

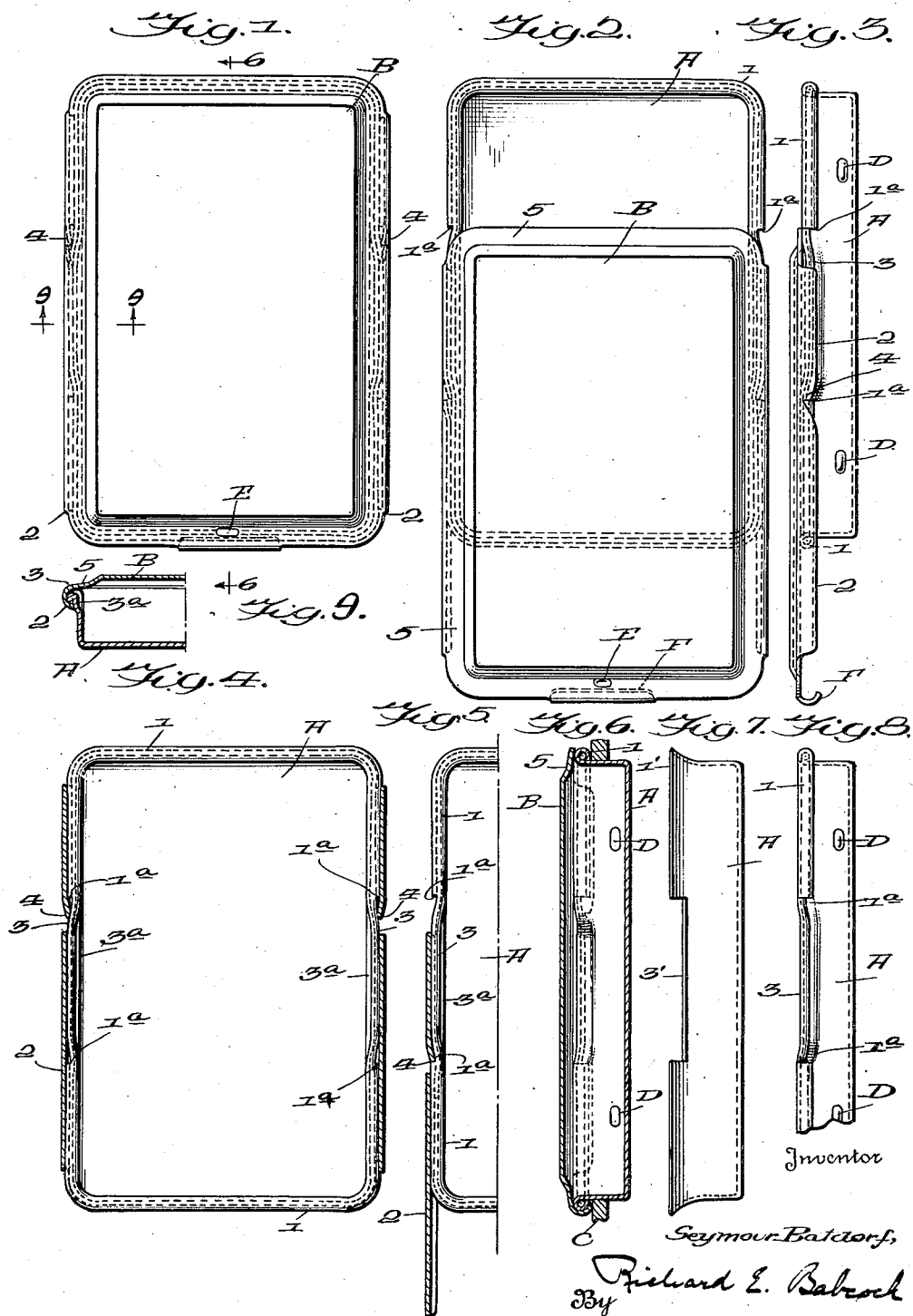
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BOX

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BOX

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This invention relates to metal boxes of the sliding cover type and constitutes an improvement on my inventions set forth in my applications Ser. No. 13,751 filed Mar. 29, 1935 for Boxes and Ser. No. 21,653, filed May 15, 1935 for Boxes.

The primary object of the present invention is to provide such a construction in a box of the type stated as to prevent twisting or canting of the top and body with relation to each other; to outwardly spread, flare, bend or offset portions of the body to prevent such twisting or canting; to offset or downwardly depress the extreme lower outer face of a portion of said two diameter curl to aid in preventing such twisting or canting; to bend portions of the small portions of the two diameter curl outward toward or flush with the plane of the extreme outer face portions of the immediately adjacent portions of the large diameter portions of said curl to aid in preventing such twisting or canting or to prevent such twisting or canting; to provide rounded edge faces which will not scratch or mar the lithographed or other special finish of the boxes as the same issue from the forming machines and drop into the receiving baskets or receptacles, the stop elements or members being so formed, positioned and disposed that no sharp or scratching or cutting faces or edges will come in contact with or mar adjacent box parts.

In the accompanying drawing:

Figure 1 represents a top plan view of a slide type box closed embodying the present preferred form of my invention;

Figure 2, a similar view, with the top open;

Figure 3, a side elevation, with the top open;

Figure 4, a horizontal cross-section taken in the plane between the lower faces of the edge panels 5 and the upper portion of the curl portions 1 and 3, and looking toward the bottom of the body A, the top being closed;

Figure 5, a view, similar to Fig. 4, of one side portion of the box, the cover or top being open;

Figure 6, a view on the line 6—6 of Fig. 1, looking in the direction of the arrow and showing the box as mounted in the opening of a display dispensing card C;

Figure 7, a side elevation of the body blank in an intermediate stage and just prior to the formation of the two-diameter edge curl;

Figure 8, a side elevation of the body in final condition; and

Figure 9, a view in section on line 9—9 of Figure 1, looking in the direction of the arrows.

Referring now in detail to the drawing, A designates the body of the box; B, the sliding top;

C, the usual dispensing display card; D, the usual lugs or ribs struck or pressed out laterally from the sides of the body to cooperate with the body edge curl or the side flanges of the top B to hold the box in the usual receiving openings in the display card C; E, the usual snap catch lug or latch stamped down or inward in the top B to engage and ride up over the end edge curl as the top B is shoved toward closed position and, as soon as the top B reaches closed position, snapping down by the resiliency of the top B and fitting inside of, and engaging the adjacent end face of body A to hold the top B closed against accidental or unintentional displacement but being adapted to similarly ride up over the top of said end face to permit the top B to be opened on pressure being applied in the reverse direction to open the box.

The body A has its edge portion rolled or curled with a two diameter curl, the larger diameter 1 being separated by the smaller diameter 3 on each side of the body, the length of the smaller diameter curl portions 3 preferably corresponding substantially to the length of movement of the top B, and the larger diameter portions 1 respectively extending about the respective end portions of the body A and having sharp abrupt end shoulders formed by the edge of the metal as rolled or curled into such larger diameter portions 1. This two-diameter curl may be formed in any suitable manner. One method is illustrated in Fig. 7, wherein the body blank A' is formed with relatively long outwardly curved or flared end and side portions 1' to form the larger diameter edge curl portions 1 and intervening intermediate shorter side portions 3' to form the smaller diameter curl portions 3, some of the metal being cut out for the length of each said portion 3', leaving a shorter length of metal to be formed into the small diameter curl portions 3.

The sliding top or cover B will preferably be slightly arched in form with an outwardly and downwardly inclined marginal panel or panels 5 extending completely around it and will preferably be springy or resilient as a whole preferably cross-wise and preferably lengthwise and at its side portions is formed with downwardly and inwardly curved side flanges 2 to fit about and below, and slidably receive, said two-diameter curl 1, 3 of the body A. Said flanges 2 have their respective lower inner portions cut out or interrupted in the preferred form preferably defined on one side of the cut or interruption by a straight vertical sharp or abrupt square edge, said edge and

adjacent supporting portion being bent inward to form a stop tongue or shoulder 4 on each side flange 2 to respectively engage the cooperating opposed faces of the shoulders 1a formed by the abrupt or sharp or raw end faces or edges of the larger diameter portions 1 of the two-diameter edge curl. Such shoulders 4 will be so disposed lengthwise of the flanges 2 that in the closed position of the top B they will lie between the shoulders 1a and closely adjacent to said shoulders of one large diameter curl portion 1 and, in the open position of the cover B, will positively engage with the shoulders 1a of the other large diameter portion 1, any pressure exerted on the top or cover B in an attempt to force it open beyond this point simply serving to force the opposing faces of the tongues or shoulders 4 and the cooperating shoulders 1a into tighter biting or cutting engagement effectually preventing any riding of one set of stop shoulders or faces beyond the other and cooperating set of stop shoulders or faces.

Since in the open position of the top or cover B the inner ends of the side flanges 2 will lie between the shoulders 1a and said flanges 2 in such case would only engage the large diameter portion 1 of the body A adjacent one end thereof and having in mind that these boxes are to be produced in great quantities with consequent lack of minute exact precision there would be a resultant slight play in a twisting transverse direction between the body A and top B when the top B is open, rendering the top subject to becoming twisted or canted with relation to the body A, and therefore the top B and body A are so formed and associated as to prevent any such degree of twisting or canting as will cause a binding or jamming of these parts or objectionably interfere with their easy and efficient relative movement incident to the opening and closing of the box.

To the immediately foregoing end preferably the upper portions of the sides of the body intermediate, and from points closely adjacent to, the shoulders 1a will be outwardly flared, bent or offset as at 3a, this involving the outward bending of most of each of the small curl portions 3 as well as the offsetting or depressing of most of said portions 3 toward the bottom of the body A, with the result that, except for their extreme end portions immediately adjacent the shoulders 1a, the extreme outer side faces of said portions 3 will lie flush or substantially flush with the corresponding faces of the adjacent parts of the large diameter portions 1 and the lower face portions will lie appreciably closer to the lower face portions of the adjacent parts of the said large diameter portions 1, thus taking up practically all of the play in a horizontal plane and most of the play in a vertical plane.

It may be desirable for considerations of economy of manufacture to simply provide one side of the body A with a single small curl portion 3 interposed between the shoulders 1a of the large diameter bead or curl portion 1, preferably offset as at 3a and to simply provide the one corresponding side flange 2 of the top B with a cooperating stop tongue or shoulder, the large diameter portion 1 of the curl extending uninterruptedly for the full length of the other side of the body A and the other flange 2 not being formed with a stop tongue or shoulder 4, such side of the body A offset at 3a and provided with the small diameter curl portion 3 outwardly and

downwardly bent between the shoulders 1a being illustrated in Fig. 5 for instance.

The top B may be formed with a hook type or form end stop F adjacent the little lug or catch E to engage the end of the body A or the adjacent portion of the edge curl to prevent sliding movement of the top B in the reverse direction beyond closed position.

In practice, after the body A and top have been formed as above, one side flange 2 of the top will be applied to or hooked under the large diameter curl portions 1 on one side of the body A with the shoulder or tongue 4 of said flange 2 disposed between the shoulders 1a of said large diameter curl portions 1, the other side flange 2 of the top B will be brought to rest on the top of the curl portions 1 on the other side of the body A, and then pressure will be applied gently, as by hand, to cause the latter flange 2 to snap about and under said curl portions 1 and the curl portions 3, and the assembly of the box will be complete. The foregoing is the preferred mode of assembly, though of course the box may be assembled by any mode found practical.

Preferably the top B will be so formed and of such size that when closed the inclined marginal portion 5 will be yieldingly resiliently pressed against the opposed upper edge face or portion of the large diameter curl portions 1 on opposite sides of the end portions of the body A.

I claim:

1. A slide cover type box comprising a body formed with a two-diameter top edge curl, said curl having two large diameter portions respectively extending across the respective ends and partially lengthwise of the sides and two small diameter portions on the sides interposed between the opposed end faces of said large portions, said end faces being the exposed edges of the curls of the large diameter portions and constituting abrupt sharp body stop shoulders having raw edges extending laterally in a plane substantially at right angles to the adjacent portions of the faces of the respective small diameter curl portions, and the upper portions of the sides of said body between and from closely adjacent to said shoulders being outwardly bent and said small diameter curl portions being downwardly and outwardly offset to have their laterally outer faces disposed substantially flush with the corresponding faces of the large diameter portions of said curl, in combination with a sliding cover arched both lengthwise and crosswise and formed of resilient material, side flanges integral with said cover and curved downwardly and inwardly to snugly slidingly engage about and under the respective outer faces of said top edge curl, and sharp abrupt cover stop shoulders respectively extending inwardly and upwardly from the lower portions of the respective flanges and so located lengthwise thereof as to be disposed between the body stop shoulders on the respective sides of said body and to be respectively presented in opposition to the respective cooperating body stop shoulders when said cover is applied to said body, said cover by its arched formation and springy resilient nature pressing with its margin against the top of said edge curl and pulling the lower portions of said flanges against the opposed face portions of said edge curl.

2. A slide cover type box comprising a body formed with a two-diameter top edge curl, said curl having two large diameter portions respectively extending across the respective ends and partially lengthwise of the sides and two small

diameter portions on the sides interposed between the opposed end faces of said large diameter portions, said end faces constituting abrupt body stop shoulders and said small diameter curl portions being respectively laterally outwardly offset between their ends to lie substantially flush with the laterally extreme outer face portions of the immediately adjacent parts of the large diameter portions of said curl, in combination with a resilient sliding cover, side flanges on said cover curved downwardly and inwardly to snugly slidably engage about and under the respective outer faces of said edge curl, and sharp abrupt cover stop shoulders respectively extending inwardly from the respective flanges and so located lengthwise thereof as to be disposed between the body stop shoulders on the respective sides of said body and to be respectively presented in opposition to the respective cooperating body stop shoulders when said cover is applied to said body, said cover by its resilient nature pressing with its margin against the top of said edge curl and pulling the lower portions of said flanges against the opposed face portions of said edge curl.

3. A slide cover type box comprising a body formed with a two-diameter top edge curl, said curl having two large diameter portions respectively extending across the respective ends and partially lengthwise of the sides and two small diameter portions on the sides interposed between the opposed end faces of said large diameter portions, said end faces constituting abrupt body stop shoulders and said small diameter curl portions being respectively laterally outwardly offset between their ends to lie substantially flush with the laterally extreme outer face portions of the immediately adjacent parts of the large diameter portions of said curl, in combination with a sliding cover, side flanges on said cover curved downwardly and inwardly to slidably engage about and under the respective outer faces of said edge curl, and sharp abrupt cover stop shoulders respectively extending inwardly from the respective flanges and so disposed lengthwise thereof as to be located between the body stop shoulders on the respective sides of said body and to be respectively presented in opposition to the respective cooperating body stop shoulders when said cover is applied to said body.

4. A slide cover type box comprising a body

formed with a two-diameter top edge curl, said curl having a small diameter portion extending in the direction of movement of said cover and interposed between the opposed end faces of two large diameter curl portions, said end faces constituting abrupt body stop shoulders and said small diameter curl portion being laterally outwardly offset between its ends to lie substantially flush with the extreme laterally outer face portions of the immediately adjacent parts of the large diameter curl portions, in combination with a sliding cover, side flanges on said cover, and a sharp abrupt cover stop extending inwardly from one of said flanges and so located lengthwise thereof as to be disposed between said large diameter curl portion ends and to be presented in opposition to the cooperating large diameter curl portion end and to engage the same when the said cover is moved in a given direction.

5. A slide cover type box comprising a body formed with a top edge curl, said curl having a large diameter portion and a small diameter portion adjacent thereto and extending in the same direction, the large diameter portion terminating abruptly with a raw sheet metal curled end adjacent the small diameter portion, and the small diameter portion being laterally outwardly offset, in combination with a sliding cover, side flanges on said cover, and an abrupt shoulder extending inwardly from one of said flanges and so located lengthwise thereof as to abut said end of said large curl portion with a non-sliding engagement when said cover is moved in a given direction.

6. A slide cover type box comprising a body formed with an interrupted top edge curl having end faces spaced from, and presented in opposition to, each other in the direction of movement of the cover and constituting body stop shoulders, the upper portion of said body being laterally outwardly offset intermediate said end faces, in combination with a sliding cover, flanges on said cover slidably receiving and engaging corresponding portions of said bead, and an abrupt shoulder extending from said cover and so located with respect thereto as to be interposed between said body stop shoulders and to engage one of said shoulders when said cover is moved in a given direction when the body and cover are in associated relation.

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