in Figures 8 to 10 inclusive, the construction and operation are the same as in the preferred form except that the molding blocks 1' and 6' and the leather or other covering 18 with its stitching 19, and the paper or other noise or rattle preventing and friction producing wrapping are dispensed with, the liquid container being slipped by itself between the protective plates 15' which have their end portions extended beyond the end plates 1 and 6 and bent toward each other and provided with engaging end flanges, the end flanges and the side marginal flanges being secured together at suitable intervals as by spot welding indicated at 19a, the front end of the plates 15' being medially suitably bent or arched away from each other as at 15b to accommodate the projection tube 10 and leave its forward end unobstructed.

Of course, in both forms illustrated, application of pressure to the portions of sides 3 and 4 left uncovered by the openings 16 in the protective plates results in breaking the frangible closure and the discharge of the contained liquid through the projection tube 10, in accordance with the teaching of Patent No. 1,983,461.

Either form illustrated may be safely carried ready for instant use, either about the person as in the pocket B of a coat or vest A as illustrated in Fig. 1 or in a spring clip or other holder E serving the same function and mounted as by hooks F at any desirable location in an automobile truck or passenger car or other vehicle, as for instance by being hooked into the front of the driver's seat D.

I claim:

1. A liquid projecting device comprising a liquid container comprising opposed arcuate thin stiffly resilient sheet metal walls, rigid end walls, a discharge passage extending through one end wall and normally out of communication with the interior of said container, and frangible means fractured by the deformation of one of said resilient walls to open said discharge passage, said liquid container being long and wide in outline and of thin elliptical shape in cross-section, in combination with a pair of protective relatively thick stiffly resilient sheet metal plates applied about said body for its full length and being arcuate in cross-section and corresponding in shape in cross-section to, and being of such size as to snugly receive between them, said body and having marginal portions contacting each other whereby said plates will absorb within themselves all blows and pressures they sustain, and a flexible outer covering for holding said plates together about said container and serving to give to the device an appearance simulating a wallet, each said protective plate being formed with an opening through which pressure may be applied to the corresponding resilient side wall of said container to deform the same.

2. A liquid projecting device comprising a liquid container having opposed arcuate thin stiffly resilient side walls, in combination with a pair of protective relatively thick plates applied about said body for its full length and having side marginal portions contacting with each other, and means for securing said protective plates in such relationship, said container being formed with a discharge passage normally out of communication with its interior, means for establishing communication between said discharge passage and the interior of said container by the deformation of one of the side walls of said container, and the corresponding protective plate being formed with an opening to expose a portion of said side wall of said container whereby the same may be intentionally deformed, said protective plates protecting said side walls of said container against accidental deformation.

3. A liquid projecting device comprising a liquid container having end walls and opposed arcuate thin stiffly resilient side walls, one of said walls being formed with a discharge passage normally out of communication with the interior of said container, and means operable

by the deformation of one of said side walls for establishing such communication, said container being long and wide in outline and of thin elliptical shape in cross-section, in combination with a relatively thick strong sheet metal casing snugly enclosing said container from end to end and being of a construction to protect the container against accidental blows and pressures, one wall of said casing being formed with an opening through which pressure may be intentionally applied to said wall of said container to deform said wall of said container.

4. A liquid projecting device for portable use by itself as a simulation of a wallet or for use in association with some currency bills in simulation of an "unloaded" package of currency, said device comprising a liquid container having end walls and opposed arcuate thin stiffly resilient side walls, one of said end walls being formed with a discharge passage normally out of communication with the interior of said container, and means operable by the deformation of one of said side walls for establishing such communication, said container being long and wide in outline and of thin elliptical shape in cross-section, in combination with a relatively thick strong metal blow and pressure resistant casing snugly enclosing said container from end to end and being formed with an opening through which pressure may be intentionally applied to said side wall of said container to deform the same.

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