

(No Model.)

4 Sheets—Sheet 1.

G. ESPITALLIER.
CARD BARRACKS.

No. 484,413.

Patented Oct. 18, 1892.

Fig1.

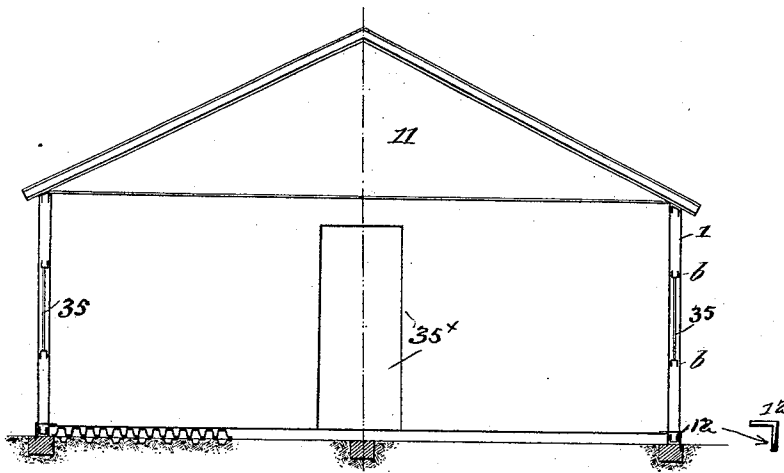


Fig3.

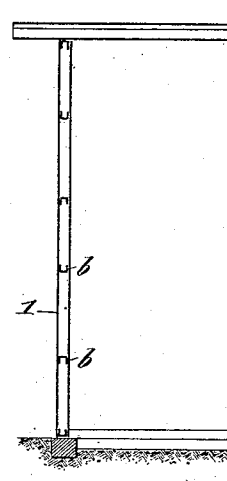


Fig2.

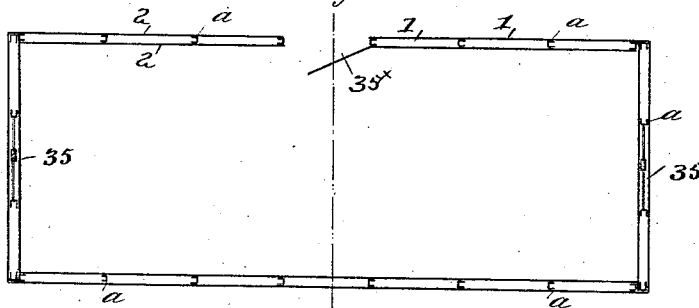


Fig. 17.

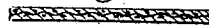
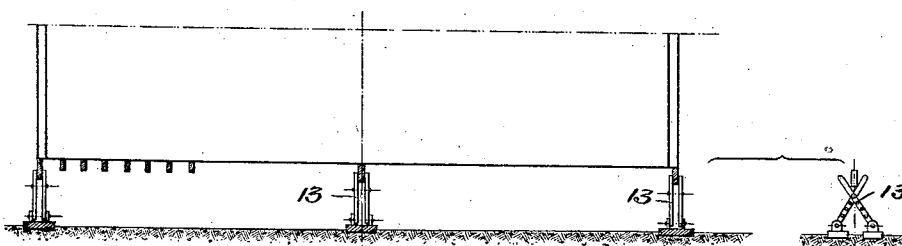


Fig4.



Witnesses:

E. B. Bolton

H. Kusterer

Inventor:
George Espitallier

By

Richardson
his Attorneys.

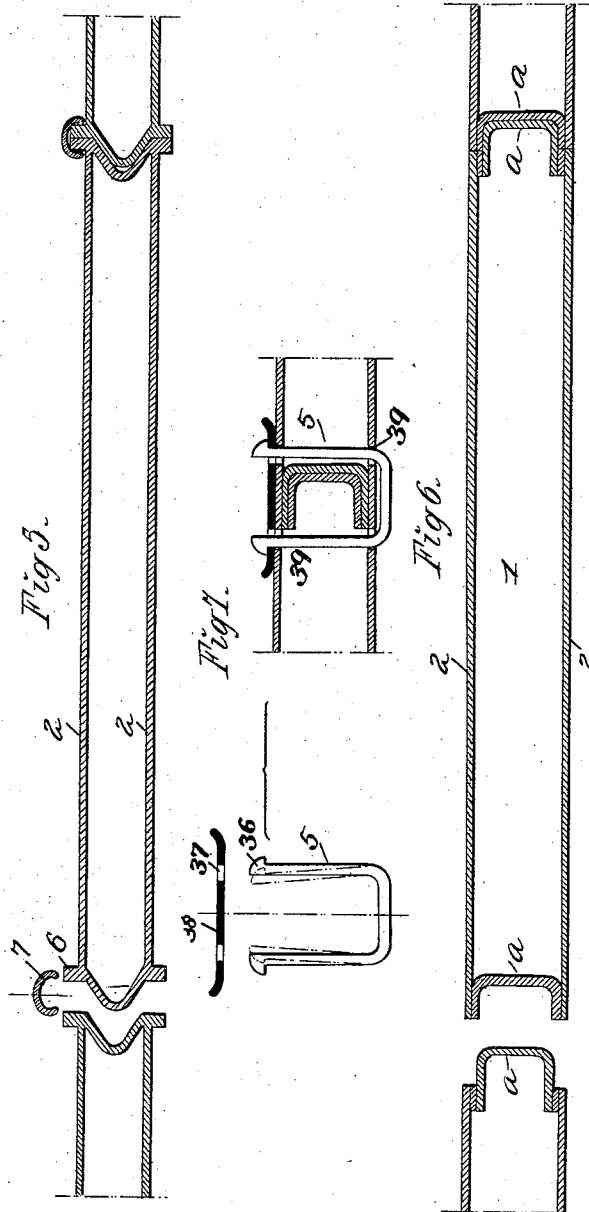
(No Model.)

4 Sheets—Sheet 2.

G. ESPITALIER.
CARD BARRACKS.

No. 484,413.

Patented Oct. 18, 1892.



Witnesses:
E. B. Kolton
H. Kuster

Inventor:
George Espitalier
By *Richardson*
his Attorneys.

(No Model.)

4 Sheets—Sheet 3.

G. ESPITALLIER.
CARD BARRACKS.

No. 484,413.

Patented Oct. 18, 1892.

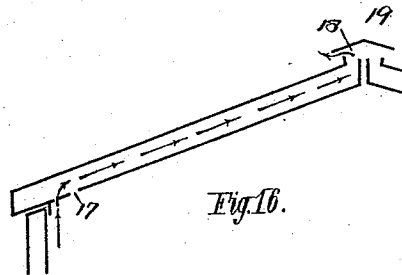
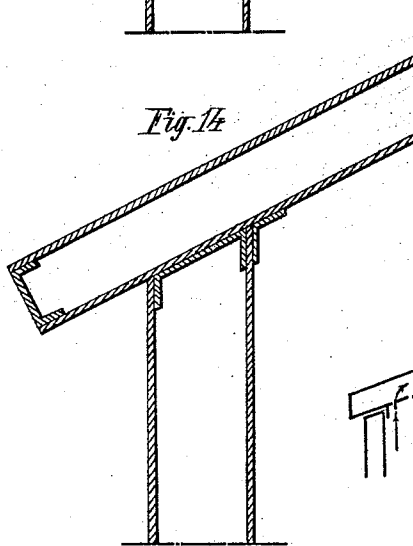
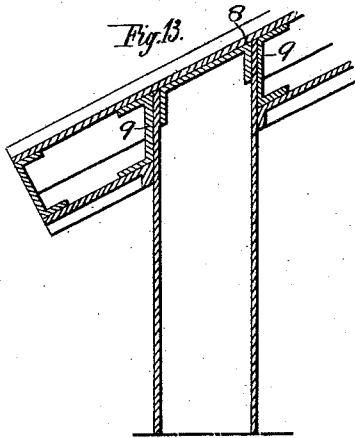
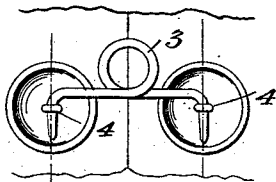
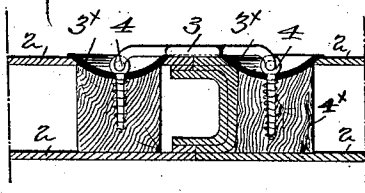


Fig. 16.



Witnesses:
E. B. Bolton
H. Kusterer



Inventor:
George Espitallier
By *Richardson*
his Attorneys.

(No Model.)

4 Sheets—Sheet 4.

G. ESPITALLIER.
CARD BARRACKS.

No. 484,413.

Patented Oct. 18, 1892.

Fig. 9.

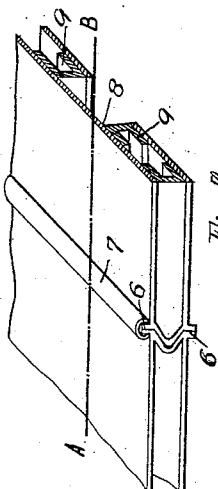


Fig. 10.

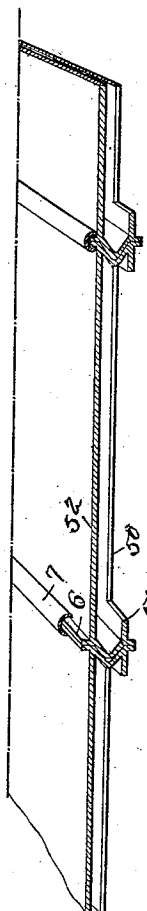


Fig. 11.

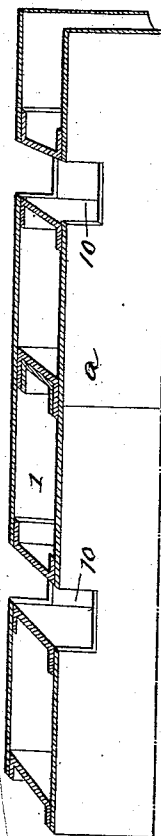


Fig. 12.

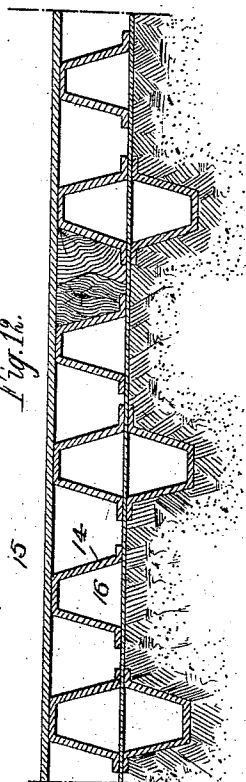
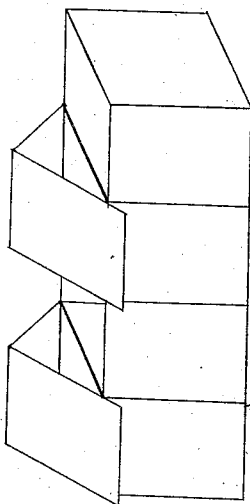


Fig. 13.



Witnesses:

C. B. Bolton
H. Kuster

Inventor:
George Espitallier.

By

Richard A.

his Attorneys.

UNITED STATES PATENT OFFICE.

GEORGE ESPITALLIER, OF CHALON, FRANCE.

CARD BARRACKS.

SPECIFICATION forming part of Letters Patent No. 484,413, dated October 18, 1892.

Application filed October 10, 1891. Serial No. 408,358. (No model.) Patented in France December 12, 1888, No. 194,734.

To all whom it may concern:

Be it known that I, GEORGE ESPITALLIER, a citizen of the Republic of France, residing at Chalon, France, have invented certain new and useful Improvements in the Construction of Barracks, (patented in France December 12, 1888, No. 194,734,) of which the following is a full, clear, and exact description.

The two methods actually in use for the setting up of provisional barracks consist in establishing a wooden or iron skeleton serving as a frame for either a covering of wood or a brick wall. In the latter case one can say that the barracks are not absolutely transportable, and when they are to be demolished the material is almost completely lost.

The barracks with a double wood covering are healthy and handy. They can, if the necessity arises, be displaced; but in truth their demolition, the transportation, and the reconstruction require a long time and cost almost as much as the construction of a new barracks. The numerous styles now in use with iron skeletons can be evidently easily and rapidly mounted; but the weight of the parts is quite considerable, and these barracks have the drawback of being very expensive.

The object of my invention is to provide a portable barracks the walls of which shall be light and strong, for which purpose said walls are constructed of light material, in which is embedded a thin metallic plate or screen, which gives rigidity without adding materially to the thickness of the wall, and, further, it is my object to provide a portable framework for use with the walls adapted for easy dismounting and transportation and constituting, with said paneled walls, a complete structure. This new kind of barracks, in presenting the different advantages of similar constructions, is adapted for ready packing and transportation in consequence of the lightness of its parts and the facility of mounting them.

In the accompanying drawings, Figure 1 is an elevation. Fig. 2 is a plan view. Fig. 3 is a section. Fig. 4 shows the arrangement of the trestles at variable widths. Fig. 5 is a sectional view of the V-shaped union of the panels. Fig. 6 is a similar view of a modification, showing a U-shaped union. Fig. 7 shows the details of connecting the panels

forming the wall. Fig. 8 is a detail view of one form of connection for the panels. Figs. 9 and 13 are perspective and sectional views of one of the arrangements for connecting the roof and wall. Figs. 10 and 11 show another arrangement of the connection of the roof and the wall, the parts being separated. Fig. 12 is a section of the flooring. Fig. 14 shows another modification of the manner of connecting the roof and wall. Fig. 15 shows the mounting of the roof by bays. Fig. 16 is an arrangement for upper ventilation. Fig. 17 is a sectional view of a small section of the side pieces, enlarged.

Although the dimensions of the different pieces constituting my invention are not absolute, I consider, however, as answering best to the conditions of an easy handling those given in the following description:

The element of the construction consists of a panel 1 of three meters in height by 1.6 or 1.8 meters in width, a regular tubular girder of ten centimeters in thickness. This panel is composed of two side pieces 2, united on U-shaped props *a a* or on the stays *b b*, similarly shaped. The sides are made either of compressed cardboard or of an inner sheet of perforated sheet-iron or wire netting or screening, on which is agglomerated a paper paste, cellulose, sawdust, cork, &c., mixed with any kind of a cement. These agglomerations can be antiseptic mixtures. Whatever may be the composition, the agglomerations are strongly compressed by means of rollers or presses on the two sides of the metal sheet. In a thickness which may be of a few millimeters only care must be taken to avoid pulverization of the covering or to have one or more layers of a large-meshed tissue in the mass. The same result is obtained by using as an interior part a mixed trellis composed of metal and any sort of fibers, on which the paste is compressed. These panels have thus a good resistance; but they can be made undulating, so as to give them still more rigidity. Each part thus formed does not weigh more than thirty-five to forty kilograms. They are therefore easily handled. They engage into one another by their alternate projecting edges, V-shaped, as in Fig. 5, or taking any other shape, as in Fig. 6. A continuous wall is thus formed of any desired dimensions.

In each part is a window 35, which takes in half of the breadth. The doors 35* are mostly made in gables. When the wall is put up, to finish making all the parts solid they are connected two by two by means of slightly-flexible clasps 3, Fig. 8, engaging in conveniently-placed screw-eyes 4, set in so as not to project from the wall, or by means of iron clamps 5, encircling the two contiguous posts, as shown in Fig. 7. These clamps are made of spring metal, as indicated in dotted lines, and have hooked ends 36, adapted to pass through openings 37 in the plate 38. In placing the clamps in position the prongs of the clamps are pressed toward each other and passed through the openings 39 in the side pieces of the panels and through the openings in the plate 38, and when the prongs spring outward into normal position the hooks engage the plate 38, and thus hold the parts together. The screw-eyes of Fig. 8 enter blocks 4* between the side pieces 2 of the panel and the eyes rest in countersunk plates 3*. The roofing is composed of analogous panels whose width is only eighty centimeters, so as to render the handling still more easy. In all cases the two panels forming the corresponding roof-sections are connected by the ridging where there are joints. These two panels fold over one on the other when the barracks is taken down, which facilitates the transport. In order that the pieces insert well in one another in case of frequent dismountings, the section ends of the roof are V-shaped and offer alternately their concavity and convexity, so that they can easily enter into one another with a certain tightness.

The exterior side piece of the roof panels or sections is of card-board, like all the rest; but the edges 6, Figs. 5, 9, and 10, are raised a few centimeters, so that the water cannot enter the joints between the two pieces. A joint-cover of card-board 7 suffices then completely for the protection of the joint. A similar card-board or metal ridge protects the junction of the two slopes of the roof. The roof may be placed upon the wall, as in Fig. 14, or the roof may be specially formed, as in Figs. 9 and 13, in which case the panels of the roof have a groove 8, Fig. 13, in which the upper part of the wall engages. The groove is completed by cross-beams 9, of compressed card-board, in U shape. These cross-beams can in certain cases be of wood or of metal. It will be seen from this construction that one side of the roof-panel—i. e., the lower side—is cut away to form a recess or groove for interlocking with the adjacent panel of the wall, and the joint thus formed is protected and covered by the remaining or upper side of the roof. Thus a very solid connection is obtained, presenting, moreover, a very great resistance to the passage of cold air. One might also simply put the roof on the wall by using an abutting top timber. In the modified arrangement of Figs. 10 and 11 the joints of the roof-panels alternate with

those of the walls. These bear incisions 10, Fig. 11, for the passage of the roof-joints, Fig. 10. As will be seen from an inspection of this figure, the lower side 50 of the roof-panel is cut away, leaving the projecting joint portions 57 to rest in the recess 10 of the wall-panels. The upper side 52, however, is not cut away, and thus it extends over the entire upper edge of the wall-panel and protects the joint formed by the recess 10 and the projection 51, as well as the joint between the edge 50 and the inner side of the wall-panels.

The walls of the gables 11, Fig. 1, are formed in a manner similar to the side walls before described. The barracks when set up may be held to the ground by strong angle-pieces 12 of any suitable material, or, as indicated in Fig. 4, the barracks may rest upon adjustable trestles 13 which hold the barracks up from the ground. The flooring would be made of panels formed by means of compressed card-board joists 14, in the form shown, retained between two boards 15 16, also of compressed card-board, of which the one constitutes the floor proper, while the other rests on the ground when used for the ground floor or constitutes the ceiling when used for the upper stories. The flooring can also be made by nailing compressed-card-board sheets on a frame or layer of wood.

The plastering of the walls can be made, as said, by compressed undulating card-board having great resistance. They can also be formed of card-board chased by stamps and decorated by varnishes or other appliances, or else, finally, they can be of agglomerations on wire-netting. As seen, my barracks is surrounded all over by a layer of air, which is very favorable to bad conductivity, which is desirable in the walls of an habitation. The exterior temperature acts in consequence but slightly on the interior temperature, a precious advantage as well in hot countries as in the cooler latitudes and which none of the systems of barracks with plain board walls has realized in the same degree. To complete these good hygienic conditions, I have assured an energetic ventilation. The draft of fresh air could, if the windows and doors did not suffice, be caused by openings conveniently formed in the double sides; but the essential and most delicate point is the evacuation of the putrid air. This air, being the lightest, because being the warmest, goes to the top of the barracks and comes at the angle of the wall and ceiling to a series of small openings 17 in the ceiling-wall, Fig. 16, and goes through the space between the roof as far as the groove 18, formed in the ridge. This groove is again covered by a ridge-tile 19, of compressed card-board, raised high enough to let the air escape freely. The method of evacuation is very efficacious, especially during the hot weather in summer, when the heating of the outer side calls forth an energetic draft.

I claim—

1. In combination, in a barracks, the panels formed of two side pieces arranged with a space between them and the props or stays at the edges of the side pieces, said props forming approximately-transverse continuations of the side pieces to form end walls of the same thickness thereof and consisting of channeled material, whereby the said props are adapted to lock with each other, substantially as described.

2. In a barracks, the combination of the panels formed of the side pieces and the interlocking props or stays at the edges thereof and the additional means for securing the adjacent edges together, consisting of the removable spring-clamps extending across the joint from one section to the other and secured at each end to the sections, substantially as described.

3. In a portable structure and in combination, the roof-panels formed of the upper and lower pieces and having interlocking stays, and the projecting edges 6, abutting each other, and the covering 7 for said edges, substantially as described.

4. The combination, in a barracks, of the two parts, roof and wall, each of said parts being formed of panels having parallel sides held at a slight distance apart and interlocking

edges, the panel of one of said parts having one side cut away to form a recess or groove to interlock with the adjacent panel of the other part, the joint thus formed being covered by the remaining side of the recessed panel, substantially as described.

5. In combination, the roof-panel formed of parallel sides, the lower side being cut away to form a recess, the cross-beams 9 on each side of the said recess, and the wall-panel fitting up into the said recess and covered by the top side of the roof-panel, substantially as described.

6. In a portable structure, and in combination, the panels forming the walls, the panels forming the roof, said panels being formed hollow with interlocking edges, the roof-panels having the opening 17, connecting the main interior space of the panel with the interior of the structure, and the opening 18 near the ridge, leading from the interior of the panel to the outside, and the ridge-covering 19, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

G. ESPITALIER.

Witnesses:

M. MOQUET,
FRANCOIS MERTENS.