

Nov. 5, 1968

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3,409,121

SANITARY PACKAGE FOR SURGEONS' GLOVES

Filed Jan. 3, 1967

4 Sheets-Sheet 1

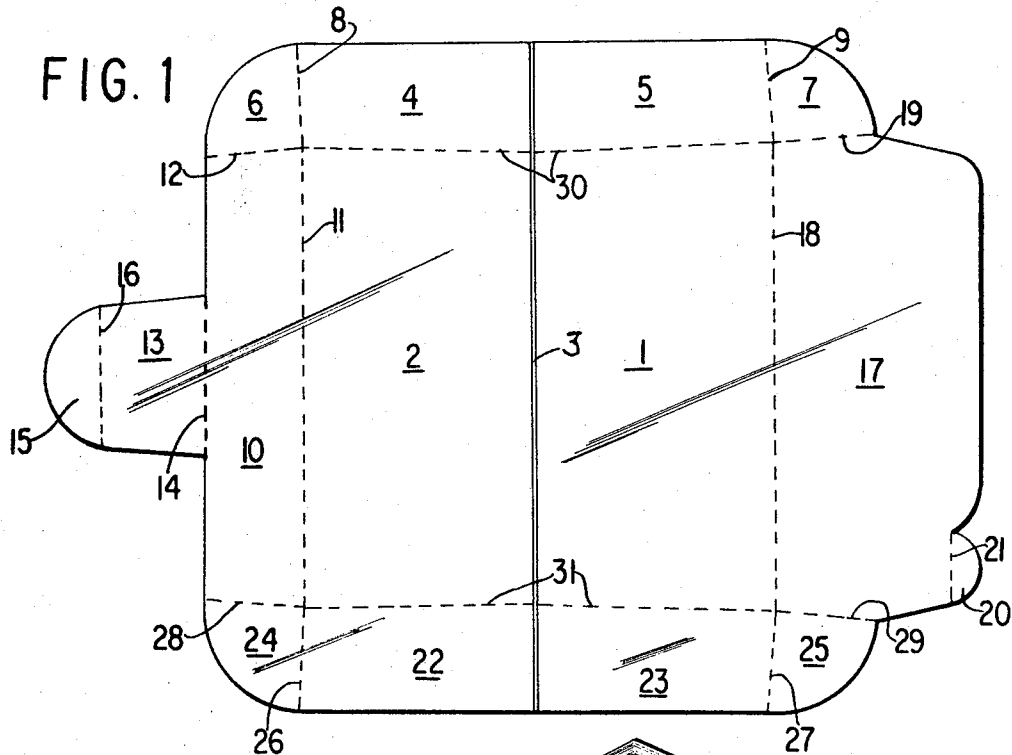


FIG. 2

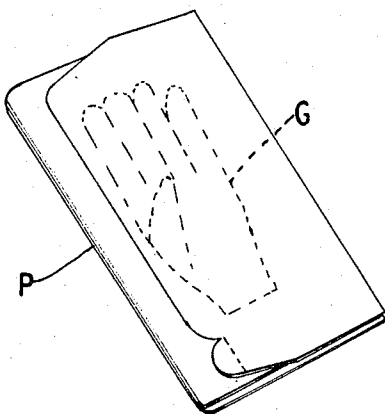
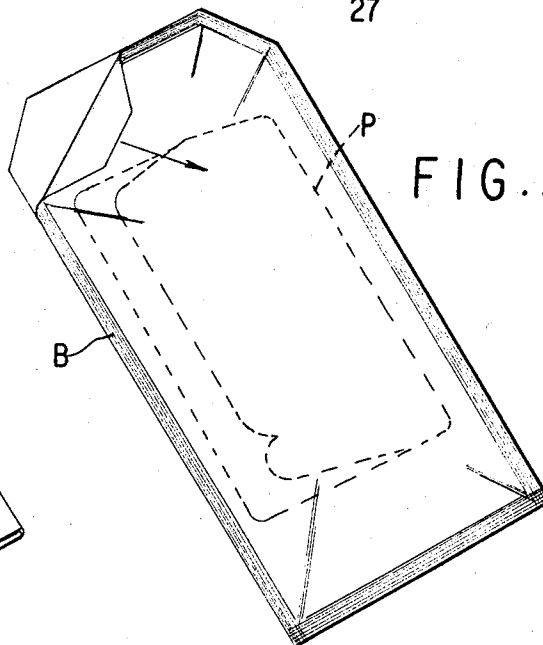


FIG. 3



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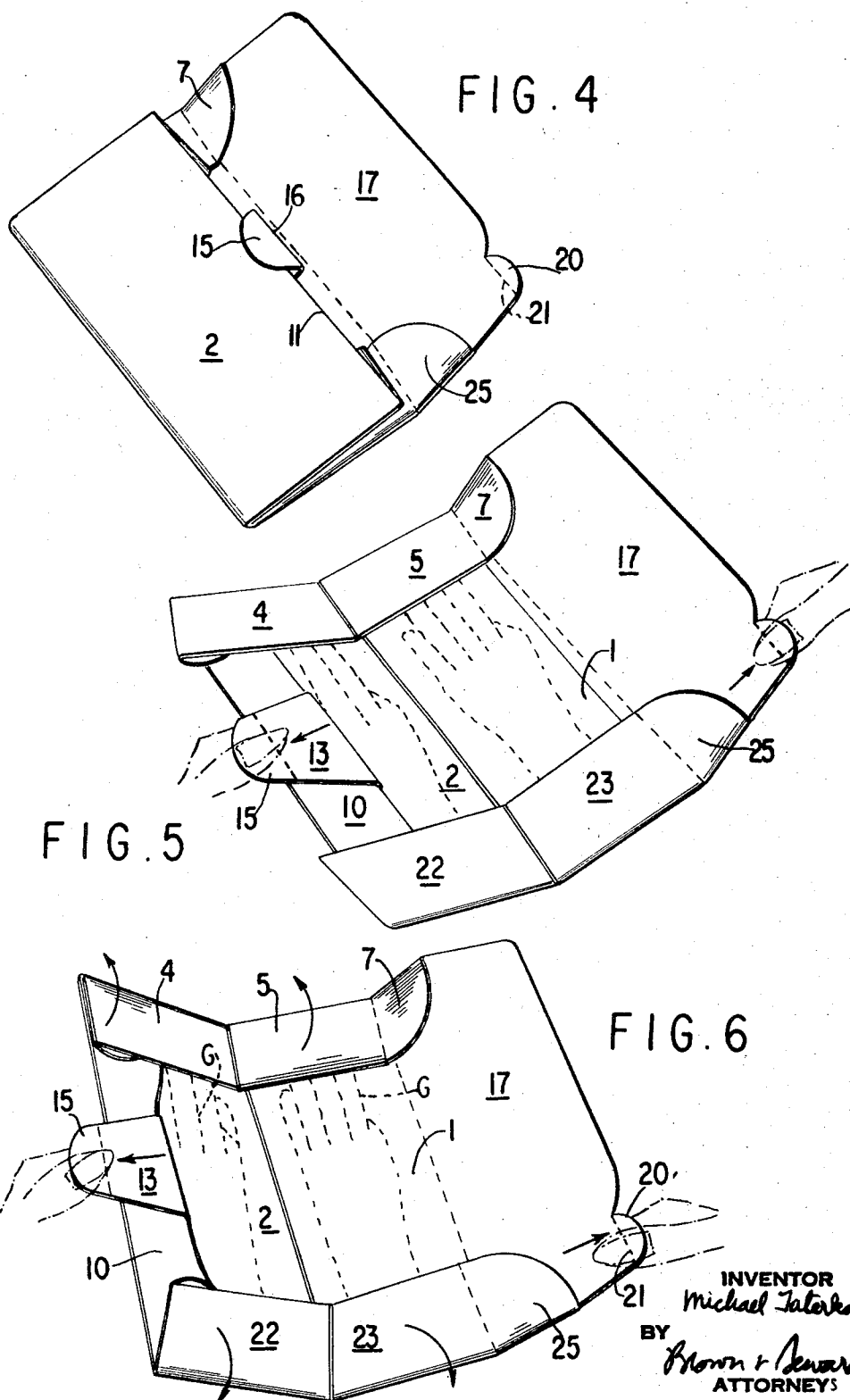
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SANITARY PACKAGE FOR SURGEONS' GLOVES

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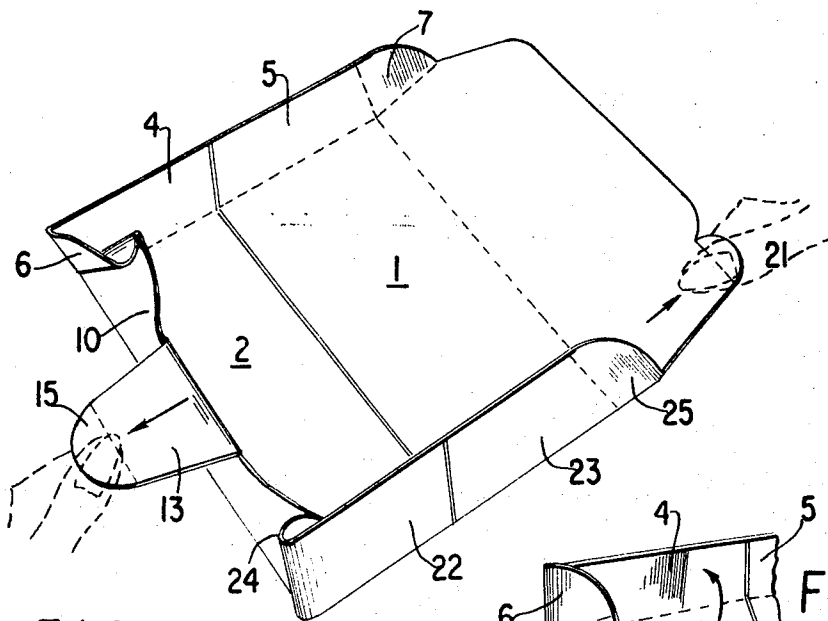


FIG. 7

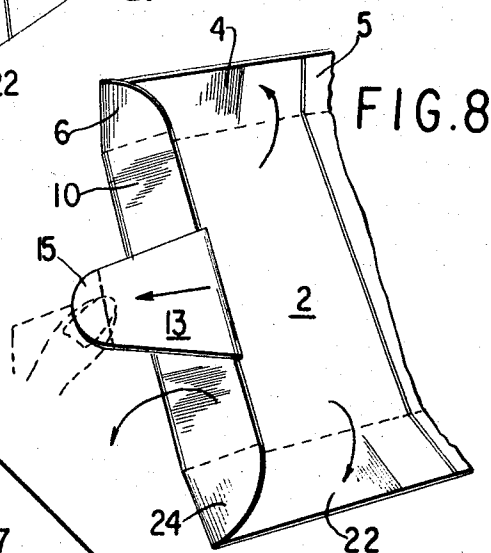


FIG. 8

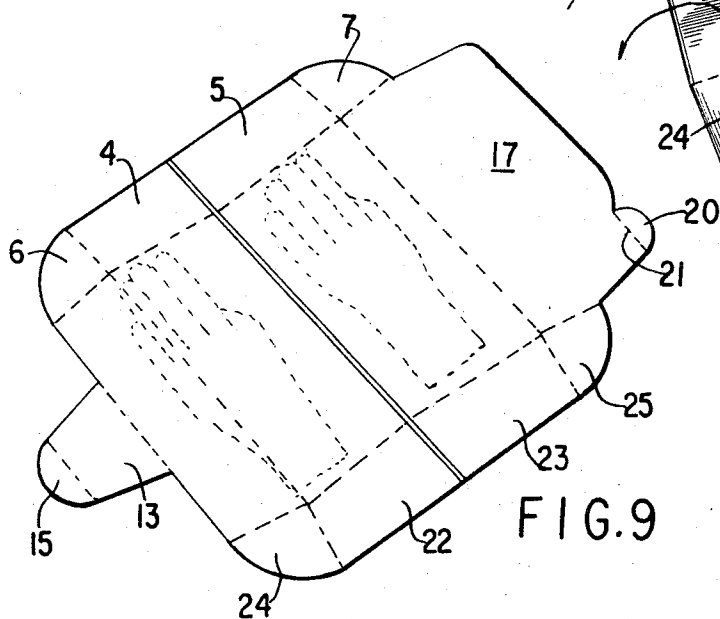


FIG. 9

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FIG. 10

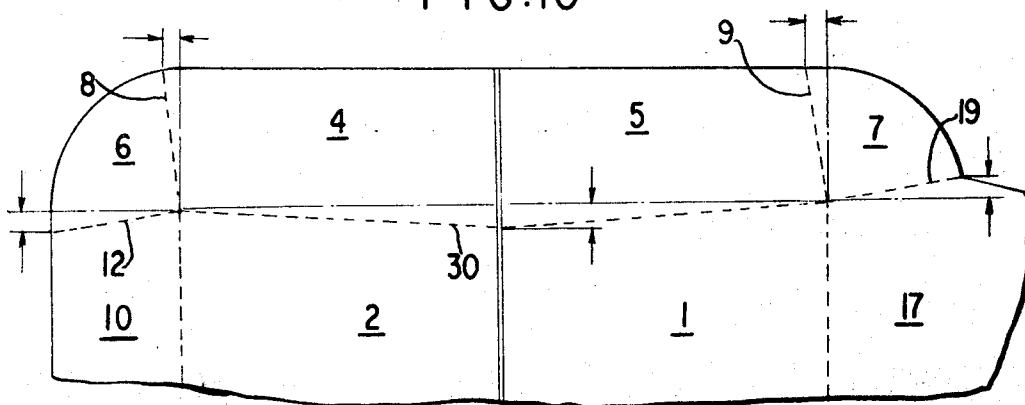


FIG. 11

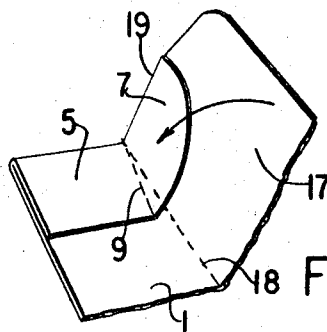
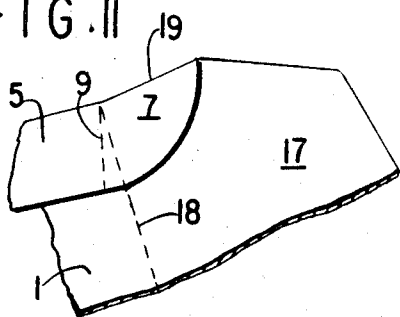


FIG. 12

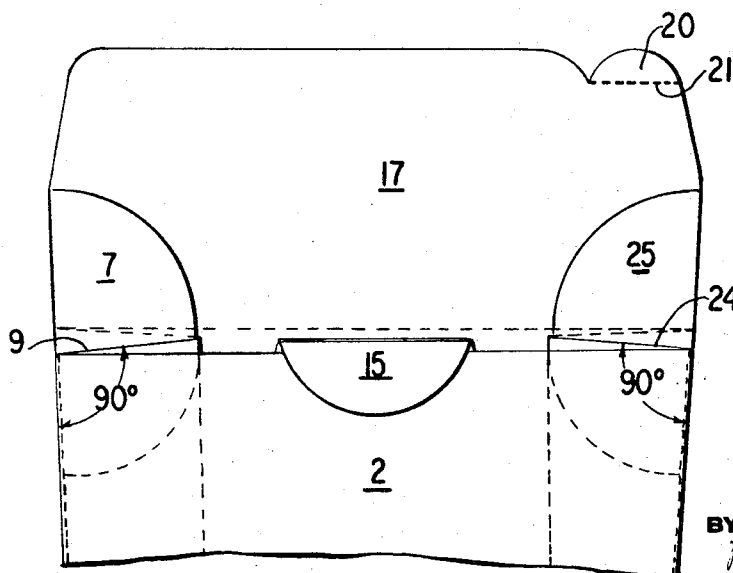


FIG. 13

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3,409,121
SANITARY PACKAGE FOR SURGEONS' GLOVES
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Inc., Murray Hill, N.J., a corporation of New York
Filed Jan. 3, 1967, Ser. No. 606,878
9 Claims. (Cl. 206—7)

ABSTRACT OF THE DISCLOSURE

A stamped, cut and scored sheet of cardboard adapted to be folded to enclose surgeons' gloves completely in sterilized condition and to be unfolded by pulling an exposed tab to expose the gloves for use while providing a large sterile surface which prevents contamination by contact from nearby unsterile areas.

This invention relates to a sanitary package for surgeons' gloves, and has for objects to provide such an article that combines complete protection against contamination, ease of manipulation, economy in manufacture, and compactness for economy in storage space.

Another object is to incorporate certain improvements in material, construction, form and arrangement of the several functional parts, whereby the above named and other objects inherent in the invention are efficiently attained.

In summary, the invention comprehends a flat, foldable package composed of cardboard, or like material, that is amenable to the folding and unfolding motions hereinafter to be described; that may itself be sterilized and also conveniently enclosed in a readily openable sterile pouch, bag or envelope which latter may thereafter be discarded; that is adapted to enfold a pair of gloves, and may be unfolded to expose the same for application by the surgeon or nurse to his hands, by the mere pulling on tabs, or similar projections, without requiring any contact by the user with the gloves or the sterilized part of the package on which they lie or rest or which embraces them; and which may be produced very simply by a mere stamping operation on a flat sheet; the operation serving to cut the shape or outline and, at the same time, impart scored and perforated lines to promote and guide the folding and unfolding according to the planned procedure.

A practical embodiment of the invention is represented in the accompanying drawings, in which:

FIG. 1 represents in plan the sheet or blank of cardboard or the like, after the original stamping operation;

FIG. 2 represents the folded package with gloves therein;

FIG. 3 represents the package inside a pouch or bag as above mentioned;

FIG. 4 represents, in perspective, the package with the outer or front flap or wing unfolded;

FIG. 5 represents, again in perspective, the package further unfolded;

FIG. 6 similarly represents a still further stage of unfolding;

FIG. 7, in like manner, represents a more complete unfolded condition in which the right or outer flap or wing is substantially entirely open and the left one together with the upper and lower ones partially open;

FIG. 8 represents, in broken perspective, the left and upper and lower flap or wings further open;

FIG. 9 represents, in perspective and on a smaller scale, full opening and exposure of the gloves;

FIG. 10 represents, in enlarged broken plan view, the upper portion of the sheet or blank of cardboard or the like to more clearly indicate the lines of scoring and perforation;

FIG. 11 represents, on the same scale, a detail broken

view of the right portion of the upper flap or wing partly folded;

FIG. 12 similarly represents a further folded condition of the last named parts; and

FIG. 13 represents, on the same enlarged scale and in plan, the condition of the package when the outer flap or wing is completely unfolded and the others are closed.

Referring now to the drawings, the cut out, creased scored and perforated sheet or blank is well illustrated in FIG. 1, where its outline is evident, said sheet or blank being composed, as above indicated, of cardboard or the like, preferably of fairly light weight.

The main glove supporting portion consists of what may be called a panel, denoted by 1, that is separated from a like panel 2, designed to cover the gloves, by a crease score line 3 which extends from bottom to top of the blank for folding purposes.

Developed from the top of the said panels 1 and 2, is a laterally elongated wing which comprises a pair of similar sections 4 and 5 as well as two quadrant shaped ends 6 and 7. The crease score line 3 serves to demarcate the sections 4, 5, while perforated lines 8 and 9 separate the ends from the sections. The said perforated lines 8 and 9 are not parallel to the lines 3 but are disposed at a slight angle thereto, slanting to the left of vertical, when looking at FIG. 1, functionally to assist the neat and compact formation of the package or folder, as well as the opening thereof.

A vertically disposed wing 10 projects from the left side of panel 2 as viewed in FIG. 1, and is, with the said panel, defined by a perforated line 11, while an additional downwardly slanting perforated line 12 is formed between the upper extremity of the wing 10 and the above mentioned end 6.

A tab 13 extends laterally and centrally from the wing 10, a perforated line 14 being formed therebetween. The extremity of the said tab is curved to form a tip 15 with an intervening line of perforations 16. This combination of the said two elements lends itself to human manipulation for unfolding when opening the package, as will be later explained. The tab 13 is slightly wider, between lines 14 and 16, than the wing 10, between lines 11 and 14, but the difference is less than that between panels 1 and 2.

On the opposite side of the blank there is a wing 17 that is connected to panel 1 along a perforated line 18 and, in like manner, to upper end 7 along an upwardly slanting line 19. This wing 17 constitutes the outer flap of the package when completely folded and its lower peripheral corner is projected into a curved tab 20 that is made flexibly fast to the wing along a perforated line 21 to facilitate initial manipulation upon opening the package for supplying the enclosed gloves to a surgeon or nurse.

Further, the blank includes a lower wing precisely and symmetrically duplicating the upper wing and comprising sections 22 and 23 with quadrant shaped ends 24 and 25, that are attached to the wing along perforated lines 26 and 27 corresponding to the upper lines 8, 9, and slanted in the same manner, as well as being similarly attached to wings 10 and 17 along slanting perforated lines 28 and 29.

It should be added that the upper and lower wings are associated with the panels 1 and 2 along lines of perforations 30 and 31 which lines are not truly straight but are angled slightly downwardly for 30 and upwardly for 31 toward the score line 3, this formation, as in the case of other features hereinabove described, affording desired operational characteristics when folding and unfolding the package. The lines 16, 14, 11, 3 and 18 are straight and parallel. The panel 2 is slightly narrower, between the lines 3 and 11, than the panel 1, between the lines 3 and 18.

When completely folded with a pair of gloves G therein, the package has the appearance of FIG. 2, resembling a folder. This illustrates also the inherent compactness of the article for storage. The gloves are, or may be, sterilized before placing in the package, while the latter may likewise be sterilized before and/or after folding.

It is desirable before storage to place the package or folder within a sterile pouch or bag that is preferably of the peelable type which is well known and thought to require no description further than to note that one side may be composed of a suitable transparent plastic such as cellophane, with the other side paper, or, if preferred, one side of heat-seal coated paper and the other plain paper. It is opened by the simple act of peeling a separable part from the remainder.

FIG. 3 shows this in which the pouch or bag as a whole is marked B and the package constituting this invention by P.

The operation of enclosing the gloves within the package and folding the latter to the condition shown in FIG. 2, consists in first placing one glove flat upon panel 1 and the other on panel 2, then manually grasping tab 13 and folding wing 10 with the ends 6 and 24 inwardly to the right on line 11 until these parts lie flat upon panel 2 and sections 4 and 22 (FIG. 8), at the same time bending tab 13 and its tip 15 backwardly, to the left, on line 14. The combined sections 4, 5, and ends 6, 7, are then folded downwardly on lines 12, 19 and 30 while the combined sections 22, 23 and ends 24, 25 are folded upwardly on lines 28, 29 and 31 until all those parts rest flat upon the panels 1, 2, and the folded wing 10 (FIG. 5). The next movement consists in folding panel 2 with its glove thereon and its appended elements onto panel 1 and its glove, this motion taking place along score line 3. At the same time the tip 15 on tab 13 is completely folded back along line 16 around the folded edge 11 so as to be exposed on top of panel 2 near the edge thereof, as shown in FIG. 4. The final closure is accomplished by folding the wing 17 with its tab 20 and ends 7 and 25 to the left inwardly to lie snugly upon the cover panel 2 and the tip 15 of tab 13. The condition of the package or folder is now as shown in FIG. 2, previously noted, and it is ready to be enclosed in the pouch or bag B (FIG. 3) for storage until the gloves therewithin are required for surgical action.

In the foregoing there have been references to sterilization of the gloves, package and pouch. It is deemed sufficient to observe that this step may be effected in any well known or approved manner such, for instance, as treatment in a chamber, or the like, filled with a sterilizing gas, as is familiar to the profession.

The opening or unfolding of the package or folder to present the gloves aseptically to the surgeon is of major importance, especially with regard to the assurance of no contamination, and constitutes a most valuable feature of this invention. Accordingly it is fully portrayed in FIGS. 4 to 9 inclusive, and will now be explained with the parts identified, as far as practicable, by the same reference numerals as heretofore.

After removal of the package or folder from the peelable pouch in a well understood manner the surgeon or his assistant pulls on the tab 20 to open the wing 17 to the position reflected by FIG. 4. Then, the holding of tab 20 and pulling with the other hand upon tip 15 of tab 13 produces further unfolding, represented in FIG. 5, partially to expose panels 1 and 2 upon which the gloves G rest, folded wing 10 and tab 13 bent thereover, together with folded sections 4, 5 and end 7 at the top and folded sections 22, 23 and end 25 at the bottom. It will be observed that, while the gloves are now partially in view, they are not yet ready for removal.

Continuance of the same pulling by both hands leads to further opening (FIG. 7) caused by the partial unfolding of wing 10 which, due to its connection with sections 4 and 22 through ends 6 and 24, brings about a swinging, so to speak, of the said parts, along with sec-

tion 5, end 7, section 23 and end 25 toward an upright position.

FIG. 8, fragmentarily illustrates continuation of this unfolding step, with arrows indicating the direction of movement; while FIG. 9 presents the completely open condition ready for englovement by the surgeon, all parts being substantially flat as in the FIG. 1 representation of the original stamped out sheet or blank.

It is deemed appropriate to explain that the entire opening or unfolding which is described at some length above may, in practice, be accomplished by a single swift manipulation by the surgeon or his assistant.

Further, and importantly, the slant or angularity of the lines of perforations 8, 9, 12, 19, 26, 27, 28, 29 and the angularity in lines 30 and 31, promote flat folding and ease in opening of the package or folder, while the ends 6, 7, 24 and 25 serve, in effect, as webs and levers to cause pulling on the single tab 13 by its tip 15 to open the entire package to a flat condition.

The slanting angle of certain perforated lines and the contour of lines 30 and 31, above described, is regarded as of such functional value that FIGS. 10 to 13 inclusive are presented better to explain this feature of the invention. Thus FIG. 10 is on an enlarged scale with arrows indicating the departure from vertical (as the figure is viewed) of lines 8 and 9; the departure from horizontal of lines 12 and 19, as well as the flat V form of line 30. As an example, not a limitation, the departure of lines 8, 9, 12, 19 may be $\frac{3}{32}$ " on a 2" radius, and the departure of lines 30 and 31 may be $\frac{3}{32}$ " at the middle of a total length of $9\frac{1}{4}$ ". The angles 8-12 and 9-19 are shown as right angles. It will be understood that the same visual emphasis could be demonstrated with respect to the corresponding lines of perforations illustrated at the lower portion of FIG. 1.

On a smaller scale, FIG. 11 represents fragmentarily the effect when the parts 5 and 7, shown at the right of FIG. 10, are partly folded toward panel 1 and wing 17; while FIG. 12, on the same scale, illustrates further folding of the said parts and shows how the angularity of line 19 brings the end 7 to a position where it is readily accommodated between panel 1 and wing 17 when the latter is folded along line 18.

FIG. 13, which is drawn to a scale slightly larger than FIG. 1, depicts in a broken view, the package partly folded with the wing 17 lying horizontally, instead of vertically as in FIG. 1. Here are seen the quadrant shaped ends 7 and 25 in full lines folded flat against wing 17, and, in mostly dotted lines, the similar ends 6 and 24 in folded position with the angularity of their perforated lines 8 and 26 exhibited and the quadrant shape of the said last named ends represented by degree notations.

Especially in consideration of the human importance of inventions in this field, it is thought well briefly to summarize some of the outstanding advantageous characteristics of this subject matter by noting that the package or folder can be opened according to sterile techniques used in surgery and the like without contaminating any of the inside surfaces where the gloves are lying as there is no need to touch the sterile area; that the folder provides a large sterile field which prevents contamination by contact with nearby unsterile areas; that, when closed, the folder covers the gloves completely to prevent accidental contamination; that there are no open corners on the inner surface near the sterile area; that the opening tabs are spaced from the sterile area; and that the package or folder can readily be transferred from hand to hand or to a sterile area, even after removal from its enclosing pouch or bag, without danger of contamination.

I desire it to be understood that various changes or modifications can be made in the material, form and arrangement of the several parts without departing from the scope or spirit of the invention; and, hence, I do not intend to be limited to details herein shown or described except as they are included in the claims, or are required by disclosures of the prior art.

What I claim is:

1. A sanitary package for surgeons' gloves comprising folded relatively stiff sheet material designed and adapted to contain a pair of gloves, and means for indirect automatic opening of the package to expose the gloves without contacting the gloves or the sterile portion of the package which contains them, said means comprising a plurality of manipulating tabs spaced from the area designed to support the gloves, said tabs being so disposed and interconnected with other parts of the package that pulling them apart in two opposite directions causes the package to open in four directions.

2. A sanitary package as defined in claim 1, which includes an outer folded portion and a folded portion therebeneath, and in which there are two tabs, one on the outer folded portion and one on the folded portion therebeneath.

3. A sanitary package as defined in claim 2, in which one tab projects from the outer folded portion and the other is bent around the edge of the folded portion therebeneath.

4. A sanitary package as defined in claim 1, in which the material is folded both vertically and horizontally when viewed in plan, there being at least three folded portions, the outer one and the one therebeneath being folded vertically and an inner one being folded horizontally.

5. A sanitary package as defined in claim 4, in which there are two horizontally folded inner portions.

6. A sanitary package as defined in claim 5, in which there is an additional inner portion that is folded vertically.

7. A blank of relatively stiff sheet material adapted to constitute a folded sanitary package for surgeons' gloves comprising a panel on which the gloves may be placed and a second panel adapted to overlie the gloves, said panels being separated by a crease score line, wings extending laterally from the said panels and being separated therefrom by lines of perforations, and wings extending

tending upwardly and downwardly from the said panels and lateral wings and being separated therefrom by lines of perforations, said upwardly and downwardly extending wings being similar and each being formed of two sections and two quadrant shaped ends, said sections being separated by a crease score line and said quadrant shaped ends being separated from the adjacent sections by lines of perforations that in plan are not parallel with the crease line and are separated from the lateral wings by lines of perforations that are inplan at an angle to the horizontal.

8. A blank as defined in claim 7, in which the said sections are separated from the said panels by lines of perforations the upper one of which in plan slants from each end downwardly toward the crease score line while the lower one slants upwardly toward said line.

9. A blank of relatively stiff sheet material adapted to constitute a folded sanitary package for surgeons' gloves comprising a panel on which the gloves may be placed and a second panel adapted to overlie the gloves, said panels being separated by a crease score line, wings extending laterally from the said panels and being separated therefrom by lines of perforations, wings extending upwardly and downwardly from the said panels and lateral wings and being separated therefrom by lines of perforations and a manipulating tab attached to each of the laterally extending wings.

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