

May 19, 1964

R. G. MOHR ETAL

3,133,642

MOUNTING

Filed Dec. 27, 1960

3 Sheets-Sheet 1

Fig. 1.

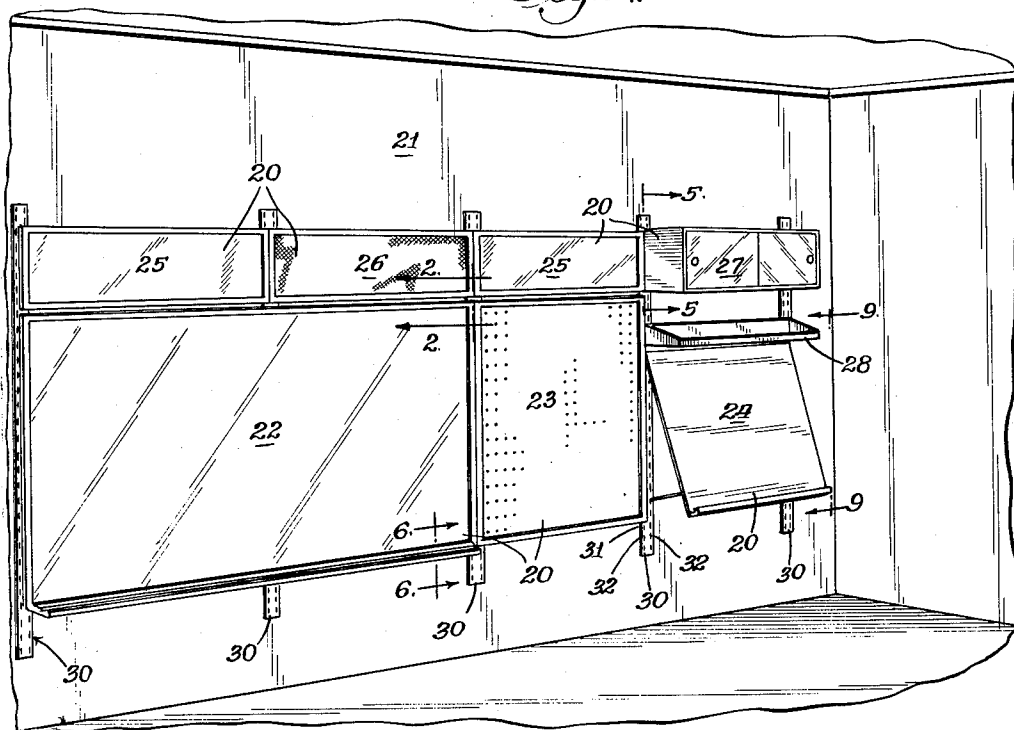
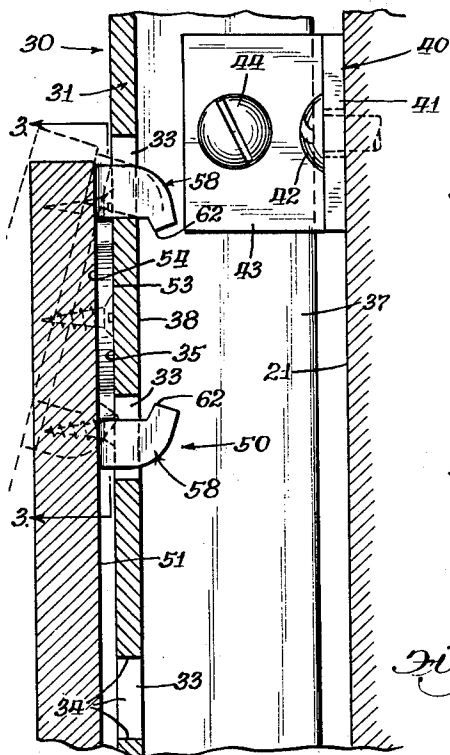


Fig. 2.

Fig. 3.

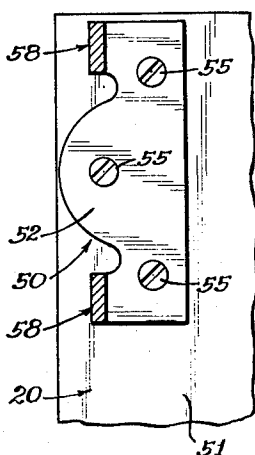
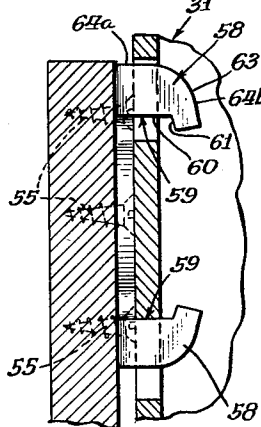


Fig. 4.



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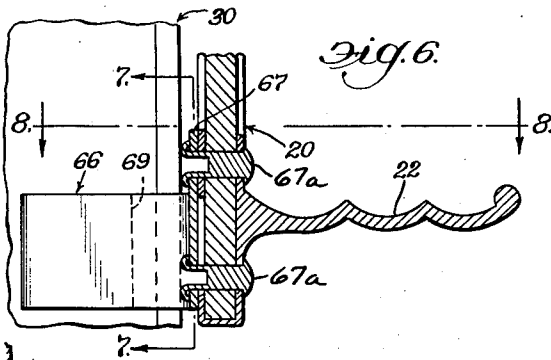
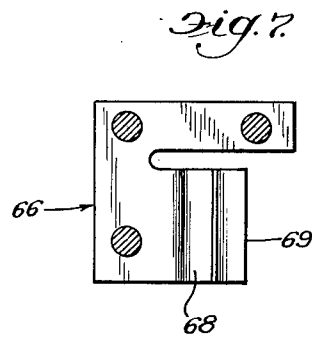
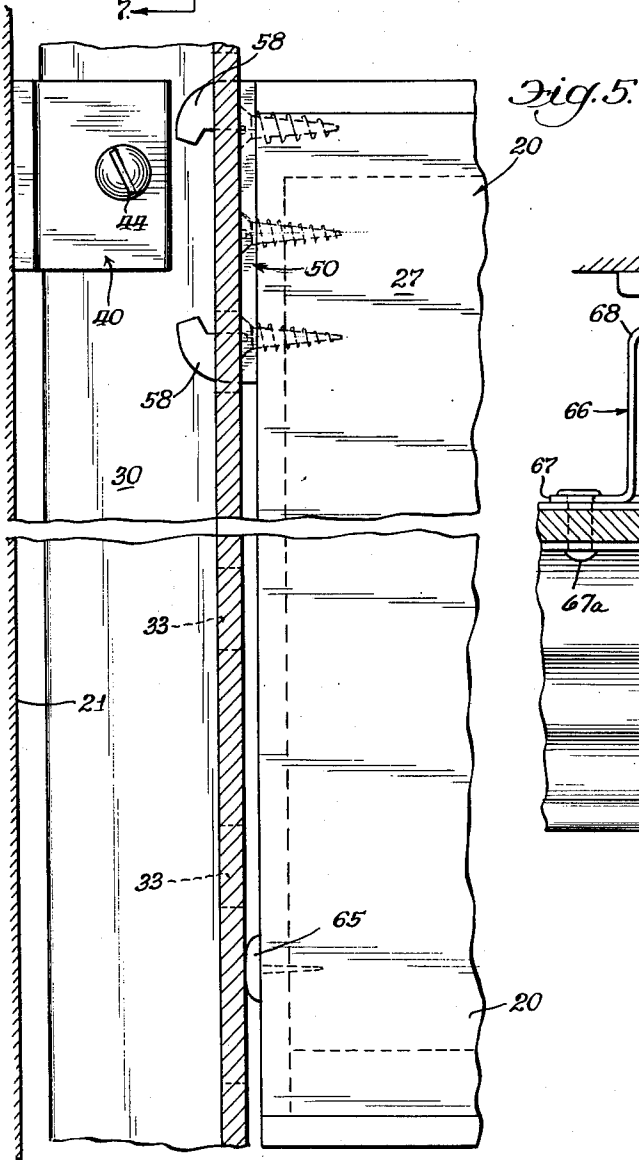
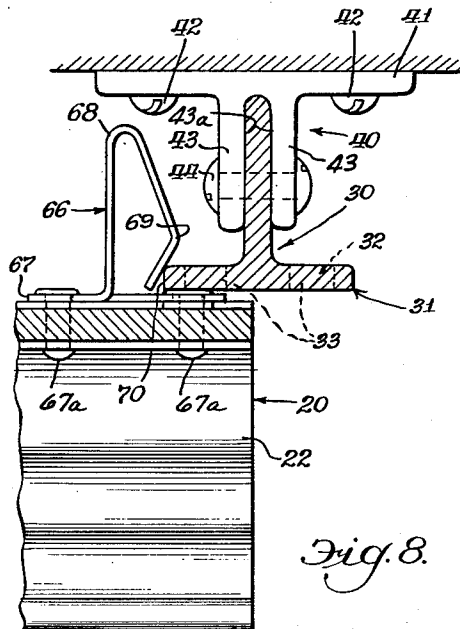
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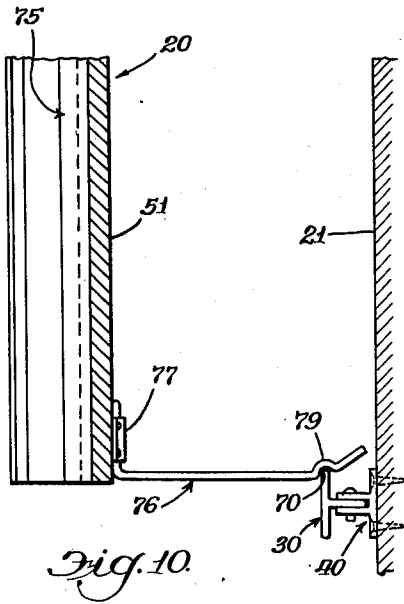


Fig. 10.

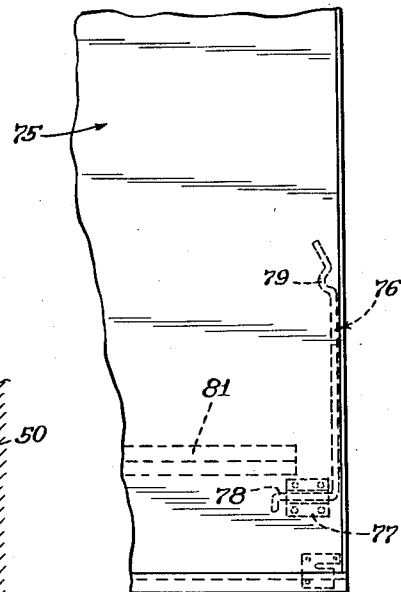


Fig. 11.

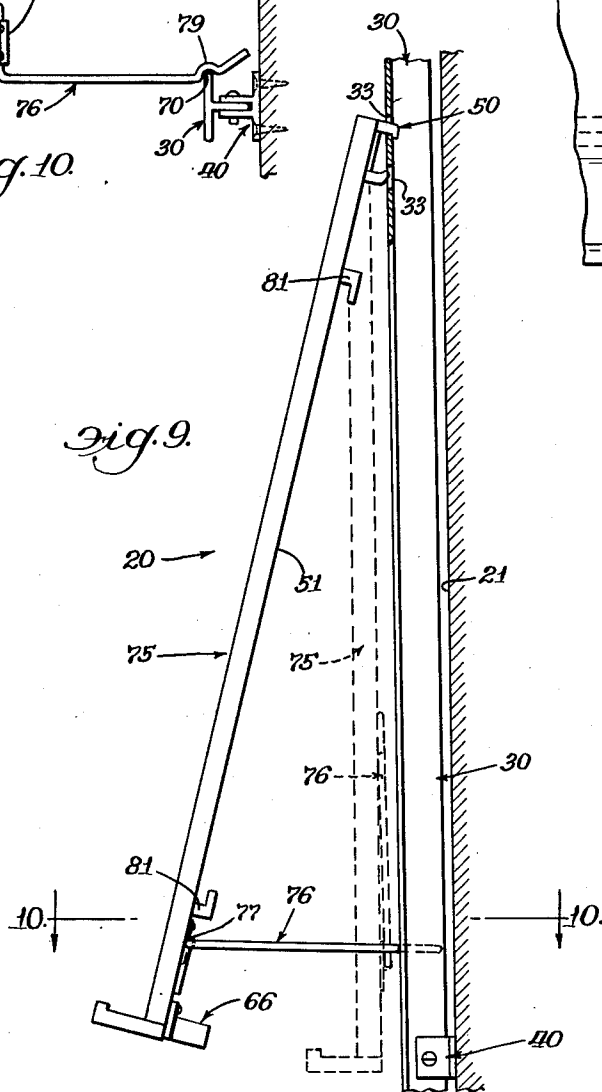


Fig. 9.

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MOUNTING

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6 Claims. (Cl. 211-86)

This invention relates to a mounting assembly, and more particularly to a mounting assembly for detachably and adjustably securing fixtures to a wall.

The primary object of this invention is to provide a new and improved mounting assembly for adjustably and detachably securing fixtures to a wall.

It has been found desirable in numerous environments to detachably and adjustably secure various types of fixtures to the walls of a room while maintaining the appearance and practicability of permanently installed fixtures. For example, in modern school class rooms many fixtures other than the usual chalkboard and bulletin board are installed on the walls of the rooms. Such additional wall mounted fixtures might include perforated panels, flannelboards, tackboards, an easel board, cabinets, and various racks such as magazine racks, to name but a few. Flexibility in arrangement of such wall mounted fixtures is finding increased favor with modern school administrators, at least in part because fixtures should be interchangeable for adapting each class room to the best possible arrangement for its specific function. However, the mounting arrangement for securing the fixtures to the wall must be such that the individual fixtures may be easily installed and removed, and when installed they must be attached to the wall in such a manner that they will not be inadvertently disengaged.

A more specific object of this invention is to provide a new and improved mounting assembly for adjustably and detachably securing various fixtures to a wall in such a manner that the fixtures have the appearance and practicability of permanently installed fixtures.

Another object of this invention is to provide an improved bracket for such a mounting assembly.

A further object of this invention is to provide an improved mounting assembly for attaching at least a pair of fixtures to a wall, wherein a plurality of spaced apart upright standards are secured to the wall, each standard having two rows of vertically spaced slots, each fixture having a bracket at opposite ends, and each bracket having a body secured to the fixture and a pair of vertically spaced fingers secured to each body and received in a pair of slots in adjacent rows in spaced apart standards, the upper finger of each pair having a surface with a first portion engaging the periphery of the upper slot of the respective pair of slots, and a second portion spaced from the body and extending away from the body in a direction toward the other finger. A related object of the invention is the provision of stabilizing members secured to a lower portion of the fixtures and each engaging the adjacent standard.

Other objects and advantages will become readily apparent from the following detailed description taken in connection with the accompanying drawings in which:

FIGURE 1 is a perspective view of a portion of a class room with various fixtures adjustably and detachably mounted on a wall of the room;

FIGURE 2 is an enlarged fragmentary sectional eleva-

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tional view taken on the line 2-2 in FIGURE 1 illustrating a mounting arrangement of a bracket and a standard for attaching a fixture to the wall;

FIGURE 3 is a fragmentary sectional elevational view taken on the line 3-3 in FIGURE 2;

FIGURE 4 is a fragmentary sectional elevational view, similar to FIGURE 2, but illustrating the fixture moved upwardly on the standard;

FIGURE 5 is an enlarged fragmentary sectional elevational view taken on the line 5-5 in FIGURE 1;

FIGURE 6 is a fragmentary sectional elevational view taken on the line 6-6 in FIGURE 1;

FIGURE 7 is a sectional elevational view taken on the line 7-7 in FIGURE 6;

FIGURE 8 is a fragmentary sectional plan view taken on the line 8-8 in FIGURE 6;

FIGURE 9 is an enlarged fragmentary sectional elevational view taken on the line 9-9 in FIGURE 1 and illustrating the mounting arrangement as applied to an easel assembly in an inclined position;

FIGURE 10 is a fragmentary sectional plan view taken on the line 10-10 in FIGURE 9; and

FIGURE 11 is a fragmentary elevational view of the front face of the easel assembly in the closed position.

While illustrative embodiments of the invention are shown in the drawings and will be described in detail herein, the invention is susceptible of embodiment in many other forms, and it should be understood that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the invention to the embodiments illustrated. The scope of the invention will be pointed out in the appended claims.

The present invention is directed to a mounting assembly in which various units or fixtures may be utilized in a classroom to best supplement the particular teaching technique of the instructor. Furthermore, the height of the units above the floor may be adjusted to best use for the height and dexterity of the student age group normally in the room.

More particularly the invention is, in brief, directed to a mounting arrangement for securing fixtures to a wall by the provision of elongated upright standards, firmly, and preferably permanently, secured to the wall by mounting plates. Each fixture is provided with brackets having fingers received in vertically spaced slots in spaced apart standards. The brackets are so arranged, and co-operate with the standards in such a manner as to assure against the fixture being inadvertently disengaged from the mounting. Stabilizing members, such as a rubber bumper, or a spring clip, may be attached to lower portions of each fixture for suitably engaging an adjacent standard for aiding in retaining the fixture on the standard. Each upright standard is in the form of an elongated T-shaped bar having a front strip with a rear strip secured to the front strip and attached to the wall by mounting plates. Each standard has two vertical rows of longitudinally aligned spaced apart slots in the front strip on opposite sides of the rear strip. One embodiment of the invention is directed to a mounting for an easel assembly. The mounting arrangement is of such a nature that an easel board may be rotated outwardly from the standards to an inclined position, and is retained in the inclined position by bars rotatably secured to the rear face of the easel board and detachably engaging the adjacent standards.

Referring to the drawings, FIGURE 1 illustrates a

portion of a school classroom, and a plurality of fixtures 20 are detachably, interchangeably, and adjustably attached on a wall 21. The fixtures 20 include a chalkboard 22, a perforated board 23, an easel assembly 24, tack boards 25, a flannel board 26, a cabinet 27, and a shelf 23. Numerous other fixtures, such as book shelving and various racks are interchangeable with the fixtures shown. Each fixture is mounted on a pair of equally spaced bases in the form of upright standards 30 secured to the wall 21, as will be more fully described hereinafter.

Each standard 30 has a front strip 31 with a pair of parallel, vertically disposed rows 32 of equally spaced apertures in the form of slots 33 which are longitudinally aligned. Each slot 33 is defined by a peripheral surface 34 in the front strip 31, and all slots open outwardly in the same direction through a front face 35 of the standard 30, and away from the wall. Each standard 30 is in the form of an elongated T-shaped bar having a rear strip 37 perpendicular to and co-extensive with the front strip 31 and fixed to the transverse mid-portion of a rear face 38 of the front strip. The standards 30 may be of any suitable material, and are preferably extruded aluminum members.

The standards are preferably equally spaced about four feet apart. Means are provided for securing the standards 30 to the wall 21 and include spaced apart mounting plates 40 on each standard, each mounting plate having a base plate 41 secured to the wall in any suitable manner as by fasteners such as bolts 42 extending through holes in the base plate and anchored in the wall 21. A pair of spaced apart legs 43 are formed integrally with the base plate 41 and define therewith a bifurcated portion defining a slot 43a snugly receiving the standard rear strip 37. A suitable fastener, such as a rivet or bolt and nut means 44, extends through aligned apertures in the legs 43 and the standard rear strip 37, thereby firmly securing the standard 30 to the wall 21. The pair of legs 43 more firmly and securely mount the standard 30 to the wall 21 as the fastener 44 is only required to carry a shear load and is not subjected to twisting because the rear strip 37 is snugly received between the legs 43.

Each fixture 20 is provided with a pair of brackets 50 secured to opposite ends of the rear face 51 of the fixture 20. More particularly, each bracket 50 has a body 52 with a rear face 53 adjacent the front face 35 of the standard front strip 31, and a front face 54 abutting the fixture rear face 51. Means are provided such as rivets or screws 55 passing through holes in the body 52 for securing each bracket 50 to the respective end portion of the fixture rear face 51. A pair of coplanar fingers 58 are integral with the body 52 and extend transversely therefrom in the same direction. Each pair of fingers 58 is received in a pair of slots 33 in a row 32 for attaching the fixture 20 to the wall 21. More particularly, each pair of fingers 58 has adjacent surfaces 59, each surface having a first portion 60 adjacent to and generally perpendicular to the body 52, and a second portion 61 spaced from the body 52 by the first portion 60 and extending away from the body 52 in a direction toward the other finger of the pair of fingers 58 and terminating in end portions 62 which are more closely spaced than are the adjacent peripheral surfaces 34 of the pair of slots 33. The upper finger of the pair of fingers 58 has its surface first portion 60 in engagement with the peripheral surface 34 of the upper notch of the pair of notches 33 when the bracket 50 and the standard 30 are in normal supporting relationship for attaching the fixture 20 on the wall 21. The surface second portion 61 of the upper finger overlies the rear face 38 of the standard front strip 31 for retaining the fixture 20 on the standard 30, as illustrated by the solid lines in FIGURE 2. Each finger also has an outer end surface 63 opposite the adjacent surfaces 59 and has a flat first portion 64a and a convex second portion 64b. The end surface 63 of the upper finger 58 may abut the upper

portion of the peripheral surface 34 of the upper slot 33 when inserting or removing the bracket 50.

Stabilizing members provide means for more securely attaching the fixtures to the standards by retarding vertical movement of the fixtures 20 on the standards 30 and maintaining the fixtures spaced from the standards. As illustrated in FIGURE 5, the stabilizing members may take the form of resilient, friction members such as rubber bumpers 65 suitably secured to the lower portion of fixture 20 and engaging the front face 35 of the standard front strip 31. Or, as illustrated in FIGURE 6, the stabilizing members may also take the form of spring clips 66 having body portions 67 suitably secured to the rear face 51 of each fixture 20, as by rivets 67a, and engaging the front face 35 of the standard front strip 31 to space the fixture 20 from the standard. Each spring clip 66 has a resilient portion 68 integral with the body portion 67, and having a return portion formed with a protruding portion 69 which is interlocked with a side edge 70 of the standard front strip 31, and further providing means for detachably interlocking the lower portion of the fixture 20 and the standard 30 to even more securely attach the fixture to the standard.

To remove the fixture 20 from the standard 30 the lower portion of the fixture must be pivoted away from the standard so that the lower fingers 58 are removed from the lower slots 33 whereupon the fixture 20 may be elevated slightly until the upper finger end surfaces engage the upper portions of the upper notch peripheral surface and the fixture may then be moved perpendicularly away from the standards 30 to disengage the upper fingers 58 from the upper slots 33. Similarly, in attaching a fixture 20 to a pair of standards 30, the lower portion of the fixture must be inclined away from the standards 30, and the upper fingers 58 engaged in the upper slots 33 and lowered into engagement with the bottom of the upper slots, as illustrated by the dotted lines in FIGURE 2, whereupon the fixture may be rotated toward the standard 30 so that the lower fingers 58 are received in the lower slots 33.

Should the fixture 20 be elevated in the pairs of notches 33 the upper fingers could not be rotated out of the upper slots because of the stabilizing members which prevent the fixture lower portion from rotating toward the standards from the position shown in FIGURE 4.

Should the fixture 20 be moved perpendicularly to the standard front strip 31 the fingers 58 will not be disengaged from the notches 33 because the finger end portions 62 are more closely spaced than the notches 33 and will engage the rear surface 38 of the standard front strip 31, even if the surface second portion 61 of the upper finger should slide up the edge between the upper slot peripheral portion 34 and the rear face 38 of the standard front strip.

FIGURES 9-11 show an easel assembly in which an easel board 75 is rotatably attached to a pair of standards 30. The easel includes an easel board 75 having a pair of brackets 50 secured to opposite ends of the easel board rear face 51 adjacent the top edge of the easel board and received in a pair of slots 33, as previously described. A pair of resilient rods or bars 76 are secured to respective sides of the easel board rear face 51 adjacent the bottom edge of the easel board, each by a bracket 77 which snugly engages a transverse end 78 of a bar 76 and is suitably secured to the easel board rear face 51, as by screws, for mounting each bar for rotation in a vertical plane and against movement in a horizontal plane. Each bar has a bight portion 79 which is urged into resilient engagement with the side edge 70 of the adjacent standard front strip 31 for detachably retaining the easel board 75 in an inclined position. The easel board may be easily rotated to a vertical position in engagement with the standard front face 35 by releasing each bight portion 79 from engagement with the adjacent standard edge 70. Because the easel board 75 is mounted

on spaced apart standards 30, the face 51 may be provided with vertically spaced guides 81 for receiving a flannel board, or the like, which may be stored between the standards 30 when the easel board is in the vertical position.

We claim:

1. A mounting assembly for adjustably attaching at least a pair of fixtures to a wall, said fixtures each having opposite ends, said mounting assembly comprising: a plurality of T-shaped standards each having an elongated front strip with front and rear faces, an elongated rear strip substantially co-extensive with said front strip and secured to the transverse center of said rear face and extending transversely to said rear face, and two parallel rows of longitudinally aligned, equally spaced slots in said front strip, said rows being on opposite sides of said rear strip, and said slots being each defined by a peripheral surface and opening outwardly through said front face in the same direction; at least two mounting plates for each standard, each mounting plate having a base plate and a pair of co-extensive, spaced apart legs secured to said base plate and snugly receiving said standard rear leg therebetween, said mounting plates being spaced apart on each standard; a fastener extending through each pair of legs and said rear strip for securing said mounting plates to said rear strips; means for securing said base plates to said wall with said standards equally spaced apart, said rows of notches vertically disposed, and said slots opening away from said wall; and a bracket for attaching each fixture end to one of said standards, each bracket having a body with a rear face adjacent the respective standard front face, and an opposite front face; means for securing each body to the respective fixture end with the body front faces adjacent the fixture; and a pair of coplanar, vertically spaced fingers secured to each body; the pairs of fingers on opposite ends of each fixture being detachably and selectively received in respective slots of pairs of slots in adjacent rows in spaced apart standards, said fingers having adjacent surfaces, said surfaces each having a first portion adjacent said body and a second portion spaced from said body and extending outwardly of said body in a direction toward the other finger of the pair and terminating in an end portion, said first portions being substantially longer than the thickness of said front strip, said end portions of each pair of fingers being more closely spaced than the vertical spacing between adjacent slots, the first portion of the upper finger of each pair of fingers engaging the peripheral surface of the upper slot of the respective pair of slots to support said fixtures on said standards, the second portion of said upper finger overlying said standard rear face to loosely receive said strip therebetween and retain said brackets on said standards, and the second portion of the lower finger of each pair of fingers engaging the rear face of the respective standard adjacent the lower slot of the respective pair of slots to prevent rotation of the respective fixture when said fixture is elevated with respect to said standard.

2. A mounting assembly comprising: an easel board or the like, said easel board having top and bottom edges and opposite ends, said mounting comprising: a pair of standards each having a front strip with an edge and a row of spaced apart apertures defined by a peripheral surface; means for supporting said standards in spaced apart relationship with said edges adjacent each other and said rows vertically disposed, and said apertures opening outwardly from said standards in the same direction; a bracket for each end of said easel board, said brackets each having a body secured to said easel board adjacent said top edge at said opposite ends; a pair of vertically spaced fingers secured to each body, each pair of fingers being received in a pair of apertures in opposite standards; each pair of fingers having adjacent surfaces, said adjacent surface each having a portion extending outwardly from said body in a direction toward

the other finger of the pair, and the surface of the upper finger of each pair engaging the peripheral surface of the upper aperture of the respective pair of apertures to rotatably support said easel board on said standard; a pair of resilient bars; means connecting each bar to an opposite end of said easel board adjacent said bottom edge and mounting said bar for rotation in a vertical plane; said bars each having a bight portion spaced from the respective connection and resiliently receiving one of said adjacent edges to retain said easel board in an inclined position.

3. A mounting assembly for adjustably attaching a pair of fixtures to a wall, comprising: a T-shaped standard having an elongated front strip with front and rear faces, and an elongated rear strip substantially co-extensive with said front strip and secured to and extending transversely from the rear face of said front strip; means for securing said standard to said wall with said rear strip spacing said front strip from said wall; two parallel rows of apertures in said front strip, said rows being on opposite sides of said rear strip, said apertures being each defined by a peripheral surface and opening outwardly in said front strip in the same direction; and a bracket for each fixture, each bracket having a body; means for securing said bodies to their respective fixtures, a pair of fingers secured to each body and each selectively received in spaced apart apertures of pairs of apertures in opposite rows; a surface on one finger of each pair of fingers, said surface being adjacent the other finger of the pair, each said surface having a first portion engaging the peripheral surface of the respective aperture, the first portion of said finger being substantially longer than the thickness of said front strip and a second portion disposed outwardly from said first portion with respect to said body and extending away from said first portion in a direction toward the other finger, said body and said second portion loosely receiving said strip therebetween.

4. The mounting assembly of claim 3 wherein said means for securing said standard to said wall comprises a mounting plate having a base plate and a pair of parallel, coextensive spaced apart legs receiving said rear strip therebetween; and means for retaining said rear strip between said legs.

5. A mounting assembly for adjustably and removably supporting a schoolroom fixture of substantial height on a schoolroom wall, comprising: a plurality of standards each having an elongated strip with front and rear faces; at least one row of equally spaced longitudinally aligned slots in each strip, said slots being defined by a peripheral surface and opening through said faces; means for securing said standards to said wall with each row of slots being vertically disposed and each standard rear face adjacent to and spaced from said wall; a pair of brackets of less height than the fixture and each having a body with a planar rear face adjacent the front face of a standard and an opposite front face; means for securing each body to a top portion of said fixture at the side thereof with each body front face adjacent said fixture; a pair of coplanar, vertically spaced fingers secured to each body and detachably and selectively received in a pair of said slots, each pair of fingers having adjacent surfaces, said surfaces each having a first portion adjacent the respective body and a second portion spaced from said body and extending away from said body in a direction toward the other finger and terminating in an end portion, said end portions being more closely spaced than adjacent slots, the first portion of the upper finger of each pair of fingers engaging the peripheral surface of the upper slot of said pair of slots to support said fixture on a pair of standards, the first portion of said upper fingers being substantially longer than the thickness of said strip, and the second portion of said upper fingers overlying said standard rear face and cooperating with said bracket rear face to loosely receive said standard therebetween, said fixture being swingable about the peripheral surface of said slots, and abutment

means cooperable between the lower portion of said fixture and the front face of said standards to stabilize said fixture.

6. The mounting assembly of claim 5 including a spring clip on said fixture adjacent each of said pair of standards detachably interlocking said fixture to said standards.

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