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R. L. WELLS ET AL

2,399,414

RESILIENT MOUNTING

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Fig. 1.

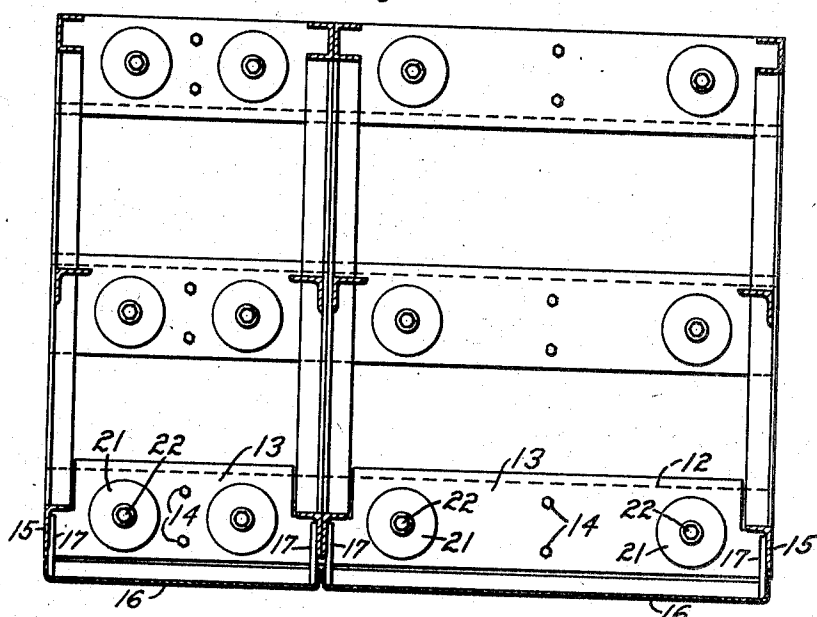


Fig. 2.

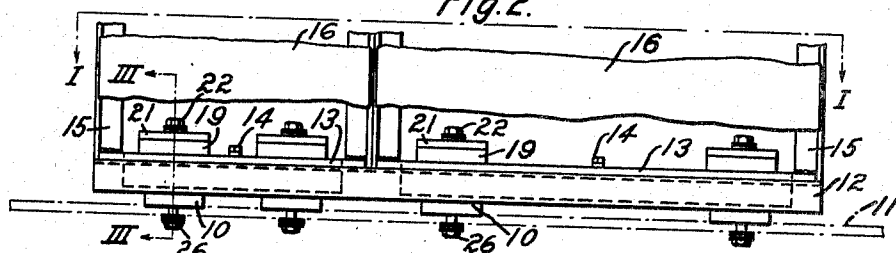


Fig. 3.

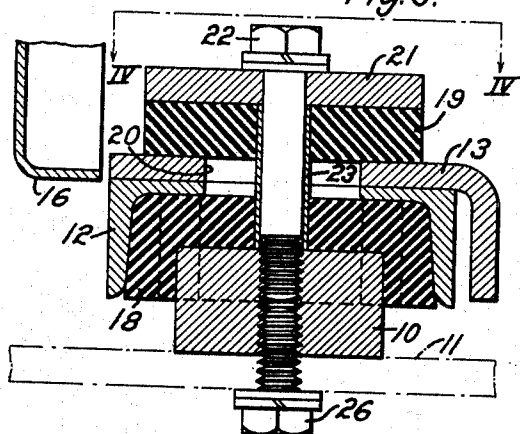


Fig. 4.

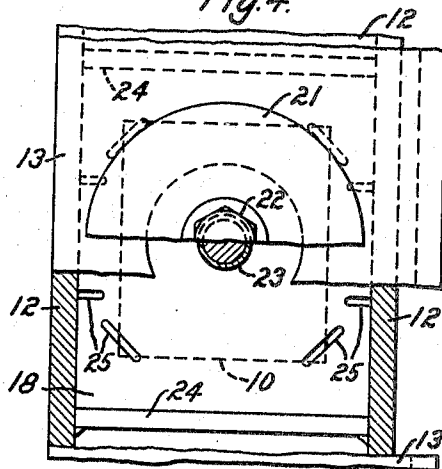
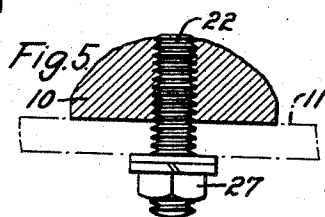


Fig. 5.



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2,399,414

RESILIENT MOUNTING

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Application January 12, 1944, Serial No. 517,938

5 Claims. (Cl. 248—358)

Our invention relates, generally, to resilient mountings and, more particularly, to resilient mountings for switchboard structures.

As explained in the copending application of R. L. Wells, Serial No. 517,937, filed January 12, 1944, it is necessary to protect a switchboard on a naval vessel from shocks of high intensity, such as are caused by explosions. In the aforesaid application a resilient mounting for switchboard structures is disclosed which obviates some of the undesirable features of resilient mountings previously utilized.

An object of our invention is to simplify still further the structure of a resilient mounting and to increase its efficiency of operation.

Another object of our invention is to provide a resilient mounting which may be readily connected to the deck of a vessel or other surface on which a switchboard structure is to be mounted.

Other objects of our invention will be explained fully hereinafter or will be apparent to those skilled in the art.

According to one embodiment of our invention, rubber members cooperate with steel members to provide a resilient support for a switchboard structure and to restrain motion of the switchboard in all directions. Only two pieces of rubber are required for each mounting unit and the overall height and weight of the switchboard structure are increased only a relatively small amount by the resilient mountings.

For a fuller understanding of the nature and objects of our invention, reference may be had to the following detailed description, taken in conjunction with the accompanying drawing, in which:

Figure 1 is a view, partly in plan and partly in section, of a portion of a switchboard structure embodying our invention, the section being taken along the line I—I of Fig. 2;

Fig. 2 is a view, in elevation, of the structure shown in Fig. 1;

Fig. 3 is an enlarged view, in section, of a resilient mounting unit constructed in accordance with our invention, the section being taken along line III—III of Fig. 2;

Fig. 4 is an enlarged view, partly in plan and partly in section, of the structure shown in Fig. 3; and

Fig. 5 is a partial view, in section, showing a modification of the structure illustrated in Fig. 3.

Referring to the drawing, and particularly to Fig. 3, the resilient mounting unit shown therein comprises a solid support member or block 10 55

which rests on the deck 11 of a vessel or similar surface suitable for supporting a switchboard structure, a channel 12, the web of which is disposed above the block 10 and the flanges of which are spaced from the sides of the block 10, and a plate 13 which is mounted on top of the channel 12 and secured thereto by bolts 14, as shown in Fig. 1.

As shown in Fig. 2, the plate 13 is preferably welded to the upright members 15 of the switchboard frame. In many instances it has been found desirable to make the channel 12 an integral member of the structure, thereby eliminating the plate 13. The channel 12 extends the length of the several individual switchboard cabinets which may be assembled as a unit. In the usual switchboard structure there are three such longitudinal members, one at the front, one at the middle and one at the rear bottom of a row of switchboard cabinets, as shown in Fig. 1. A front panel member 16 may be removably secured to the upright members 15 by suitable supports 17.

In the present structure the desired resiliency is obtained by providing a resilient member 18 between the channel 12 and the block 10. Another resilient member 19 is disposed on top of the plate 13 and a top plate or washer 21 is mounted on top of the resilient member 19. A long bolt 22 extends through the washer 21, the resilient member 19, the plate 13, the channel 12, the resilient member 18, and is threaded into the block 10.

The bolt 22 may be tightened to compress the resilient members 18 and 19. A sleeve or collar 23 surrounds the bolt 22 and is disposed between the washer 21 and the block 10 to predetermine the amount of compression that may be given to the two resilient members by tightening the bolt 22 into the block 10. An opening 20, which is materially larger than the diameter of the sleeve 23, is provided in the channel 12 and the plate 13 to permit movement of the channel relative to the bolt.

The resilient member 18 may be of a cup shape and preferably molded to fit into the rectangular recess in the channel 12 between a pair of gussets 24 provided in the channel 12. The resilient member 18 is preferably made slightly oversize in its lateral dimensions to ensure precompression of the rubber or other resilient material. If desired, openings 25 may be provided in the member 18 to permit it to be compressed more easily into the space in the channel 12.

It will be seen that the present resilient unit

may be completely assembled in the switchboard structure prior to the installation of the switchboard on the deck 11. After the switchboard is installed, a bolt 26 may be inserted into the block 10 from underneath the deck 11, thereby securing the switchboard structure to the deck. If desired, the bolt 22 may be made of sufficient length to extend through the deck 11 and secured thereto by a nut 27 in the manner shown in Fig. 5.

It is evident that motion of the switchboard structure is restrained in all directions. Thus, motion in a horizontal direction across the channel 12 is restrained by compression of the resilient member 18 between the block 10 and the flanges of the channel. Motion in a horizontal direction along the channel is restrained by compression of the resilient member 18 between the block 10 and the gussets 24 disposed across the channel. Vertical motion of the deck 11 upwardly is transmitted to the switchboard by the resilient member 18 and vertical motion downwardly is transmitted by the resilient member 19.

It will be seen that the present resilient mounting unit requires only two pieces of rubber or other resilient material for each unit. The member 19 may be easily cut from a sheet of material, and, as explained hereinbefore, the member 18 is molded to fit a recess in the channel 12. Furthermore, no bonding between the resilient and the metal members is required. Thus, the present structure is relatively simple and increases the overall height of a switchboard structure by only a small amount. If desired, the plate 13 may be omitted from the structure and the upright members 15 welded directly to the top of the channel 12, thereby further decreasing the overall height of the switchboard structure.

From the foregoing description, it is apparent that we have provided a resilient mounting unit which may be utilized for resiliently supporting switchboards and similar structures which are subjected to shocks of a high intensity, such as would be caused by an explosion. The resilient mounting unit may be readily incorporated in a switchboard structure of a standard design and as many units as are required to support the weight of the structure may be provided.

We do not desire to be restricted to the particular form or arrangement of parts herein shown and described, since it is evident that they may be changed and modified without departing from the spirit and scope of our invention as defined in the appended claims.

We claim as our invention:

1. A resilient mounting unit, comprising a solid support member, a load supporting channel having its web disposed above and its flanges spaced from said support member, said channel having transverse gussets therein, a cup-shaped resilient member disposed in the space between said gussets and between said channel and said support member, a second resilient member disposed on the opposite side of the web of said channel from the first resilient member, and a bolt extending through said resilient members and threaded into said support member to compress said resilient members, the web of said channel having an opening therein materially larger than the diameter of the bolt.

2. A resilient mounting unit, comprising a solid

support member, a load supporting channel having its web disposed above and its flanges spaced from said support member, said channel having transverse gussets therein, a cup-shaped resilient member disposed in the space between said gussets and between said channel and said support member, a second resilient member disposed on the opposite side of the web of said channel from the first resilient member, a top plate on said second resilient member, a bolt extending through said top plate and said resilient members and threaded into said support member to compress said resilient members, and a spacing sleeve disposed on said bolt between the top plate and said support member to limit the compression of said resilient members.

3. A resilient mounting unit, comprising a solid support member, a load supporting channel having its web disposed above and its flanges spaced from said support member, said channel having transverse gussets therein, a cup-shaped resilient member disposed in the space between said gussets and between said channel and said support member, a second resilient member disposed on the opposite side of the web of said channel from the first resilient member, a top plate on said second resilient member, a bolt extending through said top plate and said resilient members and threaded into said support member to compress said resilient members, and a spacing sleeve disposed on said bolt between the top plate and said support member to limit the compression of said resilient members, the web of said channel having an opening therein materially larger than the diameter of said sleeve.

4. A resilient mounting for supporting a switchboard structure on a deck or similar surface, comprising a solid support member disposed on the deck, a channel having its web disposed above and its flanges spaced from and overlapping said support member, said switchboard structure being secured to said channel, a cup-shaped resilient member disposed between said channel and the support member, a second resilient member disposed above the web of the channel, a top plate on said second resilient member, and a bolt extending through said top plate and said resilient members and threaded into said support member to compress said resilient members.

5. A resilient mounting for supporting a switchboard structure on a deck or similar surface, comprising a solid support member disposed on the deck, a channel having its web disposed above and its flanges spaced from and overlapping said support member, said channel having transverse gussets therein, said switchboard structure being secured to said channel, a cup-shaped resilient member disposed in the space between said gussets and between said channel and the support member, a second resilient member disposed above the web of the channel, a top plate on said second resilient member, and a bolt extending through said top plate and said resilient members and threaded into said support member to compress said resilient members, the web of said channel having an opening therein materially larger than the diameter of the bolt.

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