

Jan. 24, 1939.

R. L. SAYERS

2,145,137

DIAPER

Filed Feb. 13, 1937

Fig. 1

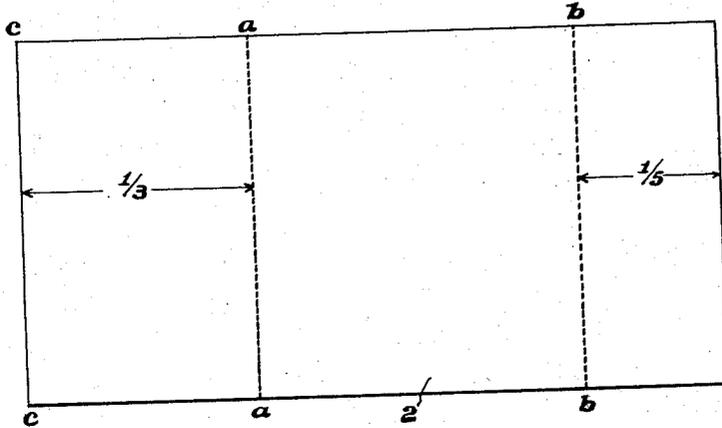


Fig. 6

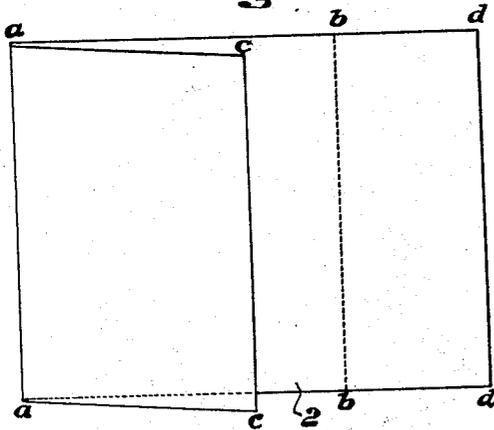


Fig. 2

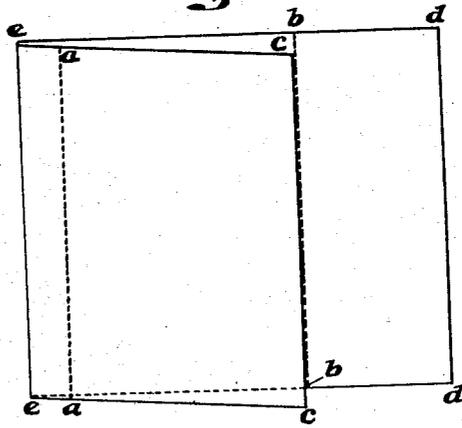


Fig. 7



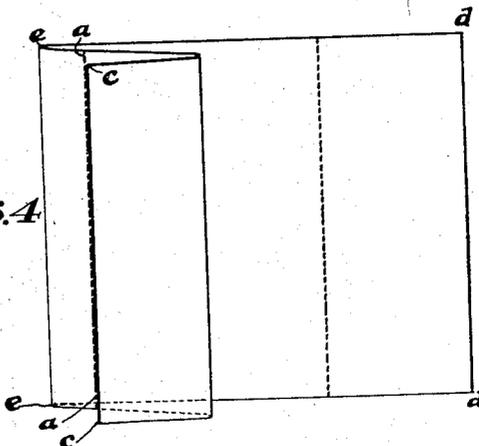
Fig. 5



Fig. 3



Fig. 4



INVENTOR  
*Ruth L. Sayers*  
 BY *Harold C. Sady*  
 her  
 ATTORNEY

## UNITED STATES PATENT OFFICE

2,145,137

DIAPER

Ruth L. Sayers, Walpole, Mass., assignor to The Kendall Company, Walpole, Mass., a corporation of Massachusetts

Application February 13, 1937, Serial No. 125,640

2 Claims. (Cl. 283—1)

This invention relates to diapers. It aims to improve articles of this character with a view to devising a construction which will be better suited to the changing requirements of the baby during the entire period in which diapers are worn.

Diapers are customarily worn from birth through the first year of the child's life and to some point in the second year. As a rule the diaper consists of a rectangular or square piece of fabric and it is intended to be folded to fit the requirements of the baby. Since the child's measurements are constantly changing from the beginning to the end of the diaper period, it is obvious that either the diaper must be folded in several different ways during that period to fit the child as it grows, or else different sizes of diapers must be used to meet the changed conditions. Since the latter course is expensive, the more common practice is to use the size initially purchased and to fit the changing dimensions of the child, as well as possible under the circumstances, by varying the manner in which the diaper is folded.

While there are two shapes of diapers in general use, namely square and oblong, the latter is more commonly used and is far more satisfactory since it is more adaptable to the requirements of the child, and may be folded to provide a greater number of thicknesses, this feature being important from the standpoint of absorbency. These articles vary in dimensions from approximately eighteen inches to twenty-two inches in width and from, say, thirty-six inches to forty-four inches in length. Usually the folding proceeds in one direction only, namely lengthwise. The original width of the diaper can be used without folding during much of the diaper period since this dimension extends lengthwise of the baby's body, but the length must at all times be folded to provide a satisfactory waist measurement. This fact introduces several complications in the diapering procedure as follows:

First: The length of the unfolded oblong diaper is approximately twice its width, yet while the width may be used complete and unfolded, or with only slight adjustment, the length must be reduced by folding to a small fraction of its original length. Second: The length must be folded differently as the diaper period progresses. Third: The width may be adjusted as actually needed after putting the diaper on the baby, but the length must be adjusted before putting the diaper on, and estimated, instead of actual measurements, must be used. In other words, much and varied folding is necessary, it must be done purely

on estimate, and it must be done throughout the entire diaper period.

It is thus obvious that the real problem in the use of a diaper of fixed dimensions, as distinguished from different sizes suited to varying requirements, is in adjusting its length to meet the conditions in hand. So long as the diaper need be folded to a final length of a quarter of that of the original length, the procedure is obvious. It is somewhat more difficult when it becomes necessary to fold it into thirds. The latter procedure also provides only three, instead of four, thicknesses, and therefore provides less absorbency. When other folds become necessary the procedure becomes more difficult.

The present invention provides a diaper in which the foregoing and additional folds required at different points in the diaper period can be made quickly, conveniently, and accurately.

The nature of the invention will be readily understood from the following description when read in connection with the accompanying drawing, and the novel features will be particularly pointed out in the appended claims.

In the drawing,

Figure 1 is a plan view of a diaper embodying this invention;

Figs. 2 and 3 are plan and edge views, respectively, showing different steps in folding the diaper in accordance with one of the methods provided by this invention;

Figs. 4 and 5 are plan and edge views, respectively, showing the method of making a different and novel fold; and

Figs. 6 and 7 are plan and edge views, respectively, of another method of folding.

The best size of diaper when a single size only is to be used, which is preferable from the standpoint of economy, is approximately twenty by forty inches, although obviously other dimensions can be used, if desired. Such a diaper is illustrated in Fig. 1 at 2. For small babies it is desirable to fold the diaper into fifths. That is, the final over-all length (which when folded becomes the width) is one-fifth of the original length and the folds or layers should all be of equal dimensions. Later it may be folded into fourths and still later into thirds. However, I have devised a special fold, hereinafter referred to as a "panel fold", which may very desirably be used following the fourths fold. It has the advantage over the thirds fold of presenting four thicknesses of fabric and of allowing greater adjustability. This panel fold may be followed by thirds in case of an unusually large baby.

This invention provides marks by which all of these folds can be made very quickly and accurately. As shown in Fig. 1, one of these marks, which is indicated at *a-a*, extends cross-wise of the diaper at a distance spaced from the left-hand end by approximately one-third of the total length of the diaper. Another mark *b-b* extends cross-wise of the diaper at a distance from said end equal to approximately four-fifths of the diaper length, or, in other words, at approximately one-fifth of said distance from the right-hand end.

To fold the diaper into fifths, the edge *c-c* is brought over to the line *b-b*, shown in Fig. 2. Next the folded edge *e-e* is brought over and registered with the line *b-b*, and finally the right-hand edge *d-d* is folded on the line *b-b* over upon the previous folds, thereby bringing it to the outside and producing five thicknesses of equal dimensions, as shown in Fig. 3.

To make the panel fold above referred to, the edge *c-c* is brought over to the line *b-b*, as before, and as shown in Fig. 2, after which this edge is folded back to the line *a-a*, as illustrated in Figs. 4 and 5, and finally the edge *d-d* is folded over and registered with the outside folded edge *e-e*, as also shown in said figures. This makes a folded diaper greater in width than either the fold into fifths or fourths and thus is better suited to larger children than either of the latter, while at the same time providing four thicknesses of fabric throughout the central portion of the diaper where, of course, the need for absorbency is greatest.

This panel fold may be varied while still maintaining its essential characteristics and advantages, but increasing or reducing its width somewhat. That is, to make a wider folded diaper the edge *c-c* is brought over somewhat short of the line *b-b*, then folded back short of the line *a-a*. If a narrower width is desired, the edge *c-c* is brought over somewhat beyond the line *b-b* and is then folded back beyond the line *a-a*. In either case the final fold will register the edge *d-d* with the folded edge *e-e*.

To fold into thirds, the edge *c-c* is folded on the line *a-a*, as shown in Fig. 6, after which the edge *d-d* is brought over and registered with the line *a-a*, as illustrated in Fig. 7.

It should be noted that in making all of these folds the folding is begun at the same end, which simplifies the use of the markings. It will also be observed that these marks make the accurate folding of the diaper in any of the ways above described very simple and require less time than a hit or miss attempt to accomplish the same results without the use of the marks.

My invention for diaper marking has been described in its preferred form. If followed exactly on a diaper of approximately 40" length, it produces with the panel fold a diaper having a central panel approximately 6½" wide and a total folded width of approximately 12". This

is the maximum width needed by the average child during the diaper period. (Used on a diaper of different length the plan will produce a panel fold with, of course, the same proportions but slightly different diamensions.) However, if it should be desired to indicate a panel fold of different dimensions from those provided by the use of my preferred plan, the relative locations of the two markings could be changed without exceeding the scope of my invention.

For instance, to provide markings for a 40" length which would be exact for producing an 11" instead of a 12" folded width, the marking points would be changed from points at 8" and 13.3" to points at 4" and 16.8". However, such a plan would not provide markings for folding in fifths and thirds and would therefore be inferior to my preferred plan. Also, as previously mentioned, by using the markings of my preferred plan as axes, as much variation as will be needed may be easily secured.

The marks themselves may be made in a number of ways. For example, a simple and satisfactory method is to stamp them on the articles with indelible ink. They may, however, be made by running in a special colored yarn into the fabric during the weaving of it, or by stitching lines across the diaper at the designated points or by notching or otherwise cutting the goods at the margins, or the weave may be changed at these particular points. The essential requirement is that the markings be sufficiently prominent to be readily seen and do not impair the appearance or characteristics of the diaper. An example of a satisfactory product embodying the invention consists of a double-woven gauze diaper with a thread count of 44 x 40, made with thirty's and thirty-two's yarn. The markings are made by weaving two ends per dent for three successive dents on each layer of the material, and by using for these three particular dents a special forty's/two reverse twist yarn.

While I have herein shown and described a typical embodiment of my invention, it will be understood that the invention may be embodied in other forms without departing from the spirit or scope thereof.

Having thus described my invention, what I desire to claim as new is:

1. An article of the character described consisting of a diaper having marks located at approximately one-third and four-fifths, respectively, of its length, both measurements being made from the same end.

2. An article of the character described consisting of a diaper of rectangular shape having a cross-wise line located at a distance from one end of the diaper equal to approximately one-third of the length of the diaper, and a second cross-wise line at approximately one-fifth of the length of the diaper from the opposite end.

RUTH L. SAYERS