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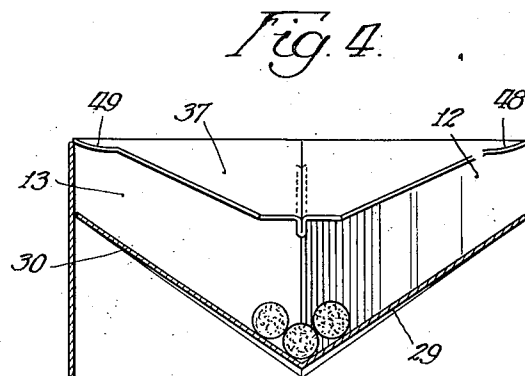
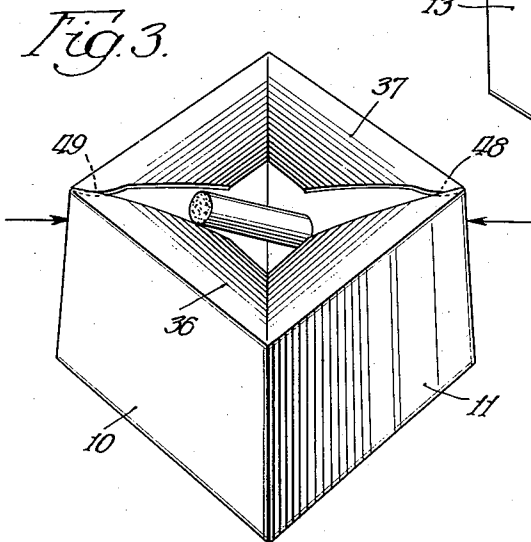
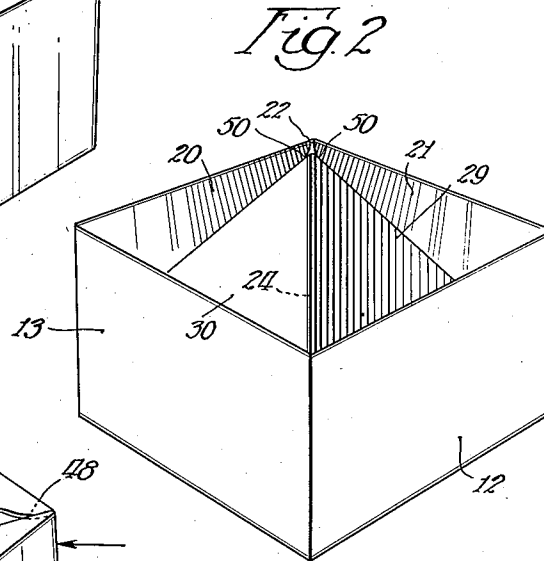
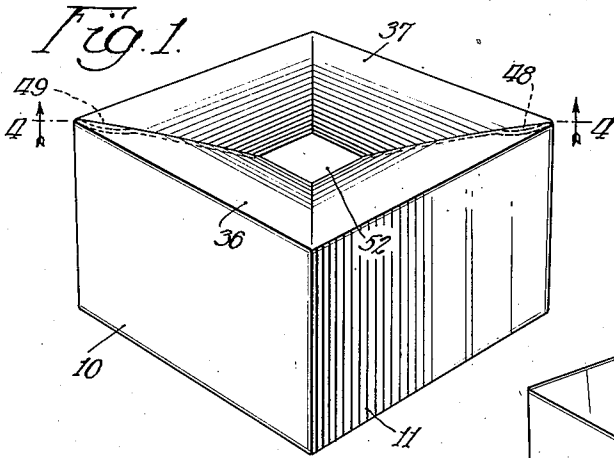
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2,291,753

RECEPTACLE

Filed May 6, 1938

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

Fig. 5.

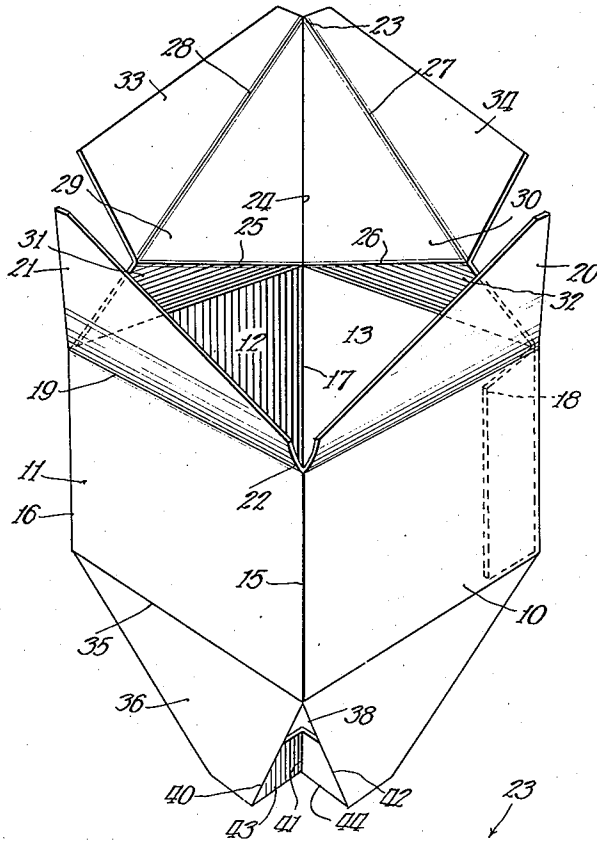
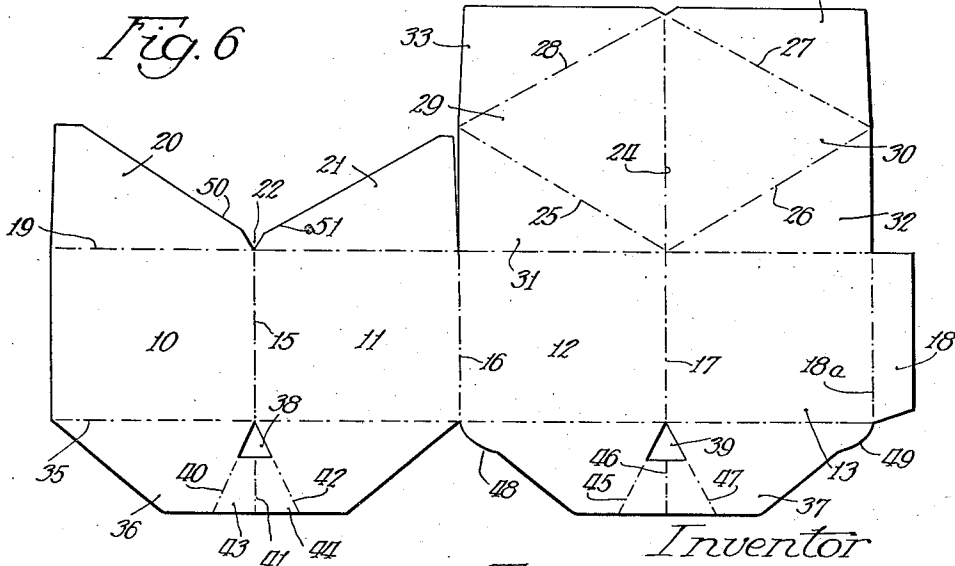


Fig. 6



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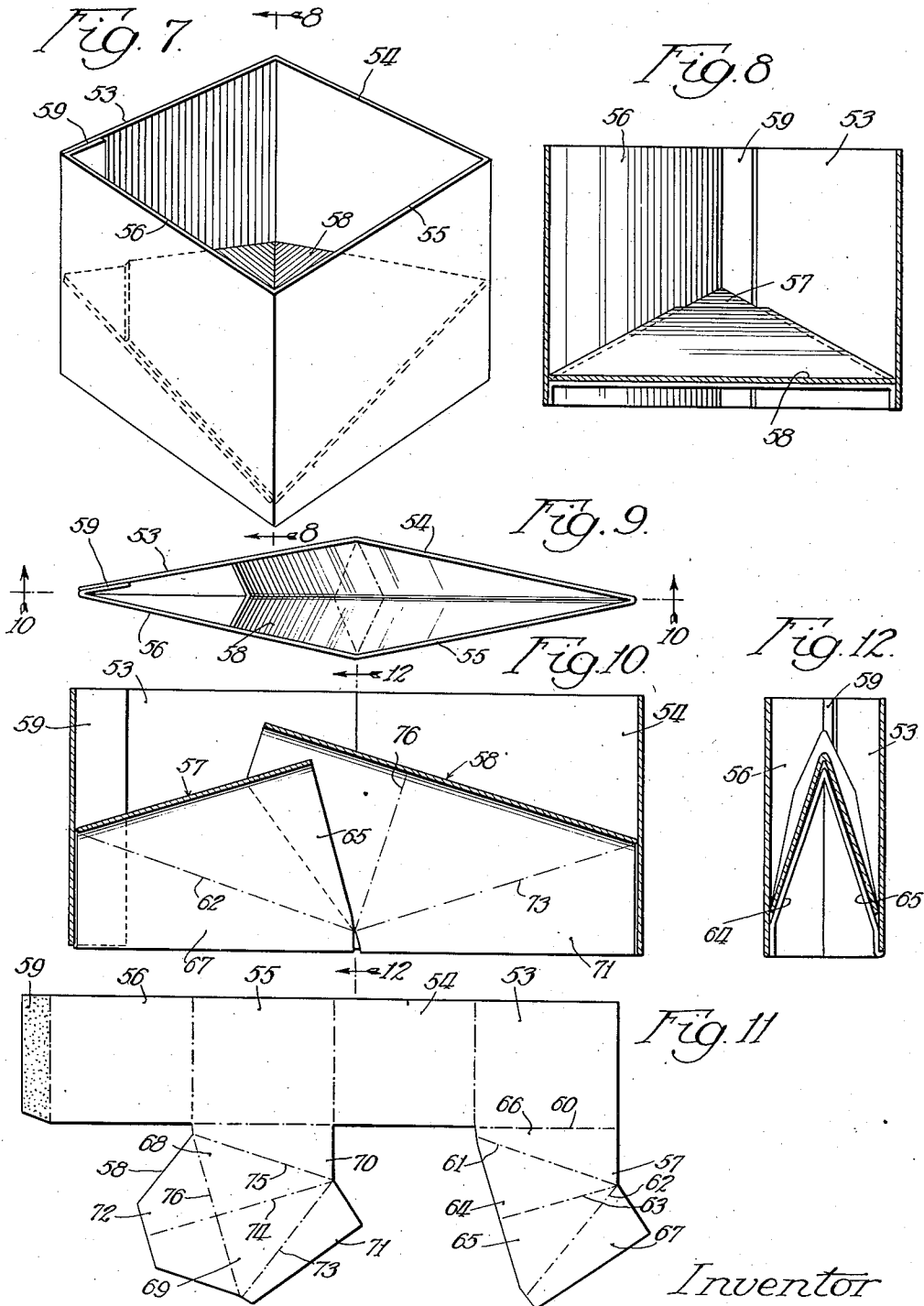
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RECEPTACLE

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3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

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RECEPTACLE

Tillman Mark Patten, Rolla, Mo.

Application May 6, 1938, Serial No. 206,341

12 Claims. (Cl. 229—37)

The present invention relates to receptacles, and particularly receptacles that are folded from blanks of sheet material such as card-board, paper and the like. It is an important purpose of the present invention to provide a receptacle of this character wherein the side walls and bottom are held in position by folded portions of the blank, which portions overlap but are not connected by passing one portion through a cut or slit in the other. The construction of the receptacle is such that no tabs or slits are necessary to provide a sturdy structure that will hold its shape under all ordinary conditions of use.

It is a further purpose of the invention to provide a receptacle of this character having a top closure which permits the use of the device as an ash tray wherein the contents of the tray are substantially covered at all times and wherein the top closure may be opened by applying pressure to the sides of the receptacle for the purpose of depositing a cigarette butt within the receptacle, and the top closure will thereafter return to its original position unaided. It is contemplated that the receptacle, when used as an ash tray, will be constructed of a suitable fire-proof or fire resistant material such as a heavy paper sheet which has been fire-proofed. The construction of the receptacle is such that the bottom closure is spaced above the lower edges of the side walls, whereby to prevent heat being communicated through the bottom closure to a table surface or other support that might be marked thereby. The top closure in normal position has only a small central opening and is inclined upwardly to the adjacent walls of the receptacle. When a burning cigarette is placed in the receptacle, the smoke and carbon dioxide soon fill the receptacle. This prevents oxygen from reaching the cigarette to support combustion and the fire is smothered quickly.

The present invention contemplates a receptacle in which four side walls formed from a single blank of material are combined with a bottom wall, which bottom wall includes two triangular portions the bases of which meet at an angle and the apices extend upwardly and outwardly into the opposite corners between the side walls. The triangular portions are joined to at least two of the adjacent side walls and the entire construction is foldable into a flat form from which it may be readily transformed into a receptacle having a stable raised bottom that furnishes the necessary support for holding the side walls in proper position. The re-

ceptacle has many advantages over the usual cardboard receptacle because it does away with interlocking tabs or slot joints which obviously weaken the material from which the receptacle is made. The construction is such that the complete strength of the sheet material is utilized to oppose collapse of the receptacle inwardly while the absence of slits or tabs gives the full strength of the sheet material to oppose outside collapse of the receptacle.

The features and advantages of the invention will appear more fully as the description proceeds, reference being had to the accompanying drawings wherein a preferred form of the invention is shown. It is to be understood, however, that the drawings and description are illustrative only, and are not to be taken as limiting the invention except insofar as it is limited by the claims.

In the drawings,

Fig. 1 is a perspective view of a completed receptacle embodying my invention;

Fig. 2 is a perspective view of the receptacle in inverted position;

Fig. 3 is a perspective view similar to Fig. 1 illustrating how the top closure of the receptacle may be caused to open to receive a cigarette butt;

Fig. 4 is a vertical sectional view taken on the line 4—4 of Fig. 1;

Fig. 5 is a perspective view of the receptacle in partially folded form, showing the several interfitting parts as they approach their final position;

Fig. 6 is a plan view of the blank of sheet material from which the receptacle is produced;

Fig. 7 is a perspective view of a slightly modified construction of the receptacle, the top closure being left off;

Fig. 8 is a sectional view taken on the line 8—8 of Fig. 7;

Fig. 9 is a plan view showing the receptacle of Fig. 7 partially folded into flat position;

Fig. 10 is a sectional view taken on the line 10—10 of Fig. 9;

Fig. 11 is a plan view on a reduced scale of the blank from which the receptacle of Fig. 7 is formed, and

Fig. 12 is a sectional view taken on the line 12—12 of Fig. 10.

Referring now to the drawings, the device illustrated in Fig. 1 is particularly adapted for use as an ash tray. When constructed of a suitable fire-proof paper sheet it may be decorated on the exterior with suitable coloring and advertising

material may be applied thereto. The construction is so simple and economical that ash trays of this character may be used once and thrown away at no great expense. The receptacle is made from a single blank, illustrated in Fig. 6. The blank contains four side-wall sections 10, 11, 12 and 13. The blank is scored between the several sections, as indicated at 15, 16 and 17. The blank is also scored along the upper and lower edges of the sections 10, 11, 12 and 13 as indicated at 19 and 35. A securing strip 18 is formed on one of the end sections and is adapted to be glued or otherwise secured to the other end section, whereby the four sections may be brought together to form a four sided enclosure.

Along the scoring line 19, at one edge of the side wall sections 10 and 11, there are provided two wings 20 and 21 somewhat triangular in shape but notched out as indicated at 22 to provide clearance. Adjacent the other two sections 12 and 13 of the side wall portion of the blank a generally rectangular extension is provided on the blank. This extension is scored as a continuation of the scoring 17 at 24. In addition, scorings 25, 26, 27 and 28 divide the portion 23 so as to form two triangular portions 29 and 30, two wing portions 31 and 32 integrally connecting the triangular portions 29 and 30 with the side wall sections 12 and 13 respectively, and wing portions 33 and 34.

At the scored edge 35 along the side wall portion of the blank there are provided extensions 36 and 37. The extensions 36 and 37 are, in general, substantially duplicates and each is cut out as shown at 38 and 39 to provide a small triangular opening. The triangular opening 38 is in line with the scoring 15, while the triangular opening 39 is in line with the scoring 17. The portion 36 is scored at 40, 41 and 42 so that small sections 43 and 44 may be folded against each other, as will presently appear. The portion 37 is scored at 45, 46 and 47 for a similar purpose. In addition, the portion 37 has two integral projecting portions 48 and 49, the purpose of which will presently appear.

In Fig. 5 the receptacle is shown in partially assembled condition to illustrate the manner in which the several parts are folded with respect to each other as they are moved toward the final position. The side walls are joined to form a four-sided enclosure by gluing or otherwise securing the extension 18 to the side wall section 10. The blank is scored at 18a to permit bending of the extension with respect to its side wall section 13. The portion 37 of the top closure is hidden from view in Fig. 5. However, it assumes substantially the same shape as the portion 36 in this stage of the completion of the receptacle.

The rectangular part 23 has the wing portions 31 and 32 turned inwardly with respect to the wall sections 12 and 13, and the triangular portions 29 and 30 are bent at an angle to each other along the scoring 24. The wing portions 33 and 34 are bent back from the triangular portions 29 and 30 so that if pressure is applied to the top of the portion 23, the entire portion can be shoved down inside the enclosure formed by the side walls. This will cause the wing portions 31 and 32 to fold flat against the side walls 12 and 13 and the wing portions 33 and 34 to fit flat against the side walls 11 and 10 respectively. The wing portions 20 and 21 may then be folded inwardly to overlap the wing portions 34 and 33 respectively. In this folding operation it is necessary to slightly distort the wing portions 20 and

21 in order to fold them, but when folded they lie with their edges fitting smoothly, along the inside angles between the portions 29 and 30 and their respective wing portions 33 and 34.

It will be noted that the shape of the wing portions 20 and 21 is not exactly triangular. They are raised slightly at 50 and 51 for the purpose of forcing the triangular portions 29 and 30 upward into the space surrounded by the side wall sections a short distance. This is done to raise the junction line between the two triangular portions 29 and 30 above the level of the lower edges of the side wall portions. Thus any heat that is communicated through the triangular portions 29 and 30 by a burning cigarette cannot so readily damage the surface upon which the receptacle is placed.

The receptacle may be folded flat for shipping purposes after the strip 18 is secured to the side wall 10 and the resulting folded unit is substantially the shape of the portion of the blank to the right of the scoring 16 in Fig. 6, that is, a rectangular shape. This makes the units easy to ship and saves space. Since it is not necessary to glue or fasten any parts together in assembling the containers, there is no objection to their being shipped in this fashion.

The assembly of the receptacle is completed by forcing the portion 23 down inside the space between the side walls from the position shown in Fig. 5 to that shown in Figs. 2 and 4, then the wing portions 20 and 21 are folded into the position shown in Fig. 2. This completes the side wall and bottom assembly of the receptacle. The wing portions 20 and 21 lock the portion 23 in place and this portion, because of the cooperation between the triangular portions 29 and 30 and the wing portions 31, 32, 33 and 34, provides a rigid bottom structure that also holds the side walls in position.

The top closure, consisting of the portions 36 and 37, is folded in place by first folding the portion 36 inwardly and downwardly until the triangular opening 38 is completely closed by bringing the sections 43 and 44 together. The section 37 is also folded inwardly and downwardly. It is preferable to have the small portions 48 and 49 overlap and extend beneath the portion 36 and to have the portion 36 forced down until its inner edge extends along the inner edge of the portion 37. The portions 48 and 49 then are held by the portion 36 and hold the portion 37 down so the inner edge of portion 36 strikes it to make a line connection. The angle between the lines 40 and 42 of portion 36 is slightly less than the angle between lines 45 and 47 so that 36 tends to swing deeper into the receptacle and hold the portion 37 in place. The triangular openings 38 and 39 are provided to facilitate folding along the lines 40, 41, 42 and 45, 46 and 47. When the top closure portions 36 and 37 are folded in, they leave a central opening 52. This opening may be made too small for the reception of a cigarette butt and the butts can still be placed within the receptacle by pressing on the receptacle at points indicated by the arrows in Fig. 3. This will cause the portions 36 and 37 to swing down into the receptacle farther and spread apart at their adjacent edges to allow the cigarette butts to fall within the receptacle. The inherent resilience of the material is sufficient to cause the receptacle to return to the position shown in Fig. 1 when the pressure is released.

Referring now to Figs. 7 to 12 inclusive, there is illustrated another form of receptacle slightly different than the form shown in Figs. 1-6. The blank from which this receptacle is constructed is shown in Fig. 11 and consists of four side portions 53, 54, 55, 56, two bottom portions 57 and 58, and a strip 59. The side portions are connected together into a four-sided construction by fastening the strip 59 to the side portion 53 by glue or other securing means.

The bottom portion 57 is integral with the side wall portion 53 but the material is scored at 60 along a line joining the two portions. The bottom portion 57 is scored along the lines 61, 62 and 63. The scorings 61, 62 and 63 divide the portion 57 into four sections. Two of the sections 64 and 65 are like triangular sections, while the other two sections 66 and 67 are four sided sections which are adapted to be secured to the side walls 53 and 56 with the scorings 61 and 62 uppermost. As examples of the manner of securing the sections 66 and 67 to the side walls 53 and 56, I may use ordinary staples or glue.

The bottom part 58 is made up of two like triangular portions 68 and 69, two side attaching portions 70 and 71, and an overlapping portion 72. The portion 58 is scored along lines 73, 74, 75 and 76. The portions 70 and 71 are adapted to be secured to the sides 55 and 54 respectively in the same manner as the portions 60 and 67 are secured to sides 53 and 56.

When the portions 66 and 67, 70 and 71 are secured to their respective side wall portions, then the portion 72 overlaps the triangular portions 64 and 65, as shown best in Fig. 7. The triangular portions 64, 65, 68 and 69, when flattened out into the position shown in Fig. 7, meet along the scoring line 76 to form a raised bottom portion for the receptacle which raised bottom portion is secured throughout its periphery to the side wall portions through the portions 66, 67, 70 and 71. Now when it is desired to fold the receptacle into flat position for shipping or storing, the bottom portion may be pushed upwardly, causing it to fold along the scoring lines 63 and 74. The side wall portions 54 and 55 may then be moved toward each other, and the side wall portions 53 and 56 may be moved toward each other until the receptacle is substantially flat. The overlapping portion 72 simply folds along the line 74 in the manner illustrated in Figs. 9 and 10. When it is desired to place the receptacle in use, it is only necessary to pull the side walls outwardly and press down upon the scoring line 76 to force the bottom portions 57 and 58 into the position shown in Fig. 7.

From the above description it is believed that the construction and advantages of the receptacles hereinabove described will be readily apparent to those skilled in this art. It is also believed to be obvious that various modifications as to details of construction may be made without departing from the scope of the invention as defined in the claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In an article of the class described, a blank having four sections joined by three generally parallel scorings and having end edges parallel to said scorings and means to secure said end edges together to form a box-like enclosure, and said blank including a generally rectangular portion joined to and coextensive with two of said

sections adjacent one end thereof, said portion being scored to provide two isosceles triangles having a common base which is a continuation of the scoring between the sections and said triangles having a combined height equal to the sum of the lengths of said two sections, the blank having triangular wings adjoining the corresponding side edges of the other two sections and said wings being foldable between the triangular part and the free edge of said rectangular portion.

2. A receptacle of the character described, having four side walls and a bottom wall, said bottom wall comprising two triangular portions having oppositely directed apices extending upward into two opposite corners between the side walls above the bottom edges of the side walls, said triangular portions being joined to certain adjacent side walls by sections integral with said portions and said triangular portions having their bases meeting at an angle on a line joining the other corners between the side walls.

3. A receptacle of the character described, having four side walls and a bottom wall, said bottom wall comprising two triangular portions having oppositely directed apices extending upward into two opposite corners between the side walls above the bottom edges of the side walls, said triangular portions being joined to certain adjacent side walls by sections integral with said portions and said triangular portions having their bases meeting at an angle and secured together to complete a bottom closure.

4. A receptacle of the character described, having four side walls and a bottom wall, said bottom wall comprising two triangular portions having oppositely directed apices extending upward into two opposite corners between the side walls, said triangular portions being joined to certain adjacent side walls by sections integral with said portions and said triangular portions having their bases meeting at an angle above the level of the lower edges of said side walls, and said portions including means closing the joint between their bases.

5. A receptacle of the character described, having four side walls and a bottom wall, said bottom wall comprising two triangular portions having oppositely directed apices extending upward into two opposite corners between the side walls, said triangular portions being joined to certain adjacent side walls by sections integral with said portions and said triangular portions having their bases meeting at an angle and an extension on one of said triangular portions extending over the other portion.

6. A receptacle of the character described, having four side walls and a bottom wall, said bottom wall comprising two triangular portions having oppositely directed apices extending upward into two opposite corners between the side walls above the lower edges of said side walls, said triangular portions being joined to certain adjacent side walls by sections integral with said portions and said triangular portions having their bases joined together.

7. A receptacle of the character described, having four side walls and a bottom wall, said bottom wall comprising two triangular portions having oppositely directed apices extending upward into two opposite corners between the side walls, said triangular portions being joined to certain adjacent side walls by sections integral with said portions and said triangular portions having their bases joined together, the meeting line between

said triangular portions being above the level of the lower edges of the side walls.

8. A receptacle of the character described having side walls joined together to form an enclosure and a bottom wall secured to said side walls and extending up into said enclosure, said bottom wall comprising two bottom wall portions meeting at an angle to each other on a line extending across said enclosure adjacent the bottom thereof, said portions extending upwardly from the meeting line to the side walls, and means securing said portions in place in said enclosure.

9. A receptacle of the character described having side walls joined together to form an enclosure and a bottom wall secured to said side walls and extending up into said enclosure, said bottom wall comprising two bottom wall portions meeting at an angle to each other on a line extending across said enclosure adjacent the bottom thereof, said portions extending upwardly from the meeting line to the side walls, and means securing said portions to the side walls, said means comprising wing portions on said first named portions extending downwardly along the inner surfaces of the side walls, and fixed thereto.

10. A receptacle of the character described having side walls joined together to form an enclosure and a bottom wall secured to said side walls and extending up into said enclosure, said bottom wall comprising two bottom wall portions meeting at an angle to each other on a line extending across said enclosure adjacent the bottom thereof, said portions extending upwardly from the meeting line to the side walls, and means securing said portions to the side walls,

said means comprising wing portions joining the side edges of one bottom wall portion with the lower edges of the adjacent side walls, wing portions at the side edges of the other bottom wall portion extending downwardly toward the lower edges of the adjacent side walls, and wings on said last named side walls folded up inside the last named wing portions and supporting the last named bottom portion.

11. A receptacle of the character described having four side walls and a bottom wall, said bottom wall comprising two triangular portions having oppositely directed apices extending into two opposite corners of the side walls above the lower edges thereof, said triangular portions each having the two edges thereof adjacent the apex lying close to the adjacent side walls along a line extending downwardly at an angle to the lower edge of the side wall from the apex of the triangular portion to its base, and means securing said triangular portions to the adjacent side walls.

12. A receptacle of the character described having four side walls and a bottom wall, said bottom wall comprising two triangular portions having oppositely directed apices extending into two opposite corners of the side walls, said triangular portions each having the two edges thereof adjacent the apex lying close to the adjacent side walls, means attached to said triangular portions along said edges and secured to the adjacent side walls, and an overlapping portion joined to the third edge of one of said triangular portions and extending over the other triangular portion.

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