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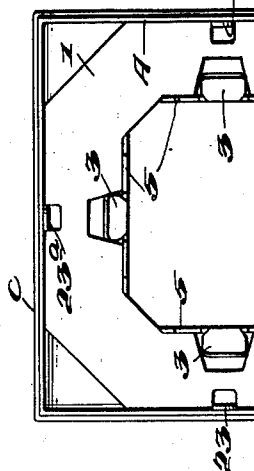
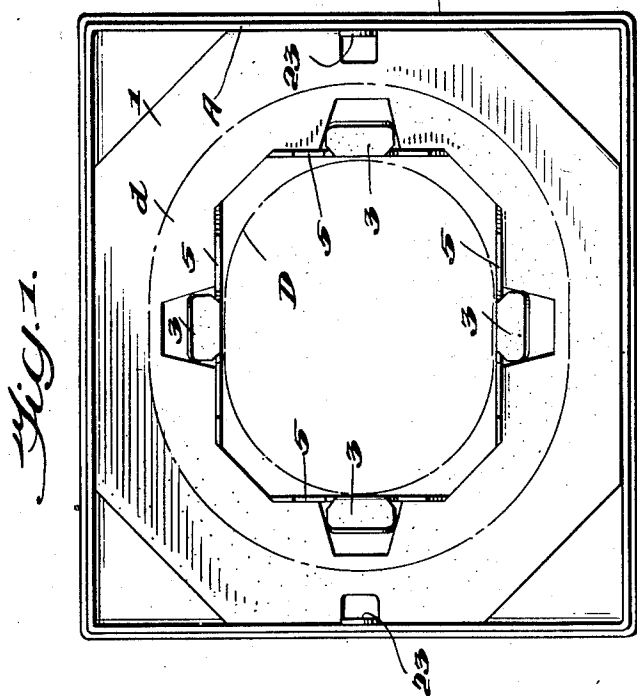
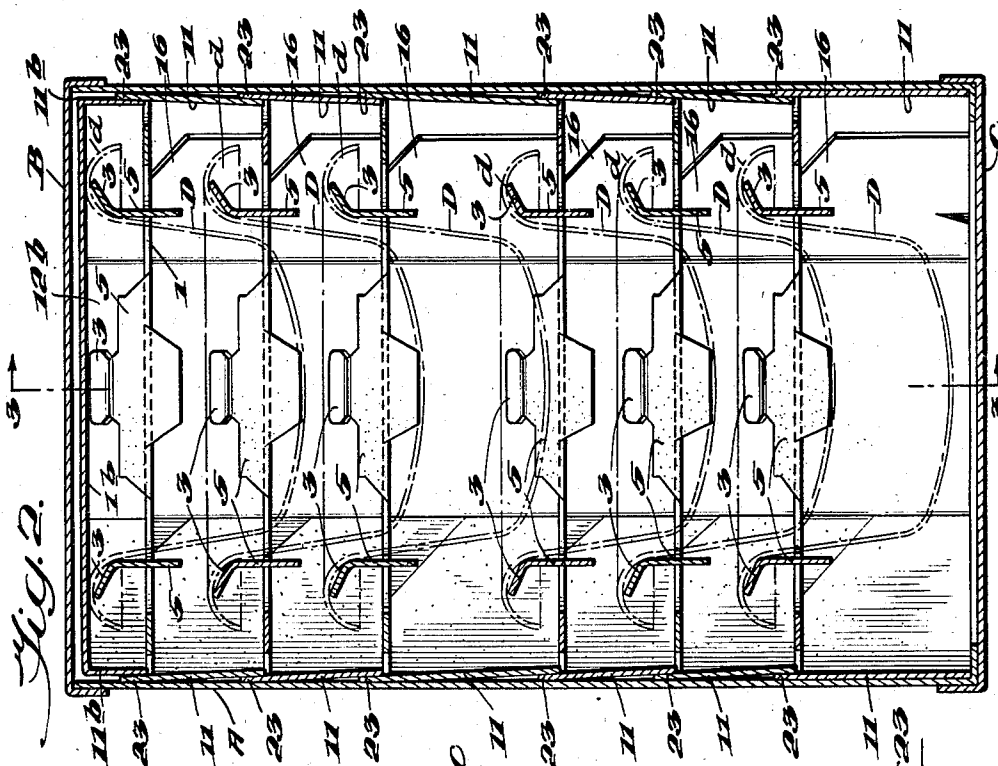
J. G. HUYE

2,384,680

HAT PACKING STAYS AND COMBINATION PACKAGE

Filed Jan. 26, 1942

3 Sheets-Sheet 1



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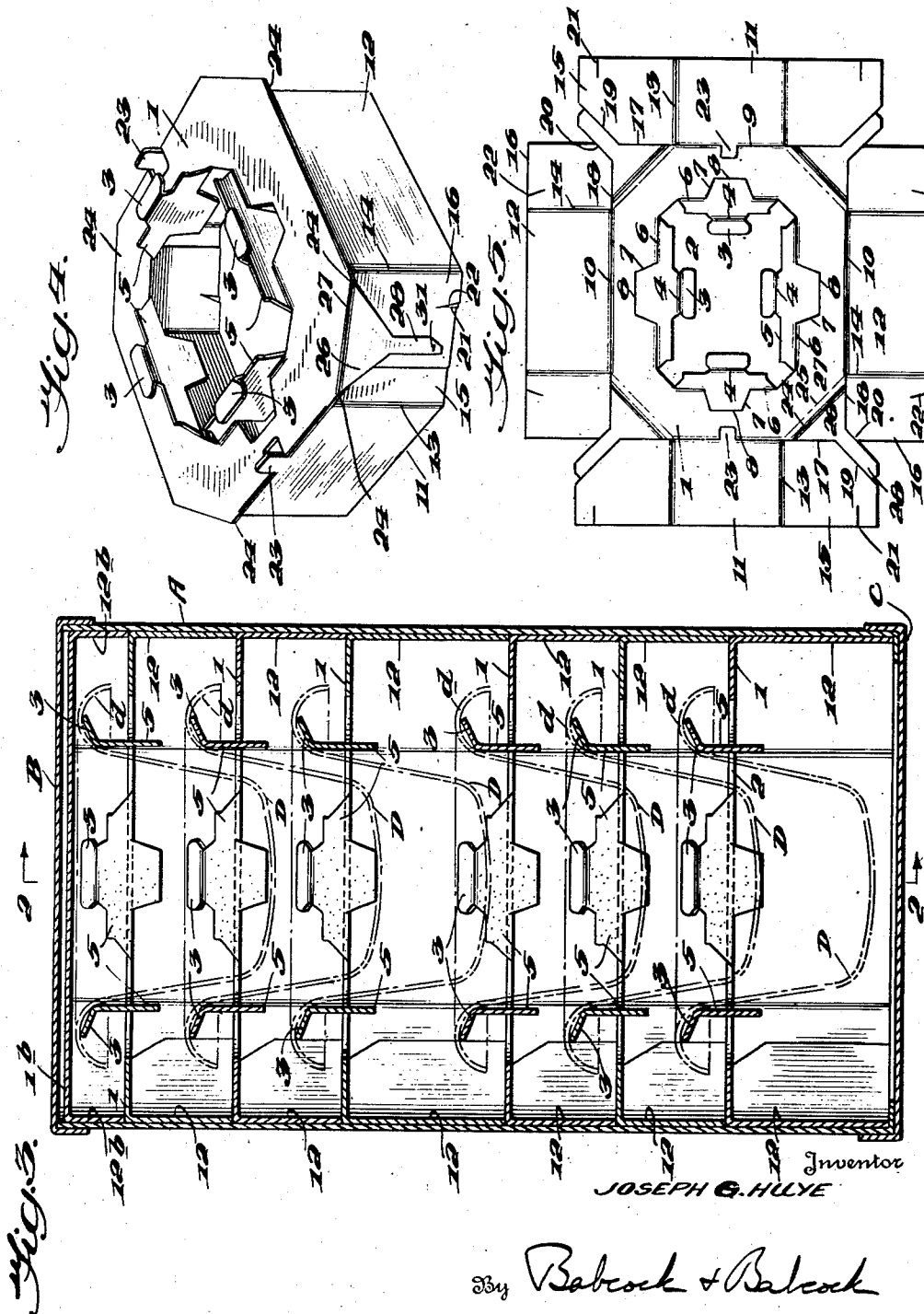
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3 Sheets-Sheet 2



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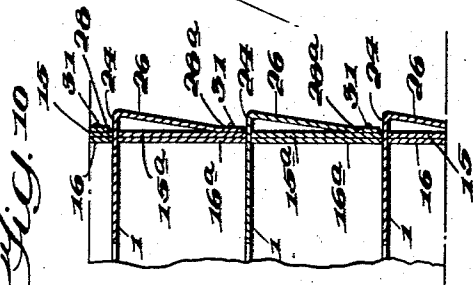
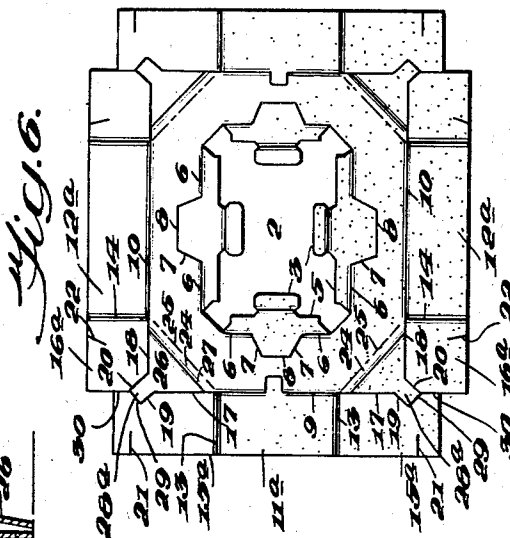
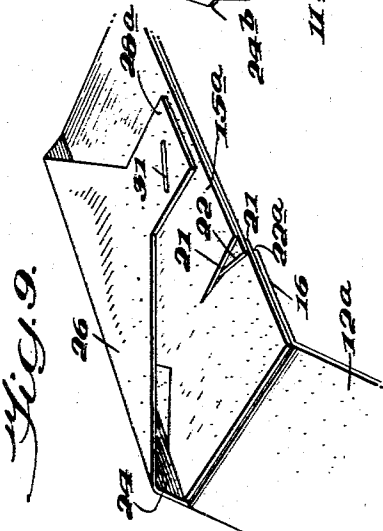
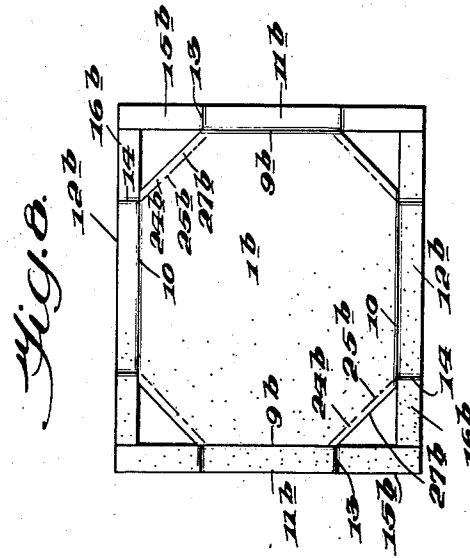
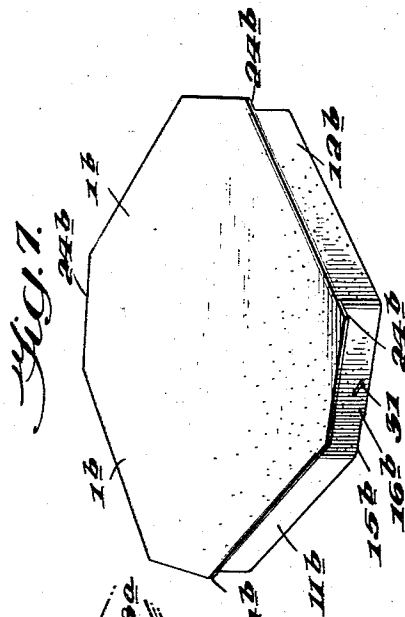
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3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

2,384,680

HAT PACKING STAY AND COMBINATION
PACKAGE

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Application January 26, 1942, Serial No. 428,294

7 Claims. (Cl. 206—8)

This invention relates to hat packing stays of the broad general type shown and described in Patent No. 2,136,744 granted to me on November 15, 1938, for Hat packing stay and combination package and Patent No. 2,180,524 granted to me on November 21, 1939, for Hat packing stay and combination thereof with a hat box and broadly speaking functions in a manner similar thereto to accomplish the same broad purposes.

More specifically stated, in addition to achieving the objectives set forth in my Patent 2,180,524, the primary objects of my present invention are to provide a hat packing stay dispensing with all need for supplementary stay means while yieldably individually receiving and supporting a hat and cooperating with the other stays, spacer and box to prevent shifting movement by any of the stays; to provide stays which may be employed to pack a number of hats, for instance six or more, in a shipping box of suitable size and shape, either in a single stack or in several stacks all according to the size and shape of the shipping box, and which thereafter may be transferred by the retailer from the shipping box to retailing boxes on the retailer's shelves, transferring the stays and the hats together as a unit or up to three units as a stack, or transferring the stays and hats separately all according to the preference and skill of the particular person doing the job; to provide stays normally functioning to resiliently support the hats which are inverted in position from the position of the hats shown in Patent No. 2,180,524; to provide for a continuous substantially constant pressure yielding or resilient supporting contact at a number of points about the center of each hat between each stay and its contained and supported hat while avoiding all other contact between said hat and its supporting stay and all other stays or elements; to specially braced end or corner supporting portions whereby a lighter weight board than otherwise may be employed to pack a given weight of hat in a given weight shipping box; and to otherwise simplify the construction and production of such packing stays while increasing their efficiency and reducing their manufacturing costs and shipping weight.

In the accompanying drawings:

Figure 1 represents a top plan view of a stack of hat stays embodying my invention as arranged in a hat shipping box and showing the upper hat in broken lines, the top spacer and cover of the box being omitted;

Figure 2, a sectional view on the line 2—2 of Fig. 3, looking in the direction of the arrows and

showing the spacer and cover of the shipping box, the hats packed in the box by means of said stays being indicated in broken lines;

Figure 3, a sectional view on the line 3—3 of Fig. 2, looking in the direction of the arrows, and showing the top spacer and cover of the shipping box, the hats packed in the box by means of said stays being indicated by broken lines;

Figure 4, a perspective view of a high stay;

Figure 5, a plan view of a blank from which the high stay of Fig. 4 is formed up or erected;

Figure 6, a plan view of a blank from which a low stay is formed or erected;

Figure 7, a top perspective view of the spacer;

Figure 8, a plan view of the blank from which the spacer of Fig. 7 is formed up or erected;

Figure 9, an enlarged fragmentary detail perspective view of an end portion of the low stay;

Figure 10, an enlarged detail fragmentary sectional view through portions of several stacked stays, omitting the hats, according to this invention; and

Figure 11, a fragmentary reduced size view showing a modification which may be embodied in all packing stays according to this invention.

Referring now in detail to the drawings, A designates the body of the shipping box; B, the top of said box; C, the bottom of said box; D, the individual hats packed by means of the packing stays in said box; and *d* the respective brims of the respective hats D.

Assuming that six hats are to be packed by means of the packing stays and spacer of the instant invention in a shipping box in a single vertical stack, a high stay would be arranged in the bottom of the box as the bottom stay of the stack, then would come successively next in order two low stays; preferably next in order would come a high stay, then successively two low stays, then the top spacer and finally the top B of the shipping box. This arrangement permits the shipping of two each of three different sizes of hats in the one shipping box, without any hat interfering with another hat. To accomplish this result, one of the two largest hats would be supported in the high stay at the bottom of the stack and the other of said two hats would be supported in the other high stay, the fourth from the bottom of the stack; one of the two medium size hats would be supported in the low stay, the second from the bottom of the stack and the other of said two hats would be supported in the low stay the second from the top of the stack; and one of the two smallest hats would be supported in the low stay, the third from the bottom of the stack

and the other of said two hats would be supported in the low stay at the top of the stack, the top spacer disposed over the brim of the top smallest size hat protecting the brim of the topmost hat and being of such height as to substantially fill the space between the upper face of the top stay of the stack and the lower face of the top or cover B of the box.

Each high stay is formed as a flat sheet having a top portion or body 1 with a large central hat-crown receiving opening 2, all as will be seen from Figures 4 and 5. Integral with said top portion or body 1 and hingedly connected therewith along the fold lines 6 at the side and end edges or portions defining said opening 2 are the swingable or cradling members 5 having a downwardly tapering portion depending below said top portion or body 1 and formed by cutting the material of the flat blank laterally outwardly from the adjacent ends of the fold lines 6 of the respective members 5 along two slightly converging lines 7 and connecting the outer end portions of the cut lines 7 by a cut line 8. Each member 5 has an upwardly presented outwardly inclined resilient yieldably upwardly pressed or swingly upwardly pressed hat brim contacting and supporting member 3 integrally connected with said member 5, preferably opposite the downwardly tapering portion of said member, by a fold line 4. The inherent natural resiliency of the card-board or paper-board or paper material from which each said stay is formed is relied upon to resiliently press, urge or swing each member 5 to swing inward with its upper part toward the center of the opening 2 while the downwardly tapering portion by the same action is urged to swing upward and outward about an axis coincident with the center of the corresponding fold lines 6, and also to resiliently press, urge or swing each foot, contact or supporting member 3 upward and inward of the opening 2 with respect to its corresponding member 5 about the axis of the hinge fold 4.

Integrally connected by fold lines 9 with the ends respectively of the top portion or body 1 are the end lips or flanges 11 and similarly side lips or flanges 12 are integrally connected with the sides of said top portion or body 1 by fold lines 10.

Fold lines 13, in the erected condition of the stay extending vertically, integrally connect end tongues 15 respectively with the respective side portions of the respective end flanges 11.

Fold lines 14, in the erected condition of the stay extending vertically, integrally connect side tongues 16 respectively with the respective end portions of the respective side flanges 14.

The end tongues 15 are respectively formed by cutting along a line 17 in alignment with the center of the hinge line 9 from the adjacent end of said hinge line 9 to the point of intersection with the adjacent foot portion 28 of the adjacent brace 26 of the adjacent corner overhang portion 24, and from said point of intersection is cut along a line 19 at an angle of approximately ninety degrees to the line 17 to the point of intersection with the end edge of the respective tongues 15.

Likewise the side tongues 16 are respectively formed by cutting along a line 18 in alignment with the center of the hinge line 11 to the point of intersection with said adjacent foot portion 28, and from said point of intersection is cut for a short distance along a line 20 extending at an angle of approximately ninety degrees to the

line 18 and parallel or substantially parallel to the line 20.

Each pair of fold lines 13 and 14 at each corner portion is at a slight distance from the extreme side and extreme end respectively of the top portion 1 so that when said respective pairs of end tongues 15 and side tongues 16 are lapped in pairs to respectively extend as composite units at angles of approximately forty-five degrees to said side flanges 12 and end flanges 11 as indicated by the broken lines 25 respectively in Figure 5.

An approximately triangular form brace 26 is connected integrally at each corner of the top portion 1 and respectively by a hinge or fold line 27 respectively extending at substantially forty-five degrees to the adjacent portions of the adjacent side and end edges of said top portion and substantially parallel to the respective corresponding broken lines 25 along lines coinciding with the extreme outer edge portions of the respective overhang portions 24 and is formed with a preferably integral long foot or leg portion.

In the erected condition of the stays the side and end flanges 12 and 11 extend substantially at right angles to the top portion 1 and to each other, the end tongues 15 are lapped over outside of the side tongues 16 respectively and then the respective braces 26 are swung about their respective fold lines 27 until the lower portions of their respective legs or feet 28 contact the opposed outer faces of the respective end tongues 15 with the respective overhangs 24 extending in a plane perpendicular to the planes respectively of said end tongues 15 and with the respective parts at the respective corners related to each other in the relationship stated, they are secured together permanently or securely in any suitable manner, as by means of a staple 31 extending through said leg or foot 28, end tongue 15 and side tongue 16 respectively at each of the four corners of each stay.

Each end tongue 15 may be formed with a vertical slit or cut 21 extending substantially perpendicularly from its lower edge and each side tongue 16 may be formed with a slanting vertically disposed slit or cut 22 extending from its lower edge, the location of said slits in the respective tongues being such that when each pair of tongues 15 and 16 is lapped, their slits 21 and 22 will substantially register in position so that the portions of said tongues adjacent said slits or cuts may be interlocked as a temporary expedient to hold the stay or a given corner thereof in erected or semi-erected condition until the brace 26 with its leg or foot 28 can be properly positioned and secured in position by more permanent means, such as the staple 31 as above mentioned.

Of course it is quite immaterial whether the end tongues 15 are lapped outside of the side tongues 16 or vice versa, either way will serve equally well.

The low stays are the same in construction and operation as the high stays except that in the blank, as shown in Fig. 6, the side flanges 12a and end flanges 11a are narrower than the side flanges 12 and end flanges 11 of the high stay so that as erected the low stays will be appreciably lower than the high stays, as clearly appears from Figures 2 and 3; and the leg or foot portion 28a of each of the braces 26 is made correspondingly shorter by cutting along the line 29 in end tongue 15a to connect the two cut lines

19 and 20 and by cutting along a line 30 extending from the intersection of cut or sever lines 20 and 29 in line with severance or cut line 17 to sever the adjacent parallel edge portions, when in the flat or blank form, of the tongues of the respective pairs of tongues 15a and 16a respectively.

The top spacer as shown in Figures 2 and 3 serves the dual purposes of covering and closing the upper end of the stack, thus serving as an additional guard against the ingress of dust and dirt to the interior of the stack where by the possible twisting or movement of a stay, or a hat in a stay, however slight such movement might be, such dust or dirt or grit might be ground into one or more of the hats in the shipment; and also as a means for filling the space between the top of the stack and the lower face of the box cover B to thus prevent relative endwise movement between the stack of stays and the top B or bottom C of the box or between one or more stays and the box or between any two stays with relation to each other.

Preferably each stay will be formed with a tongue or positioning guide 23 preferably cut out of the top portion 1 and rigid and integral with the corresponding end flange 11 or 11a as the case may be, the inner faces of the respective guides 23 of a lower stay engaging, guiding and centering the lower central portions of the outer faces of the respective end flanges 11 or 11a, as the case may be, of the stay immediately next above.

In operation the two yielding resilient folds or hinge means 4 and 6 of the four supporting feet or contacts 3 and their corresponding swingable members 5 will serve to maintain constant supporting contact between the stay and the individual hat supported and cradled by each hat and will prevent any relative movement between said hat and any of the supporting feet such as might result in injuring or scoffing off some of the knap of the hat felt, while avoiding any contact between the contained hat and any sharp edge or stiffly presented or unyielding portion of the stay or stays.

If the shipping box were laid on its side, while the crowns of the individual hats might have a tendency to droop sidewise under the pull of gravity the members 5 with their respective supporting feet or contacts 3 are so interrelated that they would cooperate in absorbing any jar incident to the box falling over on its side, that is, in insulating the contained hat against the effects of the jar and also in holding the hat in a generally horizontal position out of contact with any part or portion of any of the stays or of the box except of course for the contact between the swingable members 5 and their supporting feet or contacts 3 of a given stay and the particular hat supported or cradled in such stay.

The guides or tongues 23 are useful to ensure that the lower edge of the end flanges 11 or 11a, as the case may be, are not shoved endwise, in arranging the stack, beyond the supporting top surface of the end portion of the top portion 1 of the next immediately below stay, and is particularly useful where the stays and hats are arranged in stacks prior to, and as a preliminary step in, arranging the packed hats in shipping boxes or cases.

In the modification shown in Figure 11 the construction and operation are the same as illustrated and described above except that additional guides 23a are provided medially of the fold lines 10 to extend rigidly vertically from the medial

upper portions of the side flanges 12 when the latter are folded on the fold lines 10 to the position shown in Fig. 3, said opposed pair of guides 23a cooperating with the opposed pair of guides 23, arranged in a direction at right angles thereto, to hold stays stacked outside of shipping boxes against any endwise or sidewise movement in a plane parallel to the top surface of any of the stacked stays to prevent any slippage between them which might result in loss of support and toppling of the stack.

In case one of the upper stays should move or be moved endwise or slightly endwise and sidewise so that its lower edges of its lapped tongues 15 and 16 or 15a and 16a as the case may be got out of registry with the similar edges of the stay immediately next below and so that said edges of said tongues bore on a portion of the overhang 24 of the immediately next below stay at a distance outside of and beyond the upper supporting edges of said tongues of said stay, the brace 26 with its anchored leg or foot 28 or 28a, as the case may be, will fully, positively and efficiently support such overhang, even though the stay and said overhang 24 be made of very thin light weight material, whereas in the absence of such a brace the material would require to be relatively stiff and heavy to sustain the load that might be placed upon the overhangs 24 if unbraced.

The top spacer shown in perspective view in Figure 7 and in top-plan view of flattened out blank in Figure 8 comprises a top portion or body 1b of unbroken, or preferably unbroken, area with the end flanges 11b integral therewith and folded down in erected condition, as shown in Fig. 7, along fold lines 9b, and with the side flanges 12b integral with said body and in the erected condition of the spacer folded down along the fold lines 10, the end laps 15b and side laps 16b respectively being integral with the respective end and side flanges and being lapped in pairs to extend across the corner portions and positively secured together by any means suitable to the purpose, as by staples 31.

As thus secured together the pairs of tongues will have their upper edges in contact with the lower face of the body 1b and respectively substantially along the lines indicated by broken lines 25b, leaving corner overhang portions 24b between the broken lines 25b and the extreme corner edges 27b to insure that the upper edges of said pairs of tongues extend beneath corner portions of the body 1b, though while this is preferred it is not viewed as vitally essential.

In the drawings the thickness of the paper board, cardboard or paper material employed both for the parts of the shipping box and for the stays and spacer has been greatly exaggerated for purposes of clarity of illustration and in line with this and to be in proportion in relation thereto there has been illustrated in Figures 2 and 3 an appreciable interval or space between the lower face of the top B and the upper face of the spacer and which in actual practice will not be present in the actual shipping package, but in fact these two opposed surfaces will be in contact or substantially or practically in contact to avoid any endwise shifting of the stack should the shipping box be shaken endwise or inverted, or jarred or joggled.

I claim:

1. A storing and shipping package comprising a tubular box body, and a bottom closing the lower end of said body, in combination with a plurality

of packing stays, a plurality of hats, a top spacer and a box cover, said hats and stays being arranged as units of a stack, each unit comprising a stay and a hat inverted in said stay with its crown depending through said stay and with its brim resting on and supported by a plurality of resiliently pressed supporting members softly and continuously pressed yieldingly against given portions of said hat brim with such a degree of yielding pressure as to accommodate varying degrees of shocks, jars and pressures and prevent relative movement between said hat brim and said supporting members, each said stay in erected condition comprising a top portion or body and substantially vertically disposed supporting means depending therefrom, said top portion or body formed with a large central hat-crown receiving opening and with swingable cradling means extending at spaced intervals from said body and yieldably resiliently pressed toward the center of said opening, supporting members respectively carried by said cradling means and yieldably resiliently urged relative to said swingable cradling means upwardly and inwardly toward the center of said opening and maintained continuously in supporting contact with corresponding definite portions of the brim of the hat disposed in said stay, said vertically disposed supporting means of the lowest stay resting on the bottom of the box and of each of the other stays resting on the top of the body of the stay immediately next below, and said top spacer having vertical flange portions resting on the top of the body of the top stay and having a top portion of unbroken area substantially contacting the lower face of the cover of the box when the latter is applied to the box body.

2. A collapsible hat packing stay for use in packing a hat in a box, said stay comprising a centering body formed with a large central opening to receive a downwardly presented crown of a hat adjacent the brim thereof and having corner overhang portions and being of such size and shape as to contact opposed portions of the inner face of a box body with which it is to be used at such points as to prevent substantial movement relative to said box body in a direction perpendicular to the axis thereof, in combination with side and end flanges respectively depending from the respective side and end portions of said body, pairs of lapped tongues respectively extending at angles of approximately forty-five degrees from and respectively integral with the respective ends and sides of said flanges and with their upper edges in contact with the lower face of said body and extending across the corner portions thereof along the line of mergence between said body and its respective corner overhang portions, triangular braces respectively integral with and depending from the marginal outer portions of the respective overhang portions and respectively having integral leg portions respectively extending downwardly and inclined inwardly and contacting the respective outer faces of the respective outer tongues of the respective pairs of tongues, and means respectively passing through the respective legs and their corresponding pairs of tongues to secure said legs to said tongues to brace the respective corresponding overhang portions and to secure said tongues of said respective pairs of tongues together to hold said stay in erected condition, the lower edges of said pairs of tongues being so located and positioned with relation to all other portions of said stay as to rest on the top of the body of the stay immediately next below when

said stay constitutes one of a stack of stays and substantially in alignment with the edges of the corresponding pairs of tongues of said stay immediately next below and normally inward of the outer margins of the corner overhang portions thereof.

3. A collapsible hat packing stay comprising a body formed with a large opening and having corner overhang portions, in combination with side and end flanges respectively depending from the side and end portions of said body, pairs of lapped tongues respectively extending at angles from and respectively integral with the respective ends and sides of said flanges and with their upper edges in contact with the lower face of said body and extending across the corners thereof along the line of mergence between said body and its respective corner overhang portions, braces respectively integral with and depending from the outer marginal portions of the respective overhang portions and respectively having integral leg portions respectively extending downwardly and inclined inwardly and contacting the respective outer face of the respective outer tongues of the respective pairs of tongues, and means respectively passing through the respective legs and their corresponding pairs of tongues to secure said respective legs to said respective pairs of tongues to brace the respective corresponding overhang portions and to secure said tongues of said respective pairs of tongues together to hold said stay in erected condition, the lower edges of said pairs of tongues being so located with relation to all other portions of said stay as to rest on the top of the body of the stay immediately next below when said stay constitutes one of a stack of stays and substantially in alignment with the edges of the corresponding pairs of tongues of said stay immediately next below and normally inward of the outer margins of the corner overhang portions thereof.

4. A collapsible hat packing stay comprising a body formed with a large opening and having corner overhang portions, in combination with side and end flanges respectively depending from side and end portions of said body, pairs of lapped tongues respectively extending from and integral with the respective ends and sides of said flanges and with their upper edges in contact with the lower face of said body, braces respectively integral with the outer marginal portions of the respective overhang portions and respectively having leg portions, and means positively connecting the respective legs and their corresponding pairs of tongues, the lower edges of said pairs of tongues being so located with relation to all other portions of said stay as to rest on the top of the body of the stay immediately next below when said stay constitutes one of a stack of stays.

5. A collapsible hat packing stay comprising a body formed with a large opening and having corner overhang portions, in combination with side and end flanges respectively depending from the side and end portions of said body, pairs of lapped tongues respectively connected to and extending from the respective ends and sides of said flanges and with their upper edges in contact with the lower face of said body, braces respectively depending from the outer marginal portions of the respective overhang portions, and means positively connecting the respective braces and one of the tongues of said respective pairs of tongues and positively connecting said tongues of the respective pairs of tongues.

6. A collapsible hat packing stay comprising a

body formed with a large opening and having corner overhang portions, hat cradling members disposed about said opening and integrally connected with said body by folds respectively, and hat-brim supporting members resiliently carried by and respectively integral with said cradling members respectively, in combination with side and end flanges depending from said body, pairs of lapped tongues respectively connected with and extending from the respective ends and sides of said flanges and with their upper edges in contact with the lower face of said body, braces respectively depending from the respective overhang portions, and means positively connecting the respective braces and one of the tongues of said respective pairs of tongues and positively connecting said tongues of the respective pairs of tongues.

7. A collapsible hat packing stay comprising a body formed with a large opening and having corner overhang portions, hat cradling members

disposed about said opening and integrally connected with said body by folds respectively, and hat-brim supporting members yieldably carried by and respectively integral with said cradling members respectively and connected therewith by folds respectively acting to press said supporting members respectively upwardly and inwardly toward the center of said opening, in combination with side and end flanges depending from said body, pairs of lapped tongues respectively extending at angles from the respective ends and sides of said flanges and with their upper edges in contact with the lower face of said body, braces respectively depending from said respective overhang portions, and means positively connecting the respective braces and one of the tongues of said respective pairs of tongues and positively connecting said tongues of the respective pairs of tongues.

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