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N. T. PIERCE

2,674,532

CONTAINERS FOR CARRYING A PHOTOGRAPHIC PROCESSING COMPOSITION

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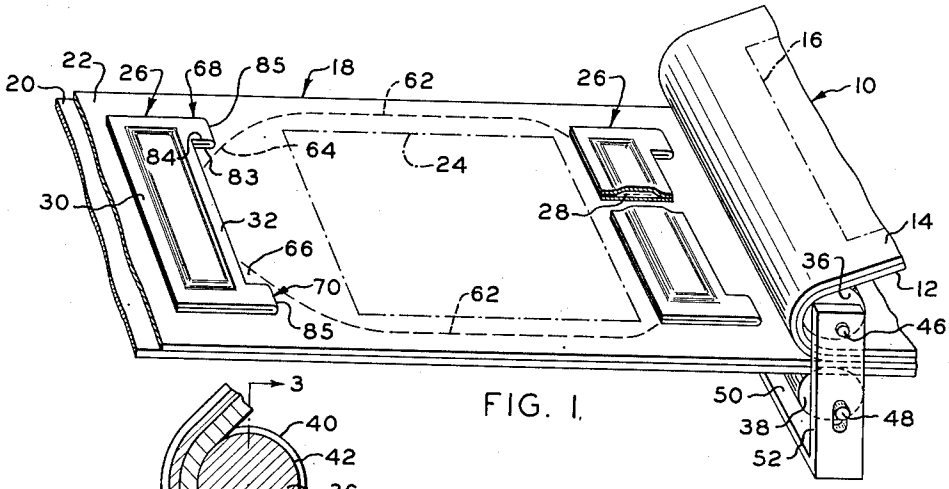


FIG. 1.

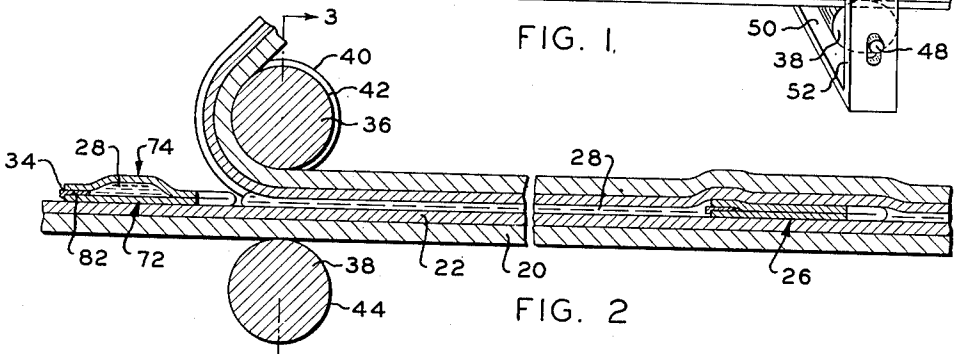


FIG. 2

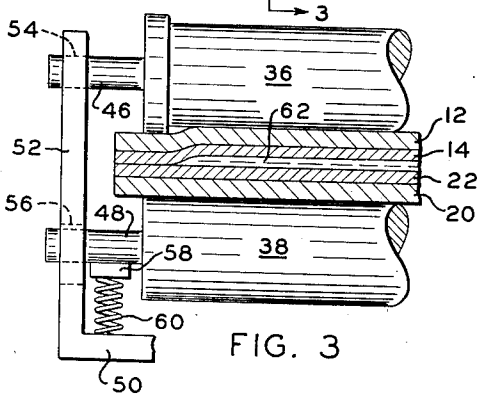


FIG. 3

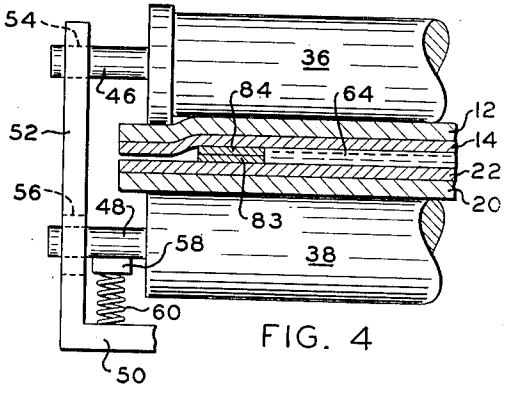


FIG. 4

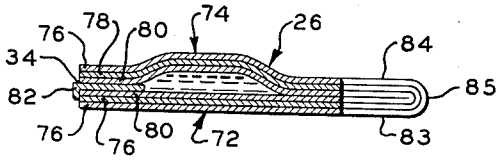


FIG. 5

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CONTAINER FOR CARRYING A PHOTOGRAPHIC PROCESSING COMPOSITION

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Application January 14, 1952, Serial No. 266,382

5 Claims. (Cl. 95—88)

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This invention relates to photography and more particularly to photographic products.

An object of the present invention is to provide a photographic product of the type in which a succession of latent images in frames of a photosensitive sheet may be developed by superposing said photosensitive sheet on another sheet and spreading a liquid processing composition between said sheets, in which product a succession of compact elements are provided which are so constituted as to supply predetermined quantities of liquid processing composition for spreading between the sheets and to limit the extent of the spreading to predetermined regions between the sheets.

Other objects of the invention are to provide a container having a forward edge provided with at least one difficultly compressible member extending therefrom and a rearward edge having a rupturable, comparatively weakly sealed, liquid-dispensing mouth; to provide a photographic product including a sheet having affixed to one surface thereof a plurality of containers of the above type, said containers being carried by said sheet at substantially regularly spaced intervals from a location adjacent a leading end of said sheet toward the trailing end thereof, the rearward edges of said containers facing the trailing end of said sheet; and to provide a product of the above type having a succession of predetermined areas, one of said predetermined areas being positioned between pairs of said containers, the containers of a pair being positioned closely adjacent a predetermined area therebetween.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises the product possessing the features, properties and the relation of components which are exemplified in the following detailed disclosure, and the scope of the application of which will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in connection with the accompanying drawing wherein:

Figure 1 is an exaggerated, diagrammatic, isometric view of portions of a product embodying the present invention shown in conjunction with one example of pressure-applying means that may be used therewith;

Fig. 2 is an enlarged, longitudinal, sectional view of the product and apparatus of Fig. 1 and showing a portion of the product approaching the

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pressure-applying means and a portion of the product that has advanced therebetween;

Fig. 3 is a partially broken-away, sectional view of Fig. 2 taken substantially along the line 3—3 and showing the pressure-applying means in plan;

Fig. 4 is a sectional view of Fig. 2 similar to that of Fig. 3 and showing the product in a different position with respect to the pressure-applying means; and

Fig. 5 is a detail sectional view of a container forming a part of the product shown in Figs. 1 through 4.

It has been proposed that an exposed photosensitive sheet be processed by superposing it on another sheet and by spreading a thin layer of processing composition between said sheets. The photosensitive sheet, for example, may comprise a silver halide layer. In one form thereof, the second sheet comprises a silver precipitating layer. The processing composition may comprise a developer, a silver halide solvent, an alkali and a viscosity-increasing film-forming material such as an alkali-inert polymer. In practice, superposition of said sheets, with a thin layer of processing composition therebetween, may be accomplished by advancing said sheets between a pair of pressure-applying members. The result of one such procedure is to develop the latent image on the photosensitive sheet to silver in order to form in a frame of the photosensitive sheet a soluble silver complex from unexposed silver halide for transfer to the other sheet. This complex, at least in part, may be transferred by imbibition to an area of the other sheet where it may be developed to silver to produce a positive image.

The photographic process and various species of photosensitive and other sheets above referred to are described in detail in Patent No. 2,543,181, issued to Edwin H. Land on February 27, 1951 for Photograhic Product Comprising a Rupturable Container Carrying a Photographic Processing Liquid. It is to be understood, however, that a product embodying the herein described invention is not limited to any particular species of photosensitive or other sheets, the terms "photosensitive sheet" and "other sheet" being used in their broadest sense to indicate a first sheet which is photosensitive and a second sheet which merely may aid in spreading the processing liquid over the surface of the photosensitive sheet or which may, if desired, possess other characteristics.

The embodiment of the present invention illustrated in the accompanying drawing generally

comprises a first sheet, which comprises a photosensitive silver halide layer provided with a succession of frames in which a succession of latent images may be formed by photoexposure, and a second sheet having a succession of areas which are adapted to be registered with the succession of frames when the first and second sheets are superposed. A succession of containers for carrying a viscous liquid processing composition are affixed to one surface of the second sheet at substantially regularly spaced intervals from a location adjacent a leading end of the second sheet toward the trailing end thereof, the containers being so spaced that one area lies between a pair of containers. Each container has a forward edge and a rearward edge, the containers being positioned to have their respective rearward edges face the trailing end of the second sheet. The rearward edge of the leading container of a pair provides a rupturable mouth which is adapted to eject liquid when opposed compressional forces are applied, as by means of rollers, to the container. This liquid may be spread between an area of the second sheet and a frame of the first sheet with which the area is in registration, by advancement of the superposed sheets between the rollers. The forward edge of the trailing container of the pair provides a trapping means which limits the spread of liquid beyond the area lying between the pair.

Referring now to the drawing, there is disclosed one modification of a product embodying the present invention. A photosensitive or first sheet 10 is provided which preferably comprises a suitable base 12 and a suitable photosensitive layer 14 on one side of said base. Photosensitive layer 14 may be composed, for example, of a silver halide emulsion, and is provided with a succession of frames, shown within phantom lines at 16, that are adapted to receive a succession of latent images upon photoexposure. An image-receiving or second sheet 18 is provided which preferably comprises a suitable base 20 and a suitable image-receiving layer 22 on one side of said base. Image-receiving layer 22 may comprise, for example, a silver precipitating agent which particularly adapts it to receive in successive areas thereof positive prints of the latent images in frames of sheet 10 when sheets 10 and 18 are superposed and a liquid processing composition has been spread therebetween. Layer 22 is provided with a succession of areas 24 shown within dot-dash lines which, in the illustrated embodiment, represent perforations by means of which areas 24 may be ripped from the remainder of sheet 18.

By way of example, it is possible to use in the silver precipitating layer certain compounds and elements whose presence during the transfer process has a desirable effect on the amount and character of the silver precipitated during positive print formation. For this purpose, such materials as, for example, metallic sulfides and selenides, thiooxalates and thioacetamides have been disclosed in copending applications Serial No. 727,385, filed by Edwin H. Land on February 8, 1947 for Photographic Product and Process, Serial No. 7795, filed by Edwin H. Land on February 12, 1948, now Patent No. 2,467,056, for One Step Photographic Transfer Process, and Serial No. 164,908, filed by Edwin H. Land on May 29, 1950 for Photographic Silver Halide Transfer Product and Process. Other precipitating agents have been proposed, such as the colloidal metals and specifically colloidal silver. It is also desirable, as disclosed in the said copending applications, to provide, as the vehicle for the silver precipitating agents in layer 22, a macroscopically continuous film that consists of submacroscopic agglomerates of minute particles of a suitable water-insoluble, inorganic, preferably siliceous, material, such, for example, as silica aerogel. The use of such a vehicle for the precipitating agents tends to aggregate the silver that is precipitated into its most effective form for print making.

A succession of containers, designated generally by 26 in the illustrated embodiment, are provided for carrying a viscous processing liquid composition 28. Liquid 28, when spread in a thin layer between frame 16 and area 24, is adapted to transform a latent image in frame 16 into a positive print in area 24. As shown, containers 26 are affixed to layer 22 of sheet 18 at substantially regularly spaced intervals from a location adjacent a leading end of sheet 18 toward the trailing end thereof, containers 26 being so spaced that one area 24 lies between a pair of containers 26. Each container 26 has a rearward edge 30 and a forward edge 32, containers 26 being positioned to have their respective rearward edges 30 face the trailing end of sheet 18. Rearward edge 30 of container 26 provides a rupturable mouth 34 (Figs. 2 and 5) which is adapted to eject liquid 28 when opposed compression forces are applied to container 26.

In practice, a pair of pressure-applying means may be provided for generating the necessary compressional force on opposite sides of container 26 in order to cause ejection of liquid 28 from mouth 34 and spreading of liquid 28 between sheets 10 and 18. In the illustrated embodiment, the pressure-applying means are shown as a pair of rollers 36 and 38 between which sheets 10 and 18 may be advanced in superposed relation. Roller 36 is provided with a pair of shouldered end portions, one of which is shown at 40 in Fig. 2, and an intermediate pressure-applying surface 42. Roller 38 is provided with a pressure-applying surface 44 (Fig. 2). When sheets 10 and 18 are advanced in superposition between rollers 36 and 38, shoulders 40 are spaced from surface 44 by a distance equal to the combined thickness of sheets 10 and 18. Rollers 36 and 38 thus are so constructed that, under such circumstances, surface 42 is spaced from surface 44 by a distance equal to the combined thickness of sheets 10 and 18 plus a predetermined amount equal to the thickness of a layer of liquid 28 that it is desired to spread between frame 16 and area 24.

In the illustrated embodiment, rollers 36 and 38 are rotatably mounted on a pair of axles 46 and 48. A U-shaped bracket having a bight portion 50 and upstanding legs 52 is provided for mounting axles 46 and 48. Upstanding legs 52 are provided with suitable bearings 54 for the reception of the ends of axle 46. Containers 26 have considerable thickness and even after ejection of liquid 28 are thicker than the normal distance between surface 42 and surface 44. In order to permit separation of rollers 36 and 38 when a container 26 is positioned therebetween, upstanding legs 52 are provided with vertically extending slots 56 for the reception of the ends of axle 48. A pair of shoes 58 (one of which is shown in Figs. 3 and 4), which may be pressed against the ends of axle 48 by such means as a pair of springs 60, urge the ends of axle 48 toward their uppermost positions in slots 56.

In order to rupture successive containers 26 and to spread liquid 28 in a thin layer between successive frames 16 and successive areas 24, sheets 10 and 18 may be advanced between rollers 36 and 38 in the direction of the leading end of sheet 18. In Fig. 1 the approximate path, with relation to the above-identified elements, followed by layer 62 of liquid 28, following release from container 26 and spreading thereof, is shown in dotted lines. Layer 62 extends from mouth 34 having an initial width approximately equal to the width of area 24. From mouth 34 layer 62 expands toward the edges of sheets 10 and 18 so that the outer limits thereof lie between the borders of area 24 and the edges of the sheets.

When layer 62 has spread so as to completely cover area 24, it contracts to a narrow tongue 64 midway between the edges of the sheets. Tongue 64 is formed of liquid in excess of that spread in a thin layer of predetermined thickness over area 24. Container 26 is provided with a quantity of liquid 28 in excess of the absolute minimum required for covering merely an area 24 with a layer of liquid 28 of predetermined depth in order to enable complete covering of area 24 with layer 62 notwithstanding adverse conditions of temperature and humidity and maldistribution of the liquid as a result of nonuniform rupture of the container and nonuniform spreading.

In accordance with the present invention, the herein disclosed product is so constructed that liquid 28 in excess of that spread over area 24 is neatly trapped between sheets 10 and 18 and is prevented from escaping into portions of the photographic apparatus where its presence is not desired. The construction furthermore is such that the liquid in excess of that spread over area 24 is prevented from passing to a succeeding area 24.

Referring to Fig. 1, it will be noted that an area 24 lies closer to the leading one than to the trailing one of a pair of containers 26 with which it is associated. A section 66 of sheet 18, lying between the rearward edge of area 24 and the forward edge of the trailing container of the pair, serves as a trapping area for collecting liquid in excess of that spread over area 24. The product is so constructed that trapping area 66 is spaced from a superposed portion of sheet 10 during advancement of sheets 10 and 18 between rollers 36 and 38. In the present embodiment, this construction includes a pair of difficultly compressible members 68 and 70, positioned at opposite ends of forward edge 32 of the trailing container of the pair. Containers 26 and members 68 and 70, which are integral therewith, constitute a compact means for supplying predetermined quantities of liquid for spreading between sheets 10 and 18 and for limiting the extent of spreading to predetermined regions between the sheets. This compact construction permits extremely close spacing of successive areas 24 and of successive frames 16 with which they are associated. Area 66, the portion of the sheet 10 superposed thereon, and members 68 and 70 define a trapping region which is large enough in volume to confine excess liquid and which will not appreciably change in volume when advanced between rollers 36 and 38. This trapping region acts to terminate spreading of liquid 28 which has been ejected from mouth 34 and which has been spread over area 24.

In the illustrated embodiment, each container 26 comprises a first portion 72 and a second portion 74, each portion being constructed of sheet material which comprises a plurality of plies. Outer ply 76 serves as a backing or support and is preferably formed of a thin, relatively inexpensive, tough material which may be composed of plastic but which is preferably a paper, such as kraft paper. Applied to the inner surface of ply 76 may be a thin layer 78 of a relatively vapor-impervious material, such as a metal foil. Coated on the surface of layer 78 is a further layer 80 of a suitable plastic which can be adhered to itself by the application of heat and/or pressure. Layer 80 is preferably liquid impervious in order to provide a protective coating for layer 78, thereby preventing the contents of container 26 from reaching and corroding layer 78. Coating 80 is relatively thin, being only sufficiently thick to be continuous.

Portions 72 and 74 are similar in peripheral outline and are bonded together at their ends and forward edges by the cohesion of layer 80 of portion 72 with layer 80 of portion 74, this cohesion being attained by the application of heat and/or pressure to these peripheral areas.

Portions 72 and 74 are bonded together at their trailing edges by a thin strip of adhesive 82 positioned therebetween. In order to assure a unidirectional release of the contents of container 26 upon the application of a squeezing force to the walls thereof, strip 82 is so constituted that the adhesive forces between strip 82 and coating 80 are less than are the cohesive forces between coating 80 of portions 72 and 74. In order to assure that a uniform peeling or separation of the marginal portions along the rearward edge of container 26 is obtained when container 26 is subjected to a liquid-releasing force, strip 82 is applied to rearward edge 30 in such a way that it extends from the very extremity thereof into the liquid-carrying cavity of container 26. Precautions are taken to insure that strip 82 extends to the extremity of rearward edge 30 even to the extent of having the material of strip 82 coated over the extremity of edge 30, as shown in Fig. 5. A further precaution against the hazard of uneven seal consists of extending strip 82 beyond the ends of rearward edge 30.

In accordance with the present invention, the ends of forward edge 32 of container 26 are provided with difficultly compressible members 68 and 70. Each member 68 and 70 is formed of a first extension 83, one end of which is integral with portion 72, and a second extension 84, one end of which is integral with portion 74. The first and second extensions are aligned and are integrally connected together at 85. When members 68 and 70 advance between rollers 36 and 38, separation of rollers 36 and 38 against the force exerted by springs 60 occurs.

The mechanics of spreading and trapping of the liquid processing composition, during operation, are best shown in Figs. 2, 3 and 4. After a frame 16 of sheet 10 has been exposed by suitable photographic means, it is superposed on an area 24 of sheet 18. Superposed sheets 10 and 18 now are advanced between rollers 36 and 38 in order to cause release and spreading of liquid 28 between frame 16 and area 24. Even spreading of liquid 28 in a uniformly thin layer 62 continues until the tongue 64 of liquid 28 in excess of that spread between frame 16 and area 24 enters the trapping region defined by members 68 and 70, trapping area 66, and that portion of sheet 10 superposed on trapping area 66. At

this point, by reason of the action of members 68 and 70, separation of rollers 36 and 38 occurs and spreading of liquid 28 is terminated. Frame 16 and area 24 are allowed to remain in superposition for a predetermined processing period during which the latent image on frame 16 is processed and a positive print is formed in area 24. At the end of this period, area 24 may be ripped from the remainder of sheet 18 with the aid of the perforations surrounding it and simultaneously may be peeled from superposition with frame 16.

Portions 72 and 74 of container 26, in one preferred form, comprise a construction in which base 76 is a kraft paper, layer 78 is a silver or lead foil, and coating 80 is a thermoplastic material such as a polyvinyl acetal, for example polyvinyl butyral, polyvinyl acetal or polyvinyl formal. It is to be understood that the composition of coating 80 may include suitable plasticizers and other materials which render the coating formed from the plastic composition more suitable for its purpose. For example, a composition comprising 60% to 72% by weight of polyvinyl butyral, 10% to 23% by weight of nitrocellulose, and approximately 5% by weight of dibutyl sebacate is particularly satisfactory. When coating 80 is of the foregoing composition, strip 82 may consist of ethyl cellulose or of a mixture of ethyl cellulose and paraffin, the mixture comprising at least 50% by weight of ethyl cellulose.

The liquid processing composition within container 26 may, in one form thereof, have a predetermined minimum viscosity which produces, in cooperation with strip 82, a uniform and complete opening of mouth 34 when container 26 is advanced between rollers 36 and 38. Uniform spreading of liquid 28 between a frame 16 and an area 24 is thus feasible. The minimum viscosity should be of the order of at least 1000 centipoises at a temperature of approximately 24° C. Such a viscosity provides adequate allowance for such variations in viscosity as may take place when the container is used in an environment where the temperatures are much higher than 24° C. The range of temperatures for which the operation of the container is intended is in the range of ambient temperatures which would be encountered in various locations under varied climatic conditions, i. e., temperatures not exceeding 45° C.

The desired viscosity may be obtained in the liquid content of the container by dissolving in the liquid a suitable high molecular weight polymer which will not decompose or otherwise lose its thickening properties due to reaction with the liquid or the reagents therein. For example, where the liquid composition in the container has water as its solvent, suitable plastics for increasing the viscosity of the liquid composition are the water-soluble cellulosic plastics such as hydroxyethyl cellulose and sodium carboxymethyl cellulose.

This container structure is particularly suited for carrying highly alkaline solutions, such as solutions of photographic developing agents having a pH as high as 14.

As a result of the foregoing structure, the container in its filled and sealed condition is relatively deformable, and it becomes possible to mount the container on sheet 18 and to wind the paper with the container mounted thereon into a roll having a small radius. In this way, it becomes possible to package a plurality of the containers in relatively compact and conveniently accessible form.

Broadly, a product embodying the present invention may employ a variety of photographic materials, including not only those related to silver halide, but additionally, for example, such materials as diazo compounds and ferric salts. The term "processing composition" as used herein is intended to include any reagent which acts to render a visible image more visible, as in the case of ferric salts, or an invisible image visible, as in the case of silver halide emulsions. It is apparent that the invention is not limited to materials sensitive to visible radiation but includes photographic materials sensitive to such other radiation as X-ray, ultraviolet or infrared.

Since certain changes may be made in the above product without departing from the scope of the invention herein involved, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. As a new product, a disposable container comprising a first portion and a second portion, said portions being substantially similar in peripheral outline, said portions being aligned and bonded together throughout their peripheral areas, each of said portions having a rearward edge on one side thereof and a forward edge on the opposite side thereof, said portions providing a cavity for holding a liquid, said portions being substantially impervious to said liquid and to the vapor of said liquid, said portions being relatively weakly bonded at their rearward edges in order to provide a rupturable, sealed passage for said liquid, the peripheral areas of said sheets, excepting said rearward edge, being relatively strongly bonded together, the forward edge of the first portion being provided with two extensions at opposite ends thereof, the forward edge of said second portion being provided with two extensions at opposite edges thereof, one each of said two extensions of said first portion being aligned with one each of said two extensions of said second portion to form a pair of elements which are adapted to separate a pair of members applying pressure on opposite sides thereof.

2. As a new product, a disposable container comprising a first portion and a second portion, said portions being substantially similar in peripheral outline, said portions being aligned and bonded together throughout their peripheral areas, each of said portions having a rearward edge on one side thereof and a forward edge on the opposite side thereof, said portions providing a cavity for holding a liquid, said portions being substantially impervious to said liquid and to the vapor of said liquid, said portions being relatively weakly bonded at their rearward edges in order to provide a rupturable, sealed passage for said liquid, the peripheral areas of said sheet, excepting said rearward edge, being relatively strongly bonded together, the forward edge of the first portion being provided with two extensions projecting therebeyond, the forward edge of said second portion being provided with two extensions projecting therebeyond, one each of said two extensions of said first portion and one each of said two extensions of said second portion being aligned and being integrally connected, said extensions forming a pair of elements which are adapted to separate a pair of members applying pressure on opposite sides thereof.

3. As a new product, a disposable container comprising a first portion and a second portion, said portions being substantially similar in peripheral outline, each of said portions comprising an outer layer composed of paper, an intermediate layer composed of metal foil and an inner layer composed of a plastic material, said portions being aligned, each of said portions having a rearward edge on one side thereof and a forward edge on the opposite side thereof, said portions providing a cavity for holding a liquid, said portions being substantially impervious to said liquid and to the vapor of said liquid, said portions being relatively weakly bonded at their rearward edges in order to provide a rupturable, sealed passage for said liquid, the peripheral areas of said sheets, excepting said rearward edge, being relatively strongly bonded together, the forward edge of said first portion being provided with a first pair of extensions at its opposite ends, said first pair of extensions projecting beyond said forward edge of said first portion, one end of each extension of said first pair being integral with said first portion, the forward edge of said second portion being provided with a second pair of extensions at opposite ends thereof, said second pair of extensions projecting beyond said forward edge of said second portion, one end of each extension of said second pair being integral with said second portion, the other end of each one extension of said first pair being integral with the other end of each one extension of said second pair, said extensions forming a pair of elements which are adapted to separate a pair of members applying pressure on opposite sides thereof.

4. A product including a sheet having a succession of predetermined areas on one surface thereof, a succession of containers carried on said one surface at predeterminedly spaced intervals from the leading end of said sheet toward the trailing end thereof, one area of said succession being disposed between a pair of said containers, each container comprising a first portion and a second portion, said portions being substantially similar in peripheral outline, said first and second portions being aligned, each of said portions having a rearward edge on one side thereof and a forward edge on the opposite side thereof, said portions providing a cavity for holding a liquid, said portions being substantially impervious to a liquid within said cavity and to the vapor of said liquid, said portions being relatively weakly bonded at their rearward edges in order to provide a rupturable, sealed passage for said liquid, the peripheral areas of said portions, excepting said rearward edges, being relatively strongly bonded together, the forward edge of said first portion being provided with two extensions projecting therebeyond, the forward edge of said second portion being provided with two extensions projecting therebeyond, one each of said two extensions of said first portion and one each of said two extensions of said second portion being aligned to form a pair of crush-resistant elements, said containers being so disposed that their mouths face the trailing end of said sheet, said one area providing a spreading surface for the liquid of the leading container of said pair, said leading container being adapted to be ruptured and the liquid therewithin discharged through the mouth thereof by the application thereto of opposed compressional forces directed from means on opposite sides of said sheet and applied substantially uniformly across said sheet, said discharged processing composition being adapted to be spread over said one area by relative movement between said sheet and said means, the crush-resistant elements of said trailing container of said pair being adapted to relieve said compressional forces in order to prevent spreading of the liquid of the leading container of said pair beyond the forward edge of the trailing container of said pair.

5. A product including a sheet having a succession of predetermined areas on one surface thereof, said sheet being provided with lines of perforations separating ones of said areas from others of said areas and from the remainder of said sheet, a succession of containers carried on said one surface at predeterminedly spaced intervals from the leading end of said sheet toward the trailing end thereof, one area of said succession being disposed between a pair of said containers and closer to the rearward edge of the leading container of said pair than to the forward edge of the trailing container of said pair, each container comprising a first portion and a second portion, said portions being substantially similar in peripheral outline, said first and second portions being aligned, each of said portions having a rearward edge on one side thereof and a forward edge on the opposite side thereof, said portions providing a cavity for holding a liquid, said portions being substantially impervious to a liquid within said cavity and to the vapor of said liquid, said portions being relatively weakly bonded at their rearward edges in order to provide a rupturable, sealed passage for said liquid, the peripheral areas of said portions, excepting said rearward edges, being relatively strongly bonded together, the forward edge of said first portion being provided with two extensions projecting therebeyond, the forward edge of said second portion being provided with two extensions projecting therebeyond, one each of said two extensions of said first portion and one each of said two extensions of said second portion being aligned to form a pair of crush-resistant elements, said containers being so disposed that their mouths face the trailing end of said sheet, said one area providing a spreading surface for the liquid of the leading container of said pair, said leading container being adapted to be ruptured and the liquid therewithin discharged through the mouth thereof by the application thereto of opposed compressional forces directed from means on opposite sides of said sheet and applied substantially uniformly across said sheet, said discharged processing composition being adapted to be spread over said one area by relative movement between said sheet and said means, said sheet providing a trapping area between said one of said areas and the forward edge of said trailing container of said pair, said trapping area being adapted to collect the processing composition in excess of that spread over said one of said areas, the crush-resistant elements of said trailing container of said pair acting to relieve said compressional forces in the vicinity of said trapping area in order to prevent spreading of the liquid of the leading container of said pair beyond the forward edge of the trailing container of said pair.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
287,047	Norton	Oct. 25, 1883
2,543,181	Land	Feb. 27, 1951
2,579,587	Land	Dec. 25, 1951