129,777

PATENT SPECIFICATION

Application Date, July 11, 1918. No. 11,362/18.
,, ,, Jan. 10, 1919. No. 756/19.
One Complete Specification Left, Jan. 13, 1919.
Complete Accepted, July 11, 1919.

PROVISIONAL SPECIFICATION.

No. 11,362, A.D. 1918.

Improvements in and relating to Portable Buildings.

I, PETER NORMAN NISSEN, D.S.O., c/o The Institute of Mining & Metallurgy, 1, Finsbury Circus, in the City & County of London, Lieutenant-Colonel Commanding Royal Engineers, G.H.Q., Troops of the British Expeditionary Force, France, do hereby declare the nature of this invention to be as follows:—

This invention relates to an improved construction of portable building, which has for its object cheapness of construction and facility of setting up or taking down. A further object is to so use the sheets of which the building is constructed that their original shape and form is maintained whereby they can be employed for any other purpose for which said sheets are used.

According to the present invention the walls of the building—which is of circular shape—is composed of a series of panels each of which consists of a sheet of corrugated iron or steel said panels being arranged with the corrugations running vertically which enables the sheets to flex automatically during erection to conform to the desired circular shape. By thus using flat sheets considerable economy in space in packing for transport arises.

The edges of the adjacent sheets are fixed together either by means of the improved junction pieces forming the subject of prior application for Letters Patent filed by me on the 15th day of June, 1917, and numbered 8620, or by overlapping them and fixing them together by means of bolts and screws.

To preserve the circular shape of the wall of the building a ring or hoop of angle iron is run round the top and bottom of said wall, said hoops or rings being each made up of a series of similar segmental parts which are fixed together by means of bolts or screws and said hoops or rings being held in position by hook bolts passing through either the junction pieces or the overlap of the sheets and engaging the vertical parts of said hoops or rings.

The doors and windows are either incorporated in or take the place of some of the panels.

The roof consists of a series of rafters which may either be of wood or metal, a series of roofing sheets having grooves at their edges which are adapted to fit over the upper sides of the rafters and a series of lining sheets also with grooves at their edges adapted to fit over the under sides of the rafters. If metal rafters are employed they can conveniently be made out of strips of sheet

[*Price 6d.*]

metal by rolling over the edges to form enlargements adapted to engage the grooves in the roofing sheets.

A central stack and ventilating cowl is provided said stack forming the central support for the rafters which are fixed to it and also to the upper ring or hoop of the wall by means of hook or other bolts.

Both the roofing and lining sheets are secured to the rafters by means of screws or spikes.

By this construction the inter-engagement of the roofing sheets and the rafters materially facilitates the construction of the roof as the sheets ensure the proper pitch of the rafters and the rafters ensure the proper lie of the sheets.

Dated this 11th day of July, 1918.

PHILLIPSS,
70, Chancery Lane, London, W.C. 2,
Agents for the Applicant.

PROVISIONAL SPECIFICATION.

No. 756 A.D. 1919.

Improvements in and relating to Portable Buildings.

I, PETER NORMAN NISSEN, D.S.O., c/o The Institute of Mining & Metallurgy, 1, Finsbury Circus, in the City and County of London, Lieutenant-Colonel, C.R.E., North Independent Force, Royal Air Force, do hereby declare the nature of this invention to be as follows:—

This invention relates to improvements in the roofing sheets of the portable building forming the subject-matter of my Application for Letters Patent No. 11,362 dated the 11th July, 1918, and it consists in making a single corrugation in the width of the shaped sheet between the grooves at its edges for the purpose of providing a certain amount of transverse elasticity.

This corrugation may be of any suitable depth which may if desired be graded from the top to the bottom of the sheet.

Dated this 10th day of January, 1919.

PHILLIPSS.

COMPLETE SPECIFICATION.

Improvements in and relating to Portable Buildings.

I, PETER NORMAN NISSEN, D.S.O., c/o The Institute of Mining & Metallurgy, 1, Finsbury Circus, in the City & County of London, Lieutenant-Colonel Commanding Royal Engineers, G.H.Q., Troops of the British Expeditionary Force, France, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to an improved construction of portable building, which has for its object cheapness of construction and facility of setting up or taking down. A further object is to so use the sheets of which the building is con-

structed that their original shape and form is maintained whereby they can be employed for any other purpose for which said sheets are used.

I attain this end by the construction shown in the accompanying drawing in which:—

Fig. 1 is a view in elevation—partly in section—of the improved building.

Fig. 2 is a view in plan thereof also partly in section.

Fig. 3 is a broken view in elevation showing particularly the construction of the roof,

Fig. 4 is a broken view showing an alternative construction of the roof.

Fig. 5 is a view in transverse section on line *x x* Fig. 4.

Fig. 6 is a view in section of the junction piece it is preferred to use for connecting the sheets, and

Fig. 7 is a view in section showing an alternative form of roofing or lining sheet.

Throughout the views similar parts are marked with like letters of reference.

The wall of the building—which is of circular shape—is composed of a series of panels each of which consists of a sheet *a* of corrugated iron or steel said panels being arranged with the corrugations running vertically which enables the sheets to flex automatically during erection to conform to the desired circular shape.

The edges of the adjacent sheets are coupled together either by overlapping them and fixing them to one another by means of bolts or screws, or preferably by means of the improved junction pieces *b* which form the subject matter of Letters Patent No. 116,546 granted to me on the 15th day of June, 1917, and which consists of two strips of corrugated iron rivetted together with suitable distance pieces between them so as to form longitudinal grooves b^1 at each edge as shown in Fig. 6.

To preserve the circular shape of the wall of the building rings or hoops *c* & c^1 of angle iron are run round both the top and the bottom of said wall, said hoops or rings being each made up of a series of similar segmental parts which are fixed to one another to complete the hoop or ring by means of bolts screws or the like. The hoops or rings are held in position relative to the sheets *a* either by hook bolts *d* the shanks of which pass through either the junction pieces *b* or through the overlap of said sheets and the hook parts of which engage the vertical parts of said hoops or rings as shown in Fig. 3, or by means of screws or gutter bolts passing through the hoops or rings.

The door *v* and windows *w* may be either incorporated in or take the place of some of the panels.

The roof consists of a series of flat roofing sheets *e* of sector shape each having corrugations or grooves e^1 at their edges whereby the adjacent sheets can engage and interlock with one another, and a series of lining sheets *f* also with corrugations or grooves f^1 at their edges for the same purpose.

If the size of the building is not excessive these sheets may be used without rafters as shown in Figs. 1, 2 & 3 in which case the top ends of the sheets *e* & *f* rest respectively on flanges h^1 & h^2 formed on the central stack *h* which is preferably provided with a ventilating cowl h^3.

If the diameter of the building is such that the roofing and lining sheets will not support themselves unless made of excessively thick plates, rafters *m* are employed as shown in Figs. 4 & 5 the corrugations or grooves e^1 & f^1 at the edges of the plates *e* & *f* being shaped to fit over the top and bottom edges of said rafters. This latter construction has the advantage that the inter-engagement of the roofing sheets and the rafters materially facilitates the construction of the roof as the sheets ensure the proper pitch of the rafters and the rafters ensure the proper lie of the sheets.

To enable the roofing and lining sheets to be rapidly assembled it is sometimes convenient to provide for a limited amount of transverse elasticity in said sheets which end I attain by forming a single corrugation e^2 in the length of the sheet

at or about the centre thereof, as shown in Fig. 7, said corrugation being preferably of relatively greater depth than width. This corrugation may also be graded from one end of the sheet to the other.

Both the roofing sheets *e* and the lining sheets *f* are secured to the rafters when same are of wood by means of screws or nails, and said rafters may be secured to the top hoop or ring *c* and to the stack *h* by similar or any other suitable means.

If metal rafters are employed they are preferably made out of strips of sheet metal rolled over at the edges to form enlargements for the corrugations or grooves at the edges of the plates to engage with. In this case the sheets are fixed to the rafters by suitable bolts.

It will be appreciated that by using flat sheets for the panels of the wall there will be considerable economy in space in packing for transport and that when the improved junctions covered by my prior Patent No. 116,546 are employed no perforation of the sheets is necessary.

When it is desired to line a building such as hereinbefore described it can conveniently be effected by means of sheets of suitable material which are kept in place by means of hoops *n* or sections thereof made out of straight lengths which are kept in place and up to their work by the springiness imparted to them by reason of their being bent to assume the required curvature.

I am aware that sheets for iron buildings have been bent or curved centrally for the purpose of increasing the strength of same and I make no claim to such *per se* but having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

1. A portable building of circular shape comprising essentially a series of sheets of corrugated iron jointed together at their edges to form the vertical wall, a hoop or ring at the upper edge of the wall, a hoop or ring at the lower edge of the wall, means for fixing said hoops or rings to the sheets forming the walls, a central stack and/or ventilating cowl, a series of roofing sheets lying between said stack or cowl and the circular wall of the building the edges of said sheets having grooves which engage one another, a series of lining sheets lying between the stack or cowl and the circular wall of the building the edge of said sheets having grooves which engage one another, and means for fixing said sheets both to the wall of the building and to the central stack or ventilator.

2. A building as claimed in the preceding claim, characterized by the edges of the adjacent sheets forming the wall of the building being coupled together by means of the junction piece shown in Fig. 6, and forming the subject matter of my prior Patent No. 116,546.

3. In a building as claimed in the first claim, rafters for carrying both the roofing sheets and the lining sheets the width of said rafters being such that they engage the grooves at the edges of said sheets as and for the purpose specified, and means for fixing said sheets to said rafters and said rafters to the wall of the building and to the central stack or ventilator.

4. Sector shaped roofing and/or lining sheets for circular buildings as claimed in Claim 1, characterized by each sheet having a centrally arranged corrugation as and for the purpose specified.

5. The improved portable building substantially, as hereinbefore described and illustrated in the accompanying drawing.

Dated this 11th day of January, 1919.

PHILLIPSS,

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1919.

Fig. 1.

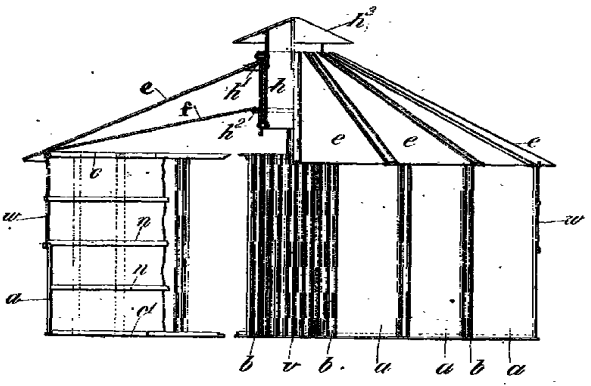


Fig. 7.

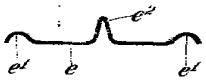


Fig. 3.

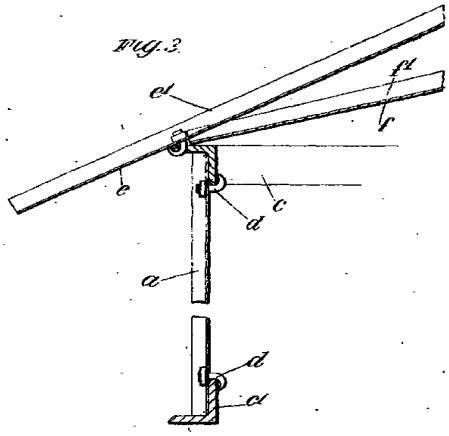


Fig. 2.

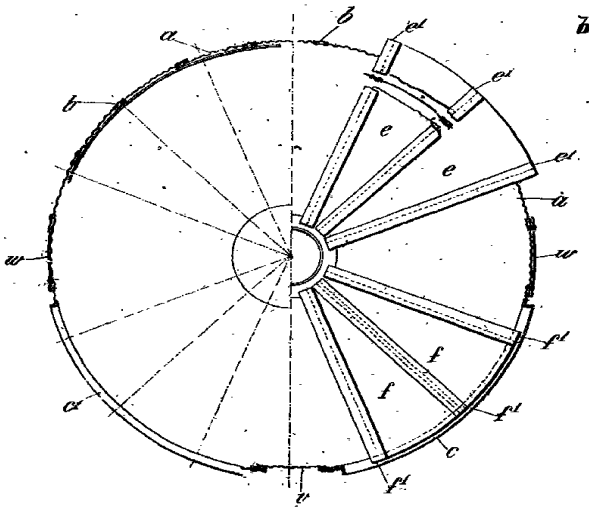


Fig. 6.

Fig. 4.

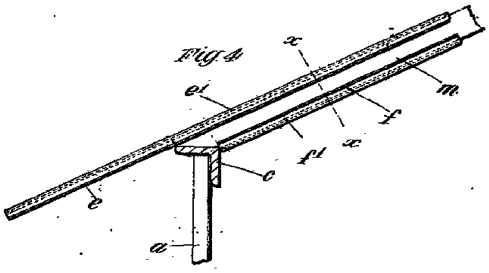


Fig. 5.

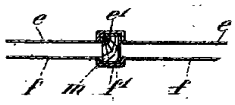


Fig. 1.

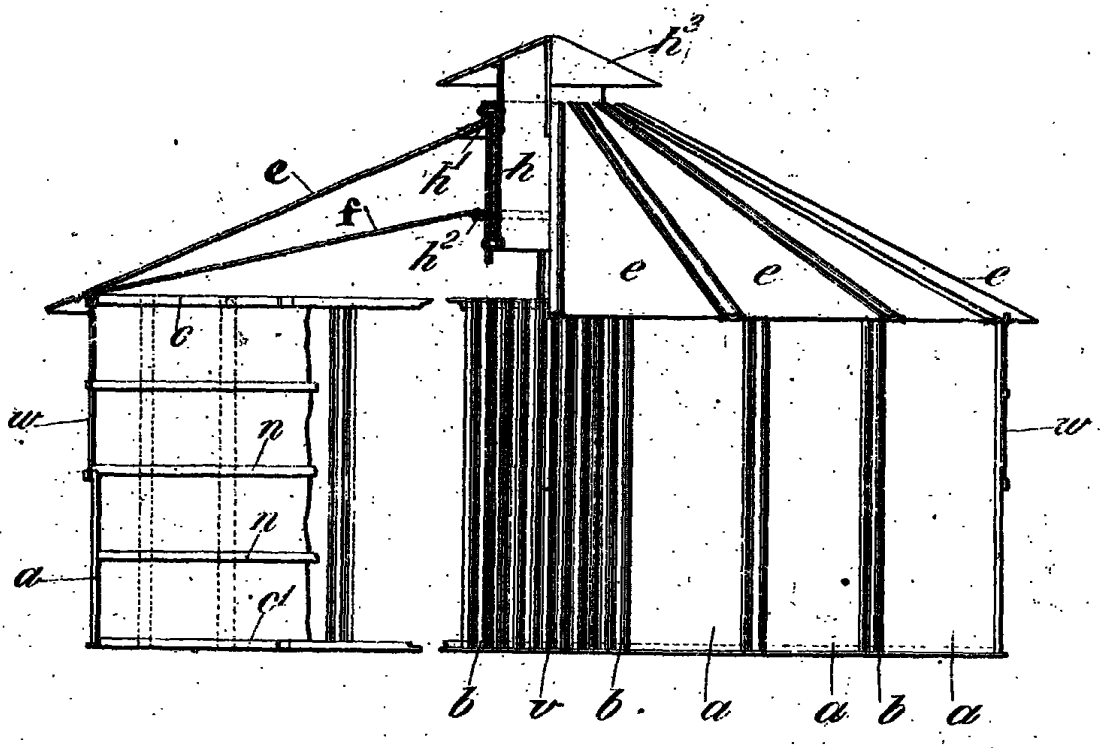


Fig. 2.

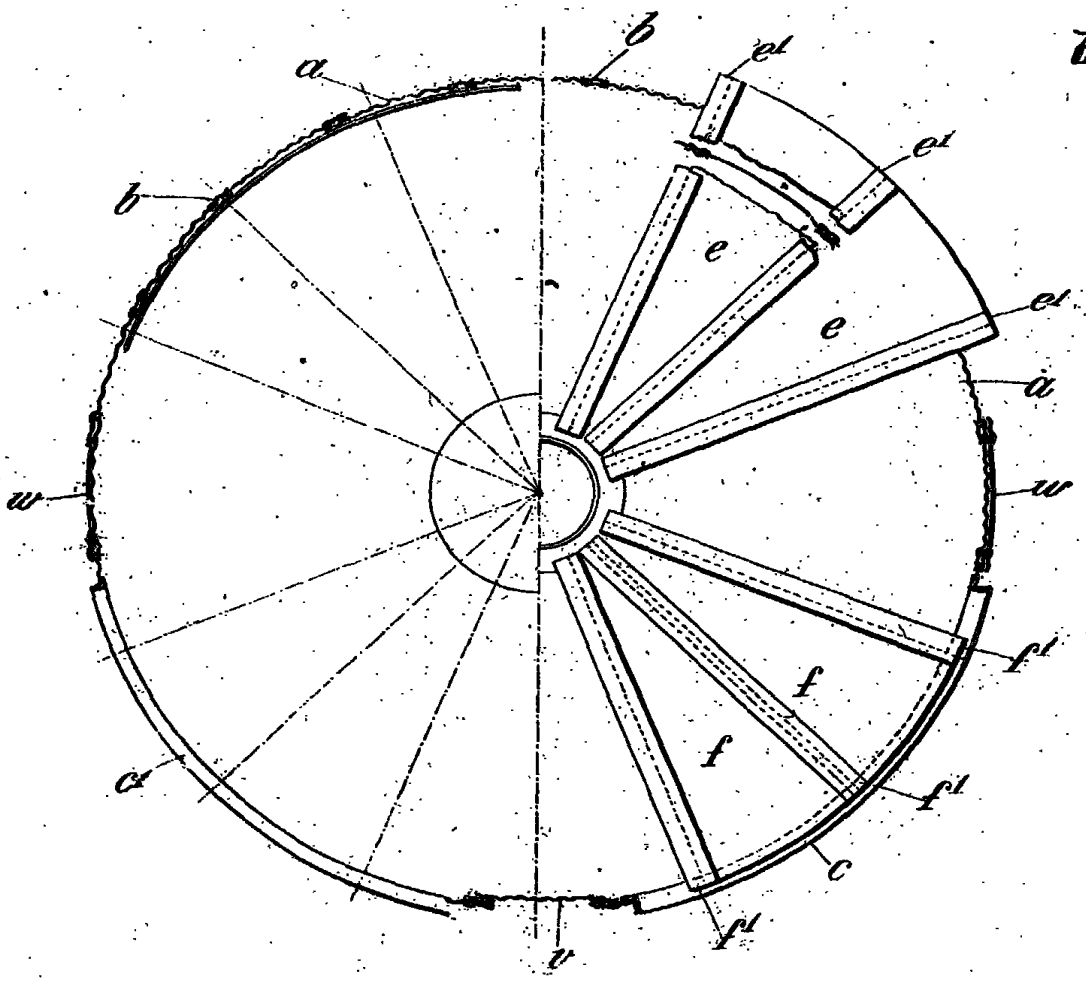


Fig. 7.

Fig. 3.

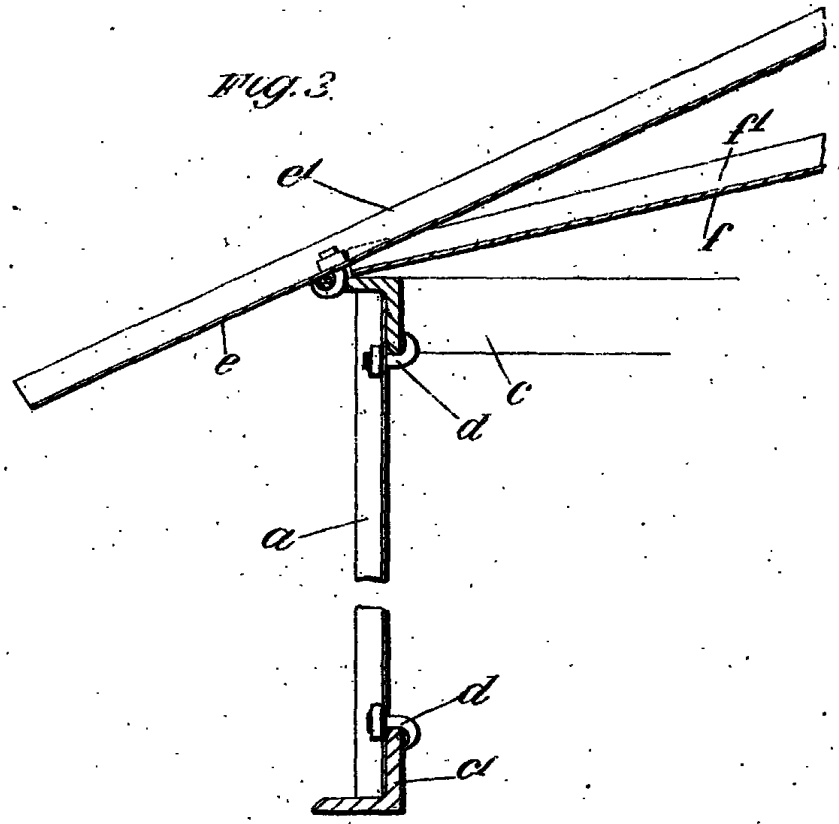


Fig. 6.

Fig. 4.

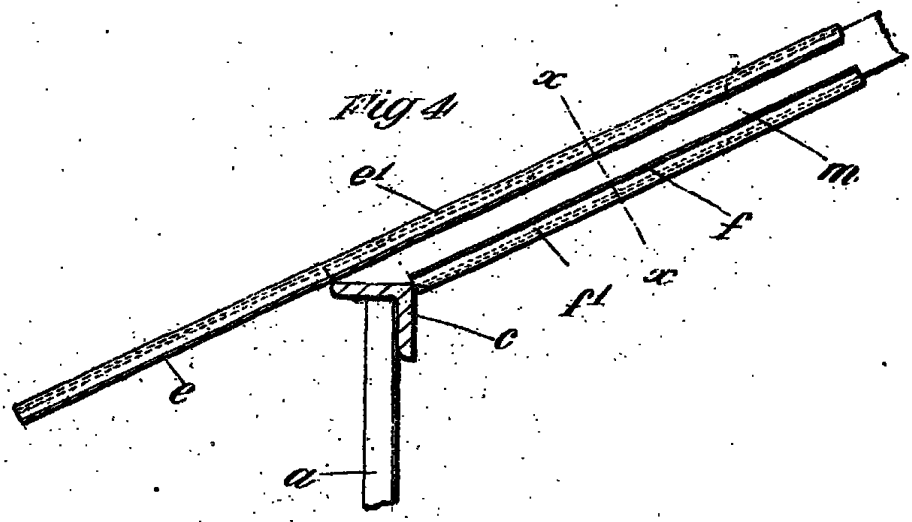
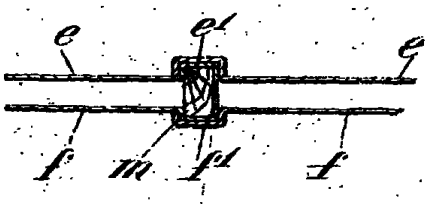


Fig. 5.



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