March 16, 1937. C. G. DUFFY 2,073,735

BUILDING UNIT AND STRUCTURE FORMED THEREFROM

Filed Feb. 5, 1935

Fig. 1

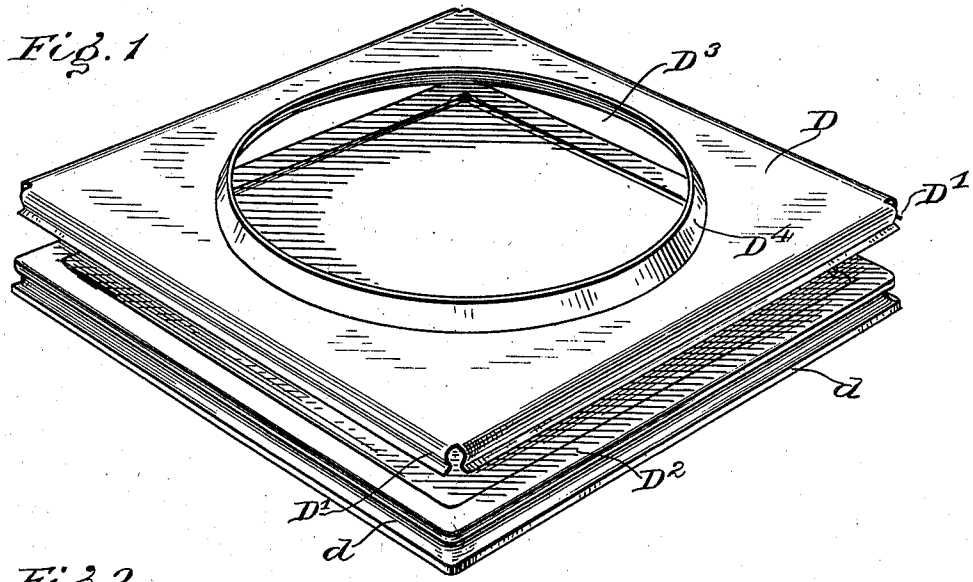


Fig. 2

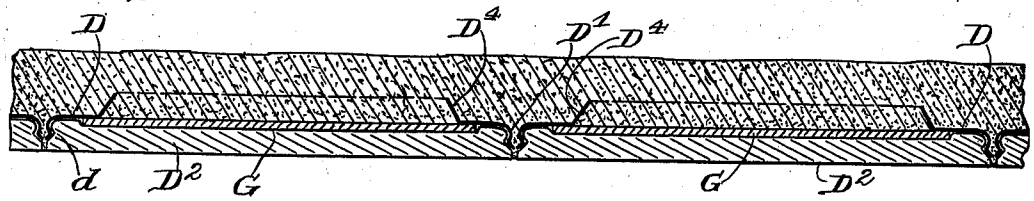
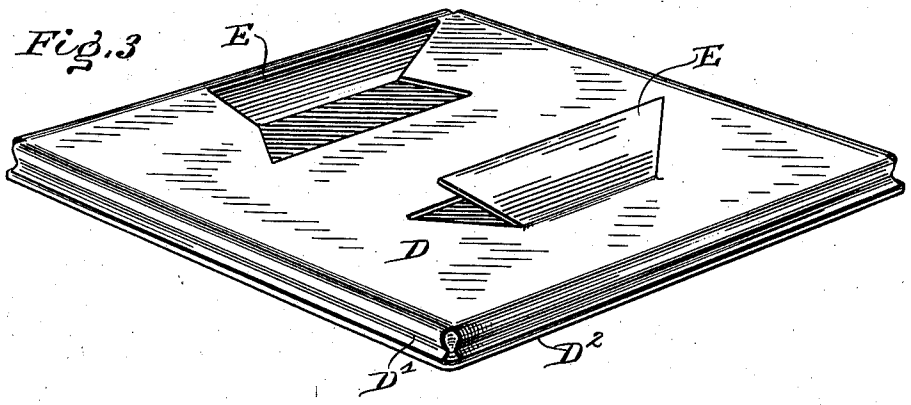


Fig. 3



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BUILDING UNIT AND STRUCTURE FORMED THEREFROM

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19 Claims. (Cl. 72—20)

This invention relates to building units of the general character usually laid up or arranged in courses to form a "wall structure" or "wall surface" and to the structures formed therefrom. The terms "wall structure" and "wall surfaces" are used here in a general sense and are intended to refer also to ceilings, floors, and to any other structure or environment in which units of the character referred to may be used.

According to the present improvements, there is provided a backing or supporting device for a tile unit having recesses at the edges thereof, which device, in the preferred form, is composed of sheet metal formed with beads at its opposite edges, yieldable to permit the tile unit to be sprung into position between them. The bead portions of the backing elements have free unrestrained edges and, as the metal is of a resilient nature, the beads will return to engage in the recesses formed in the tile edges, so as securely to hold said tile units in place.

With the supporting element, there are associated devices by which it may be secured in position on the wall or ceiling. Such devices for instance, may be pressed or struck up from the supporting element or otherwise secured thereto at the rear, and which in service will engage or be embedded in the structure to be faced, thus securely anchoring the building unit in place. A building unit (which includes the tile as well as its supporting element) of this character has particular advantages in facing concrete, for the units may be arranged in proper spaced relation on gummed paper, and applied in the concrete form with the struck up devices exposed. As the concrete is poured, it will flow around the struck up anchoring devices and in between the spaced edges of the tile, and when the concrete has set, the form and gummed paper can be removed, leaving a tile surface firmly secured to the backing structure.

A marked advantage inherent in the present invention resides in the fact that, in the event a single tile is broken, it may readily be removed and replaced by another tile without, of course, disturbing its supporting element.

Referring to the drawing:

Fig. 1 is an exploded view in perspective of a building unit formed in accordance with the invention; and which is particularly applicable for facing ceilings, walls, etc.

Fig. 2 is a sectional view through a ceiling faced with the building units shown in Fig. 1;

Fig. 3 is a perspective view of a building unit somewhat similar to that illustrated in Fig. 1, but showing a different form of anchoring device.

The embodiment of the invention, illustrated in Fig. 1, is particularly applicable for ceilings (although it is evident it could be used in other environments as well) and includes a backing or supporting plate member D (preferably made of metal) formed at its edges with yieldable beads D^1 for gripping a tile member D^2 which is formed in its edges with grooves d for the purpose. The beads at their outer edges are free and unrestrained and, as the metal, of which the supporting element is made, possesses sufficient resiliency, the beads will yield substantially bodily to permit the facing member or tile to be sprung into place and thereafter will return to engage in the grooves to grip the tile and hold it firmly.

The supporting element D is provided in its rear face with a large circular hole D^3 centrally located and formed at its edges with a portion D^4 struck or pressed up from the supporting element and which flares inwardly, the arrangement being such that when mortar, concrete or other plastic material is applied to the rear face of the building unit, it will flow in beneath the flaring portion, and when such material is set, the supporting element D of the unit will be firmly keyed therein.

As illustrative of the manner in which such a building unit is applied to a concrete backing, reference may be had to Fig. 2. A concrete form (not shown) is set in place with the building units face downward therein and held in position properly spaced by a gummed sheet of paper applied to the faces of the tiles. As the concrete or mortar is poured into the form, it will flow in between the adjacent edges of the tile and into the spaces confined by the flaring portions D^4 of the supporting element. When the concrete has set, the form and gummed paper are removed, leaving the tile surface in finished condition and with the supporting members firmly anchored in the concrete backing. Replacement of a broken tile is greatly facilitated, since the broken portions may be readily lifted out, the mortar between its supporting member and that of adjacent members removed to free the bead portions, a new tile snapped into place and the joints again pointed up with the plastic, leaving the surface in its original condition.

The invention in another of its forms is illustrated in Fig. 3. This form is in all respects similar to that disclosed in Fig. 1, with the exception of the means for anchoring the support-

ing unit in the concrete backing. Herein the anchoring means include ears E of sufficient size, preferably trapezoidal in shape, partially cut from the backing member and bent up at an acute angle therewith. These units may be applied to a backing structure in the manner previously described in connection with the building unit shown in Fig. 1, the ears E in this instance serving to anchor the members firmly in the concrete backing structure as before. Of course, other means for anchoring the supporting element in the backing structure could be employed and such means might vary depending upon the type of backing member to which the tile surfacing is to be applied.

In order to prevent the dampness from seeping through to the rear face of the tile, a sheet of moisture resistant material G may be inserted in a recess formed in the rear face of the tile, and held securely in place by the supporting member.

In the accompanying drawing the invention has been shown merely by way of example and in preferred form, and obviously many variations and modifications may be made therein which will still be comprised within its spirit. It is to be understood, therefore, that the invention is not limited to any specific form or embodiment, except insofar as such limitations are specified in the appended claims.

Having thus described my invention, what I claim is:

1. A building unit of the character described adapted with others to be laid up in courses to present a wall surface, said unit including in combination a facing member formed with a recess in the edge thereof and a supporting element therefor equipped with yieldable bead means arranged to seat in said recess and grip said facing member to secure it in position, said supporting element being individual to said facing member and entirely distinct from the supporting elements of facing members adjacent in the surface.

2. A building unit of the character described adapted with others to be laid up in courses to present a wall surface, said unit including, in combination, a facing member formed with recesses in the opposite edges thereof and a supporting element therefor equipped with yieldable bead means arranged to seat in said recesses and grip said facing member at its opposite edges, said supporting element being individual to said facing member and entirely distinct from the supporting elements of facing members adjacent in the surface.

3. A building unit of the character described, including, in combination, a facing member recessed in the edge thereof and an individual supporting element therefor equipped with yieldable bead means arranged to seat in the recessed edge portion of the facing member to hold the same firmly in place.

4. A building unit of the character described including, in combination, a facing member recessed in the edge thereof, an individual supporting element equipped with yieldable bead means arranged to seat in the recessed edge portion of the facing member for securing the same to the supporting element, and means for securing the supporting element to a backing structure.

5. A building unit of the character described, including in combination, a facing member, a supporting element, means for securing the facing member to the supporting element, and means struck up at the rear of the supporting element for securing it to a backing structure.

6. A building unit of the character described including, in combination, a facing member, a supporting element provided with beads arranged to engage in grooves formed in the edges of the facing member to hold the latter in place, and means struck up from the rear face of the supporting element for securing the latter to a backing structure.

7. A building construction including, in combination, a building unit having a facing member and supporting element provided with means for securing the facing member thereto, and a mortar backing for the unit, said supporting element being provided with means formed integral therewith and embedded in the mortar backing whereby the unit is secured in place.

8. A building construction including, in combination, a building unit having a facing member and supporting element provided with means for securing the facing member thereto, and a mortar backing for the unit, said supporting element being provided with means struck up from the rear face thereof and embedded in the mortar backing for securing the unit in place.

9. A building unit of the character described including, in combination, a facing member provided with a recess in the edge thereof, and an individual supporting element for the facing member formed with a bead yieldable to permit the facing member to be sprung into position in the supporting element and returnable to engage in the recess formed in the facing member, said bead having a free unrestrained edge so as to permit it to yield freely without substantial deformation as the facing member is sprung into place.

10. A building unit of the character described including, in combination, a facing member provided with recesses in the edges thereof, an individual supporting element for the facing member formed with beads at its opposite edges yieldable to permit the facing member to be sprung into position between them and returnable to engage in the recesses formed in the facing member, said beads having free unrestrained edges so as to permit them to yield freely without substantial deformation as the facing member is sprung into place.

11. A building unit of the character described including, in combination, a facing member provided with recesses in the edges thereof, an individual supporting element including a backing portion formed with beads at the edges thereof, said beads being yieldable to permit the facing member to be sprung into position and returnable to engage in the recesses formed in the facing member to secure the same firmly in the supporting element, said backing portion being further provided with struck-up devices for securing the supporting element to a backing structure.

12. A building unit of the character described including, in combination, a facing member formed with recesses in its edges and in the rear face thereof, an individual supporting element having a body portion provided with beads at its edges, said beads being yieldable to permit the facing member to be sprung into position in the supporting element and returnable to engage in the recesses formed in the edges of the facing member, and insulating material positioned in

the recess in the rear face of the facing member and between said facing member and the body portion of the supporting element.

13. A building unit of the character described including, in combination, a facing member, a supporting element, means for securing the facing member to the supporting element, and an inclined portion provided at the rear of the supporting element for securing it to a backing structure.

14. A building unit of the character described including, in combination, a facing member, a supporting element provided with beads arranged to engage in grooves formed in the edges of the facing member to hold the latter in place, and an inclined portion provided at the rear of the supporting element for securing it to a backing structure.

15. A building unit of the character described including, in combination, a facing member, a supporting element, means for securing the facing member to the supporting element, and a hollow truncated portion struck up from the rear of the supporting element for securing it to a backing structure.

16. A building unit of the character described including, in combination, a facing member provided with a recess in the edge thereof, a supporting element for the facing member comprising a backing portion of sheet material formed at the edge with a bead yieldable to permit the facing member to be sprung into position in the supporting element and returnable to engage in the recess formed in the facing member, said bead having a free unrestrained edge so as to permit it to yield freely without substantial deformation as the facing member is sprung into place.

17. A building unit of the character described including, in combination, a facing member provided with recesses in the edges thereof, a supporting element for the facing member comprising a backing portion of sheet material formed with beads at the opposite edges thereof yieldable to permit the facing member to be sprung into position between them and returnable to engage in the recesses formed in the facing member, said beads having free unrestrained edges so as to permit them to yield freely without substantial deformation as the facing member is sprung into place.

18. A combination according to claim 16, wherein there is provided a sheet of insulating material between the facing member and the backing portion of the supporting element.

19. A combination according to claim 17, wherein there is provided a sheet of insulating material between the facing member and the backing portion of the supporting element.

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