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FOLDING BOX.
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1,040,984.

Patented Oct. 8, 1912.

FIG. 1

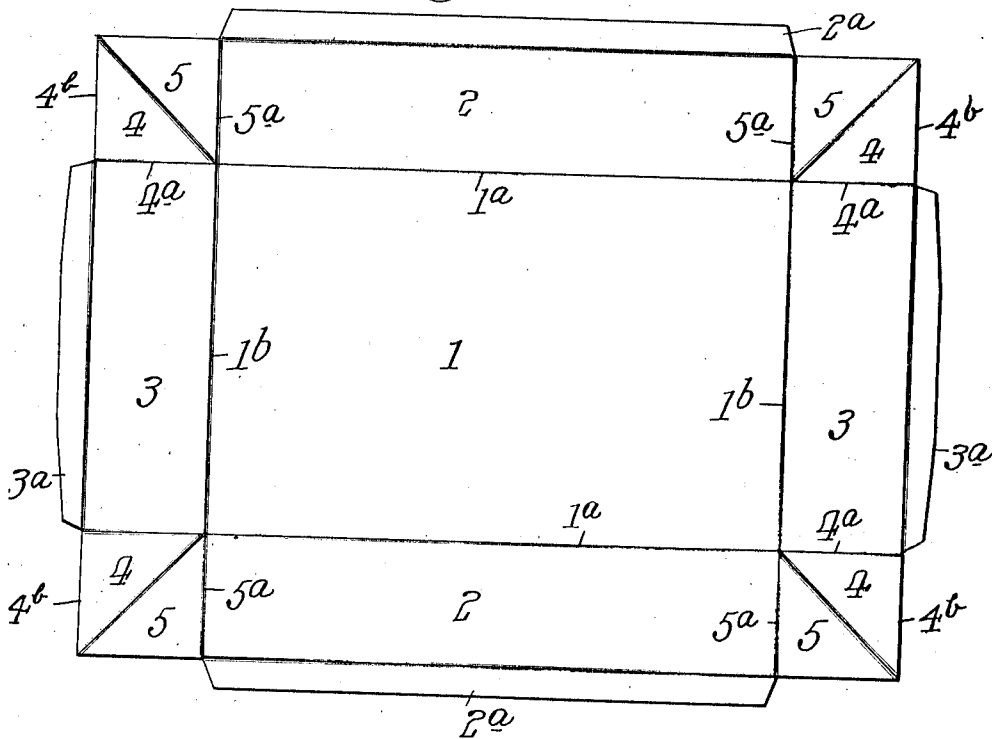
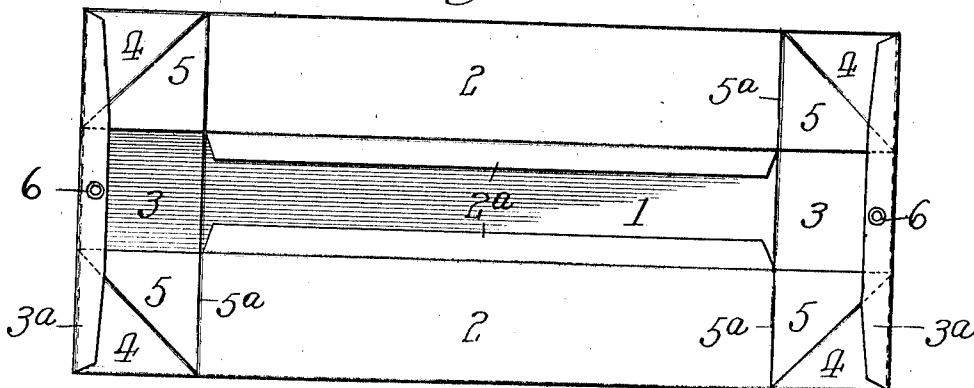


FIG. 2



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UNITED STATES PATENT OFFICE.

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FOLDING BOX.

1,040,984.

Specification of Letters Patent.

Patented Oct. 8, 1912.

Original application filed May 31, 1905, Serial No. 263,163. Divided and this application filed April 27, 1908. Serial No. 429,378.

To all whom it may concern:

Be it known that I, JOHN G. REBER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Folding Boxes, of which the following is a specification, this application being divisional of an original application filed by me on May 31, 1905, Serial No. 263,163.

My invention relates to folding boxes generally, but more particularly, though not necessarily, to that type or character of folding box known as hat boxes, suit boxes and the like, and the object of my invention is to produce a novel construction and arrangement of folding box possessing merits and features of utility not found in boxes of the general character as now in use.

My new box is so formed as to be economical of material or stock and also is so arranged as to be assembled or set up from its flat or collapsed form to a condition ready for use in an automatic manner by a simple manipulation consisting, in the present instance, in bringing the end walls toward each other, with the result that the parts of the box will spring up into assembled form and be locked in such condition in a single act.

Other features of advantage and utility will be apparent from the description hereinafter given.

In the accompanying drawing Figure 1 is a plan view of blank from which the box is formed, and Fig. 2 a plan view of the box in its flat or collapsed form.

As hereinbefore stated, my invention is particularly applicable to that type of folding boxes commonly referred to as hat boxes, suit boxes and the like, but it will be understood that my invention is not limited to such particular style or type of box, and that I contemplate employing my invention wherever applicable. However, for the purpose of affording a clear and definite disclosure of my invention, I have chosen to describe and illustrate it as embodied in a suit box.

Referring to the embodiment of my invention in the suit box, as illustrated in the drawings, such box, which is here formed from a single blank, comprises a bottom

1, to which are connected or hinged the opposite side walls 2 2 at the score lines 1^a, as well as the end walls 3 3 on the score lines 1^b. It will be understood that the bottom and also the side walls may be made of any suitable dimensions according to the desired size or proportions of the box, but inasmuch as the box now being described is a suit box, the walls 2 are made as in practice, somewhat longer than the end walls 3, and such distinction will be maintained throughout this description for the purpose of a clear explanation of my invention, although the relative dimensions or proportions of the walls is immaterial.

At the corners of the blank are formed pairs or sets of triangular folds or infolded portions 4 and 5 hinged to each other along an oblique or diagonal score line, the corner folds 4 being hinged to the ends of the end walls 3 along the score line 4^a, and the corner folds 5 being hinged to the side walls 2 along the score line 5^a. The end walls 3 are provided on their outer edges with extensions or flaps 3^a which are hinged thereto but of less height and in the present instance the opposite side walls 2 are provided with extensions 2^a which latter, however, are not essential.

In practice, the blank formed as above described is assembled or folded together for the use of the consumer or user in such manner as to appear in the flat or collapsed form shown in Fig. 2. In the process of folding, the side walls 2 2 are turned over inwardly and caused to lie flat upon the bottom 1 and the corner folds 4 5 are likewise turned over and inwardly upon the end walls 3 3 so as to lie with their inner faces flat upon the inner faces of said end walls. If desired, the outer or free edges 4^b of the corner folds 4 may be secured to the outer edges of the end walls 3 in any suitable manner, as by pasting, stapling, and the like, although it is obvious that these corner folds need not be secured or fastened to the end walls. The flaps 3^a of the end walls 3 are folded downwardly and suitably secured at their middle to their walls. As herein shown and by preference, these flaps 3^a are secured by means of eyelets 6, but other means of fastening may be employed in place thereof. The blank now assumes the condition illus-

trated in Fig. 2, in which form it is shipped to the consumer or user ready for use.

The box being in the flat or collapsed form just described, the operator simply folds up and brings the end walls toward each other, grasping such end walls at their middle portion where the eyelets are located, with the result that the side walls 2 2 will fold upwardly automatically by reason of the pressure exerted by the operator in folding the end walls upwardly and bringing them toward each other. At the same time the corner folds 5 move upwardly and outwardly, their upper edges slipping along the inner face of the flaps 3^a toward their outer ends and forcing them outwardly so as to admit said corner folds 5 underneath them, with the result that at the end of the operation of bringing the end walls toward each other, that is when such end walls assume their vertical position, the flaps 3^a will have engaged over the corner folds, thereby locking the box in its erect or assembled condition. In this condition, the corner folds 4 will remain as before with their inner faces against their end walls, while the outer faces of the two corner folds will be in juxtaposition. Inasmuch as the flaps 3^a are secured only at their middle portion, the same yield sufficiently toward their ends, to permit of the described folding or movement of the corner folds, after which such flaps take their position inside of and covering the upper edges of such folds, thereby holding them in place, as already described.

The lid for the box above described may be of any suitable arrangement or construction, but I prefer to make the same on the same principle as the body of the box and inasmuch as the box selected for this description is a suit box, it follows that the two parts thereof are similar, with the exception that one is slightly larger than the other to permit of the telescoping of one within the other.

By the use of my invention, I am enabled not only to obtain advantage in economy of stock or material, but also to dispense with the use of tongues and the like, which are objectionable in boxes of this character now in general use, not only because of the time required in setting up the box, but also because of the liability of one portion of the box catching in the tongues or slits, especially where, as in suit boxes, the two portions of the box are intended to slide or telescope into each other. In my form of box, the surfaces of the two portions which slide upon each other are smooth and do not present any interference one with another, with the result that one portion may be easily telescoped into the other in the intended and proper manner. Moreover, my form of box is much stronger than the usual form of box with such tongues and slits,

and is not liable to come apart in use. By the use of my invention I obtain the additional advantage of convenience and ease in manipulation in setting up the box ready for use, such erecting of the box and the locking thereof in such condition being accomplished practically automatically and in the act of up-folding and bringing the end walls toward each other, the side walls and corner folds springing up, as it were, into proper position, without any effort or attention on the part of the operator except that required for folding up the end walls, as stated. Furthermore, the locking of the parts of the box so as to maintain the same in its erect or assembled form is also accomplished automatically, inasmuch as the flaps 3^a of the opposite end walls 3 perform said locking function automatically in the act of erecting or assembling the box ready for use.

I claim:

1. A collapsed box, comprising a base, a pair of side walls and a pair of end walls hingedly connected to the base along folding lines, one set of walls lying flat on the base with infolded portions at the ends thereof, said infolded portions being also connected to the end edges of the other set of walls, flaps hingedly secured to the outer sides of the other set of walls, and means located adjacent the free ends of said walls for securing each flap between its ends to the wall upon which it is folded when the box is in collapsed condition.

2. A collapsed box, comprising a base, a pair of side walls and a pair of end walls hingedly connected to the base along folding lines, one set of walls lying flat on the base with infolded portions at the ends thereof, said infolded portions being also connected to the end edges of the other set of walls, said infolded portions being provided with a diagonal fold line upon which they fold in the erection of the box, flaps hingedly secured to the outer sides of the other set of walls, and means located adjacent the free ends of said walls for securing each flap between its ends to the wall upon which it is folded when the box is in collapsed condition.

3. A folding box comprising a bottom, walls connected therewith, pairs of triangular corner folds hinged to the ends of their adjacent walls, and flaps on the end walls adapted to fold inwardly and downwardly upon the corner folds to lock the box in set-up position, said flaps being secured intermediate their length to their walls with their ends free and arranged to fold upwardly to accommodate the upper edges of the corner folds in both the setting up and knocking down operation; substantially as described.

4. A folding box comprising a bottom,

walls connected therewith, pairs of triangular corner folds hinged to the ends of their adjacent walls, and flaps on the end walls adapted to fold inwardly and downwardly upon the corner folds to lock the box in set-up position, said flaps being secured substantially at their middle portion to their walls near the upper edges thereof and having their ends free to rise upwardly to accommodate the upper edges of the corner folds in both the setting up and knocking down operation; substantially as described.

5 5. A folding box comprising a bottom, walls connected therewith, pairs of triangular corner folds hinged to the ends of their adjacent walls, one member of each pair of corner folds being secured at one edge to its adjacent wall along the upper edge of the latter, and flaps on the end walls adapted to fold inwardly and downwardly upon the corner folds to lock the box in set up position, said flaps being secured intermediate their length to their ends walls, near the free edges of said walls to accommodate the upper edges of the corner folds in both the setting up and knocking down operation; substantially as described.

20 6. A collapsed box, comprising a base, a pair of side walls and a pair of end walls hingedly connected to the base along folding lines, one set of walls lying flat on the base with infolded portions at the ends thereof, said infolded portions being also connected to the ends of the other set of walls, flaps hingedly secured to the outer sides of the 35

other set of walls and means securing each flap between its ends to the wall upon which it is folded with the end portions of the flaps overlying the infolded portions.

7. A collapsed box, comprising a base, a pair of side walls and a pair of end walls hingedly connected to the base along folding lines, one set of walls lying flat on the base with infolded portions at the ends thereof, said infolded portions being also connected to the ends of the other set of walls, said infolded portions being provided with a diagonal fold line upon which they fold in the erection of the box, flaps hingedly secured to the outer sides of the other set of walls and means securing each flap between its ends to the wall upon which it is folded with the end portions of the flaps overlying the infolded portions.

8. A collapsed box, comprising a base, a pair of side walls and a pair of end walls hingedly connected to the base along folding lines, one set of walls lying flat on the base with infolded portions hingedly connected to the ends thereof, said infolded portions being also hingedly connected to the end edges of the other set of walls, flaps hingedly secured to the outer sides of the other set of walls and of less height than said walls, and means securing each flap between its ends to the wall upon which it is folded.

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