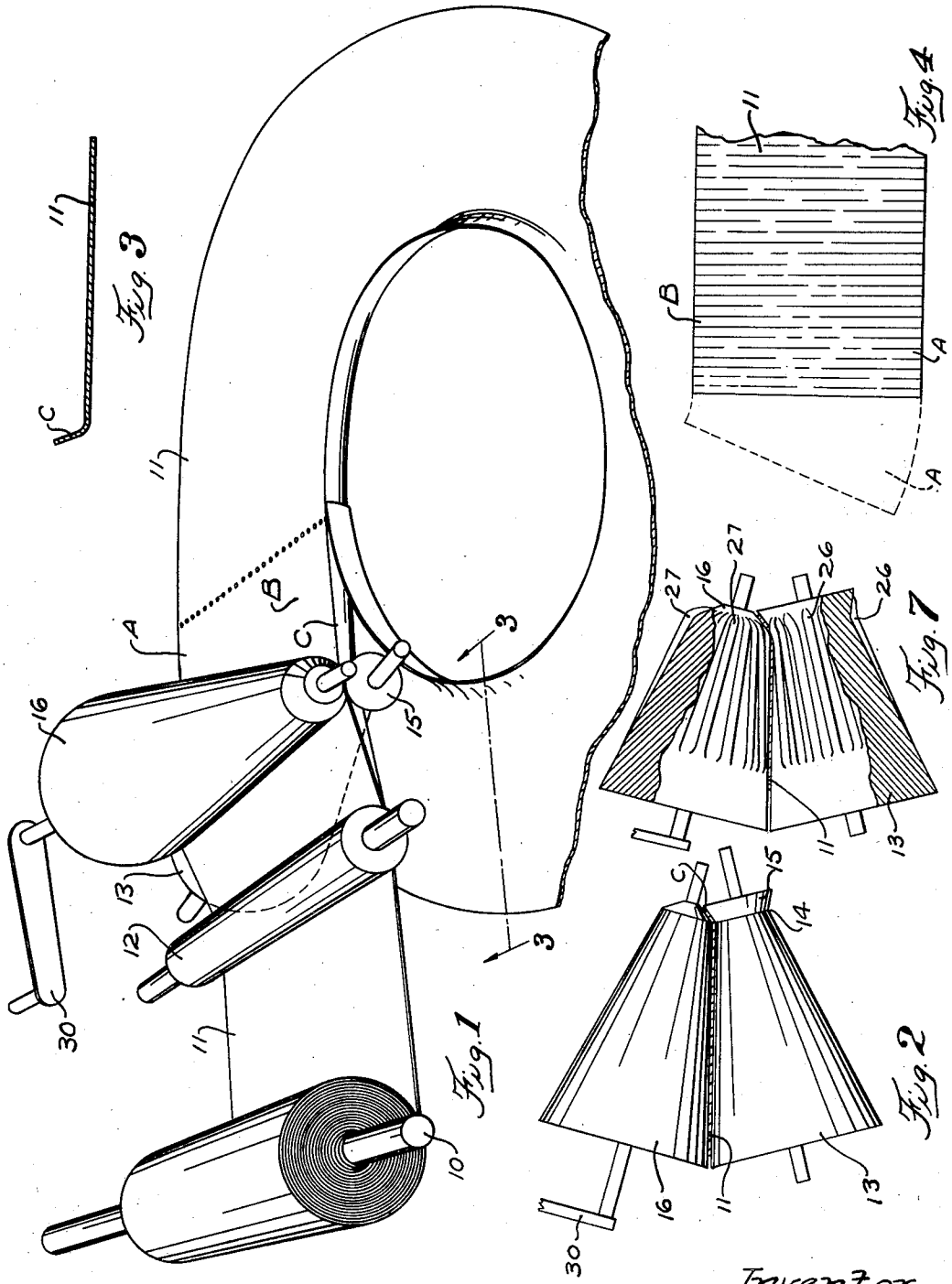
Feb. 6, 1940. G. DOERR 2,189,562

TOILET SEAT COVER AND METHOD OF FORMING SAME

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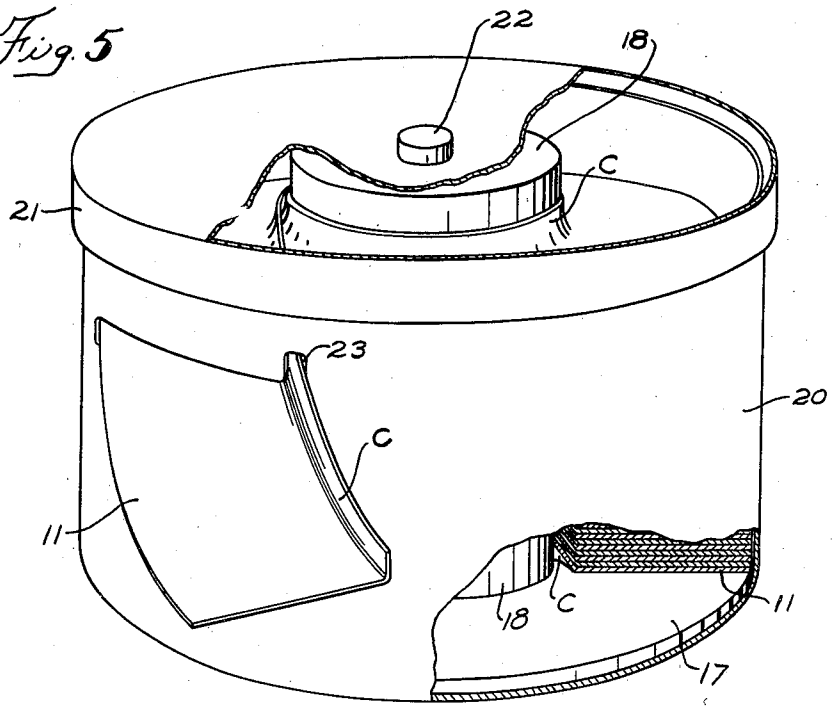
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TOILET SEAT COVER AND METHOD OF FORMING SAME

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Fig. 5



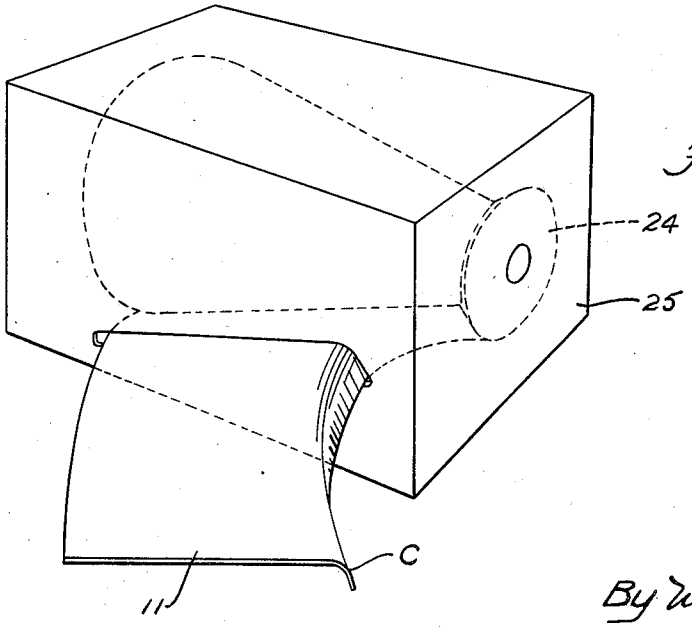


Fig. 6

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TOILET SEAT COVER AND METHOD OF FORMING SAME

Grover Doerr, near Brownstown, Ind.

Application February 10, 1939, Serial No. 255,659

4 Claims. (Cl. 93—1)

This invention relates to a sanitary cover for toilet seats and to the process for making it. A primary object of the invention is to form a flange seat cover out of a soft material, such as crepe paper, in a continuous manner whereby the covers may be produced in strip form in a continuous process so as to reduce the cost of manufacture and also to permit the storing of the covers in strip form in suitable vending carriers.

In the form of the invention herein shown, the unit cover is obtained from a continuous strip by tearing from the strip the required length, preferably determined by perforated lines or by any suitable marker permitting tearing or cutting of the length from the strip.

It is a further important object of the invention to form the covers initially detachably united one to another in a curving strip that may be wound upon either a conical spool or about a mandrel to preserve the required degree of curvature to cause the unit cover to conform substantially to the curvature of the seat.

By employing the process herein described, the downturned flange to engage about the seat may be formed on either the inner or outer edge of the cover to contact the seat accordingly, the flange being herein shown in the present form of the invention as being on the internal edge of the cover.

These and many other objects and advantages of the invention will become apparent to those versed in the art in the following description of the invention as illustrated more or less diagrammatically in the accompanying drawings, in which

Fig. 1 is a schematic view in perspective of a stretching mechanism for carrying out the process of the invention;

Fig. 2, a detail on an enlarged scale of the shaping rollers;

Fig. 3, a detail in cross section on the line 3—3 in Fig. 1;

Fig. 4, a detail in plan view of a fragment of crepe paper;

Fig. 5, a front view in perspective of a storing and vending container;

Fig. 6, a front view in perspective of a modified form of container; and

Fig. 7, a view similar to Fig. 2, showing a modified form of shaping rollers.

Like characters of reference indicate like parts throughout the various views in the drawings.

Crepe paper is obtained in strips to have a width equal that required to cover the upper side of one side of a toilet seat and to extend downwardly over an edge thereof a sufficient distance to form a positioning and retaining flange. This strip is preferably provided wound in cylindrical fashion upon a roller, as indicated by the numeral 10 in Fig. 1. The strip, generally designated by the numeral 11, is then formed to the required shape by stretching certain portions of the strip so that the stretched paper will then assume and embody a definite and permanent curvature.

Crepe paper is obtainable commercially which will permit stretching of portions thereof without stretching other portions thereof. While such paper may be elongated as much as one hundred per cent or more without affecting the strength or fracturing the paper, this paper takes a permanent "set" since the paper in stretching has no material elasticity.

With this peculiar quality of the paper in mind, the process then consists in drawing the strip 11 through any suitable deforming means which will stretch an outer marginal portion on the side A without stretching a portion B adjacent the other margin of the strip and at the same time also stretching a narrow marginal portion adjacent the area B to form a marginal flange C.

One particular mechanism for accomplishing this result is to carry the strip 11 under a roller 12 and thence upwardly over a generally conical roller 13 which tapers down to a throat 14 and then rapidly enlarges conically to form the flanging end 15, Fig. 2. The strip 11 is guided under the roller 12 and carried over the roller 13 to have the zone B at the throat 14. A gripping conical roller 16 shaped complementary to that of the roller 13 bears downwardly on the strip 11 compressibly thereagainst as a means for feeding the strip over the roller 13 and to aid in completing the forming thereof.

Since the strip of paper 11 must be carried to a higher elevation at the large diameter end of the roller 13 than it is across the throat 14, the portion of the strip designated as the zone A must therefore be elongated and pulled outwardly while there is no appreciable stretch through the zone B, the degree of stretch varying from substantially zero at the zone B to the maximum at the outer marginal edge of the zone A. Also that part of the strip which is carried upwardly on the flanging end 15 of the roller 13 must be stretched since it must travel to a higher elevation than does the part of the strip across the throat 14. The roller 10 resists unwinding sufficiently to create the desired tension in the

strip 11 during its deformation over the roller 13.

Of course, by varying the angularity of the roller 12 in respect to the axis of the roller 13, varying degrees of stretching of the paper in the strip 11 may be effected. However, in the present form, Fig. 1, the axis of the roller 12 is parallel to the axis of the roller 13. Increased stretching of the zone A is had by dropping the left-hand end of the roller 12 downwardly in respect to the axis of the roller 13, and less stretching by reversing the shifting thereof.

As the strip 11 leaves the rollers 13 and 16, it curves around in a more or less spiral manner as indicated in Fig. 1, and by having the formed strip fed onto a table 17, Fig. 5, with a central upwardly extending mandrel 18, and revolving the table 17 in accordance with the rate of travel of the strip 11, the formed strip may be wound therearound. The strip is preferably marked or perforated as by the perforated line 19, Fig. 1, to define the length of paper required to form a complete seat cover. This marking or perforating may be accomplished by any of the well-known devices customarily employed for such purposes. The marking, of course, can assume a pressed line or a score along which the paper may be easily torn.

As indicated in Fig. 5, the table 17 may be dropped down into a container 20 and a cover 21 inserted thereover to guide the mandrel axle 22 so that the strip 11 may be pulled through an opening 23 in the side wall of the container 20 and torn off as the marking line appears external of the opening or the edge of the opening may serve as a knife edge to effect the severance of the paper by pulling the paper upwardly or downwardly against either edge thereof. It is contemplated that the container 20 form a suitable vending machine, the details of which do not enter into the present invention.

Instead of having the paper strip 11 come out and be wound in a flat stacked manner as indicated in Fig. 5, the paper strip may be carried from the rollers 13, 16 directly to a re-wind roller 24 of the same general shape as the roller 13 so that the paper may be wound therearound with the flange still being preserved in its proper relation to the balance of the sheet. In this form, the strip could be withdrawn from the roller through a suitable slot in the side of a roller-carrying box 25, as indicated in Fig. 6. In this form, the paper is brought off from the under side of the roller in the same relation as it would appear when placed upon the toilet seat, that is, the flange C is downturned to engage around the inner edge of the seat.

It is understood, of course, that the strip 11 as it leaves the rollers 13, 16, as indicated in Fig. 1, is in an upside down position and requires reversing of the individual lengths for use on the seat.

The stretching action of the crepe paper is indicated in Fig. 4 where the edge A is shown by the dash lines as being carried around into the stretched condition whereas the other edge of the paper is in a less stretched condition.

Of course, the forming device comprising the rollers 12, 13, 16, may be operated by any suitable means, or by hand, such as a crank 30 so that instead of having the formed covers stacked or rolled for future delivery, the crank 30 may be turned to deliver one complete cover as and when required.

It is obvious that the same product may be obtained by substantially the same process by employing a suitable paper and corrugating the inner edge portion, to shrink, in effect, that portion so as to curl the paper around in a plane to the desired curvature conforming to that required. The product would be the same—in the first described product, the outer edge portion of the cover has less wrinkles or corrugations than has the inner portion, and in the second described product, the two portions are in the same state. To produce the cover by corrugating the flat sheet 11, the rollers 13 and 16 would be provided with intermeshing corrugating ribs 26 and 27 respectively, starting at full depth from the small diameter ends of the rollers and extending at least partially along the rollers, as indicated in Fig. 7, to a shallower depth or tapering out into the smooth periphery at the large diameter ends of the rollers.

While I have herein shown and described my invention in the one particular form, it is further obvious that variations may be employed in the particular means for altering the length of one edge portion in respect to the other edge portion of the paper and I, therefore, do not desire to be limited to the precise form described beyond the limitations as may be imposed by the following claims.

I claim:

1. That method of making shaped toilet seat covers which consists of longitudinally stretching an area along one side of a strip of crepe paper initially having transverse wrinkles to cause the strip to assume a planar-curved condition approximating the contour of the seat, and longitudinally stretching said strip over a narrow transverse width along the opposite strip edge to form a flange angularly disposed to the balance of the strip therealong.

2. That method of making shaped toilet seat covers which consists of longitudinally stretching an area along one side of a strip of crepe paper initially having transverse wrinkles to cause the strip to assume a planar-curved condition approximating the contour of the seat, said area being gradually stretched longitudinally from a minimum degree along a zone adjacent the other side to a maximum at the outer edge of said first side, and also longitudinally stretching said strip over a width extending from said zone outwardly to said other edge to form a flange.

3. A toilet seat cover in the nature of an annulus comprising a strip of crepe paper having a downturned marginal flange substantially smooth and free of transverse wrinkles, a wrinkled zone extending from the flange and gradually merging into a substantially smooth zone adjacent the edge of the strip removed from said flange.

4. That method of forming and vending toilet seat covers which comprises pulling a strip of flat wound crepe paper from a roll thereof, stretching the outer edge portions of the strip to curve the strip into approximate seat contour and to cause one edge to turn angularly from the strip to form a seat retaining form, and tearing off a length of the curved strip sufficient in length to extend around the seat.

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