A wrap assembly for a structural column extending between a bottom support and an overhead support includes a pair of similar, mating, elongated, molded plastic shaft sections each section having an interior surface, an exterior surface, a pair of side edges extending between those surfaces and an integral flange projecting from the exterior surface at one end of that shaft section. The shaft sections are shaped and dimensioned so that when the sections are juxtaposed with their interior surfaces facing one another and their side edges in abutment, the sections form a substantially continuous tubular shaft with an integral fastening cleat, defined by the flanges, at one end of the shaft by which the shaft may be secured to one of the supports. An annular fastening cleat surrounds the other end of the shaft for fastening to the other support to fix the other end of the shaft. Mating molded plastic base and capitol sections surround the shaft sections adjacent to the flanges and cleat, respectively, to add decoration and to cover the fasteners.
FIG. 3
STRUCTURAL COLUMN WRAP ASSEMBLY

This invention relates to support columns for residential and commercial structures. It relates especially to a column wrap assembly for providing added girth and an exterior finish to an otherwise unfinished support or structural column in a building.

BACKGROUND OF THE INVENTION

Conventionally in order to wrap or cover a support or structural column, squaring blocks are fastened to the floor and overhead support around the column. These blocks function as internal nailing cleats to which wall-forming boards may be attached. These walls together form a tubular shaft that surrounds the column. Alternatively, internal blocks or cleats may be attached to those walls that constitute the column wrap such that the walls connect through the internal cleats to the structural column itself; see for example, U.S. Pat. Nos. 4,912,901 and 5,335,471.

Those prior column wraps with internal nailing cleats are disadvantaged in that their installation is labor intensive, requiring the proper cutting, aligning and fastening of various separate squaring blocks or cleats. Also, when the wrap is connected directly to the associate column, the column must be more or less centered within the wrap. Accordingly, if the column is tilted slightly or out of alignment with adjacent columns, the wraps on those columns will likewise be tilted or out of alignment.

We are also aware of a prior column wrap comprising a longitudinally slit tube which may be sprung open and engaged around a support column; see U.S. Pat. No. 4,606,167. The lower end of that slit tube may be secured to the floor via a separate internal ring which functions as a fastening cleat. The upper end of the tube is secured to a second internal mounting ring anchored to the structural column by brackets and a vertical stud is connected between the two rings and to the column by additional brackets. Thus, that patented assembly includes a multitude of separate parts. Also, the centered position of the shaft relative to the column can only be changed by changing the dimensions of the brackets. In addition, the installation of that wrap assembly is labor intensive in that it requires the measuring and attaching of many separate parts.

There is another post assembly disclosed in U.S. Patent Publication US2004/0025460 whose lower end may be fastened to the floor by a base plate. The base plate is separate from the outer shell or shaft of the wrap and also supports the structural post or column. That is, the lower ends of both the column and the shaft interfit with various upstanding projections on the base plate. Thus the relative position of the shaft and post is fixed.

All of the aforesaid existing wrap assemblies which are connected either directly or indirectly to the structural columns within those wraps must be centered on those columns or, if offset therefrom, the offsetting can only be accomplished with difficulty. Also, for the most part, they require assorted internal brackets, fasteners and struts to support the wraps. Consequently, they are costly to make and to install.

SUMMARY OF THE INVENTION

The present invention aims to provide an improved structural column wrap assembly.

Another object of the invention is to provide a column wrap assembly which is completely independent of the column within.

Another object of the invention is to provide such an assembly which may be laterally offset in any direction from the column within.

Another object of the invention is to provide a structural column assembly which may have a variety of different cross-sectional shapes and external appearances.

Another object of the invention is to provide an assembly of this type which is relatively easy and inexpensive to make in quantity.

Yet another object of the invention is to provide such an assembly which may be installed easily in a minimum amount of time.

Other objects, will in part, be obvious and, will in part, appear hereinafter.

The invention accordingly comprises the features of construction, combination of elements and arrangement of parts which will be exemplified in the following detailed description, and the scope of the invention will be indicated in the claims.

Briefly, the present column wrap assembly comprises a tubular shaft, preferably of a plastic material, which surrounds a structural column that extends between floor and overhead supports. The assembly includes a pair of similar mating shaft sections each of which has an integral exterior flange at one of its ends, usually the lower end. The opposite or upper ends of the shaft sections may be trimmed so that when the shaft sections are brought together or mated around the structural column, they form an essentially continuous tubular shaft which surrounds the column. The flanges at the lower ends of the shaft sections together form an annular fastening cleat for fastening the shaft to the floor. The opposite or upper end of the shaft may be fixed in place by mating external frame sections which are similar to the flanges, but which are separate from the shaft sections. When brought together around the upper end of the shaft and fastened to the overhead support, the frame sections form an annular fastening cleat which captures the upper end of the shaft.

Preferably, pairs of mating, decorative base sections and capitol sections may be engaged around the shaft sections adjacent to the lower and upper cleats, respectively, to provide decorative or architectural features and to conceal the fastener heads.

Of course, the column wrap assembly may have various cross-sectional shapes. For example, the shaft sections may have L-shaped or semi-circular cross-sections so that two such sections form a shaft with a rectangular or circular cross-section. Also, the pair of similar shaft sections may be shaped and dimensioned so that when mated around a support column they form a tapered shaft. In that event, the corresponding frame, base and capitol sections should be shaped and dimensioned to fit that particular shaft.

An important advantage of the present construction over prior comparable column wraps is that the present assembly is completely independent of the column which it surrounds enabling it to be placed in various positions with respect to that column. This allows the assembly to be made vertical even though the structural column within is not. Also, a row such wraps can be aligned perfectly, even though the columns within may be out of alignment. Yet, even with these advantages, the present assembly is relatively easy and inex-
The brief description of the drawing

For a fuller understanding of the nature and objects of the invention, reference should be made to the following detailed description taken in connection with the accompanying drawing, in which:

FIG. 1 is a fragmentary perspective view of an entryway whose structural columns are covered by column wrap assemblies in accordance with this invention;

FIG. 2 is an elevational view with parts broken away on a much larger scale showing one of the column wrap assemblies in FIG. 1;

FIG. 2A is a sectional view taken along line of 2A-2A of FIG. 2;

FIGS. 2B and 2C are sectional views similar to FIG. 2A showing possible different relative positions of the FIG. 2 column wrap assembly and the structural column within, and

FIG. 3 is an exploded top plan view of the various components of the FIG. 2 assembly, shown disassembled as they would be in an installation kit.

Detailed description of an illustrative embodiment

Referring to the drawing, FIG. 1 illustrates an entryway comprising a plurality of vertical structural or support columns C extending between a support surface S such as a floor or deck and an overhead support O such as a ceiling or beam. Each column C, e.g., a 4x4 in. length of wood, is covered by a column wrap assembly generally at 10 which adds apparent girth to the column and provides a smooth, paintable and/or decorative exterior surface around the otherwise unfinished column.

Referring to FIG. 2, each column wrap assembly 10 comprises a tubular shaft 12 having an integral exterior fastening cleat 14 at its lower end. A second, annular fastening cleat 16 is provided at the upper end of the shaft but which, as we shall see, is separate from the shaft. Suitable fasteners F may be driven through cleats 14 and 16 into support surface S and the overhead support O, respectively, to fix the position of shaft 12 with respect to column C.

In order to add decorative features to shaft 12 and to conceal the heads of fasteners F, assembly 10 may include a tubular base B which surrounds shaft 12 adjacent to cleat 14. For the same reasons, the assembly may also include a tubular capitol 20 which surrounds shaft 12 adjacent to cleat 16.

Preferably, all of the major components of assembly 10 are molded of a suitable, strong, impact, weather and UV-resistant plastic material such as polyvinyl chloride (PVC).

Referring to FIG. 3, to facilitate the installation of the aforesaid components of assembly 10, they are split into similar, mating, shell-like halves. Thus, shaft 12 comprises a pair mating elongated half sections 22a and 22b. Each such section has an interior surface defining an inside angle or arc and an exterior surface defining an outside angle or arc. The illustrated half sections 22a and 22b have L-shaped cross-sections. However, they could just as well have semi-circular, faceted, or other cross-sectional shapes. Also, the exterior surface of each section 22a, 22b may be formed with ribs, flutes or filigree to add desired decorative features to the column wrap assembly 10.

In any event, each shaft section 22a, 22b has an integral flange 24 extending or projecting from its exterior surface at the lower end of the shaft section. Also, each such section has a pair of side edges 26a and 26b extending the length of the section including its integral flange 24. Preferably, these edges have mitered surfaces as shown so that when the two half sections 22a, 22b are juxtaposed around a common longitudinal axis A (FIG. 3) such that their opposing side edges 26a and 26b are brought into abutment, the two sections form the tubular shaft 12 and exterior fastening cleat 14 shown in FIGS. 2 and 2A.

If desired, longitudinal keys 28a and keyways 28b may be provided in the side edges 26a and 26b, respectively, to maintain the mating edges of the two shaft sections in alignment along the entire length of the shaft.

Referring to FIGS. 2 and 3, the base component 18 of assembly 10 comprises a pair of similar half sections 30a and 30b whose shapes mirror those of the shaft sections 22a and 22b. Thus in this case, the base sections 30a and 30b have L-shaped cross-sections with the inside perimeter of each such section corresponding to the outside perimeter of the lower end segment of each shaft section 22a, 22b. The height of the base sections and their exterior finish may vary depending upon the particular ornamental appearance sought by the designer of the FIG. 1 entryway.

Like the shaft sections, the base sections 30a, 30b have longitudinal side edges 32a and 32b which preferably have mitered surfaces and mating keys and keyways so that when the two sections 30a and 30b are brought together around shaft 12 so that their side edges are in abutment as shown in FIGS. 2 and 2A, the two sections form a sleeve-like base 18 which has a substantially continuous exterior surface.

The capitol 20 shown in FIG. 2 is likewise composed of two similar half sections 36a and 36b as shown in FIG. 3. These sections 36a, 36b happen to be substantially mirror images of the base sections 30a and 30b. However, they could just as well be different so that they form a capitol 20 which has a different height and/or exterior surface detail from base 18. In any event, sections 36a, 36b preferably have mitered side edges 38a and 38b so that the opposing edges of the two sections may butt and key together as shown in FIGS. 2 and 2A.

The remaining major component of assembly 10, namely the upper fastening cleat 16, may comprise a pair of similar frame sections 40a and 40b whose shape and dimensions may be comparable to those of the flanges 24 of the shaft sections 22a, 22b. The inside perimeter of sections 40a, 40b should correspond to the outside perimeter of the upper ends of the shaft sections 22a, 22b. Also, the opposite ends 42a, 42b of sections 40a, 40b should have mitered surfaces so that when those two sections are brought together around the upper end of shaft 12 with their ends in abutment as shown in FIGS. 2 and 2A, they form an annular cleat 16 which surrounds the upper end of shaft 12. Resultantly, when the fasteners F' are driven through sections 40a and 40b into the overhead support O, they positively fix the position of the upper end of that shaft.

Although we have just described the upper fastening cleat 16 as comprising two similar frame sections 40a and 40b that cleat could be molded as a single ring which may be slid onto the upper end of shaft 12 before the shaft is swung to
its vertical position. Then, once the shaft is oriented vertically, that ring may be raised into position against the overhead support O and fastened thereto by fasteners F.

[0037] If desired, during the molding process, fastener holes may be formed in the flanges 24 and frame sections 40a and 40b as shown at 50 in FIG. 3 to minimize the chances of damage when fasteners F are driven through these parts.

[0038] In order to install assembly 10, the distance between support S and the overhead support O is measured and the upper ends of the shaft sections 22a, 22b are cut off as needed so that the length of the two sections corresponds to that dimension. Then the two sections are positioned around column C so that the side edges 26a, 26b of the two sections are butted as shown in FIG. 2A. If desired, a weatherproof adhesive may be applied to those edges to permanently secure them together. Once the completed shaft 12 is positioned properly relative to the column C within, fasteners F may be driven through the holes 50 in bottom cleat 14 into surface S. Next, the two frame sections 40a and 40b comprising the upper cleat 16 are positioned around the upper end of the shaft with their ends in abutment as shown in FIG. 2. After determining that the shaft is vertical, fasteners F may be driven through the holes 50 in the frame sections into the overhead support O. Of course, if cleat 16 is a single ring as described above, it should be slid onto the top of shaft 12 prior to squaring up the shaft and then fastened to support O.

[0039] Next, adhesive may be applied to the side edges and/or the inside surfaces of the base sections 30a and 30b so that when those sections are brought together around the lower end of shaft 12, they form a sleeve-like base 18 which covers the heads of the fasteners F that were driven through the lower cleat 14. In a similar manner, after applying adhesive as above, the two sections 36a and 36b comprising capitol 20 may be positioned around the upper end segment of shaft 12 and the opposing side edges 38a and 38b are brought into abutment so that the sections form a continuous sleeve-like capitol which surrounds shaft 12 and covers the heads of the fasteners F in cleat 16.

[0040] It is a feature of this invention that the column wrap assembly 10 is completely independent of the column C within that assembly. In other words, it requires no internal squaring blocks, brackets or other attachments to the column. This allows the assembly 10 to be located at a variety of different positions relative to the column within the wrap assembly. In other words, as shown in FIGS. 2A-2C, a column C may be located at various positions inside the wrap. Thus, the wrap assembly may be installed easily since tight positional tolerances are not required. Also, as shown in those figures, even though a particular building structure has columns C which are out of alignment, the wrap assemblies 10 around those columns can be aligned perfectly due to their positional independence from the columns within them.

[0041] Even with the advantages discussed above, the wrap assembly 10 is easy and inexpensive to make because it is composed substantially entirely of molded plastic parts. Also, those parts are easy to assemble so that a given column can be wrapped or sheathed in a minimum amount of time even by relatively unskilled workers. Since the components of the assembly are of a plastic material, the column wrap should last a long time and require minimum maintenance.

[0042] It will thus be seen that the objects set forth above, among those made apparent from the preceding description, are efficiently attained. Also, since certain changes may be made in the above construction without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

[0043] It is also understood that the following claims are intended to cover all of the generic and specific features of the invention described herein.

21. (canceled)

22. A column assembly for positioning between a bottom support and an overhead support, said column assembly comprising:

- a structural column extending between said bottom support and said overhead support;
- and a wrap assembly disposed around said structural column and extending between said bottom support and said overhead support, wherein said wrap assembly includes:

- mating, elongated shaft sections, each section having an interior surface, an exterior surface, and side edges extending between said interior and exterior surfaces, said shaft sections are juxtaposed with their interior surfaces facing one another and their side edges in abutment to form a continuous shaft having first and second ends, wherein the first end of the shaft and the second end of the shaft are secured to said bottom and overhead supports to fix the position of the shaft relative to the structural column, wherein the shaft sections are dimensioned such that said interior surfaces are spaced apart from the structural column to allow the continuous shaft to be adjusted to a variety of different positions relative to the structural column within the continuous shaft before the position of the continuous shaft is fixed.

23. The assembly of claim 22 wherein the first end of the continuous shaft includes an integrally formed fastening cleat that is attached to one of the bottom support and the overhead support to secure the first end of the continuous shaft to the bottom support or the overhead support.

24. The assembly defined in claim 23 wherein the shaft and integrally formed fastening cleat are molded from a weatherproof plastic material.

25. The assembly defined in claim 22 wherein said shaft sections are shaped to form a shaft with a rectangular cross-section.

26. A method of installing column wrap assemblies around structural columns extending between a bottom support and an overhead support comprising:

- placing shaft portions of a first column wrap assembly around a first structural column;
- securing the shaft portions of the first column wrap assembly together to form a first shaft around the first structural column with a space between an interior of the first shaft and an exterior of the first structural column;
- adjusting the position of the first shaft with respect to the first structural column such that the first shaft is vertical;
- securing an upper end of the first shaft to the overhead support and a lower end of the first shaft to the bottom support to secure the position of the first shaft with respect to the first structural column;
- placing shaft portions of a second column wrap assembly around a second structural column;
- securing the shaft portions of the second column wrap assembly together to form a second shaft around the
second structural column with a space between an interior of the second shaft and an exterior of the second structural column;
adjusting the position of the second shaft with respect to the second structural column such that the second shaft is vertical and the second shaft is in horizontal alignment with said first shaft;
securing an upper end of the second shaft to the overhead support and a lower end of the second shaft to the bottom support to secure the position of the second shaft with respect to the second structural column.

27. The method of claim 25 wherein one of the upper and lower ends of the first shaft includes and integrally formed cleat that is secured to the corresponding overhead support or bottom support.

28. A row column assemblies comprising:
a row of structural columns that extend between a bottom support and an overhead support, wherein said row of structural columns are out of horizontal alignment;
a row of wrap assemblies disposed around said structural columns of said row of structural columns, wherein each wrap assembly extends between said bottom support and said overhead support, wherein each said wrap assembly includes:
mating, elongated shaft sections, each section having an interior surface, an exterior surface, and side edges extending between said interior and exterior surfaces, said shaft sections are juxtaposed with their interior surfaces facing one another and their side edges in abutment to form a continuous shaft having first and second ends, wherein the first end of the shaft and the second end of the shaft are secured to said bottom and overhead supports to fix the position of the shaft relative to the structural column, wherein the shaft sections are dimensioned such that said interior surfaces are spaced apart from the structural column to allow the continuous shaft to be adjusted to a variety of different positions relative to the structural column within the continuous shaft before the position of the continuous shaft is fixed;
wherein the positions of the continuous shafts are fixed such that the wrap assemblies of the row of wrap assemblies are in horizontal alignment.

29. The row column assemblies of claim 28 wherein the first end of each continuous shaft includes an integrally formed fastening cleat that is attached to one of the bottom support and the overhead support to secure the first end of each continuous shaft to the bottom support or the overhead support.

30. The assembly defined in claim 29 wherein the shaft and integrally formed fastening cleat are molded from a weatherproof plastic material.

31. The assembly defined in claim 28 wherein said shaft sections are shaped to form a shaft with a rectangular cross-section.

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