

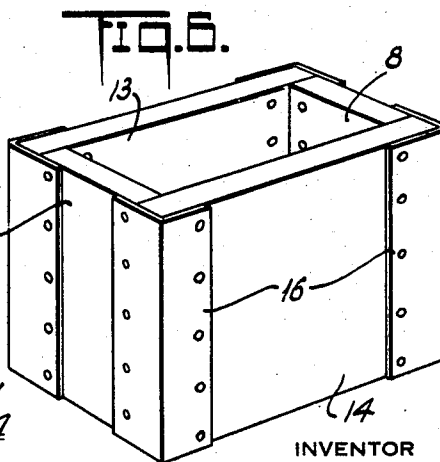
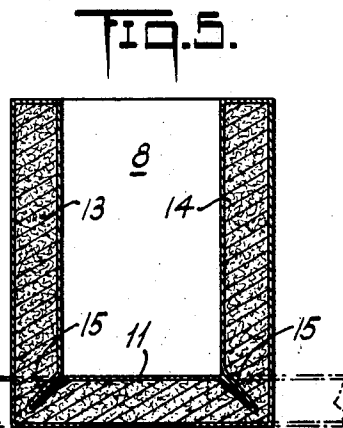
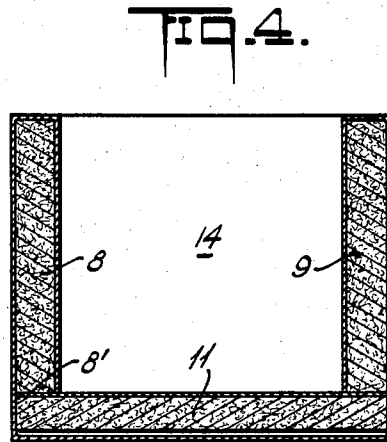
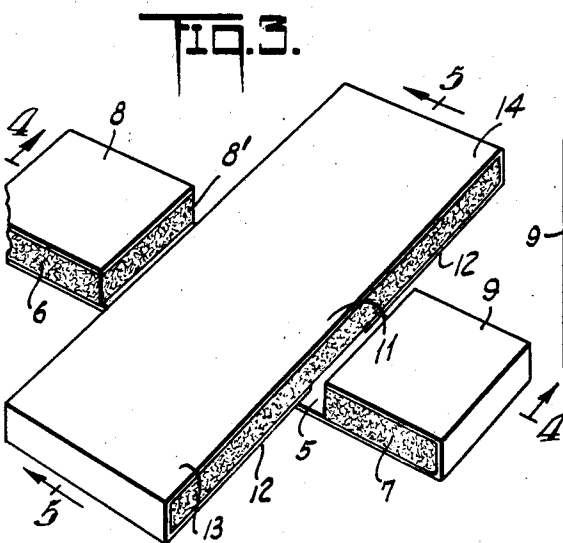
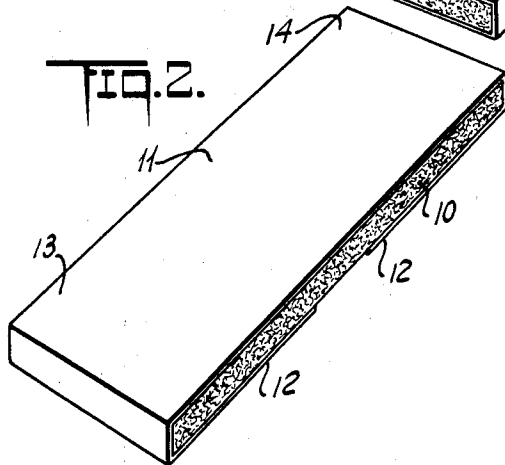
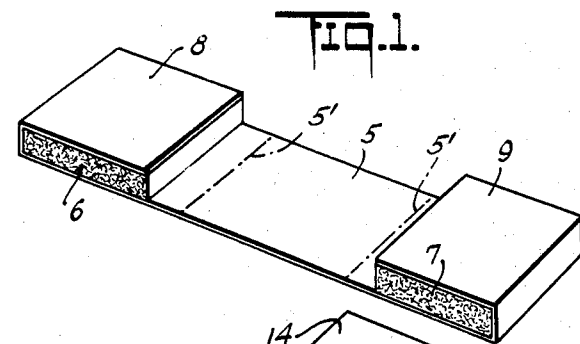
July 28, 1964

M. KANTOR
CASE

3,142,406

Original Filed Sept. 22, 1958

2 Sheets-Sheet 1



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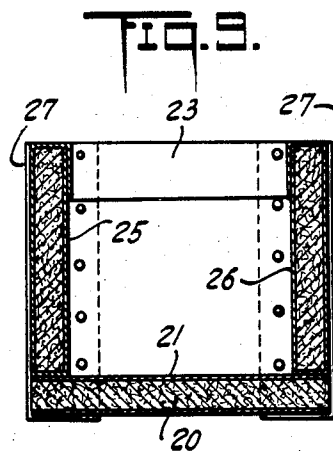
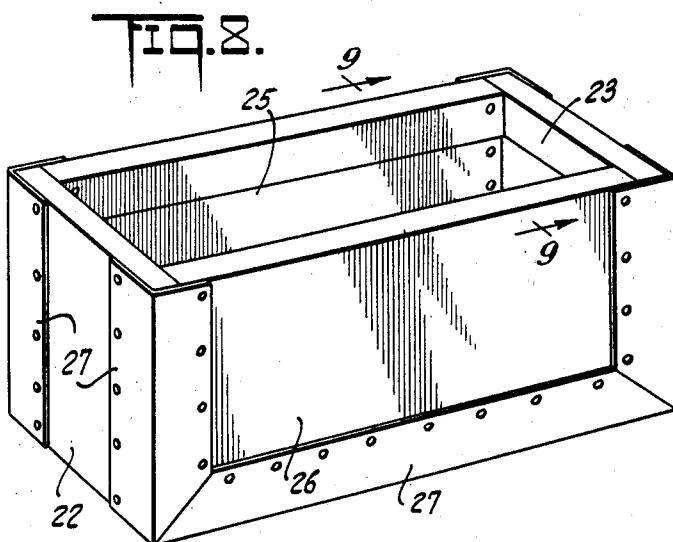
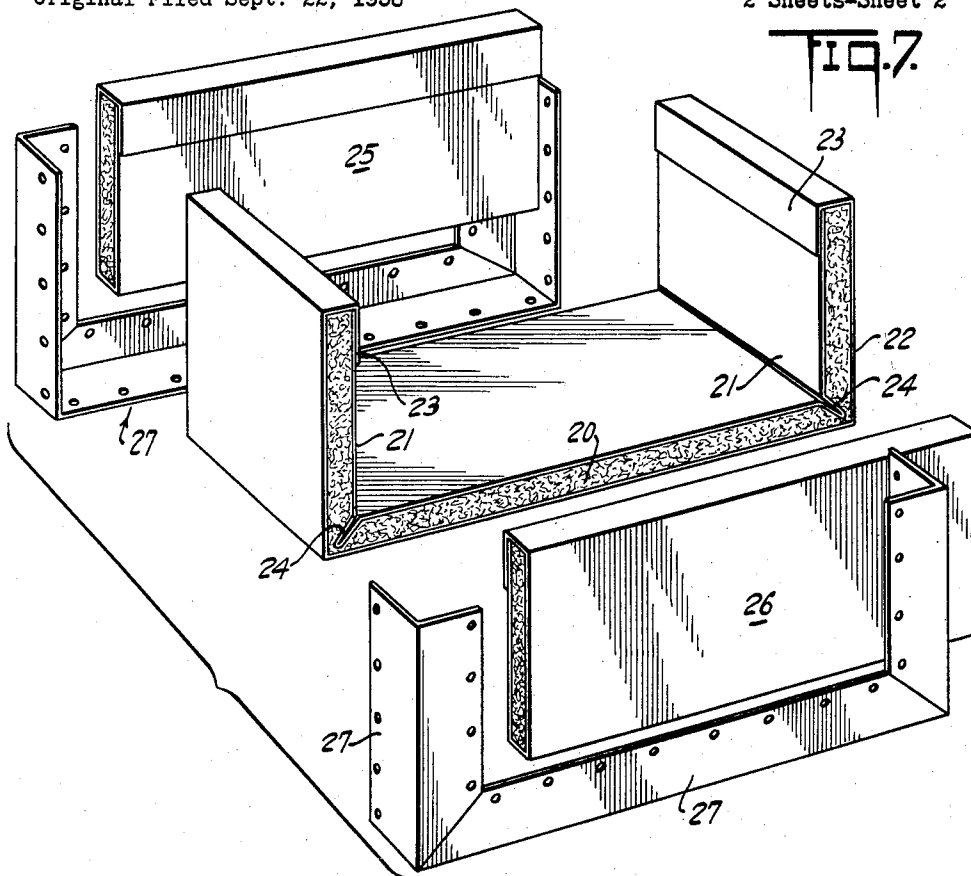
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M. KANTOR
CASE

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2 Sheets-Sheet 2



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3,142,406

CASE

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Original application Sept. 22, 1958, Ser. No. 761,521, now Patent No. 3,024,939, dated Mar. 13, 1962. Divided and this application Jan. 31, 1962, Ser. No. 179,827
1 Claim. (Cl. 220—10)

My invention relates to a case, and particularly to a case formed of sandwich material having a core and sheet metal faces.

This application is a division of my co-pending application Serial No. 762,521, filed September 22, 1958, now Patent No. 3,024,939, granted March 13, 1962.

It is an object of the invention to provide an improved case of the character indicated having fewer open joints than a standard case and, therefore, less likely to open up or leak.

A more specific object is to provide an improved case of the character indicated formed of a pair of sheets of sandwich material bent up so as to form a case.

Another object is to provide an improved case of simple construction and fewer open joints than the standard case, and which will be strong and sturdy.

Other objects and various features of novelty and invention will be hereinafter pointed out or will become apparent to those skilled in the art.

Briefly stated, in a preferred form of the invention, I provide a sheet of sandwich material comprising a sheet of core material having sheet metal secured to opposite faces thereof so as to form a strong sheet of sandwich material. This sheet is designed to be bent up at spaced apart points and preferably at right angles thereto so as to form panels or sides of a case. The sheet metal covering at the bends is continuous and intact, thus making for leakproof joints at the bends. One or more other panels or sides are provided so as to interfit with the panels formed by bending of the first sheet so as to form a case.

In one specific form, there are two sheets or panels of sandwich material, each composed of core material and sheet metal on opposite faces thereof. One of these panels is bent up at the ends to form two ends and a bottom for a case, while the other panel, at right angles to the first panel, has the ends bent up so as to form two other sides or ends of the case; all of the panels are secured together in case form, as by means of channels along the vertical joints at the panels. In this particular form, the sheet metal of both of the panels at the bottom is permanently secured together so that the case has a double bottom of sheet metal.

In another form of the invention, one panel of sandwich material comprising a sheet of core material having sheet metal secured to opposite faces thereof is bent at spaced-apart points at right angles to the sheet, and the ends are bent up at substantially right angles to the main body of the sheet so as to form a bottom and two ends or sides of a case. The metal bends both at the inside and the outside remain continuous and intact so as to provide a perfectly leakproof bend both at the inside and the outside. Additional panels interfit with the bottom and upturned ends so as to form a case, and all of the panels and base are held together in case form by suitable means, such as angle members secured to corners where panels come together.

Other variations and formations may be employed.

In the drawings, which show, for illustrative purposes only, preferred forms of the invention:

FIG. 1 is an isometric view of an elongated sheet of

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metal having spaced apart panels of core material, with sheet metal extending over the core material;

FIG. 2 is an elongated sheet of sandwich material comprising a core and sheet metal on the top and bottom faces and secured thereto;

FIG. 3 is an isometric view of the two sheets or panels of FIGS. 1 and 2 positioned relatively to each other prior to final bending and formation of a case;

FIG. 4 is an enlarged sectional view, taken substantially in the plane of the line 4—4 of FIG. 3, after the sides on one of the sheets have been bent up;

FIG. 5 is an enlarged sectional view taken substantially in the plane of the line 5—5 of FIG. 3 and showing all of the sides bent up;

FIG. 6 is an isometric view of a complete box or case showing the side panels secured together, as by means of angles;

FIG. 7 is an exploded view of a slightly modified form of case;

FIG. 8 is an isometric view of the case of FIG. 7, all parts being finally assembled; and

FIG. 9 is a sectional view, taken substantially in the plane of the line 9—9 of FIG. 8.

In the form shown in FIGS. 1 to 6, there is a first sheet-metal element comprising an elongated sheet 5 having at the ends, sheets or panels 6—7 of core material, and this core material is preferably covered over on opposite faces by having the sheet metal of a base 5 bent up over the top; the spaced-apart ends or panels thus formed are designated 8—9, and they may be referred to as a pair of sandwich panels, spaced and integrally connected by the base or outer metal sheet 5.

A second elongated panel of sandwich material is comprised of a sheet of core material 10 having facings of metal at opposite sides. In the form shown, the top of the core material 10 is covered by a sheet 11 which preferably extends around the ends of the core and underneath thereof and is secured to both faces. In the particular form shown, these bottom faces or ends 12—12 do not completely meet. For convenience, the two ends of the second elongated sandwich panel (shown in FIG. 2) are designated 13—14. This elongated sandwich panel, as shown in FIG. 2, is assembled with the first panel (shown in FIG. 1) in the manner indicated in FIG. 3. Here, the base 5 and the sheets of metal ends 12 are in direct contact with each other and are soldered or otherwise permanently secured together so that in effect there is a double sheet-metal base beneath the two crossed members in FIG. 3.

When the parts are permanently assembled and the metal bases secured together, the ends 8—9 and 13—14 are all bent up. As to the first panel (FIG. 1), the two ends 8—9 are turned up by bending the sheet metal 5 a crease locations 5', and the inner core edges (as at 8') of the two spaced-apart ends 8—9 rest directly on the top sheet 11 of the base portion of the panel shown in FIG. 2; the pair of sandwich panels 8—9 may thus be said to be spaced substantially the width of panel 11, the creases 5'—5' being spaced by said width. The second panel (FIG. 2) is bent up at spaced-apart intervals, as indicated at 15, so as to form the upstanding panels 13—14. These bends 15—15 are preferably formed by bending in the sheet metal 11 along lines at right angles to the main body of the sheet. The core material, when soft enough, for example balsa wood, and the like, is also bent-in, so that the metal at the outer corners and at the inner corners remains continuous and intact, thus providing for a perfectly leak-tight corner, as will be understood. In the form illustrated, the sides or panels 8—9 fit in between the panels 13—14, and there are four vertical joints, as will be clear. All of these panels are

held in position and the case held in case formation by suitable means, such as the angle members 16 secured to the corners.

This case, it will be clear then, has a double or reinforced metal bottom, and the bends at 15 are all continuous and intact. Likewise, the bends in the sheet-metal base 5 of the first sheet are continuous and intact and the edges of the two panel parts 6—7 rest on top of the sheet 11 on the upper panel of FIG. 2. Thus, the joints are relatively easy to seal and the angle members 16 will ordinarily suffice to hold all of the panels together. Suitable adhesive and water-proofing may be applied between the abutting parts of the panels so as to provide a perfectly tight and leak-proof case.

In the form shown in FIGS. 7 to 9, there is a main panel of sandwich material comprising a sheet of core material 20 which is covered by a metal sheet 21 which extends along the inside of the bottom and the inside of the two ends, as shown particularly in FIG. 7. A second metal sheet 22 is secured to the outer side of the core material 20, and the top ends extend over the top edges of the panels and overlap the sheet 21, as indicated at 23. This first panel of sandwich material comprising the metal-clad core 20 is bent at the corners, as indicated, and the bends are preferably such that the core material is bent and the inner sheet 21 is tucked inwardly, as indicated at 24; at the same time, the outer sheet is bent at the corners so that the metal of both the inner and outer sheets at the corners, where bent, remains continuous and intact. Thus, a thoroughly leak-proof joint is provided at the bent corners.

The central part of the sandwich sheet just described and the two upstanding ends form the bottom and two sides of a case. The other two sides 25—26 are preferably formed of sandwich material and are completely surrounded on both faces and the top and bottom edges by sheet metal. These panels 25—26 interfit with the bottom and upstanding ends on the first panel or sheet, and, in the form shown, these sides 25—26 extend between the upstanding sides on the bent-up panel.

All four sides and the bottom are held together in case formation by suitable means, such as the angle members 27, which extend along the vertical edges and along the bottom edges. Here again, wherever panels or sides come together, they are preferably treated with suitable adhesive and waterproofing material so that a perfectly tight case will result.

In the case shown in FIGS. 7 to 9, as well as in the case shown in FIGS. 1 to 6, there are fewer joints to be sealed than in the conventional case, formed by separate

side and bottom panels. The cases are strong because of integral base and side formation. In addition, the cases are relatively easy to manufacture and may be made completely tight at such seams as must be treated to make them tight.

While the invention has been described in considerable detail, and preferred forms illustrated, it is to be understood that various changes and modifications may be made within the scope of the invention, as defined in the appended claim.

I claim:

A case comprising a first sheet of sandwich material having a core material between inner and outer metal faces, one of said faces being folded over the opposite ends of said sheet material to overlie the opposite face to enclose the ends, said opposite ends of said sandwich sheet being bent up at substantially right angles to the sheet along lines spaced apart from each other, said bends occurring in both the inner and outer metal faces and in the core material leaving the metal faces continuous and intact at said bends, said sandwich sheet with said opposite ends constituting essentially two opposite sides and the bottom of a case, a pair of sandwich sheets having core material between inner and outer metallic face sheets substantially the same as said sheet of sandwich material, the outer metallic face sheets of said pair being integrally joined by a common sheet which also spaces the sandwich sheets of said pair by an amount substantially equal to the width of said first sandwich sheet; said pair of sandwich sheets being folded up from said common sheet with said common sheet overlapping said bottom, and said pair of sandwich sheets being dimensioned to fit within the open sides formed by said first sheet of sandwich material with its bent-up ends to form a case, and angle means at at least the upstanding edges of said case for fixedly sealing the joints between said first sheet of sandwich material and said pair of sandwich sheets to form a case.

References Cited in the file of this patent

UNITED STATES PATENTS

641,207	Higham	Jan. 9, 1900
1,009,993	Parrish	Nov. 28, 1911
1,488,533	Flood	Apr. 1, 1924
1,791,367	McVay et al.	Feb. 3, 1931
2,192,992	Bohnke	Mar. 12, 1940
2,246,097	Illges	June 17, 1941
2,274,765	Zalkind	Mar. 3, 1942
2,523,145	Robinson	Sept. 19, 1950