Feb. 19, 1935. C. M. DILL 1,991,882

BLACKBOARD FRAME CONSTRUCTION

Filed July 9, 1932

Fig. 1.

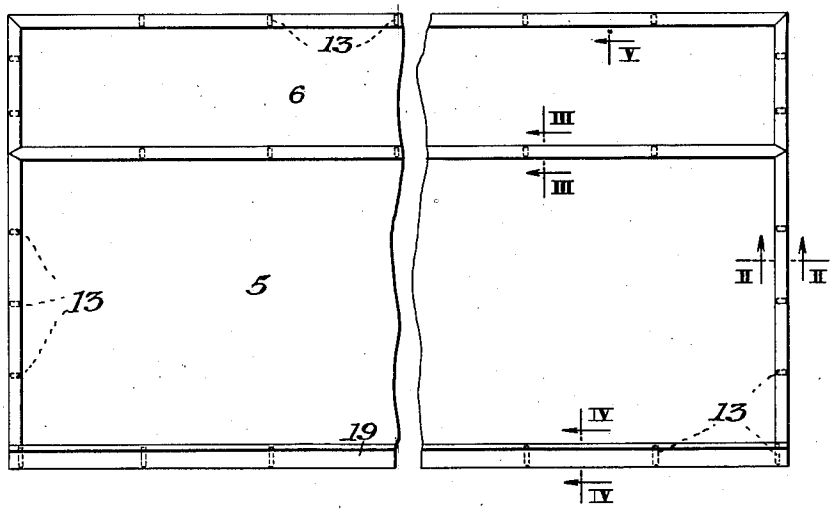



Fig. 6.

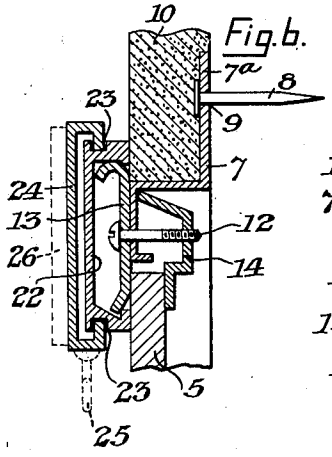



Fig. 2.

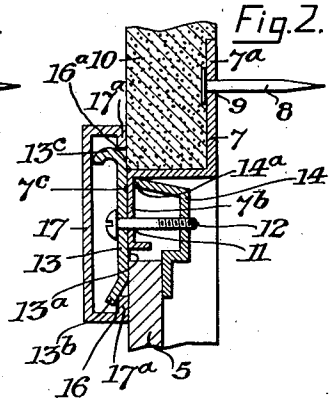
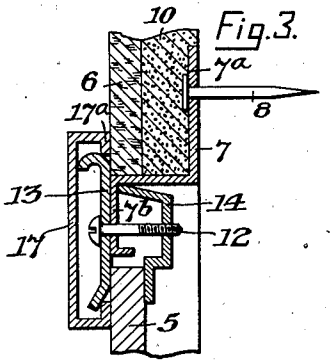



Fig. 3.



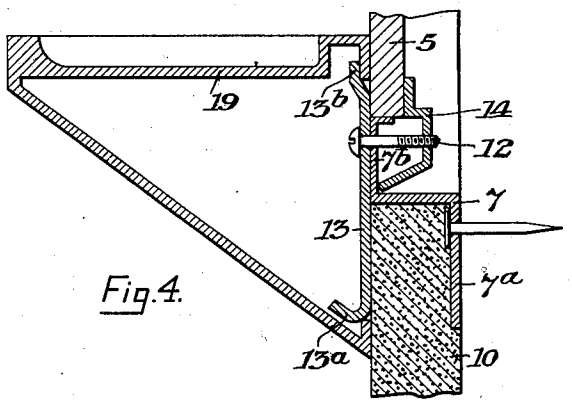
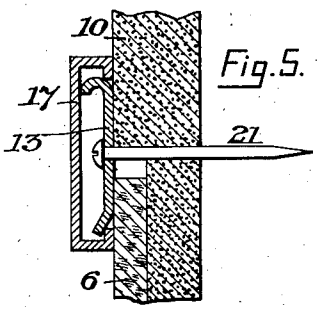




Fig. 4.

Fig. 5.




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# UNITED STATES PATENT OFFICE

1,991,882

## BLACKBOARD FRAME CONSTRUCTION

Charles M. Dill, Manoa, Pa.

Application July 9, 1932, Serial No. 621,698

6 Claims. (Cl. 35—15)

My invention relates to blackboards such as are commonly used in schools, and more particularly relates to a novel blackboard frame construction adapted to be permanently associated with a wall for holding the slate constituting such blackboard in place, preferably in a recess in said wall, associated with means for removably positioning the slate.

Modern sanitary requirements demand that blackboard frames should be so designed and constructed that they will avoid the collection of dust or at the most a minimum amount, hence projecting bolts, nuts, and clip structures as usually found will not satisfy present day conditions.

A further requirement is that the clamping means be adaptable to support a piece of slate having different thicknesses at different points, while being able to maintain the writing face of the slate in a predetermined vertical plane, preferably in the plane of the wall in which it is mounted.

Also, in view of modern conditions, it is a requirement that the frame be of metal, and be capable of quick assembly upon the job.

An object of my invention is to provide a blackboard having a metal frame which is substantially free from small dust-collecting protuberances, and which may be readily assembled upon the job.

Another object of my invention is to provide in a blackboard frame construction a portion which may be built into a wall prior to the plastering operation and into the space which such portion provides the slate may be inserted and secured at any time after the plastering operation.

A further object of my invention is to provide a blackboard frame which may support both a slate and a piece of cork or similar board within a frame having uniform external appearance, but which is so constructed internally as to conform to the weight of the material being carried. As hereinafter described the frame for holding the cork may be considerably lighter and less expansive than the support necessary for the heavy slate.

Yet another object of my invention is to provide a permanently positioned combination slate support and plaster bead.

Other objects will be apparent from the following specification and claims, and from the drawing, in which:

Figure 1 is a side elevation of a blackboard structure embodying my invention.

Figs. 2, 3, 4 and 5 are sectional views taken on the lines II—II, III—III, IV—IV and V—V, Fig. 1; looking in the direction of the arrows, and

Fig. 6 is a sectional view of an upper portion of the blackboard structure embodying a modified detail of my invention.

Referring particularly to Fig. 1, the blackboard structure may comprise a slate portion 5, adapted to receive impressions from chalk or similar writing material, and a cork portion 6, upon which drawings, maps, etc., may be mounted, by means of thumb tacks; the two being held in a desired location by suitable framework.

The frame comprises a continuous metal ground or bead 7, which may be of any desired size and outline, as here shown being substantially Z-shape in cross section; presenting the appearance of two right angle members $7^a$ and $7^b$, arranged in reversed relationship so that two sides of these angle portions lie in parallel planes.

The ground or bead 7 may be held to suitable supports by attaching means 8, herein indicated as nails, which pass through openings 9 in the portion $7^a$ of such ground with reference to the blackboard which occupies the space surrounded by such ground 7. Other means of attachment, such as toggle-bolts, expansion bolts, etc., may be employed. The ground or bead 7 should be positioned prior to the plastering of the wall upon which or within a recess of which the board is to be located, and the portion $7^a$ of the ground acts as a partial support, bead or marginal limitation for the plaster 10. In this stage of erecting the blackboard structure the wall appears with its plaster coat formed to present an opening or recess, or a series of openings or recesses definitely shaped to approximately the size of the blackboard structure, and having clean and even marginal edges by reason of the ground or bead 7 which frames the marginal edges of such opening or recess.

Following completion of the plastering operation the blackboard structure may be finished and the slate and cork set into place. For this purpose, the portion $7^b$ of the ground 7, which lies in the plane of the plastered surface, contains a plurality of openings 11 at properly and suitably spaced intervals through which machine screws 12 may pass. Each screw 12 serves to hold an outer clip member 13 against the face $7^c$ of the lower portion $7^b$ of the ground 7, and engages an inner clip member 14 which serves as a nut; holding the latter in position within the partial square formed by two of the walls of the ground 7, and such inner clip member 14 is threaded to receive the screws 12. The inner

face 13[a] of the clip member 13, when properly tensioned, will lie in the plane of the outer surface of the plastered wall 10, and the slate or cork may abut this surface.

In erecting a blackboard the clips are loosely put in position, with the inner clip member 14 which serves as a nut so positioned that the end 14[a] thereof will abut the inner surface of the wall portion 7[c] of the ground 7, and thus be prevented from turning. The outer clip members 13 may then be turned with their longer portions parallel to the edge of the ground or bead 7 and the slate may then be set in place. The slate then will rest upon the innermost end edge (with relation to the slate) of the ground 7, as will be clearly apparent from a consideration of Fig. 4. The outer clip members 13 are then turned with their longer axes at right angles to the edge of the board in the position shown in the drawing, and the screws 12 tightened. In this manner the outer clip member 13 is brought into its position with its inner face 13[a] parallel to the wall surface, and serving as a continuation thereof and seating against the ground 7, and the inner clip member 14 is brought into contact with the inner face of the slate 5 and forces it against the inner face 13[a] of the clip member 13, thus forcing the face of the slate to lie in the plane of the wall surface.

It will be obvious that such construction provides a means whereby the thickness of the slate at different points does not affect the means used for locating its surface in the desired plane, and the entire process of properly locating the slate may be accomplished after the slate has been lifted into position and effected externally of the surface of the wall as well as the slate.

The outer clip members 13 are so shaped as to form seats 16 and 16[a] between the inner and outer ends 13[b] and 13[c] thereof, respectively, for the reception of the flanges of suitable molding or other covering structure for the outer clip members. As shown in Figs. 2 and 3, this molding or other structure may comprise a channel member 17 having inwardly turned flanges 17[a], or, as is shown in Fig. 4, a pressed-up or otherwise formed chalk tray 19.

The chalk tray 19 and the molding 17 may be formed of aluminum or other suitable material having sufficient resiliency to maintain itself in position when seated on the clip members 13.

The structure so far described is suitable for forming the marginal edges of either or both the slate and cork portions of the blackboard structure, and also for forming supporting means and joint covering means between the cork and slate portions of the board, as will be clearly apparent from a consideration of Fig. 3.

Due primarily to the difference in the weight of the material, the means necessary for holding the cork board in place need not be as sturdy as that necessary for holding the slate, and I have illustrated in Fig. 5, a suitable and satisfactory modification of my invention for holding either the entire cork board or preferred portions of its edges in place. In this modification the outer clip members 13 and molding 17 are used, and in lieu of the screw 12 and inner clip member 14, a nail or other suitable connecting means, toggle-bolt, expansion bolt, etc., indicated herein as a nail 21, may pass through an opening 13[d] in the clip members 13 and into the wall proper. In this case the plaster may be held in place by a metal bead or ground, or the edges left rough; the clip member 13 and molding 17 covering any space which may be left between the cork and the plaster, and not only forming a neat and cleanly support for the cork board, but a closing means for the opening.

In the modification shown in Fig. 6, a modified form of molding, indicated at 22, is used, in the edges of which grooves 23 are formed parallel to its longitudinal axis. This type of molding is particularly desirable for use along the upper edge of the blackboard. Into the grooves 23, slidable metal tabs 24, having a cross section essentially similar to the molding 17, may be set from either end thereof or otherwise applied, and these tab sections may be provided either with depending hooks, (indicated by dotted lines at 25) or they may carry cork inserts or otherwise applied cork surfaces from which maps or other matter may be hung (as indicated by dotted lines at 26). Such tabs may be moved from side to side lengthwise of the molding 22 across the face of the blackboard, as is found suitable or necessary.

Various modifications may be made in the above-described embodiments of my invention without departing from the spirit and scope thereof as set forth in the following claims.

I claim:

1. The combination of an angular support of metal substantially Z-shape in cross section forming a bead adapted to bound or edge a shallow recess in a plastered wall and having an inwardly extending portion surrounding the recess and lying in the plane of the finished wall surface, means for securing said angular support to the wall, a blackboard slate fitting within the recess defined by the angular support and substantially filling the broad area of said recess, and means for supporting said slate comprising complemental clip members secured at intervals in pairs to and cooperating with said angular metal support; the outwardly disposed clip member of each pair being rotatably movable to permit insertion of the slate.

2. The combination of an angular support of metal substantially Z-shape in cross section and adapted to bound or edge a shallow recess in a plastered wall and provide a bead for the plaster and having an inwardly extending portion surrounding the recess and lying in the plane of the finished wall surface, means for securing said angular support to the wall, a blackboard slate fitting within the recess defined by the angular support and substantially filling the broad area of said recess, and means for supporting said slate in the plane of the finished wall comprising complemental clip members secured at intervals to opposite sides of and cooperating with the portion of said angular support lying in the plane of the wall surface; the outwardly disposed clip member of each pair being rotatably movable to permit insertion of the slate.

3. The combination of an angular support of metal substantially Z-shape in cross-section and adapted to bound or edge a shallow recess in a wall; said support having a portion lying in the plane of the finished wall surface, a portion within the wall and parallel thereto and a portion at right angles to said first-named portions and connecting the same; said latter portion being disposed within the recess in said wall, means for securing said angular support to the wall; one of the portions of said angular support constituting a limiting margin for the recess in the wall, a blackboard slate substantially filling the broad area of said recess, and means comprising pairs

of clip members secured at intervals on opposite sides of and cooperating with the portion of said angular support lying in the plane of the wall surface for supporting said slate; the outer clip member of each pair being movable to permit insertion of the blackboard slate.

4. The combination of an angular support of metal substantially Z-shape in cross-section and adapted to bound or edge a shallow recess in a wall; said support being permanently fixed to said wall and defining the area of said recess; said support forming a bead for said plaster and having an inwardly extending portion surrounding the recess in the plane of the surface, a blackboard slate fitting within said recess, pairs of clip members connected at intervals to opposite sides of the inwardly extending portion of said angular support and detachably connecting said slate thereto; the outer clip member of each pair being movable to permit the insertion of said slate, and a frame for covering the portion of the angular support in the plane of the wall detachably connected to the outer clip member of each pair of clips.

5. In a blackboard structure, the combination of an angular support of metal substantially Z-shape in cross-section permanently fixed within the surface of the plastered wall of a room; said support bounding a recess in said wall and forming a marginal reinforcement for said plastered wall with an inwardly extending portion lying in the plane thereof, a blackboard slate disposed within said recess and substantially filling the broad area of the same, cooperative pairs of clip members forming clamping means carried by said metal support and detachably positioning said blackboard slate with respect to the inwardly extending portion of said angular support whereby its writing surface is disposed in the plane of the plastered wall, and resiliently edged frame elements externally applied to and gripping the outer clip members of each pair; said frame elements covering the joints between the plastered wall the metal support and the blackboard slate.

6. The combination of an angular supporting frame of metal bounding the edge of a recess in a plastered wall; said support being substantially Z-shape in cross-section with an outer portion flush with the plane of said wall, a portion parallel with said outer portion and disposed within the wall and a connecting portion at right angles to said first-named portions against which the plastered wall may abut; said outer portion in the plane of the wall having an inwardly extending flange, a plurality of pairs of complemental clip members pivotally connected to said outer portion of the support; the outer member of each pair of clips having out-turned flanges at opposite ends and being mounted for rotative movement, a blackboard slab supported at its edges by said pairs of clip members, means for causing said clip members to grip the blackboard slab, and covering elements overlying the marginal edge of the blackboard slab and the outer portion of the support and operatively engaging the outer member of each pair of clips; said covering elements having continuous inwardly disposed flanges adapted to snap over the flanges of said outer clip members.

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