April 14, 1925. 1,533,636

E. DAY

COLLAPSIBLE BOX OR THE LIKE

Filed June 23, 1924 2 Sheets-Sheet 1

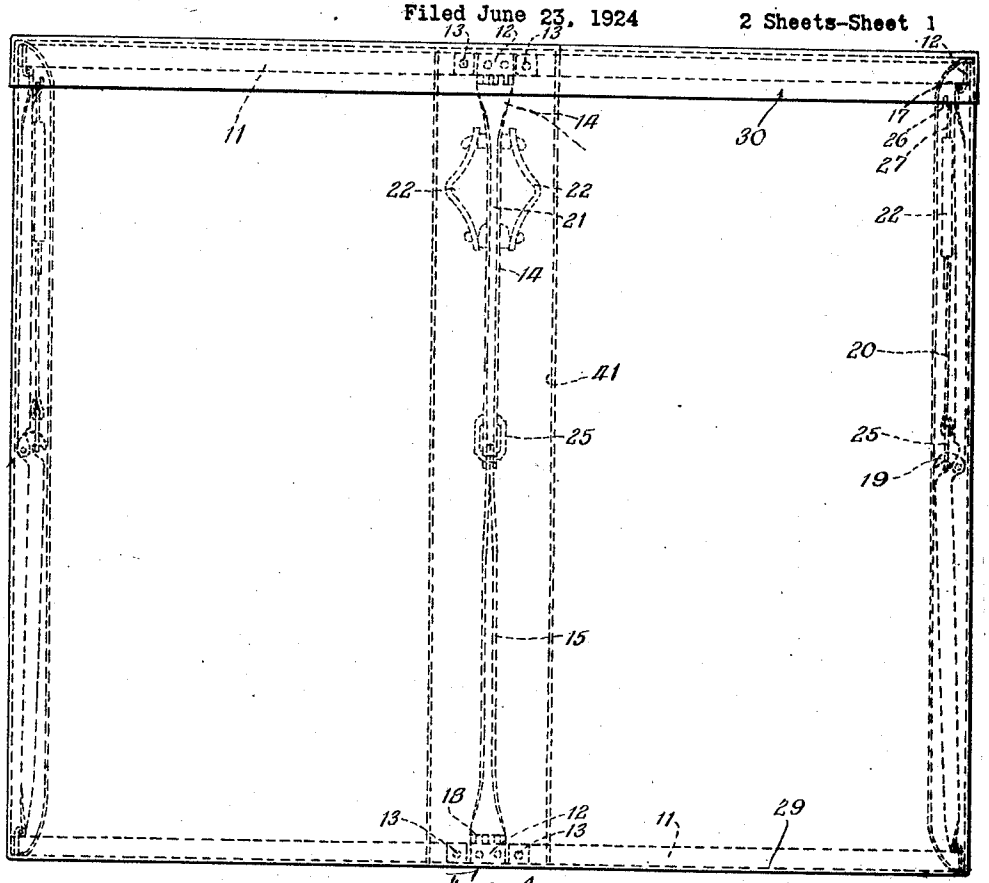


Fig. 1

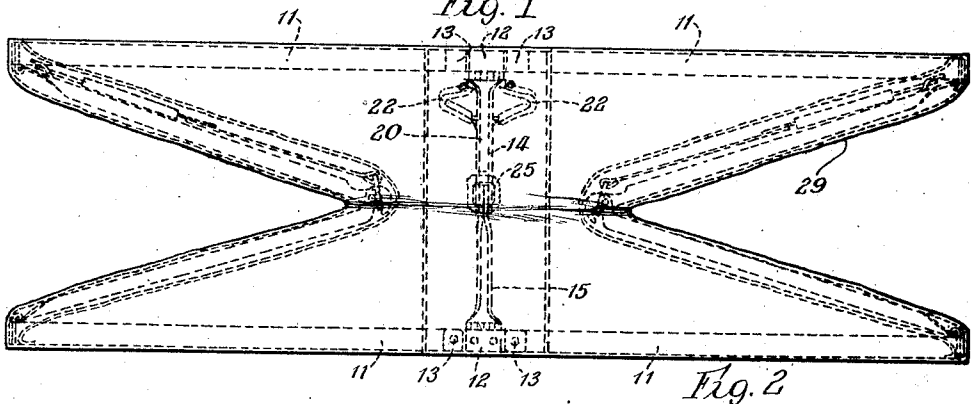


Fig. 2

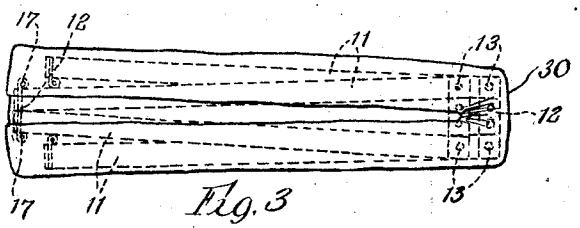


Fig. 3

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April 14, 1925.

1,533,636

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2 Sheets-Sheet 2

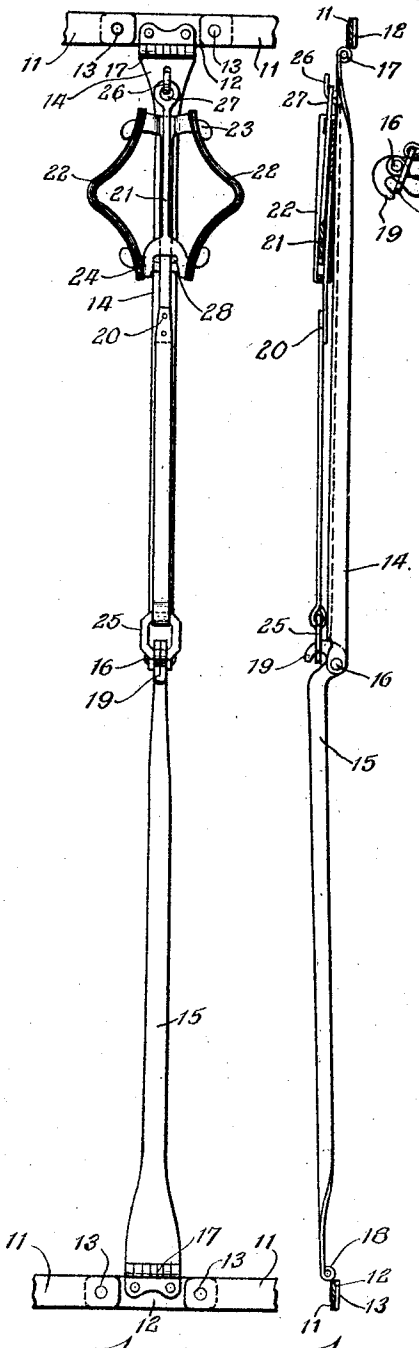


Fig. 4

Fig. 5

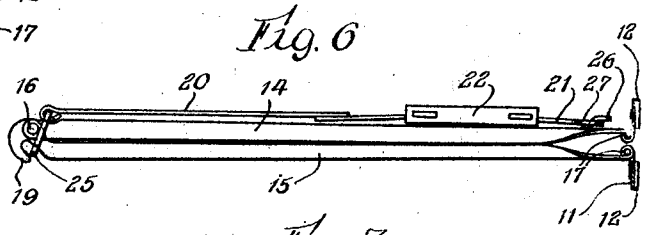


Fig. 6

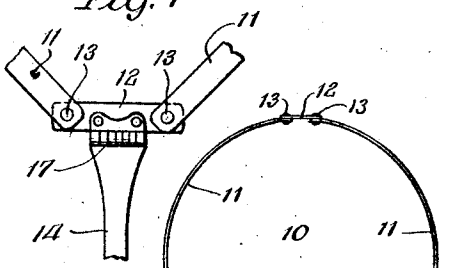


Fig. 7

Fig. 8

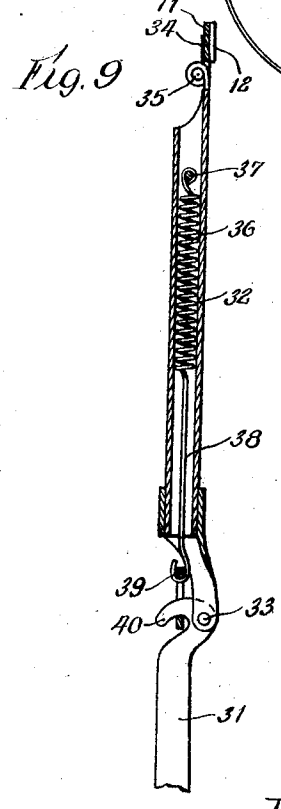


Fig. 9

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Patented Apr. 14, 1925. 1,533,636

UNITED STATES PATENT OFFICE.

ELIZABETH DAY, OF CHICAGO, ILLINOIS.

COLLAPSIBLE BOX OR THE LIKE.

Application filed June 23, 1924. Serial No. 721,632.

To all whom it may concern:

Be it known that I, ELIZABETH DAY, a subject of the King of England, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Collapsible Boxes or the like, of which the following is a specification.

This invention relates to improvements in collapsible box or container, particularly adapted though not necessarily limited in its use, for containing a hat or like article, and one of the objects of the invention is to provide an improved box of this character for the purpose of holding or containing a hat and when not in use may be readily folded into a compact space and may as readily be unfolded for use.

A further object is to provide an improved box or container of this character which will be of a simple, durable and light construction, and which will be effective and efficient in operation.

To the attainment of these ends and the accomplishment of other new and useful objects as will appear, the invention consists in the features of novelty in substantially the construction, combination and arrangement of the several parts hereinafter more fully described and claimed and shown in the accompanying drawings illustrating this invention and in which

Figure 1 is a view in side elevation of an improved box of this character constructed in accordance with the principles of this invention, showing the same unfolded for use.

Figure 2 is a view of the box showing the same in a partially collapsed condition.

Figure 3 is a view of the box showing the same folded.

Figure 4 is an enlarged detail elevation of one of the uprights.

Figure 5 is a view partly in side elevation and partly in section of Figure 4.

Figure 6 shows the upright of Figure 4 in a folded or collapsed condition.

Figure 7 is an enlarged detail view of one of the joints between the upright and one of the annular members of the box frame.

Figure 8 is a top plan view, on a reduced scale, and with parts omitted, of one of the annular members of the box frame.

Figure 9 is a view partly in elevation and partly in section showing a modified form of upright.

In the construction of the box there are provided two annular frame members designated generally by the reference numeral 10 in Figure 8. These annular members are of a sectional construction and consist of the sections 11, the ends of which terminate short of each other and the proximate ends of adjacent sections are connected by means of intermediate members 12 through the medium of suitable pivot connections 13. The pivots 13 permit the sections 11 to be folded with respect to each other and also with respect to the intermediate sections 12.

The annular members thus formed may be of any desired size and constructed of any suitable material, and the members are connected by a series of uprights, any number of which may be provided. The length of the uprights is determined by the height of the box or container that it is desired to construct.

Each of the uprights consists of section members 14—15 pivotally connected to each other adjacent one extremity thereof by means of a suitable pivot 16. One of the members, the member 14, is connected with one of the intermediate portions 12 of one of the annular members, preferably through the medium of a hinge or pivot 17. The axis of the hinge or pivot 17 is transverse to the axes of the pivots 13 so that when the annular member is folded the uprights may also be folded with respect to the annular member. The free end of the upright section 15 is also connected with one of the intermediate sections 12 of one of the annular members through the medium of a pivot 18 which is transverse to the axes of the pivots 13.

The end of the upright section 15 adjacent the pivot 16 is preferably provided with a hook shaped formation 19. Connected with the uprights are links 20—21, the proximate ends of which links overlap and interposed between the overlapping extremities are resilient elements 22, preferably in the form of springs. One end of the springs is anchored as at 23 to the link 20 and the other ends of the spring are anchored as at 24 to the link 21. The free end of the link 20 is connected with the hook shaped portion 19 of the section 15 of the upright through the medium of an intermediate link 25. The free end of the link 21 is anchored as at 26 to the section 14 of the upright. This anchoring means may be of any suitable con-

struction but is preferably in the form of a hook as shown, over which an eye 27 in the end of the link 21 is adapted to engage. The link 20 preferably passes through a suitable aperture or opening 28 in the adjacent portion of the link 21 so as to be guided thereby.

The stress of the springs 22 is such that it is constantly being exerted to separate the overlapping ends of the links 20 and 21 and is exerted at all times upon the sections 14 and 15 of the upright so as to hold the uprights in a proper position when unfolded and to operate to maintain a tension or stress upon the upright section members 14—15, when the latter are folded or collapsed for holding the parts in their folded position by reason of the fact that the stress of the springs 22 will through the medium of the link 25 be exerted upon the other side of the pivot 16 as shown more clearly in Figure 6.

The frame thus formed may be covered by a suitable covering 29 such as fabric or the like and the bottom of the box may be formed of similar fabric suitably reenforced. The cover 30 of the box may also be formed of suitable fabric and is provided with the usual encompassing flange to fit over the edge of the box when the cover is in place.

The bottom is adapted to be folded with the box frame and the cover 30 is also adapted to be folded so that the folded frame will fit within the cover as shown in Figure 3, thereby permitting the device to be collapsed into a compact space.

In the form of the invention shown in Figure 9, each of the uprights is of a sectional construction and consists of the sections 31—32 pivotally connected at one end as at 33, the end 34 of the section 32 being connected with the section 12 of one of the annular members, through the medium of a hinge 35. The element 32 is of a tubular construction and arranged therein is an elastic element 36, preferably in the form of a coil spring, one end of which is anchored to the section 32 as at 37. The other end of the spring 36 terminates in an extension 38, which extends through the end of the tubular section 32 adjacent the pivot 33. A link 39 connects the end of the extension 38 with the hook shaped portion 40 of the section 31 preferably adjacent the pivot 33.

With this form of the invention it will be manifest that when the sections 31—32 are folded with respect to each other the spring 38 will yield sufficiently to permit of the folding and unfolding operation and when in a folded or an unfolded position the spring 36 exerts its stress to maintain the sections 31—32 in their adjusted positions.

In the form of the invention shown in Figures 1 to 3, the uprights are preferably encased within a housing 41 formed by sewing or attaching a strip of fabric or similar material on the inside of the wall of the box and over the respective uprights so that the uprights will stand and operate within "pockets" so to speak.

With this improved construction it will be manifest that when not in use the box or receptacle may be folded into a compact space for packing which renders it easy for a traveler to be provided with a hat box which when desired may be unfolded for use for the reception of a hat or the like. At the same time there will be provided a simple, light and durable construction which will be effective and efficient in operation.

While the preferred forms of the invention have been herein shown and described it is to be understood that various changes may be made in the details of construction and in the combination and arrangement of the several parts, within the scope of the claims, without departing from the spirit of this invention.

What is claimed as new is:

1. A collapsible box or the like including a frame like structure, said structure including spaced sectional annular members, sectional uprights interposed between and connecting the annular members, the said parts being respectively foldable, the sections of the uprights being foldable from the periphery of the annular members inwardly, and means connected with the said uprights for maintaining them in folded and unfolded relation.

2. A collapsible box or the like including a frame like structure, said structure including spaced annular members of pivotally connected sections, uprights connecting the respective sections of the members, said uprights being formed of pivotally connected sections foldable inwardly from the peripheries of and between the annular members when the uprights are collapsed, the sections of the said annular member being foldable upon each other after the uprights are folded.

3. A collapsible box or the like including a frame like structure, said frame including spaced annular members, each of the members including a hinge section to which the other sections are pivotally connected, uprights connecting the said members, said uprights including sections pivotally connected together at one end, the other ends of the sections of the respective uprights being rigidly connected with the respective hinge sections of the said members, and formations associated with the uprights for maintaining the frame structure in folded and unfolded positions.

4. A collapsible box or the like including a frame like structure, said frame including spaced annular members, each of the members including a hinge section to which the

other sections are pivotally connected, uprights connecting the said members, said uprights including sections pivotally connected together at one end, the other ends of the sections of the respective uprights being rigidly connected with the respective hinge sections of the said members, and formations associated with the uprights for maintaining the frame structure in folded and unfolded positions, the sections of the uprights being foldable between the said annular members and the sections of the said annular members being foldable with respect to each other.

5. A collapsible box or the like including a frame like structure, said structure including spaced annular members, uprights connecting the members, each of said uprights including sections pivotally connected at one end, the other end of the respective sections being connected with the respective annular member, the sections of the uprights folding inwardly toward the diametric centers of the annular members, an elastic element connected with one of the sections of the upright, and means connected with the other section of the upright and operating upon the said elastic element for maintaining the structure in folded and unfolded positions.

6. A collapsible box or the like including a frame like structure, said structure including spaced annular members, uprights connecting the members, each of said uprights including sections pivotally connected at one end, the other end of the respective sections being connected with the respective annular member, the sections of the uprights folding inwardly toward the diametric centers of the annular members, an elastic element connected with one of the sections of the upright, and means connected with the other section of the upright adjacent the point of pivotal connection of the sections of the upright and operating upon the said elastic element for maintaining the structure in folded and unfolded positions.

7. A collapsible box or the like including a frame like structure, said structure including spaced annular members, uprights connecting the members, each of said uprights including sections pivotally connected at one end, the other end of the respective sections being connected with the respective annular member, an elastic element anchored with respect to one of the sections of the upright, a link operatively connected by one end with the said elastic element, and means connecting the link with the other section of the said upright.

8. A collapsible box or the like including a frame like structure, said structure including spaced annular members, uprights connecting the members, each of said uprights including sections pivotally connected at one end, the other end of the respective section being connected with the respective annular members, an elastic element anchored with respect to one of the sections of the upright, a link operatively connected by one end with the said elastic element, and a second link forming a connection between the first recited link and the other section of the said upright.

9. A collapsible box or the like including a frame like structure, said structure including spaced annular members, uprights connecting the members, each of said uprights including sections pivotally connected at one end, the other end of the respective section being connected with the respective annular members, an elastic element anchored with respect to one of the sections of the upright, a link operatively connected by one end with the said elastic element, a second link forming a connection between the first recited link and the other section of the said upright, and means for guiding the action of the first recited link and the said elastic element.

10. A collapsible hat box or the like including a frame like structure, said structure including spaced annular members including foldable sections, uprights connecting the members, said uprights including sections pivotally connected at one end, means pivotally connecting the other ends of the upright sections to the respective annular members on axes transverse to the axes of the pivots between the sections of the respective annular members, whereby the sections of the uprights will fold between the annular members, and resilient means co-operating with the sections of the said uprights for maintaining the structure in folded and unfolded positions.

In testimony whereof I have signed my name to this specification, on this 16th day of June, A. D. 1924.

ELIZABETH DAY.