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J. H. BLOMQVIST

3,226,900

SPACED WALL AND FACING PANELS WITH TWO PIECE SECURING MEANS

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2 Sheets-Sheet 1

Fig. 1

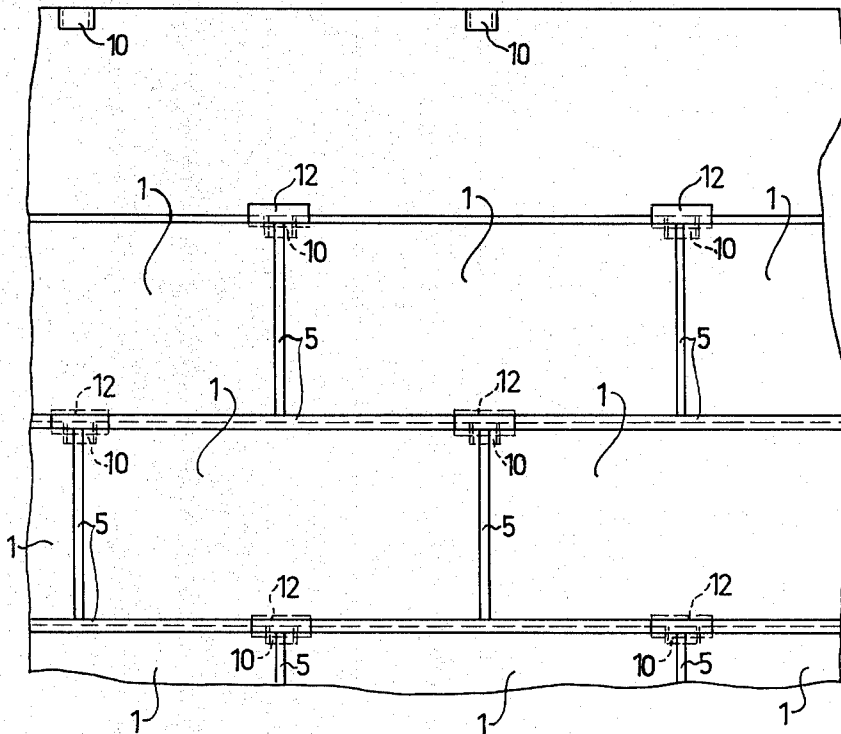
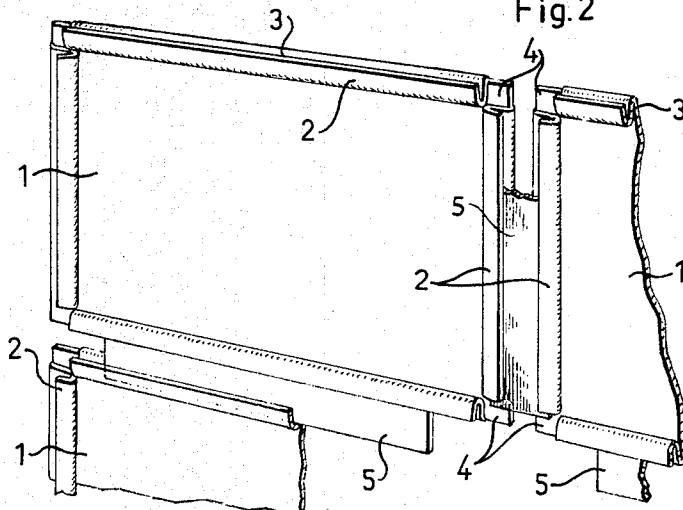


Fig. 2



INVENTOR.

JOHN HARRY BLOMQVIST

BY *Albert M. Sather*
ATTORNEY.

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J. H. BLOMQVIST

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Fig.3

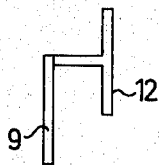
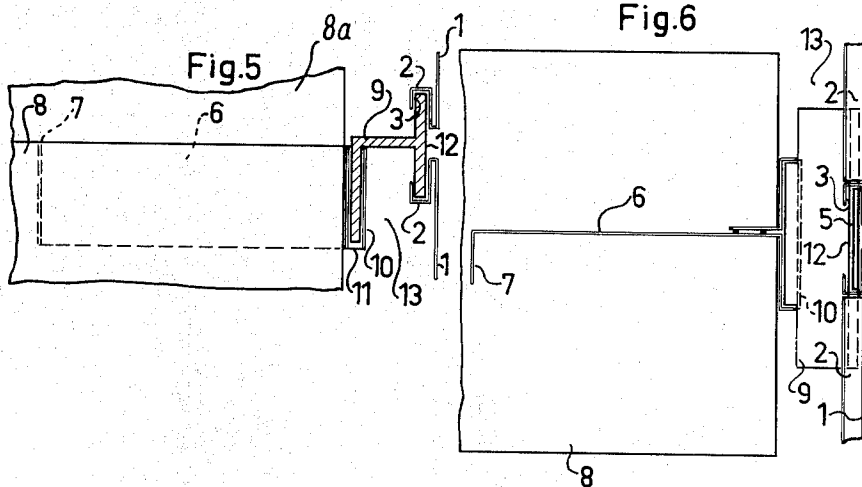
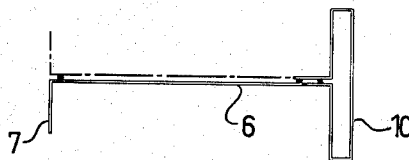


Fig.4



INVENTOR.

JOHN HARRY BLOMQVIST

BY *Albert M. Carter*
ATTORNEY.

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3,226,900 SPACED WALL AND FACING PANELS WITH TWO PIECE SECURING MEANS

John Harry Blomqvist, Borjesonsvagen 35,
Bromma, Sweden

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1 Claim. (Cl. 52—508)

This invention relates to securing means for facade or wall coverings for buildings.

It has hitherto been useful to fix facade or wall coverings, comprising a plurality of lining panels, directly to a wall of a building by means of concrete or other adhesive agent or by means of special attachment means, which are cast, screwed or nailed into the wall, an air space being left between the lining panel and the wall to render necessary ventilation possible. Along at least two opposite edges each lining panel is provided with a fold or groove for engagement with the corresponding edge portion of at least one bracket which is fixed to or adapted to be fixed to the wall and projects from the latter. However, the prior methods of fixing such brackets to the wall are time consuming and expensive and require great skill by the workers who are carrying out the mounting.

The object of the present invention is, inter alia, to avoid these disadvantages by fixing the bracket to the wall by means of a cramp which is adapted to be driven into or bricked into the wall and includes as an element located outside the wall and adapted to support the bracket. Thus, the attachment of the bracket is very simple. Particularly if the attachment means is divided into two separate members, namely brackets and cramps, there will be obtained a great freedom of designing the lining panels in a desired manner since by means of suitable brackets it will be possible to use cramps fixed to the wall in a very firm way already when the latter is being built. Preferable, the lining panels are secured to the wall by driving or bricking in the cramp into the wall so that a supporting portion of the cramp serving to carry the bracket will project outwardly from the wall whereupon the lining panel with an edge fold or corresponding groove is caused to engage the bracket. The lining panels may be easily mounted and removed without special tools and sit firmly in the mounted position near the wall.

If the wall is built up of wall elements (blocks or shaped stone) laid in skins the cramp may, for example, during the erection of the wall be driven into some horizontal or vertical free joint surface on such a wall element (for example consisting of light concrete, brick, artificial stone, hollow concrete blocks, wood, wood fibre, etc.) after which the next skin is laid. The cramp, owing to its construction and because it is specially driven into the wall element, will then be held very firmly in the wall material without screws or nails being required. The cramp has a portion shaped as a holder for the bracket and has for this purpose a part, for instance like a sleeve or socket located outside the wall and adapted to engage the bracket. The cramp may for example consist of band-shaped metal which, with a vertical plane portion which is driven into the material of the wall. According to an embodiment the part of the cramp which is intended to be driven into the wall includes two parts approximately perpendicular to each other, so that the cramp has for example an L, T or I profile. The cramp and the bracket may possibly be made in one piece, but the cramp may also be constructed as a part separate from the bracket.

An embodiment of the invention is shown in the accompanying drawings, in which

FIG. 1 shows part of a wall of a house having facing or lining panels, secured according to the invention.

FIG. 2 shows a perspective view some such panels seen from the inside.

FIG. 3 shows an embodiment of the bracket in elevation; and

FIG. 4 an embodiment of the cramp in elevation.

FIG. 5 shows from the side and partly in section the cramp, driven into the material of the wall and the bracket in engagement therewith, together with parts of some facing plates in engagement with the bracket, the plates and bracket being shown diagrammatically.

FIG. 6 shows the same parts as in FIG. 5 but in plan view.

As can be seen particularly from FIGS. 1 and 2 the wall or facade facing according to the illustrated embodiment consists of a number of panels 1 having edge folds 2 on the inside thereof. The edge folds 2 form channels or grooves 3 around all the edges, but it is also possible to arrange such folds or grooves on two opposed sides, for example the lower and the upper ones. The corners 4 (FIG. 2) of the plate are preferably free from the folds 3. The panels 1 are to be fixed to a wall 8 of a building (FIGS. 5 and 6) in spaced relation with respect to said wall 8 so that a ventilation space 13 is left between the rear side of the panel and the wall 8. The panels are suspended on the wall in the desired pattern and order (for example with the short side vertical or horizontal or alternately vertical and horizontal in the case of rectangular panels). The fixing is effected by means of a particularly advantageous attachment arrangement. This may for example be composed of a cramp 6 (FIGS. 4-6) to be driven into the wall and a bracket 9, 12 (FIG. 3) which supports the facing panel and engages the cramp. The cramp 6, which, for example, may consist of band shaped metal material, such as rustproof sheet metal, is driven in, in vertical position, placed on its horizontal edge in a suitable place of the wall 8. The insertion may be effected by the cramp being driven into the horizontal or vertical joint surface on the block or stone of the wall 8 before the next block or stone 8a (FIG. 5) is laid. The part 6, 7 of the cramp 6 fixed in the wall 8 may be substantially L-shaped, see FIGS. 4 and 6 (or T or I shaped) with a flange 7 substantially perpendicular to the main direction. FIG. 4 shows in dot-dash lines a possible alternative in which the cramp consists of double webs and flanges 7 which may be spot welded to each other. The part 10 of the cramp projecting outside the wall 8 preferably abuts the surface of the wall and has a vertical socket or aperture 11 for receiving a vertical leg of an angle bracket 9 so that the latter is firmly held in the cramp. The bracket 9 is preferably made as a separate part which advantageously may also be removed from the cramp. The horizontally projecting part of the bracket terminates in a vertical arm 12 (FIGS. 3 and 5) which preferably extends on both sides of the horizontal part and is adapted to engage the grooves 3 of the panels.

The bracket, which for example may be made of metal, plastic, glass or the like, supports the facing panels 1 in the above described manner. The illustrated form of the bracket 9, 12 renders it possible for an upper and a lower facing panel to be fixed to the same bracket, which can be seen from FIGS. 1 and 5. The joint between the edges of adjacent plates 1 may if so desired be sealed by suitable material, for example resilient cement, a strip 5 (see also FIGS. 1 and 2) of plate, rubber, plastic or the like which is introduced into the grooves 3 and spans the joint. If the bracket 9, 12 is made sufficiently long, it may replace the strip 5.

The cramps 6 are driven at suitable intervals and in the desired number in a skin of wall elements, after which new skins of wall elements are laid and new cramps driven into the upper ones of these, etc. Asso-

ciated brackets 9 are mounted in their sockets in the cramps, after which the facing panels are mounted on the brackets by pushing them thereon to seat the panels firmly at the same time providing the requisite ventilation air space 13 at the rear side of the panels.

Instead of being driven into the wall element the cramp may also be bricked into a joint between such wall elements.

The described construction is, when non-combustible panels are used, fireproof and makes a dry wall possible because of the protection obtained by the facing panels against rain and also because of the said ventilation. The space between the panels and the wall also contributes in its turn to considerably better heat economy.

Since the facing panels are loosely mounted on the brackets they may shrink or expand freely both in a vertical and a longitudinal direction. The mounting is effected as the wall is being built and therefore no additional building scaffolding is required. In addition the mounting may also be performed during severe cold, which is a great advantage, inter alia, because the building time is shortened.

If supporting pillars, for example of concrete, are joined to the wall, the cramps may be fitted to the wall on both sides of the pillar, and a wall panel caused to engage a bracket carried by the two cramps, the bracket being made of such a length that it spans the gap between the cramps. In this way the necessity of fixing a cramp in the hard concrete pillar is avoided.

The facing panels, the bracket and the cramp may of course be constructed in a different manner from that illustrated. The bracket may possibly be fixed to or made in one piece with the facade panel.

When the facing plates are arranged in a corner of the wall, angle members may be fitted in the grooves 3 instead of the planar strips 5.

I claim:

A wall covering for a building having a wall, said wall covering being composed of a plurality of facing panels which are attached to the wall with a ventilation space being left between the panels and the wall, said panels being disposed with the edges of successive panels confronting the corresponding edges of adjacent panels, and means for securing the wall covering to the wall, said securing means including cramps attached to the wall and brackets carried by said cramps for holding

said panels, each of said cramps comprising an element of flat strip material having at least one elongated upright body section, said elongated upright body section comprising at least two upright portions whose upright tangent planes extend in angular relation with respect to each other, the lower longitudinal edges of said portions being formed to be driven into the material of the wall, and each of said cramps having a second section in the form of a vertical sleeve of substantial horizontal length having an upwardly open socket therein integrally formed with said body section and extending out from said wall, each of said brackets having a depending portion with a shape complementary to that of the sockets removably mounted within the socket of its respective sleeve, each bracket having a further portion attached to the depending portion and projecting outwardly from the wall, and each bracket having a third portion on the outer end of the further portion, said third portion of the bracket having a formation thereon connected to and supporting the wall covering.

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FRANK L. ABBOTT, *Primary Examiner*.

HENRY C. SUTHERLAND, JACOB L. NACKENOFF,
Examiners.