

Description

The present invention relates to a handrail/bumper-combination as defined in the preamble of claim 1.

Background of the Invention

For almost 20 years, Construction Specialties, Inc., the assignee of the present invention, has been marketing a line of wall protection products under the trademark "Acrovyn." The line currently includes several styles of handrails, bumper guards, corner guards and crash rails, all of which have either continuous metal retainers or metal mounting clips or brackets that are attached to a wall and that receive cover members of an impact resistant, substantially rigid polymeric material. In most of the "Acrovyn" products, the cover members are mounted on the retainers or clips in a manner such they can deflect and deform under impacts from objects carried or rolled near to them. The deflection and deformation of the cover members absorb some of the energy of the impact, which prevents damage to the underlying wall. The "Acrovyn" handrails not only fulfill the function of protecting the walls on which they are mounted but provide support for persons walking through the building; thus, they are widely used in hospitals and nursing homes, places where equipment carts, food carts, wheelchairs and patient litters are constantly moving about and are apt to strike the walls and infirm patients are walking through corridors and other spaces, oftentimes for therapeutic exercise that is important to their speedy recovery, and rely on the handrails for support.

Some styles of "Acrovyn" handrails and handrails of similar designs marketed by others have handgrip portions that consist of only semi-cylindrical upper surfaces that lack a defined gripping portion that can be grasped firmly between the fingers and the thumb. Although such handrails are entirely adequate from the point of view of being capable of supporting the infirm patients that use them, they do not provide as secure a grip for the patients as a round rail does. Round rails, on the other hand, present essentially a line of contact to objects that strike them and are more apt to be marred and less able to absorb energy than are the designs that have a wide face, particularly a wide face that is also deformable and deflectable.

US-A-4,078,773 discloses a combination of a wall supported handrail having as a part thereof and depending therefrom a plate member forming a bumper to protect the adjacent wall surface from being marred oder otherwise damaged by engagement of manually moved vehicles. The handrail and the plate member depending therefrom is a

one-piece structure which is formed from extruded polyvinyl chloride and is secured directly to the wall brackets.

US-A-4,367,517 discloses a handrail arrangement having a substantially circular cylindrical surface as a handgrip portion. A lower portion of the handrail assembly has a cavity housing a light emitting source and being covered with a translucent lens for illumination of the handrail arrangement.

US-A-3,825,229 discloses a handrail/bumper-combination as set out in the preamble of claim 1.

Summary of the Invention

One object of the present invention is to provide an ergonomic handrail that has a fully rounded handgrip portion and a wide bumper portion spaced sufficiently far below the handrail portion to comfortably accept the thumb, preferably at a frontally concave web portion. Another object is to provide a handrail that meets all current codes and industrial standards, especially those relating to the strength of the handgrip portion. Still a further object is to provide a handrail that affords to architects and interior designers considerable freedom to create interesting aesthetic effects by color variations and decorative accents.

The foregoing and other objects and advantages are attained, according to the present invention, by a handrail/bumper-combination having the features as set out in claim 1.

In a preferred embodiment, the handgrip cover member is substantially tubular except for a space between front and rear edges. The rear arm portion of the retainer has a shoulder on its external surface, the front edge of the handgrip cover member resides closely adjacent the juncture of the web portion of the retainer with the front arm portion of the retainer, and the rear edge of the handgrip cover member engages the shoulder on the rear arm portion of the retainer. The web portion of the retainer has a concave front surface, which affords a comfortable resting place for the thumb of a person who grasps the handgrip portion. Advantageously, at least one cushion member is engaged between the retainer and the web portion of the bumper cover member.

An accent strip can, optionally, be provided coextensively with the front surface of the web portion of the retainer and in engagement therewith. In one form, the accent strip is of a substantially rigid polymeric material and has a lower edge portion received in the slot behind the return leg portion of the upper edge flange portion of the bumper cover member and an upper edge portion received at the juncture between the front arm portion and the web portion of the retainer an is

engaged by the lower front edge of the handgrip cover member.

For a better understanding of the invention, reference may be made to the following description of an exemplary embodiment, taken in conjunction with the accompanying drawings.

Description of the Drawings

Fig. 1. is a pictorial view of the embodiment, showing it installed on two walls that meet at an external corner; and

Fig. 2 is an end cross-sectional view of the embodiment.

Description of the Embodiment

In the typical installation of a handrail shown in Fig. 1, sections S1 and S2 of the rail assembly are installed at a suitable height along the walls W1 and W2. Molded end pieces EP are fastened to all exposed free ends of the handrail sections and may also be used at ends that occur at external corners. In the illustrated installation, a molded corner piece CP is fastened to the end of each rail section S1 and S2 at the external corner. Fig. 1 is included merely to show the general environment of the invention. Because installations of handrails of the same general type as the present invention are well-known, the various possible installation conditions need not be shown or described. As shown in Fig. 2, each handrail section S1, S2 is mounted on the wall W1, W2 in spaced-apart relation therefrom by means of mounting brackets B by fasteners F at suitable intervals along the length of the rail section.

Each section S1, S2 of the handrail assembly comprises an elongated metal retainer 10 of substantially uniform cross-section along its length and having a channel-shaped body portion 12, upper and lower flange portions 14 and 16 extending upwardly and downwardly, respectively, from the body portion, a web portion 18, which is curved to present a concave front surface 18a, extending upwardly from the body portion from a juncture therewith rearwardly of the upper flange portion and defining with the upper flange portion a slot 20 that opens generally upwardly, and front and rear arcuate arm portions 22 and 24 extending upwardly from a common juncture 26 with an upper edge of the web portion and defining the major portion of substantially circular cylindrical surface except for a space 28 between upper edges thereof. The retainer 10 is, preferably, extruded from aluminum, the extrusions being produced in a suitable length for handling and shipping and cut to the length required for the sections required for the job. As is known, per se, rail sections required for the job

longer than those that can be conveniently produced and shipped can be provided by splicing two or more rail sub-sections.

An elongated bumper cover member 30 of an impact resistant substantially rigid polymeric material and of substantially uniform cross-section along its length is mounted on the retainer 10. It has a front web portion 32, which is located in spaced-apart relation from and generally in front of the body portion 12 of the retainer, an upper flange portion 34 of substantially L-shaped cross section received in captured engagement by the upper flange portion 14 of the retainer with a return leg part 34a thereof received in the slot 20, and a lower flange portion 36 of substantially L-shaped cross section received in captured engagement by the lower flange portion 16 of the retainer. Resilient cushion members 38 are mounted in undercut mounting slots 39 on the retainer and engage the web portion 32 of the bumper cover member.

An elongated handgrip cover member 40 of an impact-resistant substantially rigid polymeric material is received over the upper arm portions 22, 24 of the retainer in substantially continuous contact therewith along mutually engageable internal surfaces of the handgrip cover member and external surfaces of the arm portions of the retainer. The handgrip cover member 40 is substantially tubular except for a space between front and rear edges 40a and 40b. The rear arm portion 24 of the retainer has a shoulder 24a on its external surface. The front edge 40a of the handgrip cover member resides closely adjacent the juncture 26 of the web portion 18 of the retainer with the front arm portion 22 of the retainer, and the rear edge 40b of the handgrip cover member 40 engages the shoulder 24a on the rear arm portion 24 of the retainer.

The cover members 30 and 40 are both, preferably, made by extrusion. A suitable polymeric material for the cover members is a polyvinyl chloride blended with a small amount of an acrylic polymer and incorporating smoke and flame inhibitors that enable it to meet flame spread and smoke development requirements according to recognized standards, such as U.L.® and A.S.T.M.

The cover members 30 and 40 are sufficiently resilient to enable them to be pressed onto the retainer by hand. In the case of the handrail cover member 40, the space between edges 40a and 40b at one end is spread apart enough to allow it to be pressed onto the retainer until it begins to pull itself into the final position. It is then simply pushed down progressively along its length. A camming action between the edges 40a and 40b of the cover member and the convexly curved outer surfaces of the arm portions 22 and 24 facilitates forcing the cover to spread apart. Once it has spread apart enough for the edges to pass a dia-

metrical plane of the arms, the resiliency of the cover enables it to pull itself into final position. End pieces, corner pieces (see Fig. 1) and other terminations, together with a frictional engagement due to slight undersizing of the cover member, keep the cover member in position on the retainer lengthwise. An adhesive may also be used for that purpose. Engagement of the edges 40a and 40b with the juncture 26 and the shoulder 40b, respectively, hold the handrail cover member 40 in position circumferentially.

The bumper cover member also is easily installed on the retainer. The upper flange portion 34 is hooked into the slot 20 along part or all of the length of the retainer, which causes the tip of the intumed leg of the lower flange portion 36 to rest against the lower surface of the curved leg 16a of the lower retainer flange portion 16. Next, the lower portion of the front web portion of the cover member is pressed toward the retainer. The leg 16a produces a camming action on the lower flange portion of the cover member, guiding it to the lower extremity of the flange portion 16, whereupon it pulls itself into place. The bumper cover member is initially formed such that the flange portions are slightly oblique to the web portion, with the edges of the intumed legs closer together than in the installed condition. Accordingly, the bumper cover member pulls itself into place resiliently with a preload that retains it in place.

The web portion 32 of the bumper cover member 30 is set forward slightly from the frontmost surface of the handrail cover member, with respect to the wall. Accordingly, virtually all impacts of objects against the handrail occur on the bumper cover member, which is better able to sustain them than is the handrail cover member. The bumper cover member is backed up by the cushion members 38, and the web portion is able to deform and deflect, relative to the retainer because of the clearance left between the leg 36a and the web portion of the cover member. Accordingly, some of the energy of impacts against the bumper cover member is absorbed by deformation and deflection of the cover member and the cushion members.

Ergonomically, the handrail portion provides an excellent gripping configuration. It is of an almost entirely round cross-section, free of corners and other discontinuities, except for the negligible change from exact roundness at the shoulder 24a in the back; the portion of the rear arm portion 24 between the shoulder 24a and the juncture 18 substantially matches the curvature of the rest of the handrail portion. In the front, the handrail portion is spaced-apart above the bumper portion by a distance great enough to readily accept the thumbs of persons using the handrail, and the front surface of the web portion is concave for a comfortable fit

to a user's thumb.

The nearly continuous engagement circumferentially between the hand rail cover member and the external surfaces of the arm portions 22 and 24 of the retainer provides very strong support for the cover member and enables the handrail to meet the most stringent building standards and codes. Tests of the handrail have established that it can sustain point loads of over 400 pounds in all radial directions, which is far in excess of any present standards and codes.

As an optional feature, the handrail assembly may include a decorative accent strip 50 that is coextensive with the front surface of the web portion of the retainer and in engagement therewith and retained in place by reception of a lower edge portion in the slot 20 and its upper edge in a small groove 22a in the arm portion 22 adjacent the juncture 26 thereof with the web portion. The accent strip is, preferably, extruded from the same polymeric material as the cover members and is easily snapped into place. When the accent strip is included, the handrail has three members of polymeric material, each of which can be colored to provide a desired decorative effect. One or more of the colors may be part of a color-coding system that identifies regions or pathways of a building. The accent strip may incorporate a fluorescent material that will glow in the dark and provide a visible marking in the event of a lighting failure. The front of the web portion may, on the other hand, be painted or finished by conventional metal treating processes.

Claims

1. A handrail/bumper-combination adapted to be mounted on a wall in spaced-apart relation therefrom by means of mounting brackets, comprising:
 - an elongated metal retainer (10) of substantially uniform cross-section along its length, the retainer (10) having a handgrip portion and a body portion (12) the latter having upper and lower flange portions (14, 16) extending upwardly and downwardly, respectively, from the body portion (12), and
 - a cover member of a substantially rigid impact-resistant polymeric material received on the retainer (10), characterized in that
 - the retainer (10) has a web portion (18) extending upwardly from the body portion (12) from a juncture therewith rearwardly of the upper flange portion (14) and defining with the upper flange portion (14) a slot (20) that opens generally



metrical plane of the arms, the resiliency of the cover enables it to pull itself into final position. End pieces, corner pieces (see Fig. 1) and other terminations, together with a frictional engagement due to slight undersizing of the cover member, keep the cover member in position on the retainer lengthwise. An adhesive may also be used for that purpose. Engagement of the edges 40a and 40b with the juncture 26 and the shoulder 40b, respectively, hold the handrail cover member 40 in position circumferentially.

The bumper cover member also is easily installed on the retainer. The upper flange portion 34 is hooked into the slot 20 along part or all of the length of the retainer, which causes the tip of the intumed leg of the lower flange portion 36 to rest against the lower surface of the curved leg 16a of the lower retainer flange portion 16. Next, the lower portion of the front web portion of the cover member is pressed toward the retainer. The leg 16a produces a camming action on the lower flange portion of the cover member, guiding it to the lower extremity of the flange portion 16, whereupon it pulls itself into place. The bumper cover member is initially formed such that the flange portions are slightly oblique to the web portion, with the edges of the intumed legs closer together than in the installed condition. Accordingly, the bumper cover member pulls itself into place resiliently with a preload that retains it in place.

The web portion 32 of the bumper cover member 30 is set forward slightly from the frontmost surface of the handrail cover member, with respect to the wall. Accordingly, virtually all impacts of objects against the handrail occur on the bumper cover member, which is better able to sustain them than is the handrail cover member. The bumper cover member is backed up by the cushion members 38, and the web portion is able to deform and deflect, relative to the retainer because of the clearance left between the leg 36a and the web portion of the cover member. Accordingly, some of the energy of impacts against the bumper cover member is absorbed by deformation and deflection of the cover member and the cushion members.

Ergonomically, the handrail portion provides an excellent gripping configuration. It is of an almost entirely round cross-section, free of corners and other discontinuities, except for the negligible change from exact roundness at the shoulder 24a in the back; the portion of the rear arm portion 24 between the shoulder 24a and the juncture 18 substantially matches the curvature of the rest of the handrail portion. In the front, the handrail portion is spaced-apart above the bumper portion by a distance great enough to readily accept the thumbs of persons using the handrail, and the front surface of the web portion is concave for a comfortable fit

to a user's thumb.

The nearly continuous engagement circumferentially between the hand rail cover member and the external surfaces of the arm portions 22 and 24 of the retainer provides very strong support for the cover member and enables the handrail to meet the most stringent building standards and codes. Tests of the handrail have established that it can sustain point loads of over 400 pounds in all radial directions, which is far in excess of any present standards and codes.

As an optional feature, the handrail assembly may include a decorative accent strip 50 that is coextensive with the front surface of the web portion of the retainer and in engagement therewith and retained in place by reception of a lower edge portion in the slot 20 and its upper edge in a small groove 22a in the arm portion 22 adjacent the juncture 26 thereof with the web portion. The accent strip is, preferably, extruded from the same polymeric material as the cover members and is easily snapped into place. When the accent strip is included, the handrail has three members of polymeric material, each of which can be colored to provide a desired decorative effect. One or more of the colors may be part of a color-coding system that identifies regions or pathways of a building. The accent strip may incorporate a fluorescent material that will glow in the dark and provide a visible marking in the event of a lighting failure. The front of the web portion may, on the other hand, be painted or finished by conventional metal treating processes.

Claims

1. A handrail/bumper-combination adapted to be mounted on a wall in spaced-apart relation therefrom by means of mounting brackets, comprising:
 - an elongated metal retainer (10) of substantially uniform cross-section along its length, the retainer (10) having a handgrip portion and a body portion (12) the latter having upper and lower flange portions (14, 16) extending upwardly and downwardly, respectively, from the body portion (12), and
 - a cover member of a substantially rigid impact-resistant polymeric material received on the retainer (10), characterized in that
 - the retainer (10) has a web portion (18) extending upwardly from the body portion (12) from a juncture therewith rearwardly of the upper flange portion (14) and defining with the upper flange portion (14) a slot (20) that opens generally



- upwardly,
- the retainer (10) has front and rear arcuate arm portions (22, 24) constituting the handgrip portion and extending upwardly from a common juncture (26) with an upper edge of the web portion (18) and defining the major portion of a substantially circular cylindrical surface except for a space (28) between upper edges thereof,
 - an elongated bumper cover member (30) of substantially uniform cross-section along its length having a front web portion (32), an upper flange portion (34) of substantially L-shaped cross-section and a lower flange portion (36) of substantially L-shaped cross-section is held in captured engagement by the upper flange portion (14) of the retainer (10) with a return leg part (34a) thereof received in the slot (20) and by the lower flange portion (16) of the retainer (10),
 - an elongated handgrip cover member (40) separate from the bumper cover member (30) is received over the arm portions (22, 24) of the retainer (10) in substantially continuous contact therewith along mutually engageable internal surfaces of the handgrip cover member (40) and external surfaces of the arm portions (22, 24),
 - the bumper cover member (30) is set forward slightly from the frontmost surface of the handgrip cover member (40), with respect to said wall, and in that
 - the handgrip portion is spaced-apart above the bumper portion by a distance great enough to readily accept the thumbs of a person using the handrail.
2. A handrail/bumper combination according to claim 1 and further characterized in that the handgrip cover member (40) is substantially tubular except for a space between front and rear edges (40c, 40b), the rear arm portion (24) of the retainer has a shoulder (40b) on its external surface, the front edge of the handgrip cover member (40) resides closely adjacent the juncture (26) of the web portion (18) of the retainer (10) with the front arm portion (22) of the retainer and the rear edge of the handgrip cover member engages the shoulder (40b) on the rear arm portion (24) of the retainer.
3. A handrail/bumper combination according to claim 1 and further characterized in that the web portion (18) of the retainer (10) has a concave front surface.

4. A handrail /bumper combination according to claim 1 and further characterized in that at least one resilient cushion member (38) is engaged between the retainer (10) and the web portion (32) of the bumper cover member (30).
5. A handrail/combination according to claim 1 and further characterized in that there is an accent strip (50) coextensive with the front surface of the web portion (18) of the retainer (10) in engagement therewith.
6. A handrail/bumper combination according to claim 5 and further characterized in that the accent strip (50) is of a substantially rigid polymeric material and has a lower edge portion received in the slot(20) of the retainer (10) behind the return leg portion (34a) of the upper edge flange portion (34) of the bumper cover member (30) and an upper edge portion received at the juncture (26) of the front arm portion (22) with the web portion (18) of the retainer and is engaged by the lower front edge (40c) of the handgrip cover member (40).

Patentansprüche

1. Kombination von Handlauf und Stoßfänger, die an einer Wand mit Abstand von dieser mittels Montagearmen anbringbar ist, mit:
- einem langgestreckten Metallhalter (10), der entlang seiner Länge einen im wesentlichen gleichförmigen Querschnitt hat und einen Handgriffabschnitt und einen Rumpfabschnitt (12) aufweist, letzterer mit einem oberen und einem unteren Flanschabschnitt (14, 16), die sich vom Rumpfabschnitt (12) nach oben bzw. nach unten erstrecken, und
 - einer auf dem Halter (10) aufgenommenen Abdeckung aus einem im wesentlichen starren, stoßunempfindlichen Polymermaterial, dadurch gekennzeichnet, daß
 - der Halter (10) einen Stegabschnitt (18) aufweist, der sich vom Rumpfabschnitt (12) von einer Verbindungsstelle mit diesem hinter dem oberen Flanschabschnitt (14) nach oben erstreckt und mit dem oberen Flanschabschnitt (14) einen Schlitz (20) bildet, der sich im wesentlichen nach oben öffnet,
 - der Halter (10) einen vorderen und einen hinteren gekrümmten Armabschnitt (22, 24) aufweist, die den Handgriffabschnitt bilden und sich von einer gemeinsamen Verbindungsstelle (26) mit einem oberen Rand des Stegabschnitts (18) nach oben



erstrecken und den Hauptteil einer mit Ausnahme eines Zwischenraums (28) zwischen deren oberen Rändern im wesentlichen kreisförmigen zylindrischen Fläche festlegen,

- eine langgestreckte Stoßfängerabdeckung (30) mit entlang ihrer Länge im wesentlichen gleichförmigem Querschnitt, die einen vorderen Stegabschnitt (32), einen oberen Flanschabschnitt (34) mit im wesentlichen L-förmigem Querschnitt und einen unteren Flanschabschnitt (36) mit im wesentlichen L-förmigem Querschnitt aufweist, in umfangenem Eingriff gehalten ist von dem oberen Flanschabschnitt (14) des Halters (10), wobei ein gekröpfter Schenkelteil (34a) der Stoßfängerabdeckung (30) im Schlitz (20) aufgenommen ist, und von dem unteren Flanschabschnitt (16) des Halters (10),
- eine von der Stoßfängerabdeckung (30) getrennte, langgestreckte Handgriffabdeckung (40) über den Armabschnitten (22, 24) des Halters (10) in im wesentlichen ununterbrochenem Kontakt damit entlang miteinander in Eingriff bringbarer Innenflächen der Handgriffabdeckung (40) und Außenflächen der Armabschnitte (22, 24) aufgenommen ist,
- die Stoßfängerabdeckung (30) von der vordersten Fläche der Handgriffabdeckung (40) in bezug auf die Wand ein wenig nach vorne versetzt ist, und dadurch, daß
- der Handgriffabschnitt über dem Stoßfängerabschnitt in einem Abstand angeordnet ist, der groß genug ist, um die Daumen einer den Handlauf benutzenden Person problemlos aufzunehmen.

2. Kombination von Handlauf und Stoßfänger nach Anspruch 1, dadurch gekennzeichnet, daß die Handgriffabdeckung (40) mit Ausnahme eines Zwischenraumes zwischen dem vorderen und dem hinteren Rand (40c, 40b) im wesentlichen rohrförmig ist, der hintere Armabschnitt (24) des Halters an seiner Außenfläche eine Schulter (40b) aufweist, der vordere Rand der Handgriffabdeckung (40) eng benachbart der Verbindungsstelle (26) des Stegabschnitts (18) des Halters mit dem vorderen Armabschnitt (22) des Halters angeordnet ist und der hintere Rand der Handgriffabdeckung mit der Schulter (40b) des hinteren Armabschnitts (24) des Halters (10) zusammenwirkt.

3. Kombination von Handlauf und Stoßfänger nach Anspruch 1, dadurch gekennzeichnet, daß der Stegabschnitt (18) des Halters (10) eine konkave vordere Fläche aufweist.

4. Kombination von Handlauf und Stoßfänger nach Anspruch 1, dadurch gekennzeichnet, daß mindestens ein federndes Pufferglied (38) in Wirkverbindung zwischen dem Halter (10) und dem Stegabschnitt (32) der Stoßfängerabdeckung (30) angeordnet ist.

5. Kombination von Handlauf und Stoßfänger nach Anspruch 1, dadurch gekennzeichnet, daß sich ein Markierungsstreifen (50) gemeinsam mit der vorderen Fläche des Stegabschnitts (18) des Halters (10) zusammenwirkend mit diesem erstreckt.

6. Kombination von Handlauf und Stoßfänger nach Anspruch 5, dadurch gekennzeichnet, daß der Markierungsstreifen (50) aus einem im wesentlichen starren Polymermaterial besteht und einen vom Schlitz (20) des Halters (10) hinter dem gekröpften Schenkelabschnitt (34a) des Flanschabschnitts (34) des oberen Randes der Stoßfängerabdeckung (30) aufgenommenen unteren Randabschnitt aufweist, und einen oberen Randabschnitt, der bei der Verbindungsstelle (26) des vorderen Armabschnitts (22) mit dem Stegabschnitt (18) des Halters aufgenommen ist und mit dem unteren vorderen Rand (40c) der Handgriffabdeckung (40) zusammenwirkt.

Revendications

1. Combinaison main-courante/barre de protection adaptée pour être montée contre un mur dans une position écartée de celui-ci, à l'aide de consoles de montage, et comprenant :
- un élément de retenue métallique (10) de grande longueur, de section transversale sensiblement uniforme sur toute sa longueur, l'élément de retenue (10) ayant une partie main-courante et une partie corps (12), cette dernière ayant des parties ailes supérieure et inférieure (14, 16) qui partent de la partie corps (12) respectivement vers le haut et vers le bas, et
 - un élément de recouvrement fait d'une matière polymère sensiblement rigide, résistante aux chocs, monté sur l'élément de retenue (10), caractérisée en ce que
 - l'élément de retenue (10) comprend une partie voile (18) qui fait saillie sur la



- partie corps (12) vers le haut à partir d'une jonction qui relie à cette partie, qui est située en arrière de la partie aile supérieure (14) et qui définit avec la partie aile supérieure (14) une fente (20) qui s'ouvre généralement vers le haut,
- l'élément de retenue (10) présente des parties bras recourbées avant et arrière (22, 24) qui constituent la partie main-courante, s'étendent vers le haut à partir d'une jonction commune (26) qui les relie à un bord supérieur de la partie voile (18), et définissent la majeure partie d'une surface cylindrique sensiblement circulaire à l'exception d'un espace compris entre leurs bords supérieurs,
 - un élément de recouvrement (30) de barre de protection, de grande longueur, de section sensiblement uniforme sur sa longueur, qui comprend une partie voile avant (32), une partie aile supérieure (34) de section sensiblement en L, et une partie aile inférieure (36) de section sensiblement en L, est maintenue captive par la partie aile supérieure (14) de l'élément de retenue (10), une partie branche de retour (34a) de cet élément de recouvrement se logeant dans la fente (20), et par la partie aile inférieure (16) de l'élément de retenue (10),
 - un élément de recouvrement (40) de main-courante, de grande longueur, séparé de l'élément de recouvrement (30) de la barre de protection est monté sur les parties bras (22, 24) de l'élément de retenue (10), en contact sensiblement continu avec ces parties bras, le long de surfaces internes de l'élément de recouvrement de la main-courante (40) et de surfaces externes des parties bras (22, 24) qui peuvent être mises en prise entre elles,
 - l'élément de recouvrement (30) de la barre de protection est déporté légèrement en avant par rapport à la surface extrême avant de l'élément de recouvrement (30) de la main-courante, relativement audit mur, et en ce que
 - la partie main-courante est espacée au-dessus de la partie barre de protection d'une distance suffisamment grande pour donner facilement place au pouce d'une personne qui se sert de la main-courante.
2. Combinaison main-courante/barre de protection selon la revendication 1 et caractérisée en outre en ce que l'élément de recouvrement

- (40) de la main-courante est sensiblement tubulaire, à l'exception d'un espace compris entre des bords avant et arrière (40c, 40b), la partie bras arrière (24) de l'élément de retenue a un épaulement (4b) sur sa surface externe, le bord avant de l'élément de recouvrement (40) de la main-courante est situé étroitement adjacent à la jonction (26) qui relie la partie voile (18) de l'élément de retenue (10) à la partie bras avant (22) de l'élément de retenue, et le bord arrière de l'élément de recouvrement de la main-courante est en contact avec l'épaulement (40b) formé sur la partie bras arrière (24) de l'élément de retenue.
3. Combinaison main-courante/barre de protection selon la revendication 1, et caractérisée en outre en ce que la partie voile (18) de l'élément de retenue (10) présente une surface avant concave.
4. Combinaison main-courante/barre de protection selon la revendication 1, et caractérisée en outre en ce qu'au moins un élément coussin élastique (38) est pris entre l'élément de retenue (10) et la partie voile (32) de l'élément de recouvrement (30) de la barre de protection.
5. Combinaison main courant/barre de protection selon la revendication 1, et caractérisée en outre en ce qu'il y a un bandeau décoratif (50) en coïncidence avec la surface avant de la partie voile (18) de l'élément de retenue (10), et en prise avec cette surface.
6. Combinaison main-courante/barre de protection selon la revendication 5, et caractérisée en outre en ce que le bandeau décoratif (50) est fait d'une matière polymère sensiblement rigide et présente une partie de bord avant logée dans la fente (20) de l'élément de retenue (10), derrière la partie branche de retenue (34a) de la partie aile de bord supérieur (34) de l'élément (30) de recouvrement du barre de protection, et une partie bord supérieur reçue à la jonction (26) entre la partie bras avant (22) et la partie voile (18) de l'élément de retenue et serrée par le bord avant inférieur (40c) de l'élément (40) de recouvrement de la main-courante.