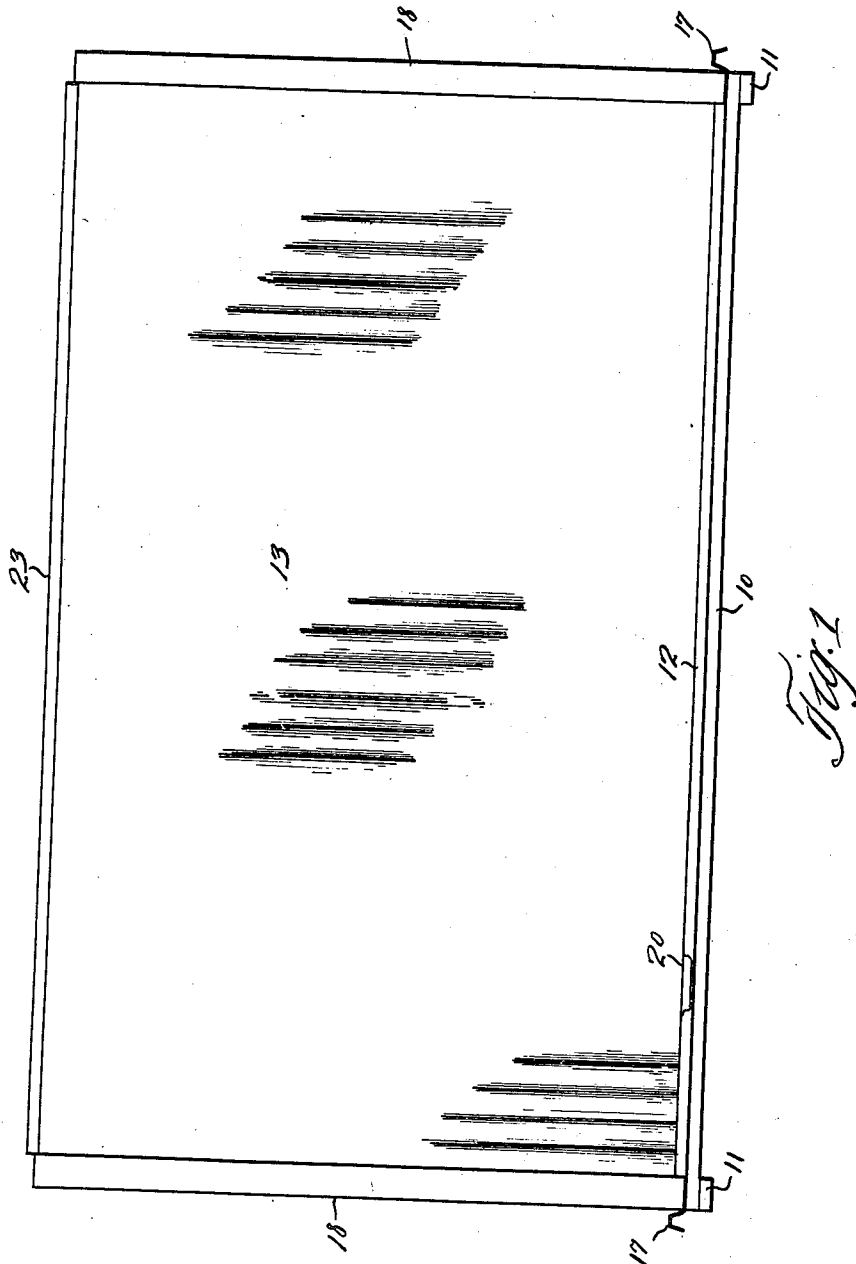


Mar. 13, 1923.

H. O. DAVIDSON.
SHEET METAL HUT.
FILED JAN. 12, 1918.

1,447,966.

3 SHEETS—SHEET 1.



Inventor
H. O. Davidson

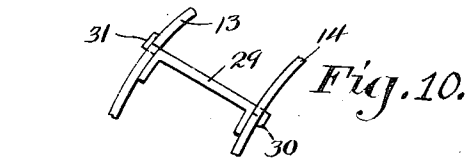
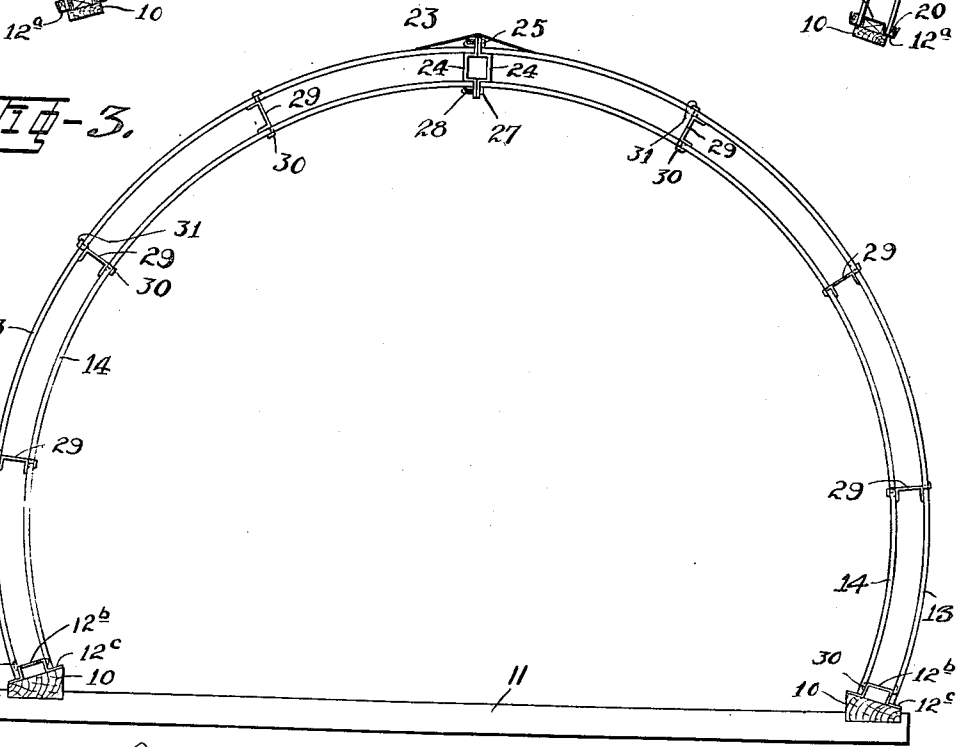
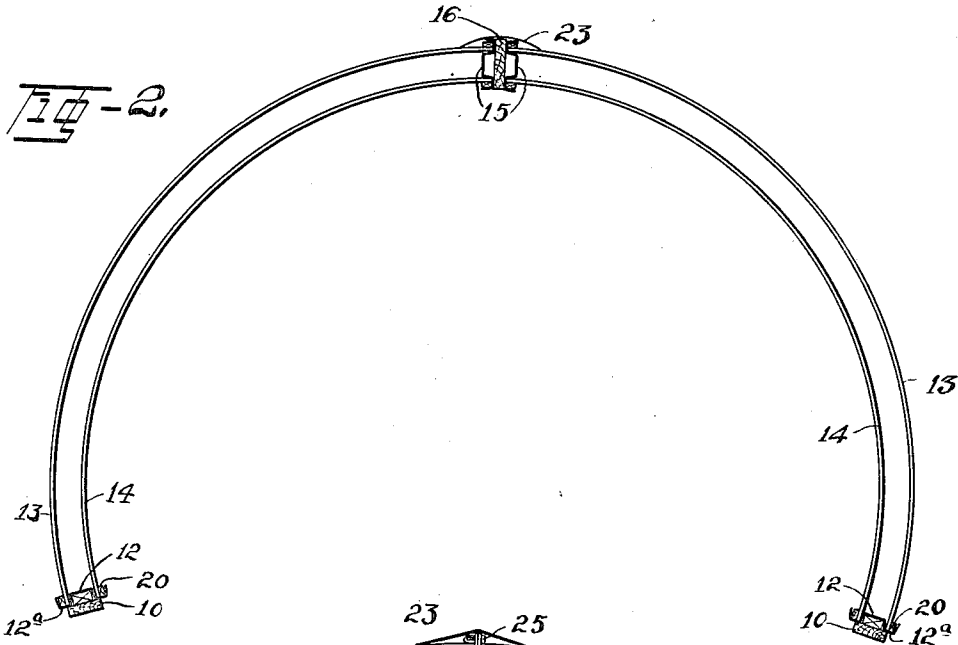
By
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Attys.

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3 SHEETS—SHEET 2.



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Fuller Smith Brock & Co Attys

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3 SHEETS—SHEET 3.

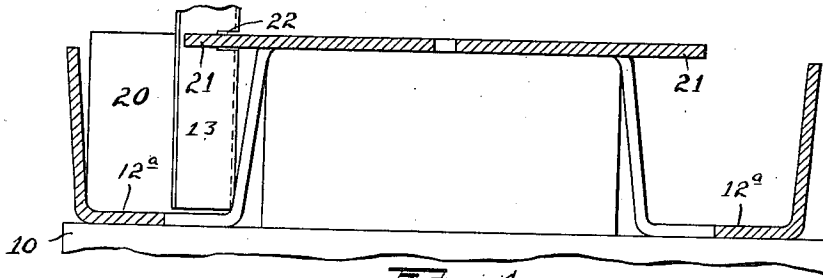


FIG-4.

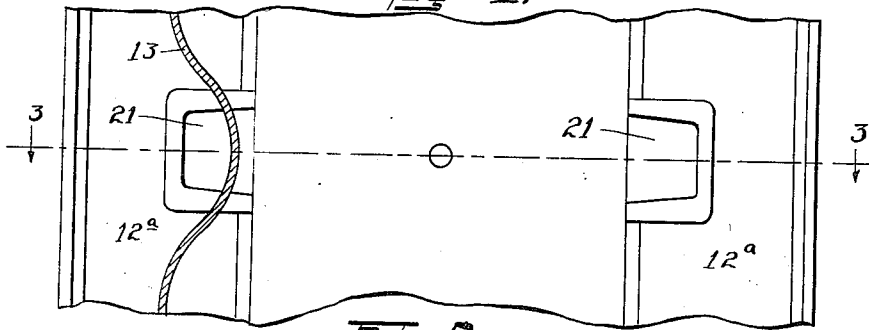


FIG-5.

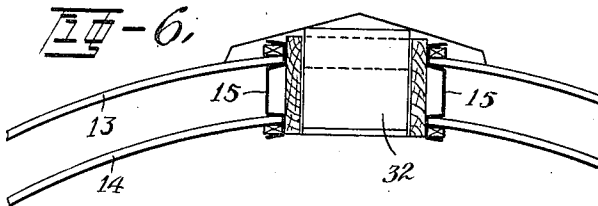


FIG-6.

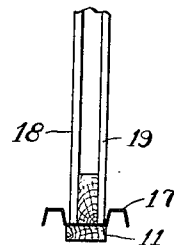


FIG-7.

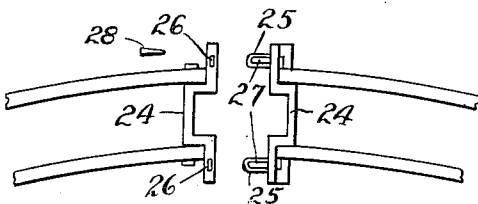


FIG-8.

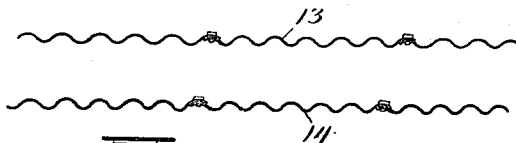


FIG-9.

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UNITED STATES PATENT OFFICE.

HARRY O. DAVIDSON, OF CLEVELAND, OHIO, ASSIGNOR TO THE HYDRAULIC PRESSED STEEL COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

SHEET-METAL HUT.

Application filed January 12, 1918. Serial No. 211,489.

To all whom it may concern:

Be it known that I, HARRY O. DAVIDSON, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Sheet-Metal Huts, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention relates generally to portable sheet metal buildings and more particularly to a sheet metal hut particularly adapted as a protective means in warfare.

The object of the invention is to provide a steel hut which shall have a maximum of strength for the least weight and which shall be so constructed that it can be quickly and easily set up and taken down and one in which the parts will nest conveniently for shipment.

Another object of the invention is to provide a hut with double walls, the intervening space of which can be filled with non-conducting material if desired or the walls can be braced intermediate their ends whereby the strength of said walls is materially increased and the device as a whole rendered capable of use underground, the strength of the walls thus braced being sufficient to withstand the load of earth placed thereon.

Another object of the invention is to so construct the various parts that the hut can be assembled quickly and easily under cover of darkness when necessary.

With these various objects in view the invention consists in the novel feature of construction and combination hereinafter fully described and set forth in the appended claims.

In the drawing forming a part of the specification Fig. 1 is a side elevation of the device; Fig. 2 is a transverse section of a sheet metal hut constructed in accordance with my invention; Fig. 3 is a similar view of a slightly different form of structure, the double walls of the hut being in this instance provided with intermediate braces; Fig. 4 is an enlarged detail of the side rail and showing the manner of locking the end of the curved side plate thereto; Fig. 5 is a sectional plan view of the same; Fig. 6 is a detail sectional view showing the center rail and the manner of locking the upper ends of the side plates thereto; Fig. 7 is a detail

sectional view showing the end rail and the manner of securing the end plates thereto; Fig. 8 is a detail view showing the manner of locking the side plates together in the form shown in Fig. 3; Fig. 9 is a horizontal sectional view of a portion of the side plates showing the corrugations therein and the manner of riveting a series of sections together to secure the side plates of any desired length.

This sheet metal hut is designed to serve as a protection to a limited number of soldiers close to the firing line and may be briefly described as a tunnel shaped structure preferably having curved sides and flat or straight ends and in placing the same I employ side sills 10 and end sills 11, to fasten the hut to, these sills being of wood and it will be noted that the side sills are set at an oblique angle as shown in Fig. 1 or are provided with oblique faces as shown in Fig. 2.

To these side sills 10 are attached rails 12 of pressed steel, these rails receiving the lower ends of the curved side plates 13 and 14 thereon. These side plates 13 and 14 are of corrugated sheet steel curved on the arc of a circle and are of sufficient length to extend from the side rails and sills to the center rails and ridge, the center rails 15 serving to receive the upper ends of the side plates exactly the same as the lower ends were received by the side rails.

The curved side plates 13 and 14 can be of any desired width and are arranged with over-lapping edges riveted together so as to provide side walls of any desired length and the plates are so curved with reference to the width of the structure that when the side sills and rails are properly positioned and the lower ends of the side plates or walls arranged upon the side rails, their upper ends will be in juxtaposition capable of quick and easy connection whereby a tunnel-like structure of the length desired can be quickly assembled.

The end sills 11 also have pressed steel rails 17 connected thereto and positioned upon these rails and sills are the end plates 18 and 19.

The side and end sills are connected or secured in any suitable manner and when the side plates or walls and end plates or walls are properly positioned a sheet metal

hut will be provided having double walls spaced apart, and if desired this intervening space can be filled with any suitable non-conducting material.

5 A hut constructed in this manner will be warmer in winter and cooler in summer than one having a wall of a single thickness of sheet metal. Where the hut is intended for use above ground I prefer to construct
10 the various parts so that the device if desired can be quickly and easily taken apart, shifted to a new position and quickly and easily reassembled, and with this idea in
15 view, the side rails are constructed with spaced channel portions 12^a into which fit the lower ends of the curved side plates 13 and 14 and in order to securely lock the ends of the plates in their respective channels I insert
20 wedge strips 20 between one side of the channel and the side plate, and in addition to these wedge strips it is preferred to punch tongues 21 from the central web of the side rail, said tongues being adapted to enter
25 slots 22 produced in the curved side plates adjacent their lower ends. The wedge strips serving to maintain these interlocking parts in their proper positions after the assemblage has once been completed.

As before stated, the center rails are constructed exactly the same as the side rails
30 and the upper ends of the curved plates are connected thereto in exactly the same manner and the two adjacent center rails are connected to a common ridge rail 16 by
35 nailing or otherwise. If desired a ridge plate 23 can be arranged to cover the central joint.

A vent opening 32 can also be provided at the central portion of the roof if so desired
40 as shown in Fig. 5. In Fig. 2 I show a slightly different construction, the sheet metal hut in this instance being intended for use below ground and is therefore designed to support the weight of the earth imposed
45 thereon. The side rails 12^b which are attached to the side sills 10 are here shown in the form of an inverted channel having laterally projecting feet 12^c upon which the lower ends of the curved side plates or walls
50 rest, and at their upper ends the curved side plates are connected to channel shaped center rails 24 by means of bolts 25 passing through the ends of the plates and the parallel flanges of the channels and these channels
55 are also provided with laterally projecting feet against which the ends of the plates abut, but these projecting feet also serve another purpose as it will be noted that the feet of one channel are provided with apertures 26 while the feet of the opposed channels are provided with slotted pins or bolts
60 27 which are adapted to pass through the apertures 26, when the center rails are brought into juxtaposition, and then locking wedges 28 are forced through the slots

of the pins thereby completing the connection, and these parts are all of such size and so arranged that this assemblage can be made under cover of darkness when necessary.

The side walls 13 and 14 are of corrugated sheet metal as previously described and are curved on such an arc that when positioned upon the side rails and sills their upper ends
70 will be brought into proper locking position and in order to stiffen the walls of this structure I interpose at proper intervals a number of braces 29. These braces are sheet
75 metal channels and have the flanges thereof positioned to contact with the inner and outer curved side plates, and in order to properly position these braces a tongue 30
80 is punched from said channel and projected through an opening 31 in the adjacent plate and this projecting portion of tongue is then bent back upon the plate securely connecting each end of the bracing channel to the adjacent or contiguous side plate or wall.
85 The side rails 12^b Fig. 2 are also provided with similar tongues for connecting the lower ends of the side plates or walls to the side rails.

It will thus be seen that I provide a double walled sheet metal hut capable of quick and easy assemblage at the place indicated and
90 which can be knocked down and shifted to a different position and reassembled when desired.

It will also be noted that the side plates or walls can be quickly and easily detached
100 from the rails when desired and these plates or walls nested for transportation.

Having thus described my invention what I claim is:—

1. In a structure of the kind described, 105 parallel sheet metal plates, a channel member having its flanges interposed between said plates, and engaging means carried by said channel member and adapted to engage said plates.

2. In a structure of the kind described, 110 parallel sheet metal plates curved on the arc of a circle, a channel member having its flanges interposed between said plates and engaging means carried by said channel member and adapted to engage said plates.

3. In a structure of the kind described the 115 parallel curved sheet metal plates, a channel member having substantially parallel flanges interposed between said plates, and integral tongues carried by said channel members and adapted to engage said parallel plates.

4. A double walled sheet metal hut comprising parallel curved sheet metal plates, 120 means at the ends of said plates for spacing said plates and connecting them together, the spacing means at the center being adapted to be connected together.

5. A double walled sheet metal hut comprising parallel curved plates, spacing 130

means at the ends of said plates and detachable connecting means for uniting the adjacent spacing means.

5 6. A double walled sheet metal hut comprising parallel plates curved upon the arc of a circle, channel members to which the opposite ends of said plates are connected, the channel members connected to the upper ends of said plates being detachably connected together.

10 7. In a structure of the kind described, the parallel oppositely disposed curved plates, oppositely disposed channel members to which the lower ends of said plates are

connected and opposed members to which 15 the upper ends of said plates are connected, said opposed members being detachably connected together.

8. A sheet metal hut comprising side rails, center rails and curved metal plates, said 20 curved metal plates being detachably connected to the side rails and center rails, said center rails being detachably connected together.

In testimony whereof, I hereunto affix my 25 signature.

HARRY O. DAVIDSON.