No. 817,508. PATENTED APR. 10, 1906.

V. J. NIELE.

METALLIC STRUCTURE.

APPLICATION FILED NOV. 4, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

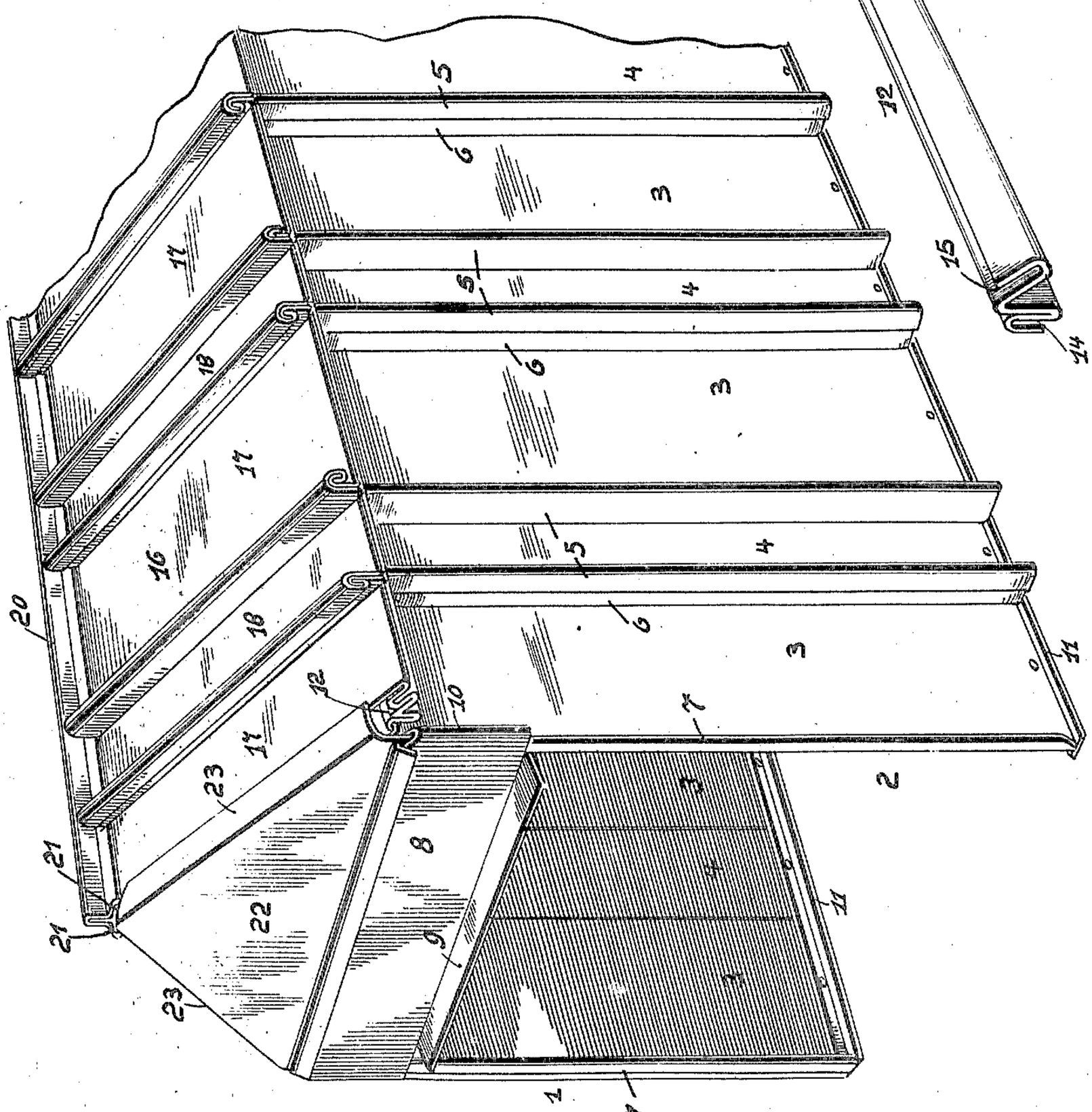

Fig. 2.

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2 SHEETS—SHEET 2.

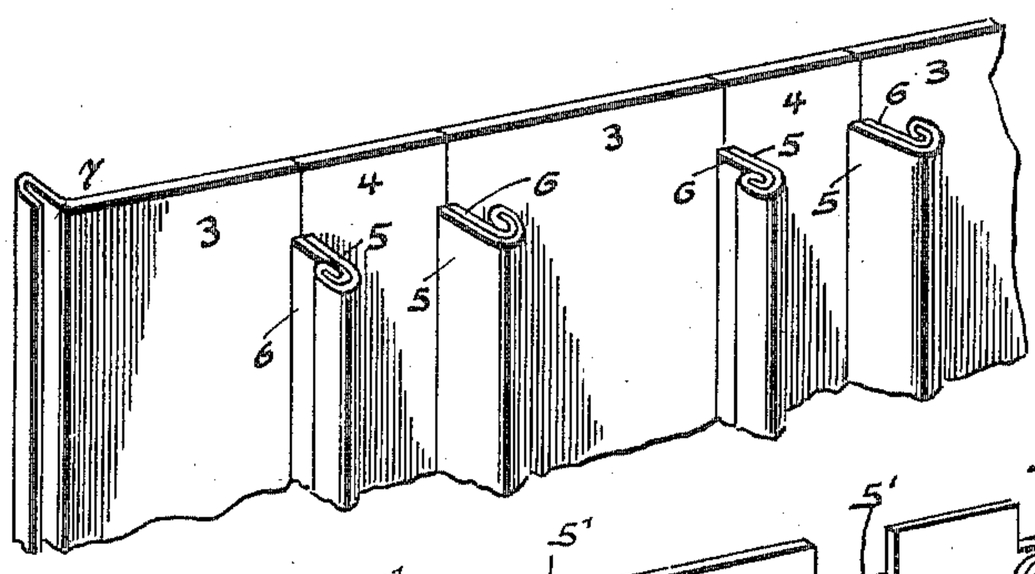

Fig. 3.

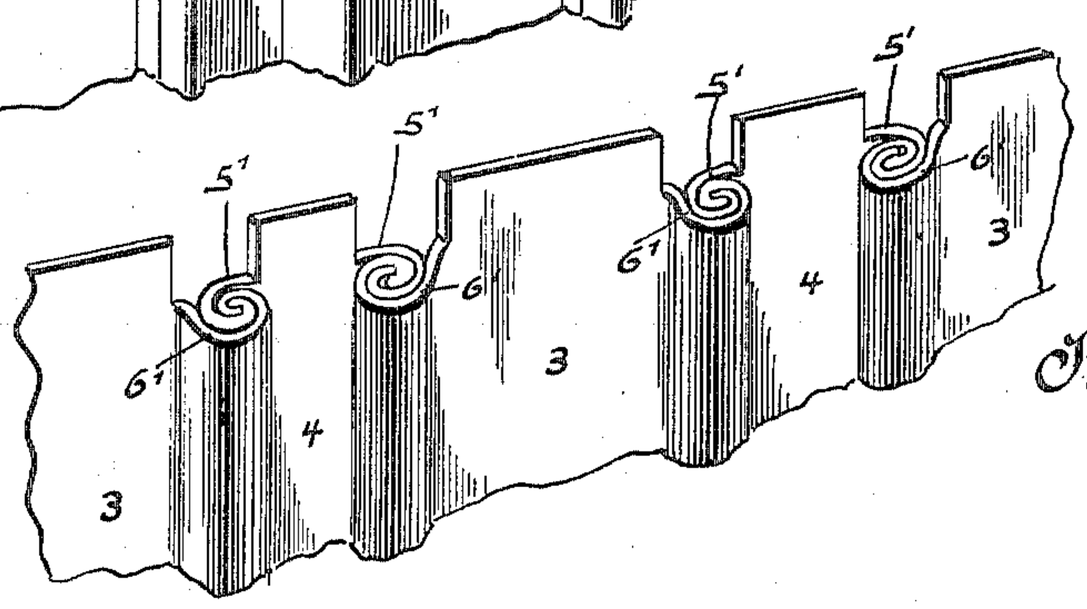

Fig. 4

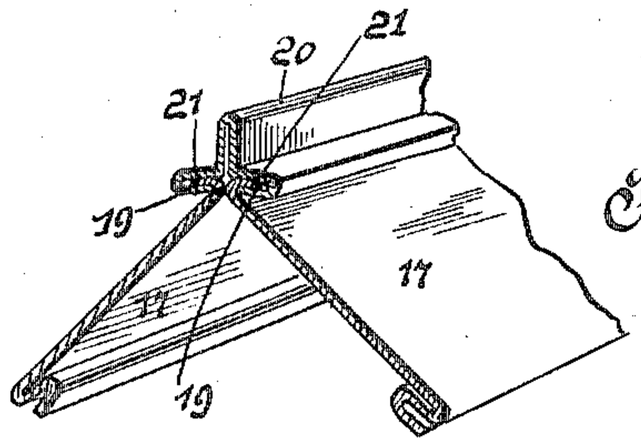

Fig. 5

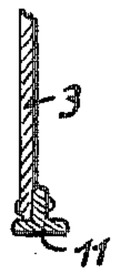

Fig. 6

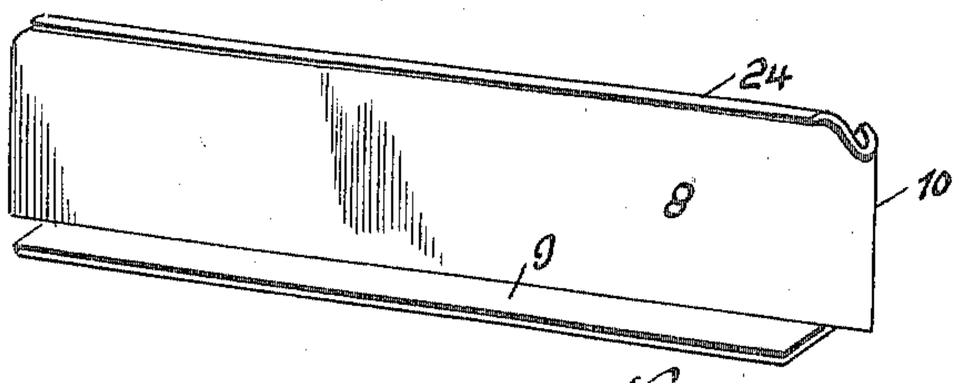

Fig. 7.

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[illegible]

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UNITED STATES PATENT OFFICE.

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METALLIC STRUCTURE.

No. 817,508. Specification of Letters Patent. Patented April 10, 1906.

Application filed November 4, 1905. Serial No. 285,929.

To all whom it may concern:

Be it known that I, VALENTINE J. NIELE, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Metallic Structures, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in metallic structures; and the invention relates more particularly to buildings constructed of metal.

The primary object of this invention is to provide metallic sheeting and frames which can be easily and quickly assembled to provide a strong, durable, and comparatively inexpensive structure. In building the structure I dispense with the use of nails, screws, and the like fastening means and employ novel forms of flanges and interlocking edges to hold the different parts of my improved structure together.

The detail construction entering into my invention will be presently described and claimed, and reference is had to the drawings accompanying this application, wherein like numerals of reference designate corresponding parts throughout the several views, in which—

Figure 1 is a fragmentary perspective view of a structure formed of sheet metal. Fig. 2 is a perspective view of a longitudinal girder. Fig. 3 is a fragmentary perspective view of one of the side walls of the structure. Fig. 4 is a similar view of a modified form of construction. Fig. 5 is a detail perspective view of a portion of the roof of the structure. Fig. 6 is a vertical sectional view of a portion of one of the side walls. Fig. 7 is a perspective view of a lintel used in connection with the structure.

The entire structure, as illustrated in Fig. 1 of the drawings, is constructed of sheets and strips of metal, which are bent, flanged, grooved, and provided with interlocking edges in order that the different parts of the structure may be easily and quickly assembled. The structure illustrated in Fig. 1 of the drawings is one of the various designs of buildings that may be built from sheet metal constructed in accordance with my invention. Therefore I do not care to confine myself to this type of structure, having simply employed the same to illustrate the manner in which the sheet metal may be assembled.

The side walls 1 and 2 of the structure are identical in construction, and each side wall consists of a plurality of sheets of metal 3 and 4, said sheets being of a length corresponding to the height of the side walls 1 and 2, and the sheets 3 are preferably of a greater width than the sheets 4, the object of which will be presently described. The sheets 4 4 upon their vertical edges are provided with right-angular hook-shaped flanges 5 5, said flanges extending from the bottom of the sheets 4 to within close proximity to the upper ends of said sheets. The sheets 3 3 are provided with vertically-disposed flanges 6 6, which are substantially hook-shaped in cross-section, said flanges being adapted to engage in the hook-shaped flanges 5 of the sheets 4 4, as clearly illustrated in Fig. 3 of the drawings. This construction provides sets of vertically-disposed ribs upon the outer sides of the walls 1 and 2, and said ribs are adapted to add rigidity to the walls and aid in supporting the roof of the structure.

In lieu of the flanges 5 and 6 just described flanges 5′ 5′ and 6′ 6′ may be employed, the flanges 5′ 5′ of the sheet 4 being adapted to interlock in the flanges 6′ 6′ of the sheets 3, said flanges providing vertically-disposed ribs which are tubular in form and substantially circular in cross-section.

The sheets of metal 3, forming the ends of the structure are flanged, as at 7 7, to permit of lintels 8 8 being mounted between the side walls 1 and 2, said lintels being flanged, as at 9, upon their horizontal edge and, as at 10 10, upon their vertical edge to engage the flanges 7 7 of the sheets of metal 3. The lintels 8 are adapted to form a doorway, the flanges 9 of said lintels shielding said doorway.

To the bottom edges of the side walls 1 and 2 are secured T-irons 11 11, said irons forming a base for the side walls and assisting to support the same in a vertical position. The top edges of the side walls 1 and 2 are provided with longitudinally-disposed girders 12 12, said girders being constructed from a strip of metal which is bent upon itself a number of times to form grooves 14 and 15, the grooves 14 being adapted to receive the upper edges of the side walls, while the grooves 15 receive the eaves or edges of a roof 16.

The roof 16 consists of a plurality of sheets or plates 17 and 18, the sheets 17 being similar to the sheets 3 of the side walls 1 and 2 and the sheets 18 similar to the sheets 4 of the side walls. The edges of the sheets 17 and

18 are flanged similarly to the sheets 3 and 4 and locked together to form two slanting sides of the roof. The upper edges of the sheets 17 and 18 forming the apex of the roof are flanged outwardly, as at 19 19, and retaining the sides of the roof together is an inverted-T-shaped cleat 20, said cleat being bent upon itself to form two grooves 21 21 to receive the flanges 19 19 of the sheets 17 and 18. To close the space above the lintels 8 and between the sides of the roof, I employ triangular plates 22, said plates being flanged, as at 23 23, to engage the edges of the roof 16, the lower edge of the plates 22 extending behind the upper flanged edges 24 of the lintels 8. I do not care to confine myself specifically to metal, as terra-cotta or the like building material may be constructed similar to the sheet metal described, or the terra-cotta may be provided with metallic interlocking edges.

It will be observed from the novel form of sheets which I employ and the manner of interlocking them together that it is an extremely easy matter to build a structure such as illustrated in Fig. 1 of the drawings, and while I have herein set forth the principle of my invention I desire it to be understood that such changes in the construction as are permissible by the appended claims may be resorted to without departing from the spirit and scope of the invention.

What I claim, and desire to secure by Letters Patent, is—

1. A structure built of sheets of metal and consisting of side walls, lintels, plates, a roof, said walls and roof being composed of sheets of metal having their edges interlocked together to form ribs, girders carried by the upper edges of said walls and supporting said roof, said lintels being formed of sheet metal and flanged to engage said walls, said plates being flanged to engage said roof, a cleat mounted upon the apex of said roof, substantially as described.

2. A structure of the character described consisting of side walls, a roof, said walls and roof being composed of a plurality of sheets of metal having interlocking edges forming ribs, girders carried by said walls and supporting said roof, lintels connecting said walls together, plates supported by said roof, a cleat mounted upon the apex of said roof, substantially as described.

3. A structure built of sheet metal and consisting of side walls, a roof, said walls and roof being composed of a plurality of sheets of metal having interlocking edges forming vertically-disposed ribs, said ribs extending from the edge of the roof to the bottoms of the walls, and means to support said roof upon said side walls, substantially as described.

4. A structure of the character described consisting of walls of sheet metal having interlocking edges, said interlocking edges forming ribs which are disposed vertically and which extend from the top to the bottom edges of the walls, a roof of sheets of metal having interlocking edges, lintels engaging said walls, plates supported by said roof, and resting upon said lintels, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

VALENTINE J. NIELE.

Witnesses:

HENRY C. EVERT,

E. E. POTTER.