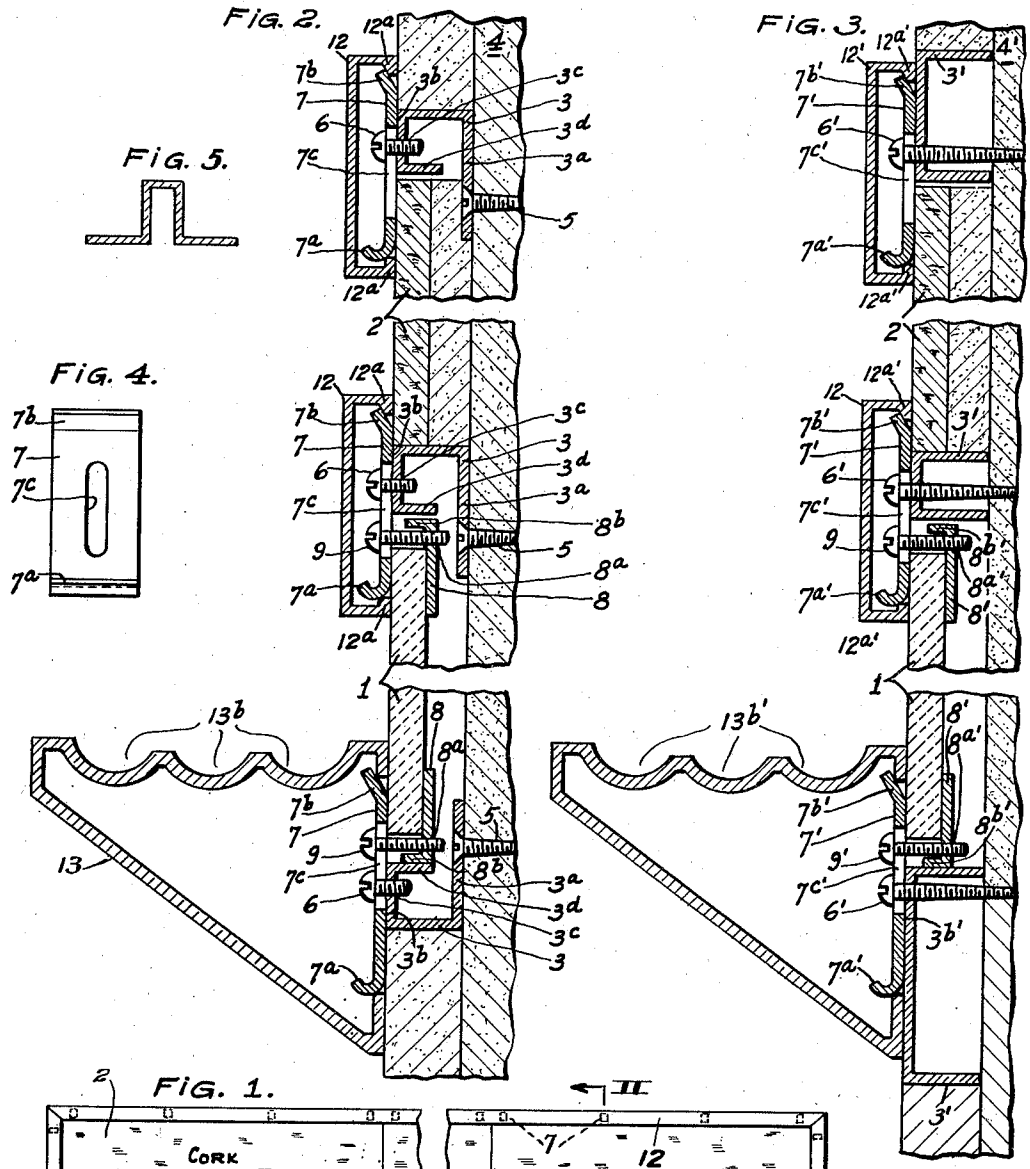
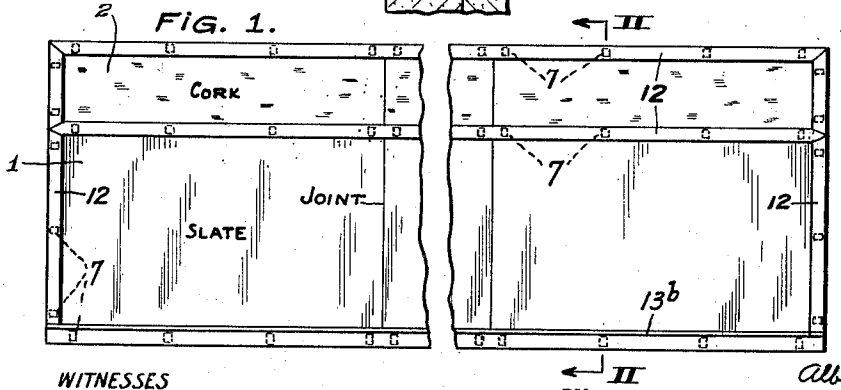
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BLACKBOARD FRAME CONSTRUCTION

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WITNESSES
A. B. Wallace.
E. O. Johns

INVENTOR.
Albert M. Masters
BY
Brown, Critchlow & Flick
his ATTORNEYS.

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BLACKBOARD FRAME CONSTRUCTION

Albert M. Masters, Philadelphia, Pa.

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This invention relates to an improved frame construction for permanently mounting blackboard slate or similar field material on the wall of a class room, conference room, or the like, but more particularly to an all-metal frame construction of this character.

It is the usual practice to mount these frames on the walls of the building in which they are being used when the building is being erected. For this reason it is especially desirable they be so designed that they may be assembled in sections and to employ a base section or ground which can be attached to the wall before the latter is plastered, if plaster is used. It is also desirable that they be susceptible of being readily disassembled at any time to permit the replacement of the blackboard slate in case such replacement is necessary. Also, they must be sturdy of construction and pleasing in apparance as well as not too expensive to manufacture and assemble.

Ordinarily the slates in these boards as furnished vary in thickness both with respect to each other and over their individual length and height, and several pieces are employed in each board. Because of this variation in thickness somewhat of a problem is presented in the mounting of the slates as it is necessary that their outer or writing surface be perfectly smooth when installed.

With the foregoing in mind it is an object of this invention to provide a blackboard frame construction of the character referred to which will satisfy all of the requirements mentioned. Another object is to provide a clamping arrangement for engaging the blackboard slate in frames of this type which automatically aligns the exposed surfaces of the slate when the slates are drawn in place by clamps, thereby eliminating the necessity of any special adjustment or blocking around the edges.

These and various other objects as well as the various other novel features and advantages of the invention will be apparent when the following detailed description is read in conjunction with the accompanying drawing of which Fig. 1 is a front elevational view of a typical blackboard assembly constructed in accordance with the invention; Fig. 2 a sectional view taken on the line II—II of Fig. 1; Fig. 3 a view similar to Fig. 2 of a modified form of the invention; Fig. 4 an elevatonal view of one of the slate-engaging and mold-supporting clips attached to the outer surface of the frame-supporting ground; and Fig. 5 a sectional view of a modified form of ground.

Referring in detail to the drawing, and first more particularly to Figs. 1 and 2, the numeral 1 designates the field of the blackboard on which the chalk marks are received and which is made of slate or other equivalent material. The numeral 2 likewise designates a field of cork or similar composition provided for the mounting of maps or other papers by means of thumb tacks, stickers or the like, being shown merely as an adjunct to the board proper. It will be readily appreciated, of course, by those skilled in the art, that this combined assembly may take various other shapes.

As a main support for the assembly a continuous frame or ground 3 is employed. This consists preferably of a rolled or extruded angular metal section having a flat side which is secured to the supporting wall 4 either before or after the plaster is placed on the wall and a side parallel therewith but spaced therefrom to which the slate is anchored by clips and clamps. As shown in Fig. 2 a ground 3 is illustrated which comprises a hollow rectangularly shaped section 3 having a protruding flange 3*a* on the side thereof which is disposed against the wall. Through this flange 3*a* which as will be appreciated may be projected from either side of the section the nails 5 or other means such as screws or toggle bolts employed to fasten the ground to the wall are passed. When the flange 3*a* is projected in the opposite direction it is, of course, covered over by the plaster which has strengthening advantages. While in the form shown it is afforded the support of the plaster on one side only, it is adapted to be secured to the wall either before or after the plaster is put on.

When in position the outer surface 3*b* of the ground frame 3 is disposed in a plane parallel to the wall 4 and preferably flush with the plaster in case plaster is used. To this outer portion 3*b* there is secured in spaced relation by means of screw bolts or sheet metal screws 6 a plurality of outer clamp members, or clips 7 for engaging the outer surface of the slate 1 or cork surface 2. To hold these screws in place either nuts may be used or the openings 3*c* threaded as indicated or punched for sheet metal screws.

Cooperating with the clips 7 is a plurality of complementary clamps 8 which engage the inner surface of the slate at its edges. These clamps as shown are held in place and tightened against the slate by means of screws 9 which are passed through the openings 7*c* and threadably engaged in threaded openings 8*a* in the clamps 8. While individual holes may be provided in the clips 7 to accommodate both the screws

6 and 9, a single slot as shown in Fig. 4 is preferably provided and made slightly longer than the normal spacing between the two screws. The purpose of this is to permit the clamps 8 to be mounted as close as possible to the edge of the slate, even though the width of the slate may vary as it frequently does. Normally, however, it is preferred to mount the clamps so that their inner ends bear against the inner portions 3d of the ground frame, and to enhance the rigidity of the clamps when so disposed they are provided with right angularly extending flanges 8b which may be rested against the side 3d of the ground.

By reason of the fact that the clips 7 are rigidly secured to the outer portion 3b of the frame 3 and that the clamps 8 are adjusted with respect to the clips 7, the outer surface of the slate 1 is always maintained in an even and fixed plane irrespective of any variation in thickness of the slate. Hence, by simply tightening the clamps 8 against the slate, the slate is rigidly drawn to place and its outer surface brought into perfect alignment without any special adjustment, notwithstanding any variations in the thickness of the slate.

In addition to functioning as a means for engaging the slate, the clips 7 are also adapted to function as a means for mounting a molding 12 over the edges of the assembly to enclose the opening therein and also to provide the assembly with a pleasing appearance. To so function the clips are provided with a curled bead 7a at one end and an outwardly flared edge 7b at the other. The molding 12 is in turn made in the form of a channel section and provided at the ends of its flanges with inwardly turned shoulders 12a. The upper of these shoulders 12a when assembling the molding is engaged behind the outwardly flared edges 7b of the clips, and the other then snapped over the curled bead 7a. In this way the molding is firmly and rigidly held in place but in such a way that it can be readily removed if such is desired to permit access to the clamps so that the slate can be replaced if desired.

To provide a support for chalk and erasers at the base of the frame, a shelf-like molding 13 is substituted along the bottom of the blackboard for the molding 12. This shelf comprises a somewhat triangular-shaped hollow section, which is adapted to be secured by the clips 7 in the same fashion as the molding 12. The lower side of it, as shown, is inclined downwardly to function as a strut, and because of the greater distance between the upper and lower edges thereof adjacent the wall, longer clips 7 than are used about the rest of the frame are attached along the bottom of the frame 3. Preferably the top of such shelf 13 is dished out to provide a retaining cavity 13b for the chalk and erasers, and in the particular embodiment shown this dished-out portion is divided into parallel grooves with ridges between for supporting the erasers out of contact with the bottoms of the recesses. The purpose of this is to prevent the erasers from coming in contact with the dust, etc., which collects on the shelf,—this being desirable especially if they have been cleaned before they are placed on the shelf.

As will be noted, the cork or matting 2 may be laid directly against a thin section of plaster and held in place solely by the clips 7, although if desired the clamps 8 may be used for this purpose the same as they are for the slates, as will be appreciated.

In the embodiment of the invention shown in Fig. 3, wherein the parts thereof are designated by the same reference characters applied to the structures shown in Figs. 1, 2 and 4, except that they are distinguished by the use of a prime character, a ground frame section 3, is employed which is a simple U-shaped section rather than the hollow rectangular section shown in Fig. 2. This ground, as shown, is mounted with its web portion carrying the clips 7' and its leg ends disposed against the wall 4'. When used it is preferably attached to the wall by independent screws, although the screws 6' that are used for attaching the clips 7' to the frame 3' may be used for this purpose. Where the latter is done the screws 6' are, of course, projected through both the clips and frame into the wall. Instead of a simple U-shaped section, however, the ground in this embodiment may take the shape shown in Fig. 5 and in which case the flanged edges may be adapted to receive the retaining screws. The advantage of this shape of ground is that while it may be used with plaster as indicated it also forms a very desirable type of frame for use in connection with a glazed or like wall where no plaster is employed, as it presents a finished molded effect around the outside edges of the frame which ordinarily can not be accomplished without the use of a separate molding. In this connection, as will be appreciated, the width of the channel 3' may be varied at the top and bottom of the assembly as indicated to form a completely closed and smooth-edged frame.

In assembling a blackboard embodying this invention, the frame 3 is of course first attached to the wall. The clips and clamps 7 and 8, respectively, at the bottom of the frame are next secured to the ground with the clamp loose. The other clips and clamps are then secured sufficiently tightly to hold them in place around the sides and upper edges of the slate and the slate set between the clamping elements previously attached to the base of the frame. It is then tilted into the plane of the frame where it is stopped by the clips 7 disposed about its edges. When in this position the sections of slate are adjusted to bring their edges tightly together, and the clips 7 moved into registration with the holes 3c. When in such position the screws 6 are engaged in the frame 3 and progressively drawn up until the clips are tightly secured in place. The clamps 8 by means of screws 9 are then drawn tight against the slate and the molding 12 and shelf 13 snapped into position over the clips 7.

Obviously, as will be appreciated, due to clamps 8 being secured to the clips 7 by screws separately from those used to attach the clips to the ground frame 3, the mounting of the clips and the erection of the slate are greatly facilitated. Furthermore, since the screws employed to hold the clips in engagement with the ground do not have to be adjusted to secure the slate in position, the structure provides a more rigid and foolproof arrangement than where only one screw is used for both purposes. As will also be obvious, the entire structure is one which can be easily and with complete satisfaction assembled and erected by any ordinary unskilled laborer.

According to the provisions of the patent statutes, I have explained the principle and con-

struction of my invention and have illustrated and described what I now consider to represent its best embodiment. However, I desire to have it understood that, within the scope of the appended claims, the invention may be practiced otherwise than as specifically illustrated and described.

I claim:

1. In a blackboard frame construction, a ground frame of angular cross-section, an outer clamp member detachably secured to the outer surface of said ground frame for engaging the outer surface of the blackboard field at the edge thereof and for determining the position of the blackboard field, and an inner clamp member secured to said outer clamp member so as to permit movement thereof after said outer clamp member is fixedly positioned.

2. In a blackboard frame construction, a continuous ground frame of angular cross-section, at least one outer clamp member for engaging the outer face of the blackboard field, means for detachably securing said clamp member in spaced relation to the outer face of said frame, at least one inner clamp member for engaging the inner face of the blackboard field, and independent means for adjustably securing the inner clamp member to the outer clamp members whereby the inner clamp member is movable relative to the positively positioned outer clamp member.

3. In a blackboard frame construction, a ground frame of angular cross-section, an outer clamp member for engaging the outer face of the blackboard field, screw means for attaching said clamp to the outer face of said ground frame, an inner clamp member for engaging the inner face of the field, and independent screw means for adjustably securing the inner clamp member to the outer clamp member to permit movement of the inner clamp member after the outer clamp member is fixedly positioned, said latter member having a slot therein for receiving both said screw means and of a length adapted to permit the spacing of the screws to vary.

4. In a blackboard frame construction, a ground frame having an inner flat surface for attaching it to a supporting wall and an outer spaced parallel flat surface, an outer clamp member secured to the latter surface for engaging the outer face of the blackboard field at the edge thereof and determining the position of the blackboard field, and an inner clamp member for engaging the inner face of said field adjustably secured by independent means to said outer clamp member to permit movement of said inner clamp member after said outer clamp member is positively positioned.

5. In a blackboard frame construction, a metallic ground frame of angular cross-section having one side provided with a flange disposed to be attached to a supporting wall and a spaced parallel surface for aligning the outer face of the blackboard field, a clamp member secured to said ground frame for engaging the outer face of the field, an inner clamp member for engaging the inner face of the field and clamping it against said first-mentioned clamp, and an independent screw for adjustably securing said clamp members together and for permitting movement of said inner clamp member after said outer clamp member is positively positioned.

6. In a blackboard frame construction, a ground frame having a side wall which is disposed at right angles to its outer wall, a clamp member for engaging the outer face of the blackboard field at the edge thereof detachably secured to the outer wall of said frame, an inner clamp member for engaging the inner face of said field which clamp member is L-shaped in cross-section and arranged with its long side parallel to said outer clamp and its short side parallel to the side of said ground frame and directed towards said outer clamp member, and independent means for adjustably securing said inner to said outer clamp member and for permitting movement of said inner clamp member after said outer clamp member is positively positioned.

7. In a blackboard frame construction, a ground frame member of angular cross-section, an outer clamping member detachably secured to the outer surface of said ground frame for engaging the outer surface of the blackboard field and for determining the position of the blackboard field, securing means detachably securing the outer clamping member to the frame member, an inner clamp member adapted to engage the back of the blackboard, and independent securing means for said inner clamp member carried by one of the aforesaid members and controlling the position of said inner clamp member so as to permit movement thereof after said outer clamp member is fixedly positioned.

8. In a blackboard frame construction, a ground frame member having a back surface adapted to rest against a wall, an angular portion extending from the back surface, an outer surface parallel to the back surface and forming a generally U-shaped structure, an outer member detachably secured to the outer surface of said ground frame member for engaging the outer surface of the blackboard field adjacent the edge thereof and for determining the position of the blackboard field, an inner clamping means adapted to engage the back of a blackboard, and operating means carried by one of the aforesaid members and engaging the inner clamping means so as to move the latter forwardly to engage the back of a blackboard after said blackboard is in position and the outer member is in fixed position.

9. In a blackboard frame construction, a ground frame member having a back surface adapted to rest against a wall, an angular portion extending from the back surface, an outer surface parallel to the back surface and forming a generally U-shaped structure, and an inwardly directed surface extending towards the back surface; an outer member for engaging the outer surface of the blackboard field adjacent the edge thereof and for determining the position of the blackboard field, securing means for detachably securing the outer member to the outer surface of said ground frame member, an inner clamping means adapted to engage the back of a blackboard, and operating means independent of said securing means carried by one of the aforesaid members and engaging the inner clamping means so as to move the latter forwardly to engage the back of a blackboard after said blackboard is in position and the outer member is in fixed position.

10. In a blackboard frame construction, a ground frame member of angular cross-section, an outer clamping member detachably secured to the outer surface of said ground frame for engaging the outer surface of the blackboard field and for determining the position of the black-

board field, securing means detachably securing the outer clamping member to the frame member, an inner clamp member adapted to engage the back of the blackboard, and independent means for securing said inner clamp member and controlling its position so as to permit movement thereof after said outer clamp member is fixedly positioned.

11. In a blackboard frame construction, a ground frame member having a back surface adapted to rest against a wall, an angular portion extending from the back surface, an outer surface parallel to the back surface and forming a generally U-shaped structure, an outer member detachably secured to the outer surface of said ground frame member for engaging the outer surface of the blackboard field adjacent the edge thereof and for determining the position of the blackboard field, an inner clamping means adapted to engage the back of a blackboard, and operating means engaging with said inner clamping means and adapted to move the latter forwardly to engage the back of a blackboard after said blackboard is in position and the outer member is in fixed position.

12. In a blackboard frame construction, a ground frame member having a back surface adapted to rest against a wall, an angular portion extending from the back surface, an outer surface parallel to the back surface and forming a generally U-shaped structure, and an inwardly directed surface extending towards the back surface; an outer member for engaging the outer surface of the blackboard field adjacent the edge thereof and for determining the position of the blackboard field, securing means for detachably securing the outer member to the outer surface of said ground frame member, an inner clamping means adapted to engage the back of a blackboard, and operating means independent of said securing means engaging with said inner clamping means for moving the latter forwardly to engage the back of a blackboard after said blackboard is in position and the outer member is in fixed position.

ALBERT M. MASTERS.