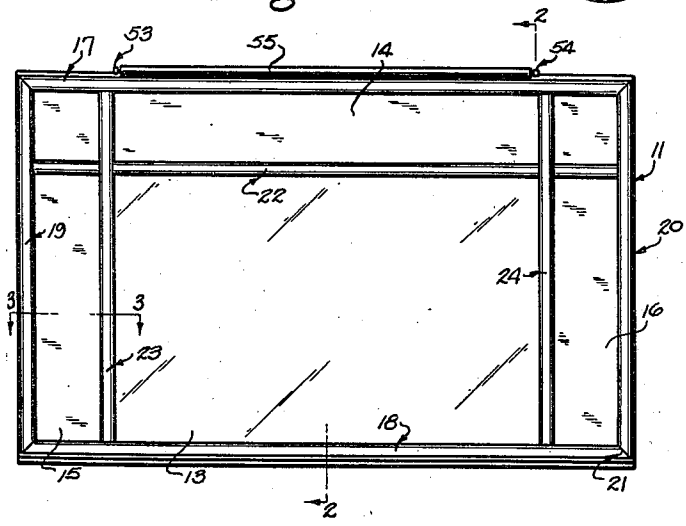
May 19, 1942. C. D. LOWRY 2,283,272

BLACKBOARD CONSTRUCTION

Filed June 29, 1939 2 Sheets-Sheet 1

Fig. 1.



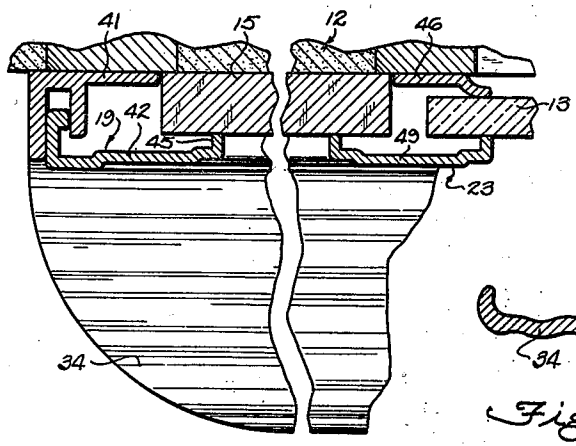


Fig. 3.

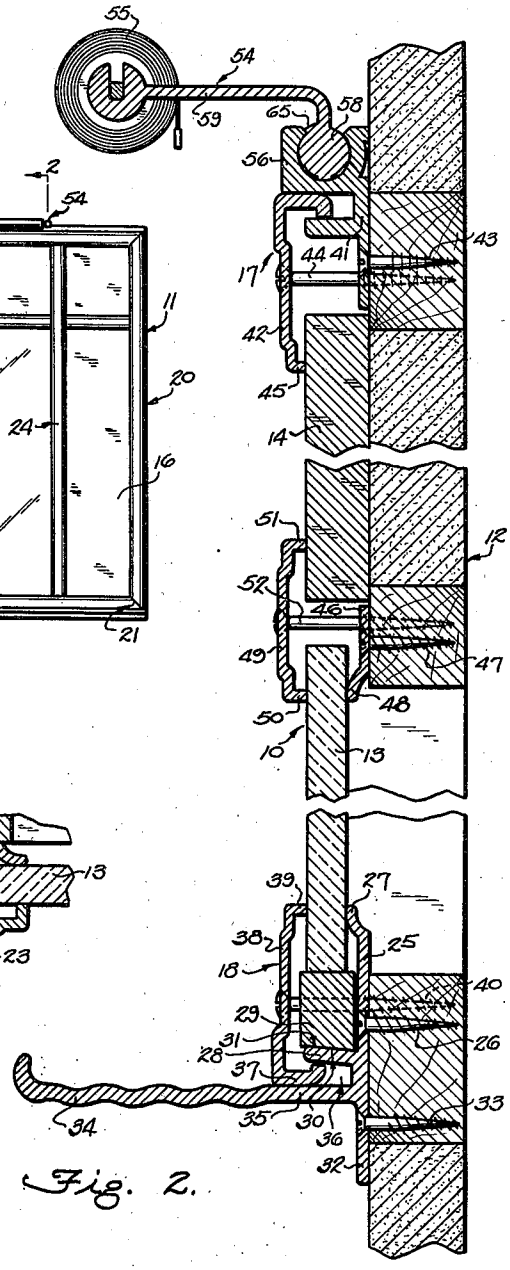


Fig. 2.

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BLACKBOARD CONSTRUCTION

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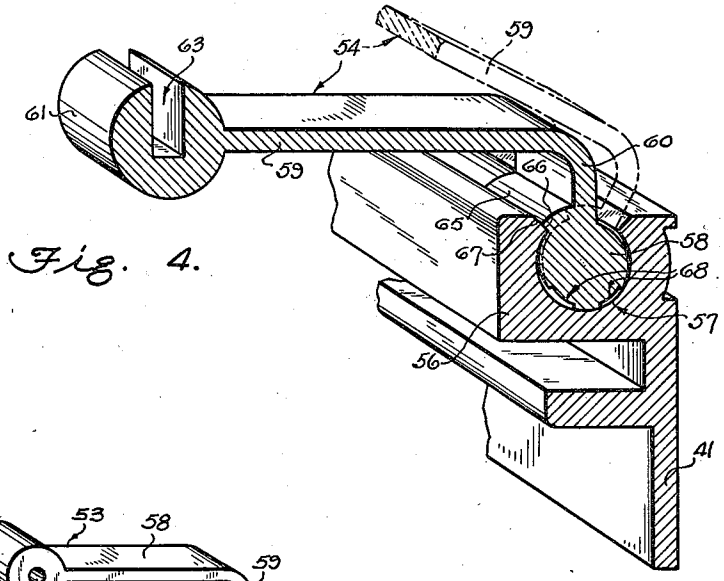

Fig. 4.

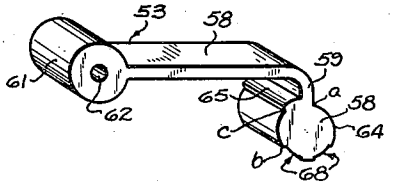

Fig. 5.

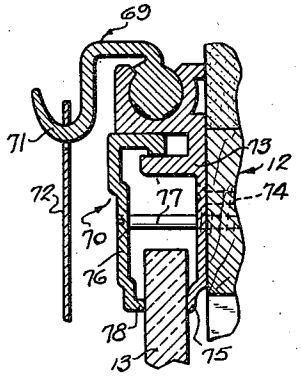

Fig. 6.

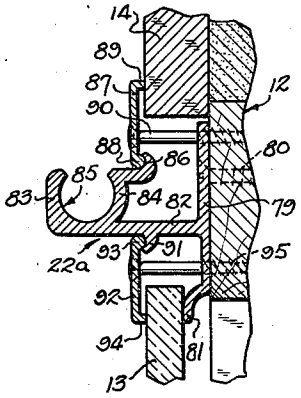

Fig. 7.

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2,283,272

BLACKBOARD CONSTRUCTION

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Application June 29, 1939, Serial No. 281,863

6 Claims. (Cl. 35—63)

The present invention relates to wall blackboards and more particularly to the construction of a metal frame mounting therefor.

An object of the invention is the provision of novel means associated with the metal frame mounting for supporting roll maps, charts, or the like, as well as cards, posters, etc.

Another object of the invention is the provision of supporting means of the above character embodying bracket members associated with the metal frame mounting in such a manner that they may be readily and conveniently shifted longitudinally of the blackboard to the desired position and yet firmly maintained in predetermined position without the use of screws or other supplemental fastening means.

Other objects and advantages of the invention will become more apparent during the course of the following description, when taken in connection with the accompanying drawings.

In the drawings, wherein like numerals are employed to designate like parts throughout the same:

Fig. 1 is a front elevation of a blackboard constructed in accordance with the present invention;

Fig. 2 is a vertical section therethrough taken substantially on line 2—2 of Fig. 1;

Fig. 3 is a detail horizontal section taken substantially on line 3—3 of Fig. 1;

Fig. 4 is a perspective sectional view of a portion of the metal frame mounting for the blackboard having associated therewith one of the bracket members for supporting roll maps, charts, and the like;

Fig. 5 is a perspective view of the bracket member which is used in conjunction with the bracket member illustrated in Fig. 4;

Fig. 6 is a detail vertical section showing a different form of bracket member adapted particularly for hanging cards, posters, etc.; and

Fig. 7 is a detail vertical section showing a modification of the metal frame mounting.

With reference to the drawings and particularly to Figs. 1 and 2, the blackboard provided by the present invention is designated in its entirety by the numeral 10 and is mounted, by means of the metal frame mounting indicated generally at 11, upon a supporting wall 12 of any desired construction.

The blackboard proper on which the chalk marks are received preferably comprises one or more sheets or plates of glass 13, although it can be made of slate or any other suitable material. When glass sheets are used, however, they can be either of opaque glass or transparent glass provided upon the rear surfaces thereof with a desired opaque backing. Any color glass may be used but the two colors most generally preferred are black and green. The numeral 14 designates a panel of cork or other composition arranged above the blackboard 13 and similar composition panels 15 and 16 can be arranged at opposite sides thereof. The panels 14, 15, and 16 may or may not be used, as preferred, but, if used, are provided for the mounting of papers, etc. by means of thumb tacks, stickers, or the like.

The metal frame mounting 11 comprises the upper and lower horizontal sections 17 and 18 and the vertical side sections 19 and 20 associated with one another to form a rectangular frame and preferably mitered at their adjacent ends as indicated at 21. Arranged between and connecting the adjacent horizontal edges of the blackboard 13 and composition panel 14 is a horizontal division molding or muntin 22, while similar vertical division moldings or muntins 23 and 24 may be used to connect the adjacent vertical edges of the blackboard 13 and composition panels 15 and 16 respectively. It will be readily appreciated by those skilled in the art that this combined assembly may take various other shapes and that any one or all of the composition panels 14, 15 and 16 may be omitted. Each of the metal frame sections 17 to 20, as well as the division moldings 22, 23 and 24, includes generally a fixed rear member secured to the supporting wall 12, a movable front member, and means for removably clamping the blackboard 13 and composition panels 14, 15 and 16 between the said fixed and movable members.

Referring particularly to the bottom metal frame section 18, the fixed rear member thereof comprises a vertical back wall 25 secured to the supporting wall 12 by screws or the like 26. The back wall 25 is provided at its upper end with a longitudinally extending flange 27 engaging the inner face of the glass sheet 13 constituting the blackboard proper. Formed integral with the back wall 25 is a substantially horizontal shelf 28 upon which are mounted a plurality of spaced setting blocks 29 for supporting the sheet 13 at its lower edge.

As shown in Fig. 2, the shelf 28 extends forwardly and upwardly to provide an inclined upper surface 30, while the bottom surface 31 of each setting block 29 is correspondingly beveled. With this arrangement, the setting blocks 29 will normally tend to slide or work rearwardly against

the back wall 25 and are thereby prevented from slipping forwardly off of the shelf 28. The upper surfaces of the setting blocks are horizontal and may be covered with rubber, felt, or the like, if desired, to protect the lower edge of the blackboard and provide a cushioned support therefor. The back wall 25 also projects downwardly beyond the shelf 28 as indicated at 32 and through which may pass additional fastening screws 33.

Also formed integral with the back wall 25 beneath shelf 28 is a forwardly directed, substantially horizontal chalk and eraser receiving trough 34, the bottom of which is preferably corrugated to provide longitudinally extending grooves for receiving the chalk and eraser. The inner end portion 35 of the trough is preferably flat and cooperates with the shelf 28 to provide a forwardly facing, horizontal channel 36 for receiving therein the inturned lower end 37 of the movable front member 38.

The front member 38 covers the shelf 28 and setting blocks 29 and is provided at its upper end with a flange 39 engaging the outer face of the blackboard 13 opposite flange 27. The front member 38 may have any desired profile and is removably secured in place in clamping relation with the blackboard by screws 40 which pass through openings in said front member and also through openings in the back wall 25 of the rear member, being threaded at their inner ends in the supporting wall 12. By properly adjusting the fastening screws 40, the desired clamping pressure can be exerted upon the blackboard to hold it firmly in place without danger of cracking the same.

The top section 17 and vertical side sections 19 and 20 of the metal frame mounting each comprises a fixed rear member 41 and a front member 42 removably associated therewith. The rear member 41 is secured to the supporting wall 12 by screws 43 while the front member is secured in place by screws 44. The composition panels 14, 15 and 16 rest against the supporting wall 12 and are held in place by the flange 45 formed on the front member 42 of the respective frame section. The front and rear members of the top and vertical side sections of the metal frame mounting are of substantially the same construction and are associated with one another in substantially the same manner as the front and rear members of the bottom section 18, as will be clearly seen from the drawings, so that a more detailed description thereof is not thought to be necessary.

The horizontal division molding 22 and vertical division moldings 23 and 24 each comprises a fixed rear member 46 and a movable front member 49. The rear member 46 is secured to the supporting wall 12 by screws 47 and has a flange 48 engaging the rear surface of the blackboard 13. The front member 49 is removably secured in place by screws 52 and is also provided at one end with a flange 50 engaging the front surface of the blackboard and at its opposite end with a flange 51 engaging the outer surface of the respective composition panel 14, 15 or 16.

As pointed out above, the present invention also contemplates the provision of novel means associated with the metal frame mounting for supporting roll maps, charts, and the like. The means provided for this purpose comprises the spaced bracket members 53 and 54 (Fig. 1) associated with the top section 17 of the metal frame and shown as supporting a roll map 55. In accordance with the invention, the upper end 56 of the rear member 41 of the top section is provided with a longitudinally extending, arcuately curved channel 57. Each bracket member 53 and 54 includes an elongated, substantially cylindrical body portion 58 adapted to be slidably and rotatably received within the channel 57. Formed integral with the body portion 58 is a forwardly directed, substantially horizontal arm 59 connected with said body portion by a vertical web 60. The arm 58 is provided at its outer end with a head 61 and the head of bracket member 53 is provided with a horizontal opening 62 (Fig. 5), while the head of bracket member 54 is provided with a horizontal slot 63. This arrangement is provided so that one end of the rod supporting the roll map or the like 55 can be slipped into the opening 62 in bracket member 53 and the other end thereof dropped into the slot 63 in bracket member 54. This is particularly desirable where the roll map is of the spring operated roller shade type.

The inner surface of the channel 57 is arc-shaped, while the outer surface 64 of the body portion 58 of each bracket member 53 and 54 is also arc-shaped from the point *a* to point *b* (Fig. 5) and eccentric with respect to said arc-shaped portion from points *b* to *c* to provide a wedge portion. The body portions 58 of the bracket members are thereby so shaped with respect to the channel 57 that when the bracket members are in operative position, as shown in full lines in Fig. 4, the said body portions will bind within the channel so that the bracket members are prevented from sliding longitudinally of the blackboard. In this way, after the bracket members 53 and 54 have been arranged in the desired position and the map 55, for instance, associated therewith, the said bracket members cannot be moved longitudinally of the blackboard to prevent accidental displacement of the map. On the other hand, when it is desired to move the bracket members longitudinally of the blackboard, it is simply necessary to swing them upwardly to the position indicated in broken lines in Fig. 4, whereupon the wedge portions will be moved outwardly of the channel and binding action between the body portions 58 and wall of the channel relieved. However, after the bracket members have been slid to the desired position and permitted to drop downwardly to full line position, they will be firmly secured in place. In this way, the bracket members are firmly secured in place without the use of screws or other supplemental fastening means. To prevent the body portions 58 of the bracket members from binding too tightly within the channel 57, the body portion of each bracket member is provided with a rib 65 forming a shoulder 66 which abuts the edge 67 of the frame member 56 and thereby prevents further rotatable movement of the body portion within the channel.

Another feature of the invention is the provision of the longitudinally extending grooves 68 in the outer surface of the body portion 58 of each bracket member. These grooves are adapted, upon sliding movement of the bracket members to different position, to receive any dust and dirt which may collect in the channel. In other words, if these grooves were not provided and the body portions 58 of the bracket members were made to snugly fit the channel 57, any sliding movement of the bracket members would cause the dust and dirt to pile up in front of the body portions thereof and in this way hinder

or prevent free sliding movement of the bracket members. With the construction provided, however, upon sliding movement of the bracket members, any dirt or dust in the channel 57 will pass through the grooves 68 and will thereby not interfere with the desired movement of the bracket members.

In Fig. 6 is disclosed a modified form of bracket member which is particularly adaptable for supporting cards, posters, and the like. The bracket member, designated 69, is associated with the upper metal frame section 70 in the same manner as disclosed in Figs. 2 and 4. The principal difference is that the bracket member 69 is formed with a hook portion 71 from which a card or the like 72 may be hung. One or any desired number of such bracket members may be employed and individual cards or the like can be hung from each bracket member or a relatively large card or the like supported by two or more of the bracket members. The metal frame section 70 is here shown as directly engaging the blackboard panel 13 and includes a rear member 73 secured to the supporting wall 12 by screws 74 and provided with a flange 75 engaging the rear surface of the blackboard. The front member 76 has a flange 78 engaging the front surface of the blackboard and the said front member is removably secured in place by screws 77.

In Fig. 7 is illustrated another modification in which the division molding 22*a*, extending horizontally between the blackboard 13 and composition panel 14, is constructed to support the bracket members which may be either of the type shown in Figs. 4 and 5 or the type shown in Fig. 6. The division molding 22*a* comprises a back wall 79 secured to the supporting wall 12 by screws 80. The back wall 79 of the molding is provided at its lower end with a flange 81 adapted to engage the rear surface of the blackboard. Intermediate its upper and lower ends, the back wall is provided with a forwardly directed, horizontal shelf 82 with which is formed the two longitudinally extending side portions 83 and 84 defining therebetween a channel 85 similar to the channel 57 above described.

The side portion 84 of channel 85 is formed at its upper end with a longitudinally extending forwardly curved lip 86 and associated therewith is the upper front member 87. This front member is provided at its lower end with a bead 88 adapted to engage and fulcrum upon lip 86 and at its upper end with a flange 89 engaging the front surface of the composition panel 14. The front member 87 is removably secured in place by screws 90. The horizontal shelf 82 is also formed upon its bottom surface with a forwardly curved lip 91 with which is associated the lower front member 92. The front member 92 is provided at its upper end with a bead 93 adapted to engage and fulcrum upon the lip 91, while the lower end of said front member is provided with a flange 94 engaging the front surface of the blackboard 13. The lower front member may be secured in place by screws 95.

It is to be understood that the form of the invention herewith shown and described is to be taken as the preferred embodiment of the same, and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

I claim:

1. In a device of the character described, a horizontal metal member having a longitudinally extending channel therein circular in cross section, and bracket members each having a substantially cylindrical body portion slidably received within said channel and another portion adapted for supporting a roll map, cards or the like, said body portion being rotatable within said channel on a plane transversely to the said channel, the outer surface of said body portion being formed with two arcuate portions extending circumferentially thereof and disposed at opposite sides of the vertical center of the said body portion and being struck from different centers, the distance between two diametrically opposed points on said opposite arcuate surface portions being greater than the diameter of said channel whereby to cause a wedging of the said body portion within the said channel upon rotation thereof.

2. In a device of the character described, a horizontal metal member having a longitudinally extending channel therein circular in cross section, and bracket members each having a substantially cylindrical body portion slidably received within said channel and another portion adapted for supporting a roll map, cards or the like, said body portion being rotatable within said channel on a plane transversely to the said channel, the outer surface of said body portion being formed with two arcuate portions extending circumferentially thereof and disposed at opposite sides of the vertical center of the said body portion and being struck from different centers, the distance between two diametrically opposed points on said opposite arcuate surface portions being greater than the diameter of said channel whereby to cause a wedging of the said body portion within the said channel upon rotation thereof, said body portion being provided with a rib outwardly of said channel forming a shoulder engaging said metal member to limit the rotating movement of the said body portion within the said channel.

3. In a device of the character described, a horizontal metal member having a longitudinally extending channel therein circular in cross section, and bracket members each having a substantially cylindrical body portion slidably received within said channel and another portion adapted for supporting a roll map, cards or the like, said body portion being rotatable within said channel on a plane transversely to the said channel, the outer surface of said body portion being formed with two arcuate portions extending circumferentially thereof and disposed at opposite sides of the vertical center of the said body portion and being struck from different centers, the distance between two diametrically opposed points on said opposite arcuate surface portions being greater than the diameter of said channel whereby to cause a wedging of the said body portion within the said channel upon rotation thereof, said body portion being provided with longitudinally extending grooves in the outer surface thereof and within said channel.

4. In a device of the character described, a horizontal metal member having a longitudinally extending channel therein circular in cross section, and bracket members each having a substantially cylindrical body portion slidably received within said channel and another portion adapted for supporting a roll map, cards or the like, said body portion being rotatable within said channel on a plane transversely to the said channel, the outer suface of said body portion being formed with two arcuate portions extending

circumferentially thereof and aranged diametrically opposite one another and having different centers offset with respect to the longitudinal center of said channel, the distance between the upper end of one said arcuate portion and the lower end of said other arcuate portion being greater than the diameter of said channel whereby to cause a wedging of the said body portion within the said channel upon rotation thereof.

5. In a device of the character described, a horizontal metal member having a longitudinally extending channel therein circular in cross section, and bracket members each having a substantially cylindrical body portion slidably received within said channel and another portion adapted for supporting a roll map, cards or the like, said body portion being rotatable within said channel on a plane transversely to the said channel, the outer surface of said body portion being formed with two arcuate portions extending circumferentially thereof and arranged diametrically opposite one another and having different centers offset with respect to the longitudinal center of said channel, the distance between the upper end of one said arcuate portion and the lower end of said other arcuate portion being greater than the diameter of said channel whereby to cause a wedging of the said body portion within the said channel upon rotation thereof, said body portion being provided with a rib outwardly of said channel forming a shoulder engaging said metal member to limit the rotating movement of the said body portion within the said channel.

6. In a device of the character described, a horizontal metal member having a longitudinally extending channel therein circular in cross section, and bracket members each having a substantially cylindrical body portion slidably received within said channel and another portion adapted for supporting a roll map, cards or the like, said body portion being rotatable within said channel on a plane transversely to the said channel, the outer surface of said body portion being formed with two arcuate portions extending circumferentially thereof and arranged diametrically opposite one another and having different centers offset with respect to the longitudinal center of said channel, the distance between the upper end of one said arcuate portion and the lower end of said other arcuate portion being greater than the diameter of said channel whereby to cause a wedging of the said body portion within the said channel upon rotation thereof, said body portion being provided with longitudinally extending grooves in the outer surface thereof and within said channel.

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