Feb. 28, 1933. W. S. MARR 1,899,241

TRANSFORMABLE CONTAINER

Filed July 3, 1931 4 Sheets-Sheet 1

Fig. 1.

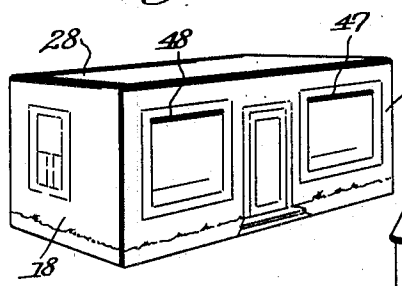


Fig. 2.

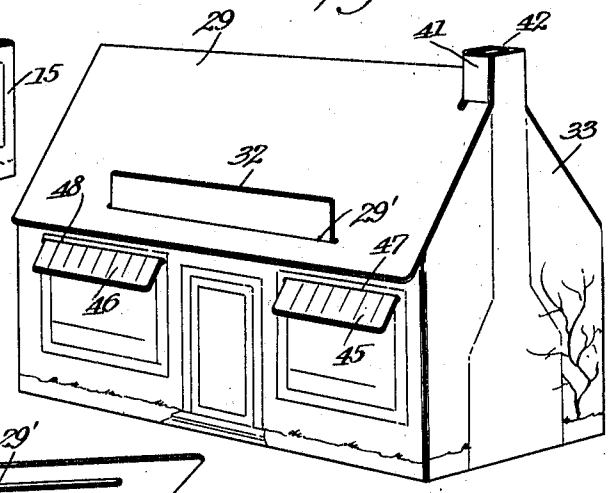


Fig. 3.

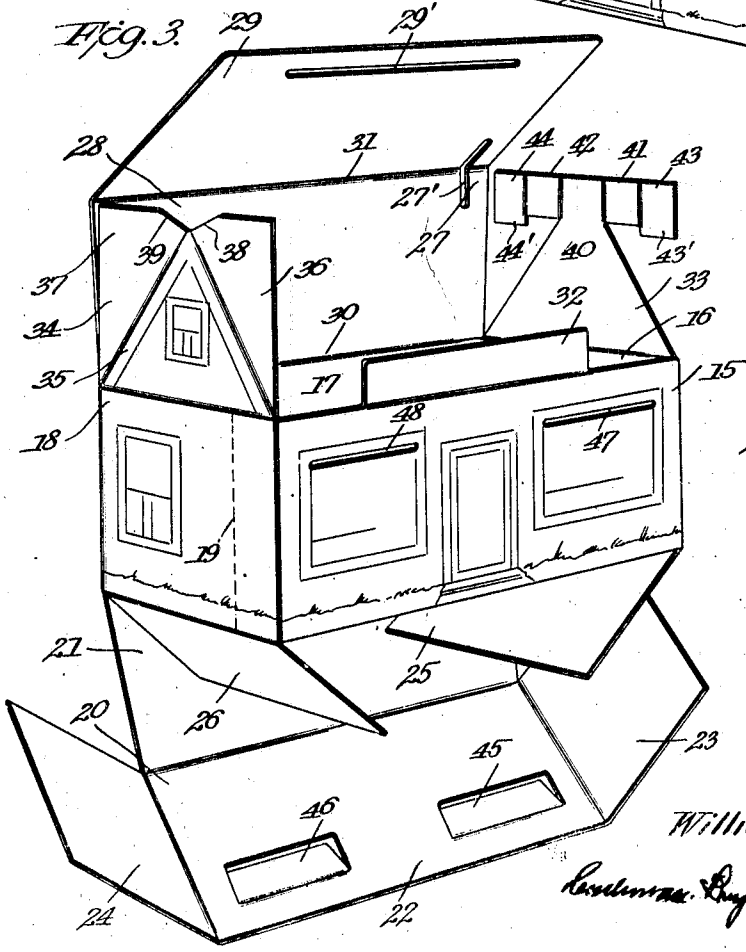
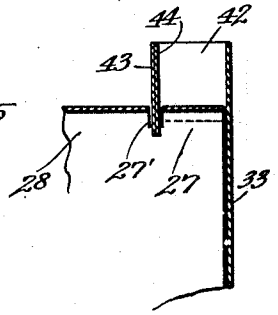


Fig. 4.



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Feb. 28, 1933. W. S. MARR 1,899,241

TRANSFORMABLE CONTAINER

Filed July 3, 1931 4 Sheets-Sheet 2

Fig. 5.

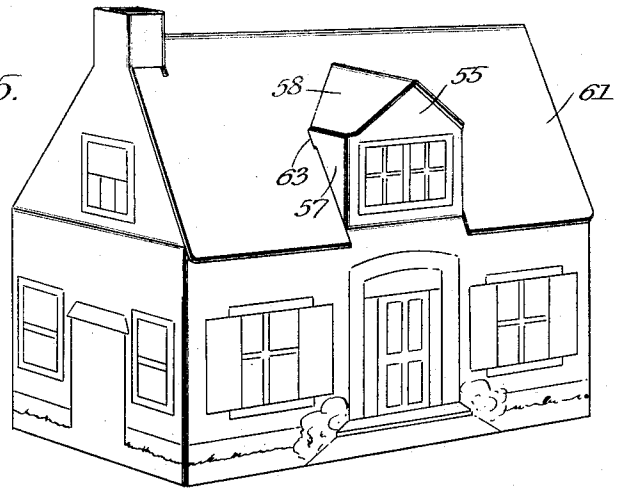
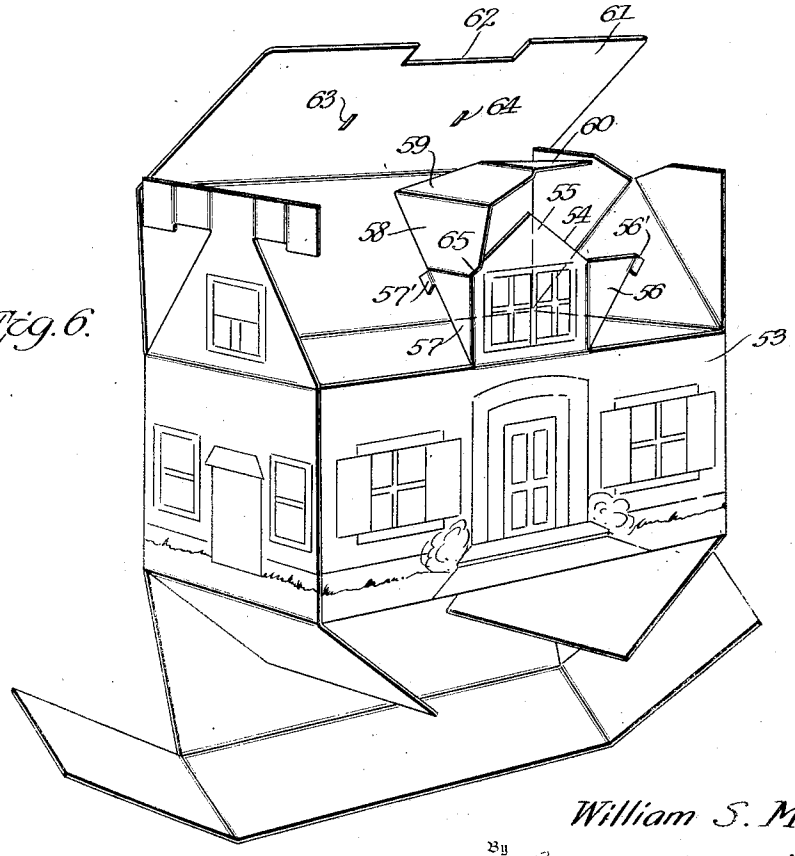


Fig. 6.



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TRANSFORMABLE CONTAINER

Filed July 3, 1931 4 Sheets-Sheet 3

Fig. 7.

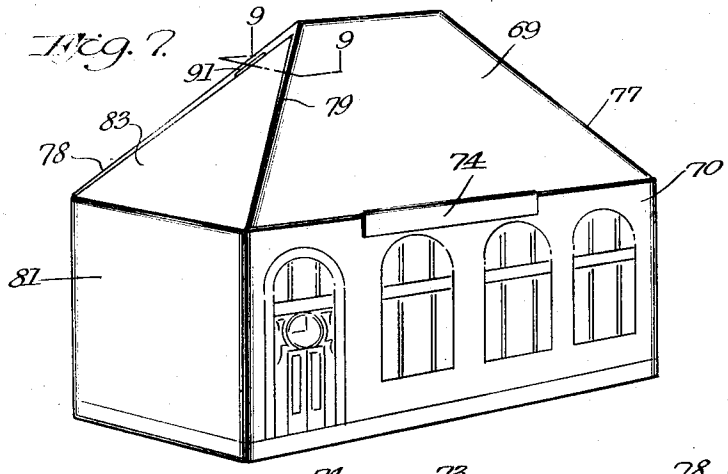
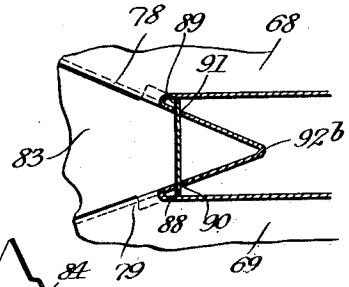


Fig. 9.



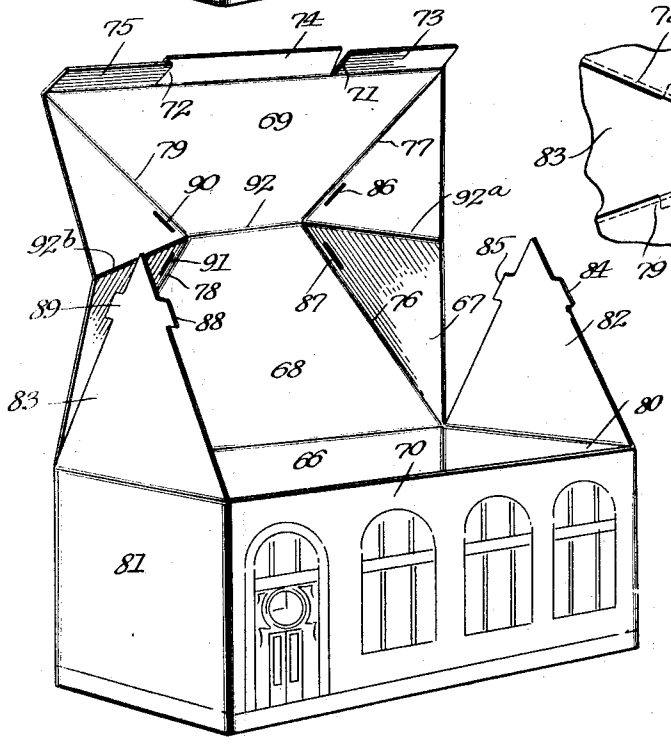


Fig. 8.

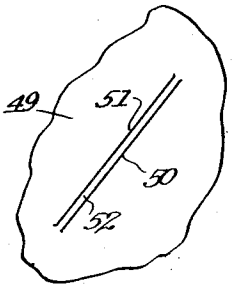


Fig. 13.

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Feb. 28, 1933. W. S. MARR 1,899,241

TRANSFORMABLE CONTAINER

Filed July 3, 1931 4 Sheets-Sheet 4

Fig. 10.

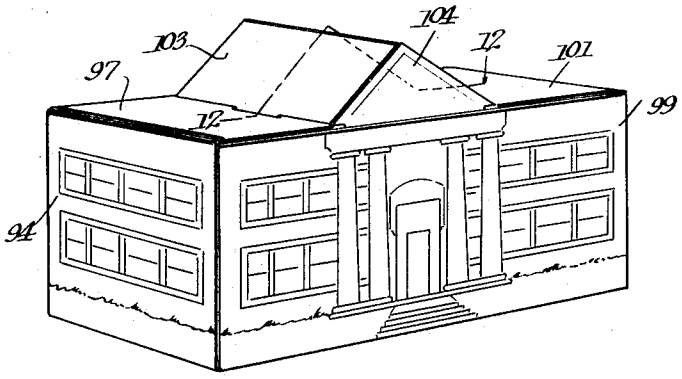


Fig. 12

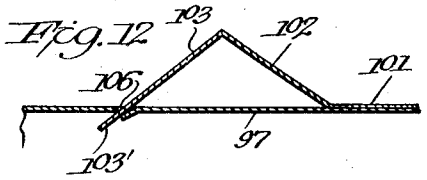


Fig. 11.

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Patented Feb. 28, 1933 1,899,241

UNITED STATES PATENT OFFICE

WILLIAM S. MARR, OF NUTLEY, NEW JERSEY, ASSIGNOR TO BAKERIES SERVICE CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE

TRANSFORMABLE CONTAINER

Application filed July 3, 1931. Serial No. 548,660.

The present invention relates to containers so designed as to be capable each of assuming different forms to the end that subsequent to fulfillment of their ordinary utilitarian purpose, in one form, they may be rearranged to assume a different form in simulation of buildings or the like.

According to the invention, containers of initially substantially uniform dimensions are transformable into toy buildings of various designs. The containers, as marketed with their contents, are compact and durable, and, being of uniform size, are readily handled. As transformed, however, they may exhibit different architectural and decorative features in simulation of dwelling houses and public and commercial buildings. By securing the complete series of designs, the purchaser will be enabled to lay out a miniature community with representative buildings.

The containers are preferably formed from series of blanks, which, while differing specifically from each other, are adapted to be folded into the same initial form which is preferably that of a rectangular parallelepiped. In the accompanying drawings I have shown a number of structures embodying certain features in common and other features peculiar to each, whereby the general purposes of the invention are attained, the showing being merely illustrative of the invention and not restrictive thereof, as will be understood.

In the drawings:

Figure 1 is a perspective of a container in its initial form, this being typical of containers made in accordance with the present invention,

Figure 2 is a perspective of the container of Figure 1 in its secondary arrangement.

Figure 3 is a perspective of the partially folded blank which may take the forms shown in Figures 1 and 2.

Figure 4 is a partial vertical longitudinal section of Figure 2.

Figure 5 is a perspective of a modified secondary arrangement,

Figure 6 is a perspective of the partially folded blank utilized in the arrangement of Figure 5,

Figure 7 is a perspective of another secondary arrangement,

Figure 8 is a perspective of the partially folded blank utilized in the arrangement of Figure 7,

Figure 9 is a section on line 9—9 of Figure 7,

Figure 10 is a perspective of still another secondary arrangement,

Figure 11 is a perspective of the partially folded blank, utilized in the arrangement of Figure 10,

Figure 12 is a section on line 12—12 of Figure 10, and

Figure 13 is a perspective of a detail.

Referring to the drawings, and first to Figures 1 to 4, reference numerals 15, 16, 17 and 18 designate panel portions of a preferably integral blank, the panel portions being arranged in quadrilateral form to constitute the normally upright wall members of the article to be produced. Panel 15 has an extension 19 which lies behind the margin of panel 18 and is secured thereto in any suitable manner. The opposite wall members are of equal length and the adjacent wall members are rectangularly related. The top ends of the wall members lie substantially in the same horizontal plane, the height of members 15 and 17 being somewhat greater than the width of members 16 and 18. It will be understood that all lines of fold are preferably scored.

Wall member 17 has an extension 20 at its lower edge, the extension comprising two panels 21 and 22, the first of which is adapted to extend across to the wall member 15 and the second of which is adapted to lie behind wall 15. Portion 22 has wings 23 and 24 which are adapted to lie above inwardly folded extensions 25 and 26 of wall members 16 and 18 to form a rigid interlock, panel 21 underlying extensions 25 and 26 and constituting the main bottom portion of the container.

Wall 17 has an upward extension 27 comprising the panel portions 28 and 29, portion 28 being foldable on the hinging line 30 across to wall member 15 and portion 29 be-

ing foldable about a hinge line 31 to lie behind wall member 15.

Wall member 15 has a tab extension 32 which is foldable from a position in which it extends downwardly against the upper margin of wall 15 to a position in which it extends upwardly in uniplanar relation therewith. Wall member 16 has an extension generally indicated at 33 and wall member 18 an extension generally indicated at 34. Extensions 33 and 34 are foldable inwardly to underlie the top wall panel 28 and with tab 32 folded inwardly a closed container in the form of a rectangular parallelepiped as shown in Figure 1 is obtained. When the container has been emptied, it may be rearranged to assume the form shown in Figure 2.

In transforming the container, extension 27 is brought substantially to the position shown in Figure 3, and extensions 32, 33 and 34 brought into the upright positions also shown in Figure 3. Extension 34 has a triangular portion 35 and wing portions 36 and 37. The wing portions are folded inwardly about their lines of demarcation until their angular upper edge portions 38 and 39 abut in a substantially horizontal line, edge portions 38 and 39 being formed by notching the upper extremity of extension 34. Hereupon extension 27 may be folded downwardly, and tab 32 passed through a slot or opening 29′ provided in panel 29, line 31 thus being positioned at the ridge of a symmetrically double sloped roof whose sides are constituted by panels 28 and 29. Panel 29 is longer than panel 28 by substantially the distance between its free outer edge and slot 29′ so that a symmetrical roof is obtained. The extra length (the direction of length is considered to be normal to the hinging line) is accommodated behind wall member 15 in the initial arrangement, Figure 1, due to the fact that the wall member has a greater vertical dimension than the distance between it and wall member 17, as has been mentioned above.

Extension 27, its free end being engaged by tab 32, is sustained in roof simulating position. Edges 38 and 39 of wings 36 and 37 underlie the ridge and are thus retained in angular position to the triangular portion 35, which constitutes a gable wall portion. The abutment of edges 38 and 39 with the ridge, tends to insure the gable portion against inward flexing.

Extension 33 is substantially in the form of a T having a substantially triangular stem portion 40 similar to the triangular portion 35 of extension 34 and wings 41 and 42 disposable in quadrilateral relation with the end portions 43 and 44 overlapped, the overlapped portions being receivable in a slot 27′ formed transversely of the ridge in panels 28 and 29. The overlapped portions 43 and 44 have downward projections 43′ and 44′ which extend below the ends of slot 27′ so that the overlapped relation is securely maintained and the simulated chimney also serves to hold the roof against upward displacement relative to wall member 15. The triangular portion 40 constitutes a gable wall portion.

The exterior portions of the article may be decorated as desired, and appropriate decoration has been indicated in Figures 1 to 3. As an additional feature, panel 22 has a pair of flaps 45 and 46 struck therefrom and these may be inserted through slots 47 and 48 in wall member 15 in simulation of awnings, as shown in Figure 2.

Slots which are utilized only in the secondary arrangement of the article are preferably formed in the manner indicated in Figure 13 wherein reference numeral 49 designates a portion of a blank, reference numerals 50 and 51 knife slits, and reference numeral 52 a strip of material between the slits. Strips as at 52 in the initial set up of the article close quite completely the space between slits 50 and 51. In transforming the article into its secondary arrangement, the strips 52 are removed so that a slot is formed for the reception of a cooperating tab.

The bottom structure described with reference to Figures 1, 2 and 3 is preferably utilized in the modifications to be hereinafter described and while in these modifications I have not shown flaps such as shown at 45 and 46, Figure 3, and the cooperating slots 47 and 48, it will be understood that these elements may be utilized in any of the modified forms if desired.

The general structure shown in Figures 5 and 6 will be readily understood from the preceding description. According to Figures 5 and 6, however, wall member 53 has an extension generally indicated at 54 which is foldable in simulation of a dormer. Prior to folding the extension is uniplanar and folded inwardly against wall member 53 so that the initial article is of the identical form illustrated in Figure 1.

Extension 54 terminates upwardly in a triangular gable portion 55 and has lateral triangular wings 56 and 57, the latter being continued into the two panel portions 58, 59 and the tab 60. The free edge of the roof panel 61 is provided with a recess or opening 62 whose rear edge is adapted to abut extension 54 to prevent the roof from collapsing. Wings 56 and 57 are bent toward the roof, and are provided with tabs 56′ and 57′ engageable in slots 63 and 64 formed in the panel 61. Panel portions 58 and 59 are disposable over gable 55 as the sides of a double sloped roof, tab 60 being engageable behind wing 56 to retain the roof in position. The dormer roof thus simulated has an extension beyond the plane of the gable due to the offset indicated at 65 Figure 6.

In the arrangement shown in Figures 7 to 9, wall member 66 has an extension generally indicated at 67 similar in form to the extensions described with reference to Figures 3 and 6, and comprising panel portions 68 and 69, the latter being adapted to lie behind wall member 70 in the initial arrangement of the article. The marginal portion of panel 69 is transversely slit as at 71 and 72 to form the tabs 73, 74 and 75. As indicated in Figure 7, in the secondary arrangement of the article, the top wall member 70 is gripped by tabs 73 to 75, tabs 73 and 75 lying behind wall member 70 and tab 74 lying in front of the latter. With the roof thus set up, its ends are folded or bellowsed inwardly along the lines 76, 77, 78 and 79 so that the outer edges of each roof panel are upwardly convergent.

Wall members 80 and 81 are provided at their upper ends with triangular extensions 82 and 83 disposable between the end edges of the opposite roof sides to form a French type roof as distinguished from the ordinary gable roofs heretofore described. Extension 82 has laterally projecting tabs 84 and 85 engageable in slots 86 and 87 in the downwardly folded roof portions, and extension 83 has tabs 88 and 89 engageable in slots 90 and 91. It will be understood that lines 92, 92*a* and 92*b* are portions of the original straight ridge line.

According to Figures 10 to 12, wall members 93 and 94 have extensions 95 and 96 initially foldable in flat relation across the top of the hollow body and beneath the closure flap 97 which has a tongue 98 designed to lie behind wall member 99, the closure flap 97 being a continuation of wall member 100. Extension 95 comprises three panels 101, 102 and 103 demarked by scoring lines parallel to the top end of wall member 93, panels 102 and 103 being of the same length and the former having a triangular wing 104.

In the secondary arrangement of the article, extension 95 is withdrawn, wing 104 bent outwardly at right angles to panel 102, panel 101 brought flat against closure flap 97 and tab 104′ of wing 104 engaged in a slot 105 formed in the closure flap. Tab 103′ at the extremity of tab 103 is engaged in a slot 106 in the closure flap so that panels 102 and 103 now are positioned as the sides of a double sloped roof of which wing 104 forms the gable.

It will be understood that many other modifications are possible without departure from the invention and accordingly I do not limit myself to structure except as in the following claims.

I claim:

1. A container comprising quadrilaterally arranged upright wall members whose upper ends lie substantially in the same plane, one of said members having an extension hingedly connected to its upper end, said extension having a portion adapted to extend flatly across to the opposite wall member and having an end portion foldable along a line parallel to the hinging axis of the extension and relative to the first mentioned portion to lie behind said opposite wall member, said extension being also disposable to position said two portions as the sides of a double-sloped roof, and means for retaining the free end of said end portion on the upper end of said opposite side member to sustain the extension in roof simulating position, said means comprising an extension on said opposite wall member engaged in an opening provided in said end portion, the upper portion of said last named extension being foldable to simulate a dormer and having tabs engageable in slots in the underlying roof portion.

2. A container comprising quadrilaterally arranged upright wall members whose upper ends lie substantially in the same plane, one of said members having an extension hingedly connected to its upper end to extend flatly over the upper end of the container as a closure member, said extension being foldable to represent a double-sloped roof having a ridge parallel to the hinging axis of said extension, means for supporting the free end of the roof extension, when so folded, to retain it in roof-simulating position, and an extension on an adjacent one of said members and comprising a substantially triangular portion disposable to form a gable wall element having its terminal portion provided with laterally extending wings, said wings being foldable in quadrilateral arrangement with their free ends overlapping, to form a chimney, the ridge portion of the roof being provided with a transverse slot to receive said overlapped ends.

3. A container comprising quadrilaterally arranged upright wall members whose upper ends lie substantially in the same plane, one of said members having an extension hingedly connected to its upper end, said extension having a portion adapted to extend flatly across to the opposite wall member and having an end portion foldable along a line parallel to the hinging axis of the extension and relative to the first mentioned portion to lie behind said opposite wall member, said extension being also disposable to position said two portions as the sides of a double-sloped roof, means for retaining the free end of said end portion on the upper end of said opposite side member to sustain the extension in roof-simulating position, and an extension on one of the other wall members comprising a substantially triangular part disposable to form a gable wall element and having its terminal portion provided with laterally extending wings, said wings being foldable in quadrilateral arrangement, with their free ends overlapping, to form a chim-

ney, the ridge portion of the roof being provided with a transverse slot to receive said overlapped ends.

4. A container comprising quadrilaterally arranged upright wall members whose upper ends lie substantially in the same plane, one of said members having an extension hingedly connected to its upper end, said extension having a portion adapted to extend flatly across to the opposite wall member and having an end portion foldable along a line parallel to the hinging axis of the extension and relative to the first mentioned portion to lie behind said opposite wall member, said extension being also disposable to position said two portions as the sides of a double-sloped roof, means for retaining the free end of said end portion on the upper end of said opposite side member to sustain the extension in roof-simulating position, and a hinged extension on one of the other upright wall members adapted to underlie the first extension when the latter is in its flatly extending position and also disposable to form a gable wall element having side wings foldable to underlie the roof portions in contact therewith.

5. In an article of the class described, a hollow body portion comprising quadrilaterally arranged upright wall members, one of said members having an extension adapted to assume an upright position and terminating in laterally projecting wings, said wings being disposable in quadrilateral arrangement with their free ends overlapping, and means presenting a slot for the reception of said overlapped ends.

In testimony whereof I have hereunto set my hand.

WILLIAM S. MARR.