July 14, 1959 M. E. LUNDSTEDT 2,894,290

COLLAPSIBLE CABIN

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Fig.1

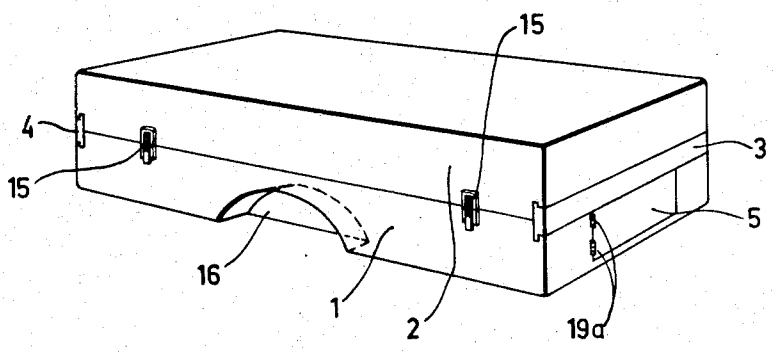
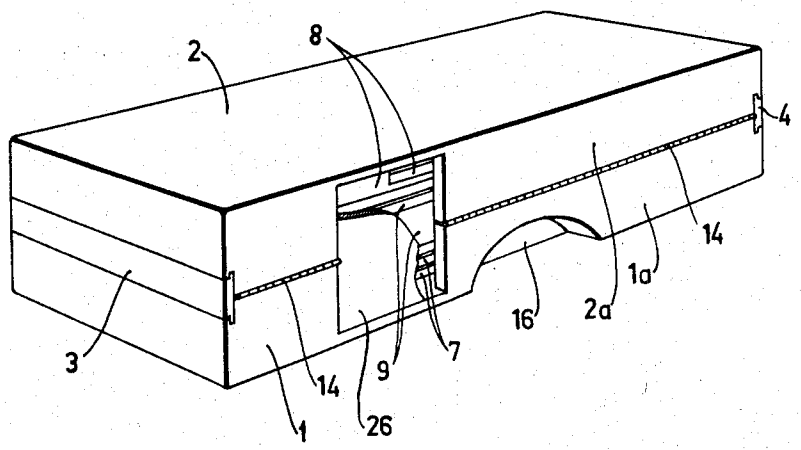


Fig.1a



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Fig. 2

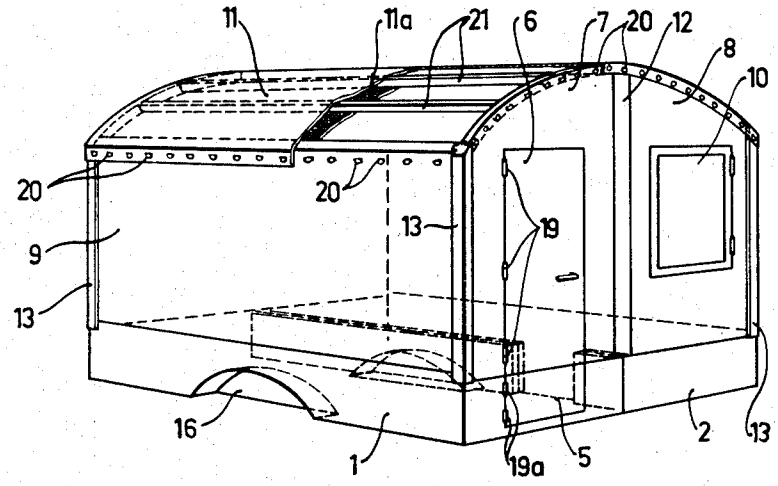


Fig. 3

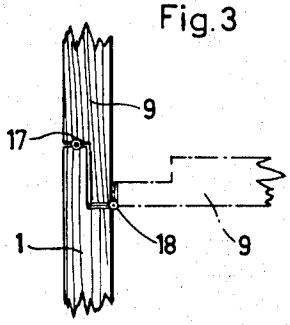


Fig. 4

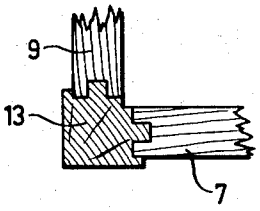
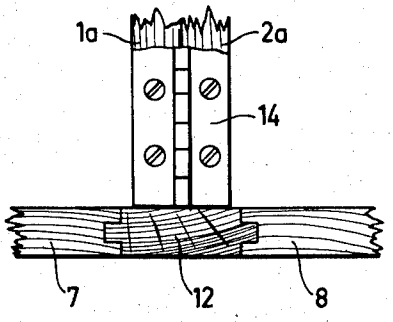


Fig. 5



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Fig. 6

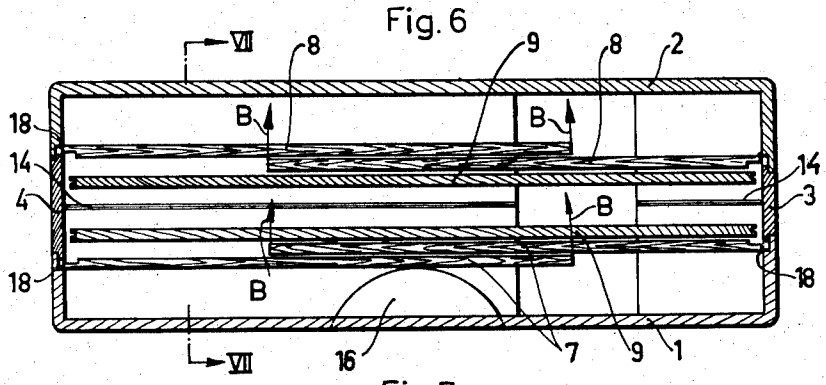


Fig. 7

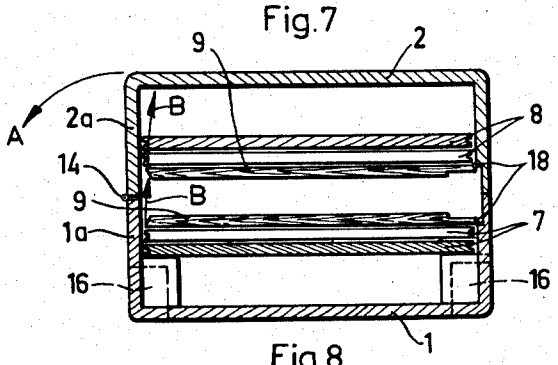
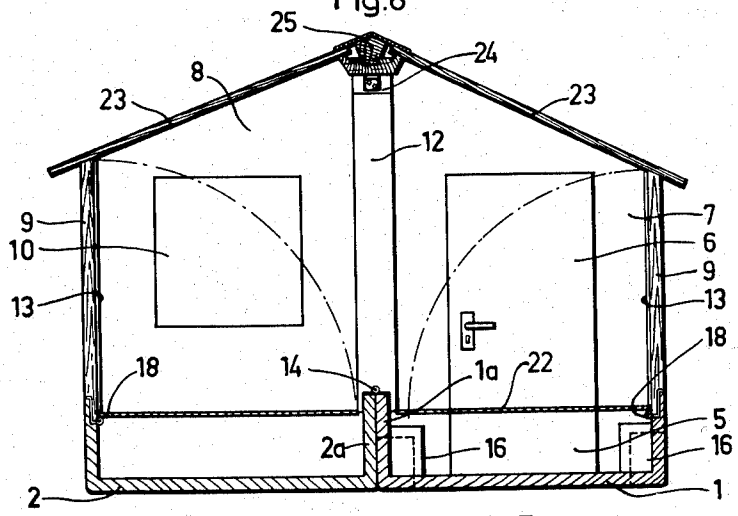


Fig. 8



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COLLAPSIBLE CABIN

Margit Elisabeth Lundstedt, Stockholm, Sweden

Application February 6, 1957, Serial No. 638,520

7 Claims. (Cl. 20—2)

The present invention relates to a collapsible cabin construction, which in the collapsed position may be stored in a box consisting of a bottom section and a collapsible lid.

The main object of the invention is to make the area of the floor of the erected cabin about twice that of the collapsed or folded box.

A further object of the invention is to make the volume of the collapsed cabin small in comparison with that of the erected cabin. Such a capacity of being collapsible is of great importance for cabins or houses of a temporary nature, such as weekend cottages, lumbering barracks, and so on, particularly for cabins constructed as trailers to be used together with motor vehicles.

The invention consists of a collapsible cabin comprising a plurality of wall sections adapted by means of hinges to be erected from a box comprising a base section and a lid having approximately the same size and the same height as said base section, wherein the base section and the lid are hinged to each other along a long side so that on opening the lid and swinging it into a position in the same level as said base section the base section and lid together will form a floor area about twice as large as the base area of said collapsed box, said hinges being arranged below the top edge of the associated base section and lid at a distance at least equal to the wall thickness; the wall sections in the erected position being joined together and tightened in the corners by means of corner posts, while each of the end walls of the cabin consists in the erected position of two wall sections kept together and tightened by means of joining strips.

An embodiment of the invention is illustrated in the drawing, wherein:

Figure 1 shows a perspective view of a cabin according to the invention in a collapsed position, forming a box;

Figure 1*a* shows a similar view from the opposite side of the box;

Figure 2 is a perspective view of the cabin as erected for use, some parts being broken away;

Figure 3 is an elevation of a detail showing the hinge arrangement between one of the wall sections and the base section;

Figure 4 is a detail horizontal section taken through the corner structure, showing the appearance and positioning of a corner post;

Figure 5 is a detail horizontal section taken through an end wall of the cabin, and showing a joint in said wall;

Figure 6 is a vertical section through the collapsed box showing the interior thereof;

Figure 7 is a section taken along line VII—VII in Figure 6, and

Figure 8 is a vertical section, viewed from the interior of the erected house according to another embodiment.

Referring first to Figures 1*a*, 6 and 7, it will be seen that the collapsed cabin has the shape of a box structure comprising a base section 1 and a top section or lid 2, having substantially the same size and height as the base section 1 and being hinged to the latter along a longitudinal side 1*a* and 2*a*, respectively, by means of hinges 14 (Fig. 5).

In the position according to Figures 1 and 1*a* the lid 2 may be locked to the base section 1 by locking elements 15. The hinges 14 are situated at the side of the box opposite to the locking elements 15 and are shown in Fig. 1*a*. In this collapsed condition the box receiving the walls and roof of the folded cabin (Figs. 6 and 7) merely occupies a small space and can easily be constructed as a trailer to be coupled to a motor vehicle such as a motor car. To this end the box has recesses 16 at the lower edges of the longitudinal sides. Mounted in a gap between the base section 1 and lid 2 are detachable rails or the like 3 and 4 adapted to seal the box as will be described hereinafter.

In order to erect the cabin the locking elements 15 are unlocked and the rails 3, 4 removed. The lid 2 is then opened by being swung about the hinges 14 as indicated by the arrow A in Fig. 7. In the fully opened position shown in Fig. 2 the lid 2 is situated side by side to the base section 1 so that the total floor area of the base section 1 and the lid 2 will be about twice as large as that of the box shown in Fig. 1. Along the centre line of the composed floor area according to Fig. 2 a double separation wall 1*a*, 2*a* (Fig. 5) extends in the longitudinal direction of the floor, said double wall consisting of adjacent side walls of the base section 1 and the lid 2 and carrying said hinges 14. The sides 1*a*, 2*a* may, if desired, be provided with a removable door 26 (Fig. 1*a*), which on being removed will enable access to the interior of the collapsed box. The opening formed on removing the door 26 will, in the erected cabin facilitate convenient passage between the two halves constituting the floor of the cabin as shown in Fig. 2.

From the inside of the box consisting of the base section 1 and the lid 2 the hinged wall sections of the cabin will be unfolded and erected into vertical position as indicated by the arrows B in Figs. 6 and 7. The wall sections comprise two end walls, 7, 8 and two longitudinal walls 9 but Fig. 2 merely shows one wall of each kind. Each end wall consists of two sections 7 and 8, of which section 7 is erected from base section 1 while section 8 is erected from lid 2. Upon erection the sections 7 and 8 are interconnected by means of detachable joining strips 12 (Fig. 5) which preferably engage the wall sections 7 and 8 by means of a matching tongue and groove connection. The strip 12 is arranged in the central plane of the cabin.

At each corner of the cabin between the wall sections 7, 9 there is mounted a corner post 13 (Fig. 4) functioning as a sealing and connecting element similarly to the strip 12. By means of the strips 12 and the corner posts 13 as well as packing strips 17 (Fig. 3) provided between the lower edges of the walls 7, 8, 9 and the top edges of the base section 1 and the lid 2, respectively, the cabin may be made substantially free from draught.

The wall sections 7, 8, 9 are hinged to base section 1 (Fig. 3) and lid 2, respectively, by means of hinges 18 so that they may be folded from the position shown in Figs. 6 and 7 into the position shown in Fig. 2 and vice versa. The connection to the base section and lid, respectively, preferably is effected in the manner shown in Fig. 3 according to which the adjacent ends of elements 1 and 9 are shaped in a step-like manner, so as to enable an improved sealing and also a greater rigidity in the erected position. In order to prevent the surface of the wall sections 9 from protruding above the top edge of the base section in the collapsed position according to the dotted lines in Fig. 3 (see also Figs. 6 and 7), the hinges 18 must be arranged spaced below said top by a distance at least as great as the thickness of the wall section 9.

In the collapsed position according to Figs. 6 and 7 all wall sections should be received within the interior of the box 1, 2. To this purpose it is necessary that the pair of wall sections 9 will be collapsed to a different level than the pair of wall sections 7, 8 that is to say that the hinges 18 of the wall sections 9 should be arranged at a correspondingly different level than the hinges 18 of the wall sections 7, 8. The difference in level corresponds to the thickness of the wall sections 9 and 7, 8 respectively. As a result, in the collapsed position the wall sections 9 on one side, and the wall sections 7, 8 will be in different levels, as shown in Figs. 6 and 7. It is also shown in Fig. 2 that the top edges of the longitudinal sides of base section 1 and the lid 2 are at a higher level than the top edges of the corresponding end sides, so that in the collapsed position (Fig. 1) there will be a gap between the base section 1 and the lid at the ends of the collapsed box. In order to fill and seal the gap thus formed in the box 1, 2 in the collapsed position the aforesaid elements 3, 4 are provided.

The cabin may be provided with one or more windows 10 and a door (or several such doors) consisting of two sections 5, 6 of which section 6 is hinged to the end wall section 7 by means of hinges 19; door section 5 being hinged to base section 1 by means of hinges 19*a*. The division of the door into two sections is necessary in order to enable collapsing of the wall section 7. Sections 5, 6 of the door are also hinged to one another by means of horizontal hinges (not shown) in approximately the same manner as the interconnection between wall section 9 and bottom section 1 according to Fig. 3. In this manner the lower section 5 of the door will be locked in the collapsed position of the cabin and forms one unit with the top section 6 in the erected position of the cabin.

The roof 11 may be double and consists for instance of moisture-proof double canvas or the like 11, 11*a*, attached to either sides of roof beams 21 extending from one end wall to the other of the cabin. The top section of the canvas roof extends downwards over the wall 7, 8, 9 where it is fastened, for instance, by means of conventional spring-fasteners 20 (Fig. 2). By the arrangement with two layers of canvas 11, 11*a* between the beams and with air caught between said layers, an insulated roof is obtained. The roof 11, 11*a*, 21 may be rolled up and stored in the box 1, 2. In this it should be placed diagonally.

The roof may also consist of boards or sheets 23 as shown in Fig. 8, and a sealing and carrying roof rail 25 resting on supports 24 at the ends may be arranged at the meeting edges of such boards or sheets 23 at the top of the roof.

As a matter of course, a number of modifications are conceivable within the scope of the invention. Thus, for instance, the shape of the cabin is not confined to that shown in the drawing, and it is also to be understood that changes in the details of construction, arrangement and combination of parts may be resorted to, provided that they fall within the scope of the invention as defined in the appended claims.

What I claim is:

1. A collapsible cabin comprising a box-like structure having two halves of approximately equal size and height forming a base section and a lid respectively and hingedly connected along one of the longitudinal sides so as to be swingable into the same level for forming a cabin floor corresponding to about the double base area of said box-like structure and having a surrounding upright frame formed by surrounding frame portions of said box-halves, wall sections being hingedly connected to said frame portions of each of the box halves at three of the sides different from said longitudinal side, said wall sections being confined by said box in collapsed state and forming in erected position upright prolongations of said floor-surrounding frame so as to obtain vertical walls.

2. A collapsible cabin according to claim 1, in which said floor-surrounding frame and said wall sections have about the same thicknes in order to obtain substantially continuous wall surfaces.

3. A collapsible cabin comprising a box having two halves of approximately equal size and height forming a base section and a lid respectively and hingedly connected along one of the longitudinal sides so as to be swingable into the same level for forming a cabin floor corresponding to about the double base area of said box and having a surrounding upright frame formed by surrounding frame portions of said box-halves, wall sections being hingedly connected to said frame portions of each of said box-halves at three of the sides different from said longitudinal side, the wall hinges being arranged below the top edge of the associated edge portion of the floor-surrounding frame at a distance at least equal to the thickness of said sections, said wall sections being accommodated in said box in its closed state and forming in erected position vertical walls together with said frame.

4. A collapsible cabin comprising a box having two halves of approximately equal size and height forming a base section and a lid respectively and hingedly connected along one of the longitudinal sides so as to be swingable into the same level for forming a cabin floor corresponding to about the double base area of said box and having a surrounding upright frame formed by surrounding frame portions of said box-halves, wall sections being hingedly connected to said frame portions of the box-halves at three of the sides different from said longitudinal side so as to be accommodated in substantially parallel position in the closed box, the top edge of the frame portion and the lower edge of the wall sections having step-like shape so as to obtain improved sealing and support in erected position of said wall sections.

5. A collapsible cabin comprising a box having two halves of approximately equal size and height forming a base section and a lid respectively and hingedly connected along one of the longitudinal sides so as to be swingable into the same level for forming a cabin floor corresponding to about the double base area of said box and having a surrounding upright frame formed by surrounding frame portions of said box halves, wall sections being hingedly connected to said frame portions of said box-halves at three of the sides different from said longitudinal side, said frame portions having different height in order to secure a vertical distance between wall hinges on different frame portions, corresponding to at least the thickness of said wall sections, in order to accommodate the last mentioned in parallel position in the closed state of the box, and to allow to bring said wall sections into erected position for forming vertical walls together with said upright frame portions.

6. A collapsible cabin according to claim 5, in which rails are introduced between opposite frame portions in the closed state of the box in order to fill gaps arising between frame portions being lower than the maximum frame-portion height.

7. A collapsible cabin comprising a box having two halves of approximately equal size and height forming a

base portion and a lid respectively and hingedly connected along one of the longitudinal sides so as to be turnable into the same level for forming a cabin floor corresponding to about the double base area of said box and having a surrounding upright frame formed by surrounding frame portions of said box halves, part of the abutting longitudinal frame portions in the two box halves being detachable in order to secure a continuous floor surface through a passageway between the two floor sections formed by said two box-halves, wall sections being hingedly connected to said frame portions at three of the sides different from said longitudinal side on each

of said two box halves, said wall sections being accommodated in said box in its closed state and forming in erected position vertical walls together with said frame portions.

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