SURFACE-MOUNTED WALL GUARDS

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ABSTRACT
A wall guard for protecting wall corners or other wall areas subject to abuse including an elongate resilient strip to be mounted directly upon completed wall surfaces. The elongate strip includes a central portion conforming generally to the wall area to be protected, the central portion being supported in spaced relation to the underlying wall surface. The strip includes inturned edges defining concealed channels near the edges which receive retainers mounted upon the protected wall portion. The retainers, which include portions extending into the channels, are entirely masked by the protective strip to give a clean, neat appearance. The retainers may conform to the underlying wall section, as by forming the retainers for extension about a wall corner, in which case the retainers afford easy alignment of the strip and protected wall area. At the ends of the strip, a combined retainer and cap engages the strip to close the space defined between the strip and wall.

2 Claims, 6 Drawing Figures
SURFACE-MOUNTED WALL GUARDS

BACKGROUND OF THE INVENTION

This invention relates generally to protective arrangements and more specifically to protective provisions for mounting on surfaces such as wall corners, wall ends, columns, etc. which are commonly abused by accidental impacting.

Wall protector arrangements have been suggested wherein an elongate resiliently deformable strip is supported upon a wall for protection of an underlying wall member. For example, an elongate strip formed of tough, resiliently deformable material, having a central portion thereof for mounting in spaced relation to an underlying wall member and having movable edge portions thereof directed away from the central portion for supporting the strip has been suggested in the copending United States application, Ser. No. 722,594 of Ephraim Koral, filed Apr. 19, 1968, now U.S. Patent No. 3,559,356 and in the copending United States application Ser. No. 42,023, of Edward C. Hallock, et al. filed June 1, 1970, now, both such applications having been assigned to the assignee of the instant invention.

The aforementioned patent applications relate broadly to improvements in the protection of wall surfaces subject to abuse by describing, in general, protectors which are constructed of tough, resilient materials capable of absorbing substantial shocks and impacts without deterioration. However, the specific preferred embodiments described in detail in those patent applications use visible retainers which are exterior to the protective member or strip and which extend parallel to the strip along each of its edges. The present invention, on the other hand, provides a wall protector wherein all fastening elements are concealed, and which is still capable of absorbing substantial shocks and impacts.

The protectors according to this invention provide a further advantage. Although the subject protectors are perfectly suitable for use with walls under construction and arrangements adapted specifically for that purpose are described below, a resilient protective strip with fastening elements hidden beneath it is ideally suited for use with previously completed walls, since the associated wall need not be specially adapted for use of the protector.

Corner guards or wall protective arrangements have previously been suggested for direct application to completed wall surfaces. These known arrangements characteristically have employed the strip material secured to wall surfaces by the application of adhesives intermediate the strip material and wall surface. Thus, abusive impacting of the strip material sufficient to cause substantial movement of this material with respect to the underlying wall surface may easily overcome the adhesive gripping of the outer protective member with the underlying wall member. Further, such previous arrangements normally have employed exterior strips of flexible material of insufficient durability to withstand substantial abuse without deterioration.

In comparison, the preferred embodiments described herein do not employ adhesive material between the outer protective member and the underlying member, yet they are capable of withstanding severe abuse and capable of absorbing applied forces.

SUMMARY OF THE INVENTION

In view of the foregoing, it is an object of this invention to provide improved durable protector arrangements with concealed retaining or fastening provisions. Further, it is an object of this invention to provide protector arrangements especially suitable for application directly to an already completed surface, and which avoid the disadvantages of the prior art.

Another object of this invention is to provide protector arrangements which include retaining provisions especially suitable for easy alignment of a protective member and the areas over which the member is to be applied and, in this connection, which are capable of being initially deformed for placement over mounted retainers to resiliently engage the retainers, once in place.

A further object is the provision of wall guard arrangements with concealed, fastening elements provided specially for inclusion in a wall which is being constructed.

The foregoing and other objects are achieved in accordance with this invention by an outer protective member of tough, resilient material supported by concealed internal mounting provisions. The resilient member may be in a stressed condition when supported upon the mounting provisions, being resiliently biased into firm engagement with the mounting provisions. Formation of the protective member to include concealed interior channels affords ease in mounting the outer protective member on retainers supported upon an underlying member with extensions received within the concealed channels.

The resilience of the outer protective member allows initial deformation of the protective member for application over the retainer extensions and further allows movement of the protective member upon impacting, without dislocation. Thus, the protective arrangement withstands even severely abusive impacting, the tough resilient material of the outer protective member resisting deterioration. The manner of mounting the outer protective member and its resilience allow the member to return to its normal disposition, following impacting sufficient to cause movement of the protective member relative to the underlying member.

With the above objects in view, the nature of the invention will be more clearly understood with reference to the following detailed description of preferred embodiments and the several views of the accompanying drawings.

IN THE DRAWINGS

FIG. 1 is a perspective view of a wall guard arrangement in accordance with this invention, parts being broken away for clarity, showing the wall guard assembly in combination with a finished exterior wall corner.

FIG. 2 is an enlarged cross-sectional view of the arrangement in accordance with FIG. 1 and taken along the line 2—2 of FIG. 1.

FIG. 3 is an enlarged cross-sectional view similar to FIG. 2 and illustrating a further embodiment of the invention.

FIG. 4 is a cross-sectional view of an outer protective member or strip of the type shown in FIG. 2 and illustrates the natural, unstressed configuration of the pro-
tective member prior to application to wall-mounted retainers.

FIG. 5 is an enlarged cross-sectional view of the wall guard arrangement, additionally including anchors mounted in place when the wall is initially constructed.

FIG. 6 is an enlarged cross-sectional view of a further anchored wall guard assembly embodiment.

DESCRIPTION OF PREFERRED EMBODIMENTS

Turning now to the drawings in detail and particularly to FIGS. 1 and 2, the wall guard or wall protective arrangement is generally referenced by the numeral 10. The protective arrangement 10 is shown in FIGS. 1 and 2 in association with an external wall corner including underlying, structural wall members 11 and 12 and an outer, finished surface layer 13 of plaster, plaster board or any other suitable wall surface material. (The term “external wall corner,” as employed herein, refers to corners formed by angularly related wall surfaces meeting at an external angle of somewhat more than 180°.) The wall guard may, however, also be used on the external wall corners of solid masonry walls, various types of partition walls, and in general, any type of wall construction.

It will be apparent to those skilled in the art that the term “wall” is used in the broad sense of any exposed surface, whether it be an interior or exterior vertical bounding member of a room or building, a part of a column or support, or a horizontal bounding surface of a room or other space, such as a ceiling, a beam, and so forth. Also, the angularly related wall surfaces need not be flat or form an apex but may be curved or be joined by a curved portion.

The outer plaster layer 13 defines first and second finished exterior wall surfaces 14 and 15, respectively, intersecting at an external wall corner about which extends a retainer 16. Two mounting portions, or straps, 17 of the retainer 16 have generally planar faces 18 supported flush against the surface 14 and 15 of the wall and are provided with a series of apertures 20 through which extend, into the wall member, suitable fasteners 21, such as screws, for supporting the retainer 16.

Each end of the retainers 16 terminates in an extension 22, supported slightly outwardly with respect to the underlying wall surfaces 14 and 15 by an integral offset connecting portion 23. The extensions 22 lie generally parallel to the underlying wall surfaces 14 and 15 and define recesses 24 adjacent those surfaces for receipt of an inturned edge 25 of an elongate resilient protective strip 26.

The edges 25 of the strip 26 are each connected along a fold 27 with a central strip portion 28 which conforms generally to the configuration of the underlying wall surface. The central strip portion 28 is thus supported outwardly away from the underlying wall surfaces 14 and 15 by the spaced relation of extensions 22 relative to the wall. The fold 27, and inturned edge portions 25, then, define a concealed, interior channel 31 for receiving the retainer extensions 22.

As illustrated in FIGS. 1 and 2, the central portion 28 of the strip 26 may be divided into first and second sections 32 and 33 joined along a radius 34 which is supported parallel to the external wall corner formed by the intersecting wall surfaces 14 and 15. The degree of curvature of the radius 34, extending the length of the strip 26 and connecting the sections 32 and 33, may be selected as desired for appearance and proper conformity with the underlying wall configuration.

It will be noted that the entirety of the retaining provisions constituted by the retainers 16 and the associated fasteners 21 is housed beneath the resilient protective strip 26 and is entirely masked, thus presenting an attractive appearance, despite fully exterior mounting of the arrangement upon the finished wall.

As illustrated in FIG. 4, the strip 26, in its unstressed condition prior to application to the retainers 16, has the edges 25 and the channels 31 less distantly spaced than the ends of the retainer extensions 22. Once applied to the retainers 16, then, the strip 26 is in a stressed condition across the width thereof between the retainer extensions 22. The resilience of the strip maintains the strip substantially fixedly in place absent abusive impacting.

Again as illustrated in FIG. 4, the strip, when formed for employment with a right angular exterior wall corner, may have the strip sections 32 and 33 disposed at less than a complete right angle such that upon application to the retainers 16, the strip portions engaging the retainer extensions 22 at the fold 27 will be biased into firm engagement with the ends of the extensions 22.

The strip 26 is applied to the retainers 16 after the retainers have been supported upon the wall. One strip edge 25 is positioned within an associated recess 24; the central strip portion 28 is then forced inwardly toward the wall to allow the remaining edge 25 to "snap" resiliently into place within the remaining recess 24. Thus, the strip 26 is easily and quickly applied to the retainers 16.

Ease of mounting and alignment of the protective arrangement 10 is further facilitated by making the strips 17, the offsets 23 and the extensions 22 of one-piece design conforming to the wall corner to be protected. The portions constituting the strips 17 may be pre-formed for conformance with the corner to which they are to be applied, defining a bend 38 along which the two retainer halves are joined. The joiner of the two retainer halves along the bend 38 causes the extensions 22 to be properly supported a predetermined distance from the wall corner to cause certain alignment of the resilient protective strip 26 immediately upon application of the strip to the mounted retainers.

Upon abutment or impacting of the resilient protective member or strip 26, the central portion 28 flexes inwardly toward the wall, absorbing the forces applied to the strip, and, following impacting, the strip 26, being substantially fully elastically returnable, resumes its initial configuration. Flexure and return of the strip 26 are further facilitated by sliding movement of the strip edges 25 within the recesses 24 defined between the extensions 22 and the associated wall surfaces. Thus, the spacing of the extensions 22 from the surfaces 14 and 15 should be sufficient to allow movement of the strip edges 25 outwardly with respect to the associated recesses upon impacting and initial flexing of the strip and to allow movement of the strip edges 25 inwardly within the recesses upon resilient recovery or return of the strip following impacting.
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FIG. 3 shows an alternative embodiment in association with a wall of the type illustrated in FIGS. 1 and 2 and bearing like reference numerals. A pair of retainers 41 is supported upon the wall surfaces 14 and 15 a predetermined distance from the intersection of the surfaces. Again, the retainers 41 include mounting portions 42 having apertures 43 receiving fasteners 21 to secure the retainers to the wall. Angular extensions 44 formed integrally with the mounting portions 42 of the retainers 41 extend outwardly from bends 45 to define an acute angle with an associated wall surface 14 or 15.

An elongate resilient protective strip 46 includes a central portion 47 including the sections 48 and 49 and an intermediate curved section 50 aligned with the underlying wall corner. A pair of strip edges 52 is joined to the central strip portion 47 along a pair of longitudinally extending folds 53. The edges 52 of the strip 46, are, like the edges 25 of FIGS. 1 and 2, inwardly turned for association with the extensions 44 of the retainers 41. Each turned edge 52, however, defines an acute angle with the nearest central section 48, 49, the angle conforming with the angle defined between the retainer extensions 44 and the wall surfaces 14 and 15.

The angular extensions 44, then, are received within a pair of concealed channels 54 formed by the turned edges 52 extending the length of the strip 46. Thus, the interior surface 55 of the strip 46 is supported outwardly away from the underlying wall surfaces 14 and 15 by engagement of the extensions 44 within the channels 54.

The angular disposition of the extensions 44 of the retainers 41 and the cooperating angular disposition of the edges 52 provide ease of application of the resilient protective strip 46 to its associated mounting provisions since the strip may be quickly "snapped" in place over the extensions 44 by application of a force to the central strip portion and toward the underlying wall corner. It will, of course, be apparent that while separate retainers 41 have been illustrated in FIG. 3, the retainers 41 may be integrally formed as described above with respect to the retainers 16 of FIGS. 1 and 2, thus allowing easy alignment of the outer resilient strip 46 with the underlying wall sections. Again, it is to be noted that the resilient strip 46 entirely masks its associated mounting provisions and is placed in a stressed condition across its width between the extensions 44 as in the embodiment illustrated in FIGS. 1 and 2.

The resilient strip 46, upon impacting, flexes inwardly toward the wall and, being substantially fully elastically returnable, recovers its initial disposition. The strip edges 52 facilitate flexure and return of the strip 46 by movement first outwardly then inwardly with respect to the recesses defined between the wall surfaces and the angularly disposed extensions 44 in a manner similar to that discussed with respect to the strip edges 25 of FIGS. 1 and 2.

Both the embodiment of FIGS. 1 and 2 and the embodiment of FIG. 3 may employ a combination internal retainer and external cap or closure member 60 as illustrated in FIG. 1. Suitable for use at either end of the resilient strip, the cap 60 is employed most often at the upper strip ends, although in FIG. 1 it is shown at the lower strip end for clarity of illustration. The combined retainer and cap 60 includes an integral interiorly disposed retainer portion 61 conforming substantially to the configuration of either the retainer 16 of FIGS. 1 and 2 or the retainers 41 and 42 of FIG. 3. The retainer portion 61, however, terminates at an outwardly extending shoulder 62 engaging a terminal edge of the protective strip to prevent vertical movement.

The shoulder 62 is formed upon a cap or closure portion 63, having a visible exterior surface 64 conforming to the exterior surface of the associated protector strip and curved inwardly toward the underlying wall surfaces to provide an attractive termination at the end of the over-all protective arrangement 10.

The combined retainer and cap 60, then, provides support for the resilient strip adjacent its end while capping or closing the space defined beneath the strip and enhancing the general appearance of the entire arrangement.

When, prior to construction of a wall, the need for corner protection is known, the protector arrangement of FIG. 5 allows the wall corner structure to be designed with the protector mounting provisions specifically in mind. The supporting uprights of the FIG. 5 wall structure are steel studs 65. Fastened to these by suitable fasteners 66, an angular anchor 67 forms a part of the underlying wall structure. Plaster 68, applied over the anchor 67 and suitable lath 70, completes the wall corner.

The anchor 67 includes two projections 71 extending outwardly to the surface of the plaster 68 at each side of the wall corner. Projections 71 may include central bores 72, internally threaded, and positioned for alignment with apertures 73 formed in a retainer 74. The retainer 74 is similar to the retainer 16 described above and is securely affixed to the anchor 67 by suitable screws or fasteners 75 which extend through the apertures 73 into threaded engagement with the bores 72. The resilient protective strip 26 is like the similarly referenced strip described above and is applied over the retainers 74 for protection of the wall corner.

The anchor 67 may be a continuous member of, for example, extruded aluminum, extending the length of the wall corner. Similarly, the projections 71 may be extruded integrally with the anchor with either the bores 72 bored and tapped at the desired spacing, or with continuous slots at 72 with extruded interior teeth on each side positioned to mate with the threads of a screw 75. Alternatively, the anchor 67 may be but one of a number of anchor straps, spaced apart along the length of the wall corner. In which case the plaster 68 is supported by the lath 70 intermediate the spaced anchors 67.

FIG. 6 illustrates an anchored protector arrangement like that shown in FIG. 5 with identical parts bearing identical reference numerals. Here, however, the anchor 67 is employed beneath a rounded wall corner formed by the plaster 68. A retainer 77 conforms to the rounded corner 76 and supports a resilient protective strip 46', like the strip 46 described above, but with completely reversely turned edges 52'.

FIG. 6 shows but one of a number of alternate retainer and strip arrangements according to the invention which are tailored to the protective corner. For example, corners having surfaces intersecting at more or less than 90° or varying from standard corner configurations may be protected by similar protective arrangements with retainers altered slightly to meet the corner.
requirements. Also, the cap 60 shown in FIG. 1 is suitable to close the top, the bottom, or both, of the protective arrangement of FIGS. 5 and 6. The cap may, itself, be secured to a pair of projections 71 on an internal anchor 67. The retainers 16, 41, 74, and 77 may be extrusions of, say, aluminum, cut to the desired width. Or in fact, they too may extend the entire length of the protected corner.

While preferred embodiments of the invention have been described, it will be apparent to those skilled in the art that variations and modifications of the described preferred embodiments may be made without departure from the spirit and scope of the invention defined in the appended claims. For example, it will be apparent, that while the embodiments illustrated have been shown in association with an external wall corner, arrangements within the spirit and scope of the invention may be employed with other wall configurations and may be horizontally disposed to be used, say, as "chair rails" or like protectors guarding underlying wall surfaces against abuse by contacting furniture.

Moreover, although in the preferred embodiment, the strip edges provide channel-defining portions which are preformed to be moved laterally outwardly with respect to the center of the strip during mounting, it is within the invention to preform the strip to provide internal channel-defining portions or internal retainer engaging portions which are movable toward each other during mounting. In such case, the channel which receives the retainer and those portions of the strip which engage the retainers may be formed to extend from the inner surface of the strip, but at a location closer to the strip's center. Channels formed in this fashion would preferably open in a direction opposite to the opening of the channels illustrated. In this connection, the term "stressed condition" should be understood to include any condition of resilient stress of the strip. Modifications of the shape of the protective member are also possible. Thus, the member need not be a strip, but may take other shapes, such as a shape suitable for protection of a corner formed at the intersection of three surfaces.

We claim:

1. A wall corner protector arrangement including a generally right angular elongate outer abuse-resistant resilient member extending along and protecting a protruding corner of a wall, the resilient member having inturned edges defining interior channels at each side of an angular outer central section of the resilient member, interior retainers including mounting straps connected to the wall beneath the resilient member, said straps including wall engaging portions terminating at each side in extensions connected to said said straps and supported outwardly away from the wall engaging portions of the straps and laterally with respect to the resilient member, said extensions being received into the channels of the resilient member, the outward positioning of the extensions with respect to the wall engaging portions forming recesses beneath the extensions, said recesses receiving said inturned edges slidably therein between the extensions and the wall surface, said central section of the resilient member being spaced outwardly from the underlying wall surface, a cap member having an external portion and an internal portion relative to the resilient member, the external portion extending across the width of the resilient member at the end of the resilient member and defining a shoulder substantially perpendicular to the outer surfaces of the resilient member to close the space between the resilient member and the underlying wall surface at the end of the resilient member, the internal portion of the cap having a mounting strap portion contacting and attached to the wall and connected with said external portion at the shoulder, and outwardly positioned extensions projecting laterally and offset from said mounting strap portion, of said cap receiving the ends of the inturned edges, said mounting strap portion of the cap being spaced inwardly from the central portion of the resilient member to permit inward flexure and return of the resilient member at and adjacent its end.

2. The wall corner protector arrangement according to claim 1, wherein the outer portion of the cap includes substantially perpendicular sections for extension about a right angular wall corner, and a convex curved outer surface on each perpendicular section extending from said shoulder to the surfaces of the wall corner.

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