Oct. 27, 1964 W. B. DREVITSON 3,153,798

FOLDABLE SUPPORTING STRUCTURE

Filed June 29, 1962

Fig. 1

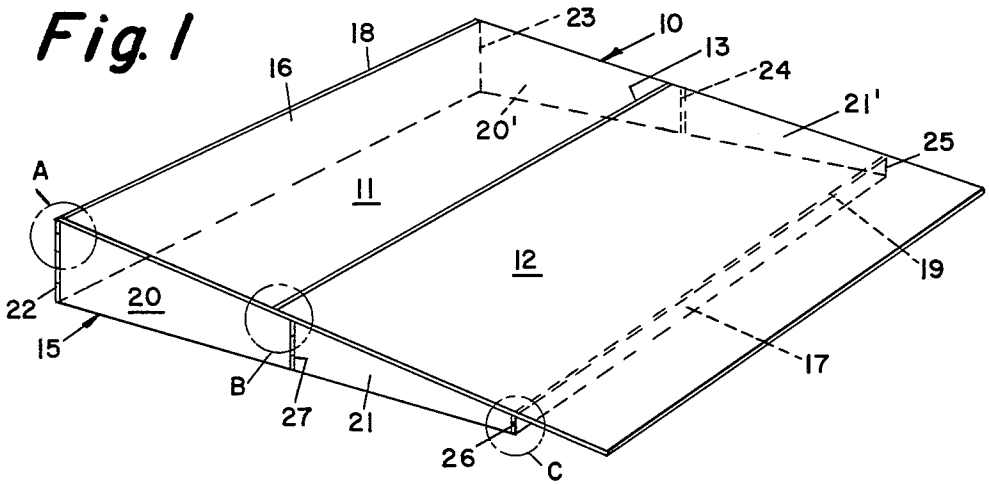


Fig. 2

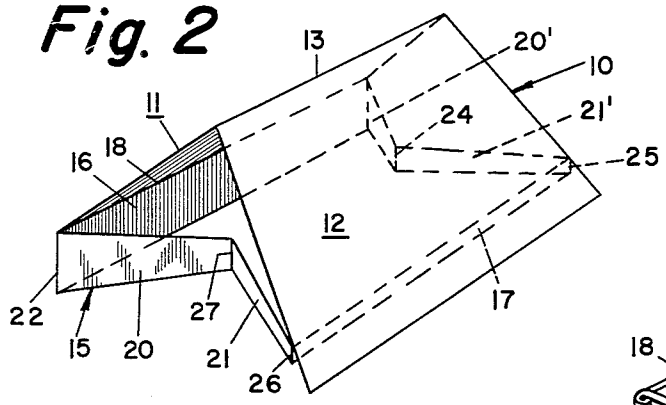


Fig. 3

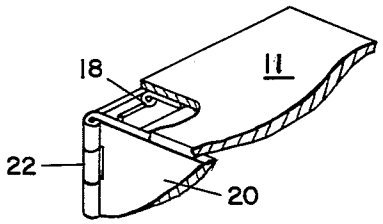


Fig. 4

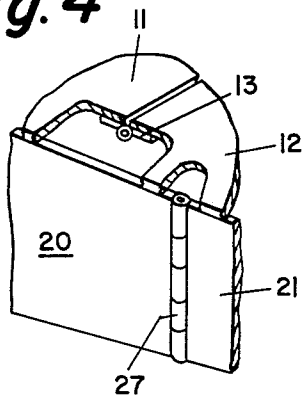
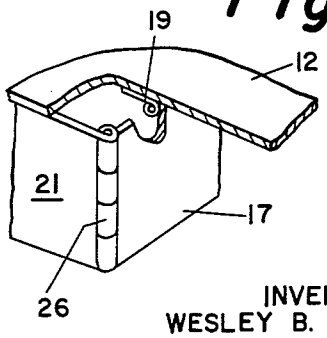


Fig. 5



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FOLDABLE SUPPORTING STRUCTURE

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(Granted under Title 35, U.S. Code (1952), sec. 266)

The invention described herein may be manufactured and used by or for the Government of the United States of America for governmental purposes without the payment of any royalties thereon or therefor.

This invention relates to supports and in particular is concerned with foldable supporting structure which may be used as a ramp for movement of material from one area to another area or as a platform.

One object of the invention is to provide such a supporting structure of a plurality of sections which are interconnected or articulated to permit their ready manipulation to an operative position or to an inoperative position for storage.

Another object is to provide such a supporting structure having a jointed top or cover portion and a mounting therefor which are interconnected or articulated to permit ready manipulation to an operative position or to an inoperative position for storage.

Another object is to provide such a supporting structure which is formed of cooperating hinged top or cover sections and a mounting therefor which is formed of cooperating hinged sections and so interconnected with the cover sections as to permit ready manipulation of the structure to an operative or to an inoperative position for storage.

Other and more specific objects will become apparent from the following detailed explanation of the invention.

FIG. 1 is a view in perspective of the supporting structure of the invention showing the relative positions of the articulated or jointed sections when in operative or unfolded position.

FIG. 2 is a view in perspective of the supporting structure of the invention showing the relative positions of the articulated or jointed sections when in partially folded position.

FIGS. 3, 4 and 5 are enlarged views to show details of the encircled portions of FIG. 1 which are identified respectively as A, B and C in FIG. 1.

In FIGS. 1 and 2, the platform or cover portion of the supporting structure of the invention is indicated generally at 10 and consists of two sections 11 and 12 which are interconnected by a central transverse joint 13. The sections 11 and 12 are disposed on a mounting which is indicated generally at 15 and is formed of opposed end vertical brace sections 16 and 17, which are respectively connected to the platform sections 11 and 12 by transverse joints 18 and 19, and side vertical brace sections 20, 21 and 20', 21'. The platform sections 11 and 12 repose on the brace sections 20, 21 and 20', 21' when the supporting structure is in operative position of FIG. 1 but have no connection with the side braces and are permitted to move relative thereto as shown in FIG. 2.

The several brace sections forming the mounting 15 are interconnected as a unit by vertical joints indicated in FIGS. 1 and 2 at 22, 23, 24, 25, 26 and 27 and these vertical joints in conjunction with the transverse joints 13, 18 and 19 provide the articulated structure which may be readily manipulated to the position of FIG. 2 from that of FIG. 1 and then to a completely folded position for storage when not in use. No figure has been provided to show the supporting structure in the completely folded or stored position since it is believed to be apparent from FIGS. 1 and 2 that the various jointed sections are so articulated that they may be readily moved

to the completely folded position. From an inspection of FIG. 2, it will be understood that in a completely folded position the pair of side braces 20, 21 and the other pair of side braces 20', 21' will fold inwardly toward each other until the braces of each pair are in contact while the cover sections 11 and 12 will be simultaneously moved toward each other.

The various joints are formed by hinged connections as shown in the enlarged detailed drawings of FIGS. 3, 4 and 5 but since they are ordinary hinge connections it is not considered necessary to describe the connections in any detail but only to explain their respective functions in forming the articulated structure.

In FIG. 3, the hinge forming the transverse joint 18 interconnects the inner faces of the section 11 and the end brace 16 in a manner to permit section 11 to swing upwardly and away from the vertical brace 16, while the hinge providing the vertical joint 22 is arranged to permit the side brace 20 to readily swing inwardly toward contacting relation with the end brace 16. In FIG. 4, the hinge forming the transverse joint 13 is located on the inner faces of sections 11 and 12 to permit these sections to move toward each other readily while the hinge forming vertical joint 27 interconnects the braces 20 and 21 in a manner to permit these sections to swing inwardly toward each other as is shown in FIG. 2. In FIG. 5, the hinge forming the joint 17 interconnects the inner faces of cover section 12 and end brace 17 to permit section 12 to swing upwardly and away from the end brace 17 and toward section 11 while the hinge providing the vertical joint 26 permits the side brace 21 and end brace 17 to swing toward each other. It will be understood that the other hinge connections 23, 24 and 25 will function respectively in a manner similar to their counterpart hinge connections 22, 27 and 26.

From the detailed description, it will be seen that the foldable supporting structure of the invention is formed of complemental platform sections which are positioned with adjacent edges providing an inner horizontal joint transversely of the length of the platform permitting the sections to swing or fold upwardly. It will further be seen that the mounting is formed of end braces which provide end horizontal joints transversely of the platform and parallel with the inner joint and also that the side braces of the mounting complement each other and have vertical inner joints therebetween and vertical end joints with the end braces which cooperate with the horizontal joints of the platform to permit or provide for movement of the entire assembly to folded or unfolded position.

In use of the device as a ramp for movement of material between two areas of different elevations, the end section 16 will have a greater vertical height than the end section 17 to provide an inclined surface formed by the sections 11 and 12. In the movement of material from a freight car to a loading platform, for example, the vertical section 16 could provide a securing means for attachment adjacent the freight car opening while the section 12 could be supported by the loading platform. The supporting structure may be manipulated to open or closed position with a minimum of effort by virtue of the various hinged connections above described. When the vertical end section 16 is secured adjacent a freight car opening, after the supporting structure of the invention has been used for conveying material between the freight car and the loading platform, the structure may be moved from the operative position of FIG. 1 to the partially closed position of FIG. 2 and further advanced to a closed position and stored. The supporting structure may be stored in collapsed or folded condition and manipulated to provide a platform having an inclined surface for supporting chairs, benches, etc., and used for occasions such as parades and other social events.

In order to adapt the supporting structure of this invention for use with heavy vehicular equipment it may be provided with desired additional bracing, for example, which extends transversely of the sections 11 and 12. No additional bracing is shown since it is not considered essential to the invention which is to be limited only by the scope of the appended claim.

I claim:

A collapsible platform comprising

(*a*) a pair of generally rectangular flat sections having a common edge hinged to permit the sections to be folded downwardly for disposing their inner surfaces in facing relation or moved upwardly from the folded position to dispose their outer surfaces in a common plane,

(*b*) a first hinged end brace depending from the inner face of one section and a second hinged end brace depending from the inner face of the other section,

(*c*) said first and second end braces being spaced from and parallel with said common edge and one being of lesser height than the other to incline the sections when they are positioned in a common plane,

(*d*) a first side brace having one end hinged to the first end brace and its other end hinged to the second end brace and a second side brace having one end hinged to the first end brace and its other end hinged to the second end brace,

(*e*) said side braces being generally parallel with each other and aligned with the side edges of the sections when the sections are in a common plane,

(*f*) a joint in the first side brace and a joint in the second side brace aligned with each other and with the common edge of the sections permitting the side braces to fold inwardly when the sections are folded downwardly and

(*g*) said side braces being tapered toward the end brace of lesser height to support the sections in an inclined common plane permitting the sections to function as a ramp.

References Cited in the file of this patent

UNITED STATES PATENTS

596,867	Frick	Jan. 4, 1898
1,567,388	Rohne	Dec. 29, 1925
2,098,469	Smith	Nov. 9, 1937
2,624,058	Kudrna	Jan. 6, 1953
2,835,931	Sterkin	May 27, 1958
2,890,089	Sanchez	June 9, 1959

FOREIGN PATENTS

688,285	Great Britain	Mar. 4, 1953
825,512	Great Britain	Dec. 16, 1959