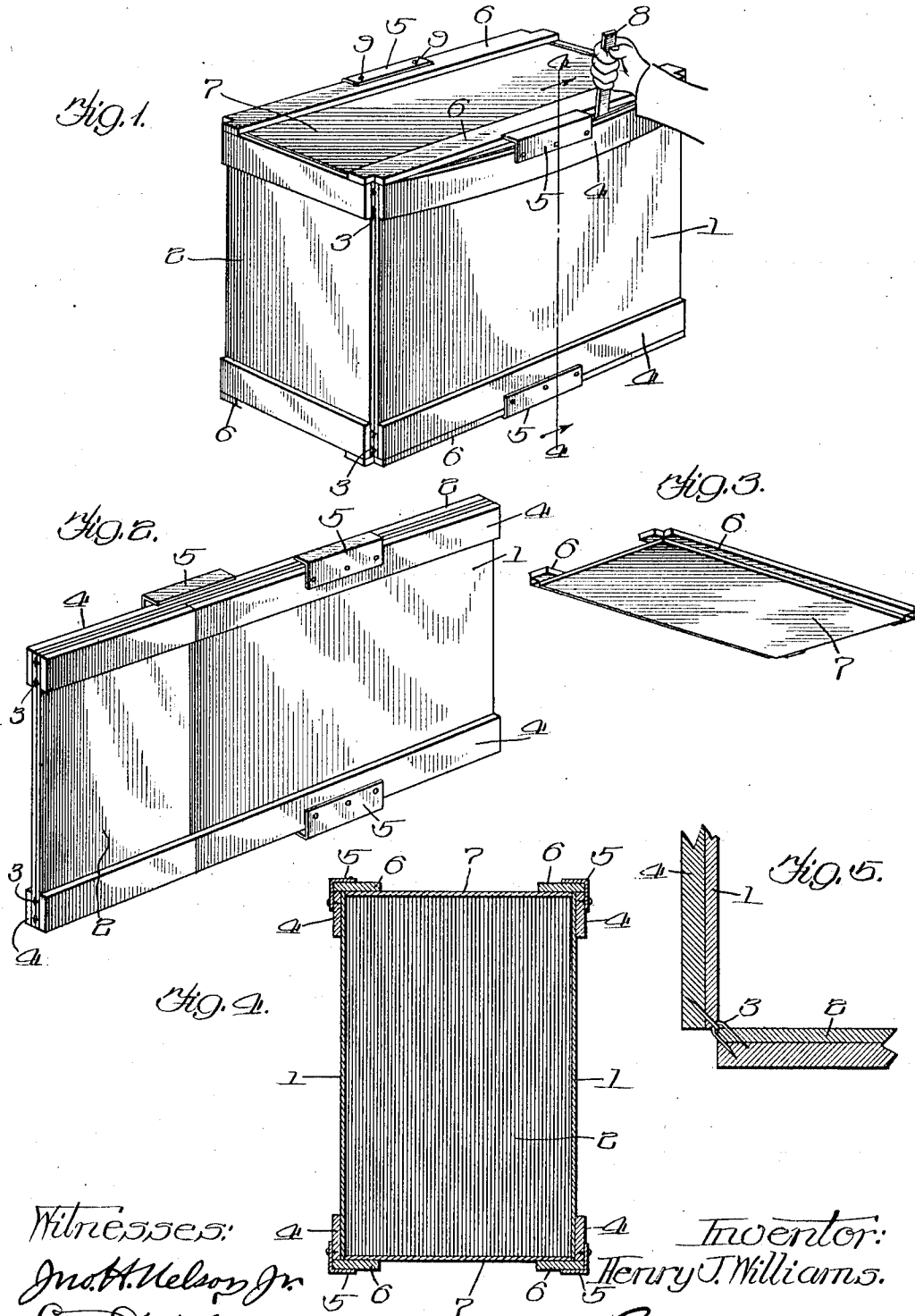


H. J. WILLIAMS.
FOLDING BOX.
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Patented Feb. 25, 1913.



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UNITED STATES PATENT OFFICE.

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FOLDING BOX.

1,054,378.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HENRY J. WILLIAMS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Folding Boxes, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to boxes, the term being employed in a broad sense to cover receptacles whose walls are continuous or imperforate, or which are made with clear spaces therebetween as in the formation of crates, for example.

As the invention is preferably practised, the box includes six walls whereby the box contents may be completely closed, though the invention is not to be limited to the presence of a wall that serves completely to close the box.

In the preferred embodiment of the invention the body of the box is formed of four walls and which are hinged together at the corners of the box body so that said box body may readily be collapsed, though the invention is not to be restricted to a collapsible box body and the number of its walls. This box body has one or two complementary wall portions secured thereto in accordance with my invention. As my invention is preferably practised each box wall, which is to be secured in position with respect to the balance of the box structure, is provided with one element of a fastening device which is adjacent to a box body wall provided with a complementary element of such fastening device, this complementary element being provided upon a marginal portion of the box wall which carries it and which marginal portion is springlike or resilient. By means of a suitable tool the resilient box wall portion may be flexed from its normal plane so as to enable the elements of the fastening device to be placed in suitable alinement whereafter these fastening elements may be mutually engaged when the flexed box wall portion is relieved of its flexing influence. Where the box body and each wall portion to be applied thereto are to be adapted for complete separation there are associate duplicated fastening devices upon opposite sides of the box body.

I will explain my invention more fully

by reference to the accompanying drawing showing the preferred embodiment thereof and in which—

Figure 1 is a perspective view of a box constructed in accordance with the invention; Fig. 2 is a perspective view illustrating the box body in collapsed position; Fig. 3 is a perspective view of one of the wall portions to be applied to the box body; Fig. 4 is a sectional view taken on line 4 4 of Fig. 1; and Fig. 5 is a sectional view on line 5 5 of Fig. 1.

Like parts are indicated by similar characters of reference throughout the different figures.

The box body includes two side walls 1 and two end walls 2, the side walls being articulated with the end walls, at the corners of the box body by means of staples 3 (Figs. 1 and 5) whereby the box body may be collapsed into the shape illustrated by Fig. 2. I have shown each side wall 1 with spring cleats 4 margining its top and bottom horizontal edges to make the top and bottom edge portions of the side walls of the box sufficiently springlike or resilient to accomplish the object of my invention. I do not limit myself however to the provision of the extra pieces 4. Each piece 4 that is to be brought into fixed relation with a box wall is provided with one element 5 of some suitable form of fastening device, such as an angular metal clip. The vertical portions of the clips 5 are fastened to their complementary spring supports 4 while the horizontal portions of these clips are removed sufficiently away from the spring elements 4 as to permit the reception of complementary elements 6 of the fastening devices between the elements 5 and the box body, these complementary elements 6 being desirably in the form of strips which margin the side edges of the box wall or walls 7 to be held in position though I do not limit myself to the provision of the extra strips 6 for the purpose of my invention. As the invention is embodied the strips 6 are received between the horizontal portions of the fastening elements 5 and the box body, the box body being thus entirely interposed between the strips 6 at the top of the box and the strips 6 at the bottom of the box, though of course the invention is not to be limited to this arrangement. When the box body is collapsible the portions of

the top and bottom walls 7 that carry the fastening elements 6 are surrounded by the box body and engage the walls thereof (Fig. 4) thereby further to assure the maintenance of the angular relation between the walls of the box body.

In assembling the parts, the box body is first placed in normal shape, if the box body is collapsed, whereafter the portion 6 of the wall to be added is tucked between the horizontal member of one fastening element 5 and the box body, whereafter a tool 8 is brought to bear upon the spring member 4 carrying the fastening element 5 opposite the aforesaid fastening element 5, as illustrated in Fig. 1, to spring said opposite fastening element 5 outwardly clear of the wall to be added, the tool 8 being disengaged when the wall to be added is placed in proper position and with its portion 6 in line with the space intervening between said opposite fastening element 5 and the adjacent edge of the box body, the resilience of the previously flexed spring member 4 becoming effective to move the fastening element 5 supported thereby into position with its horizontal portion over the complemental fastening element.

It will be observed that the fastening elements 5 are of limited length and that they are disposed at intermediate portions of their supporting spring members 4 so that the ends of these fastening elements 5 may be moved clear of the space occupied or to be occupied by the wall portion or portions to be added or fastened to the box body.

The fastening elements 5 are desirably of metal and are thus made separately from the balance of the box structure, though I do not limit myself to these characteristics.

After the parts of the box have been assembled, nails 9 may be driven through the horizontal portions of the elements 5 into the elements 6. One of the elements 5, only, has the nails 9 shown in connection therewith, the illustration of the nails and the holes therefore being omitted elsewhere for the sake of clearness. It is obvious that when the nails 9 or other fastening elements are withdrawn the box may readily be opened, the process of assembly being reversed in opening the box.

While I have herein shown and particularly described the preferred embodiment of the invention I do not wish to be limited to the precise details of construction shown as changes may readily be made without departing from the spirit thereof, but

Having thus described my invention I claim as new and desire to secure by Letters Patent the following:—

1. A box structure including a box body; a box wall to be secured thereto; and a fastening device having complemental elements upon adjacent portions of the box body and the wall to be fixed with respect thereto, the

element of the fastening device upon the box body being in the form of an angular clip having one branch upon the box body and its other branch spaced apart from the box body for the reception between it and the box body of the complemental fastening element, the portion of the box body carrying said clip being resilient and movable from the other wall portion upon being outwardly flexed so as to permit movement of the clip from its normal fastening position, the clip being located at the middle part of said resilient portion to permit clearance of this clip from its operative position.

2. A box structure including a box body; a box wall to be secured thereto; and a fastening device having complemental elements upon adjacent portions of the box body and the wall to be fixed with respect thereto, the element of the fastening device upon the box body being in the form of an angular clip having one branch upon the box body and its other branch spaced apart from the box body for the reception between it and the box body of the complemental fastening element, the portion of the box body carrying said clip being resilient and movable from the other wall portion upon being outwardly flexed so as to permit movement of the clip from its normal fastening position.

3. A box structure including a box body; a box wall to be secured thereto; and a fastening device having complemental elements upon adjacent portions of the box body and the wall to be fixed with respect thereto, the portion of the box body having one of said elements being resilient and movable from the other wall portion upon being outwardly flexed to permit of the proper relative positioning of said elements, the fastening element provided upon the resilient portion being located at the middle part of said resilient portion to permit clearance of this fastening element from the operative position of the complemental fastening element.

4. A box structure including a box body; a box wall to be secured thereto; and a fastening device having complemental elements upon adjacent portions of the box body and the wall to be fixed with respect thereto, the portion of the box body having one of said elements being resilient and movable from the other wall portion upon being outwardly flexed to permit of the proper relative positioning of said elements.

5. A box structure having two wall portions which are to be fastened together and including a fastening device having complemental elements upon adjacent parts of said wall portions, the wall portion carrying one of said fastening elements being resilient and movable from the other wall portion upon being outwardly flexed, whereby the complemental elements of said fastening device may be separated in order to establish

proper relation therebetween, the fastening element provided upon the resilient portion being located at the middle part of said resilient portion to permit clearance of this fastening element from the operative position of the complemental fastening element. 15

6. A box structure having two wall portions which are to be fastened together and including a fastening device having complemental elements upon adjacent parts of said wall portions, the wall portion carrying one of said fastening elements being resilient

and movable from the other wall portion upon being outwardly flexed whereby the complemental elements of said fastening device may be separated in order to establish proper relation therebetween.

In witness whereof, I hereunto subscribe my name this ninth day of July A. D., 1912.

HENRY J. WILLIAMS.

Witnesses:

ETTA L. WHITE,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."