

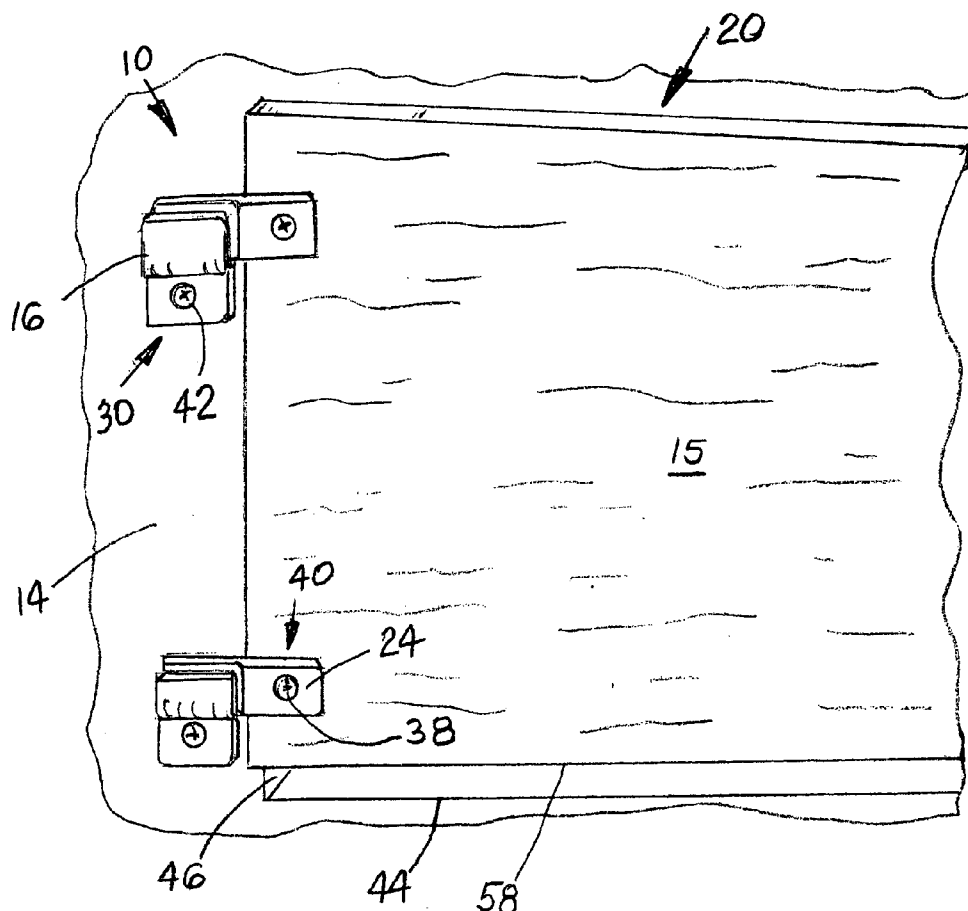


US 20070290106A1

(19) **United States**(12) **Patent Application Publication**
Spivey(10) **Pub. No.: US 2007/0290106 A1**(43) **Pub. Date: Dec. 20, 2007**(54) **PROTECTIVE COVER ASSEMBLY FOR
SHIELDING WINDOWS DURING
INCLEMENT WEATHER CONDITIONS****Publication Classification**(51) **Int. Cl.**
A47F 5/00 (2006.01)(52) **U.S. Cl.** **248/208**(76) **Inventor: Curtis Spivey, Orlando, FL (US)**(57) **ABSTRACT**

An interlocking bracket assembly for removably securing a protective covering over a window in a structure during inclement weather conditions. The assembly includes at least two Z-shaped bracket members having a first portion offset a predetermined distance from a second portion thereof, and a first fastener for mounting the first portion of each of the Z-shaped bracket members to such structure on opposite sides of such window. Also included are at least two Y-shaped bracket members having a first portion, a substantially parallel spaced second portion and a third portion. A second fastener mounts opposing sidewall portions of such covering between the first and second portions of each of the Y-shaped bracket members. The third portion of each of such Y-shaped bracket members is slidably inserted between a corresponding second portion of each of the Z-shaped bracket members and such structure for removably securing such covering over such window.

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(21) **Appl. No.: 11/803,611**(22) **Filed: May 15, 2007****Related U.S. Application Data**(60) **Provisional application No. 60/808,352, filed on May 25, 2006. Provisional application No. 60/816,026, filed on Jun. 23, 2006.**

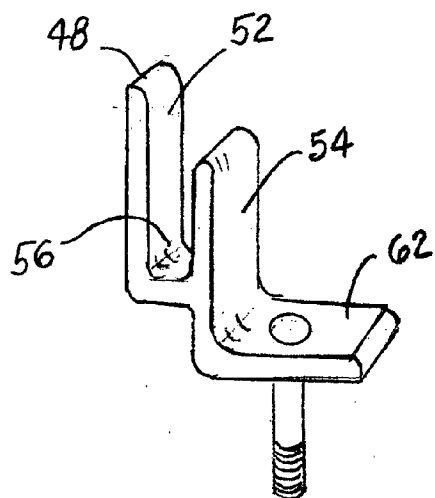


FIG. 1A

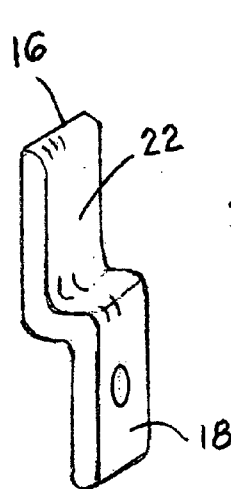


FIG. 1B

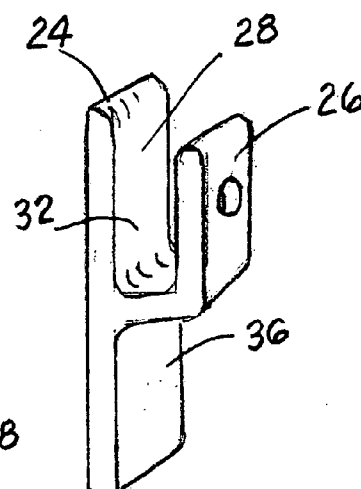


FIG. 1C

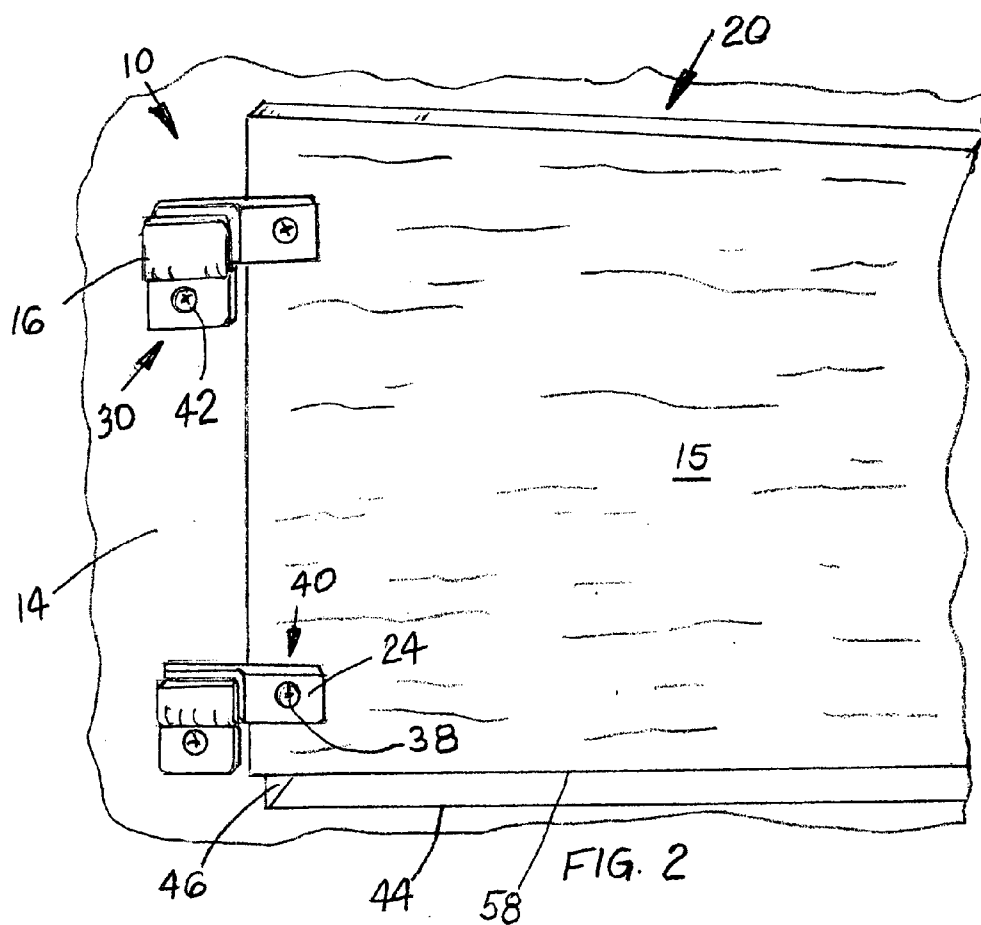
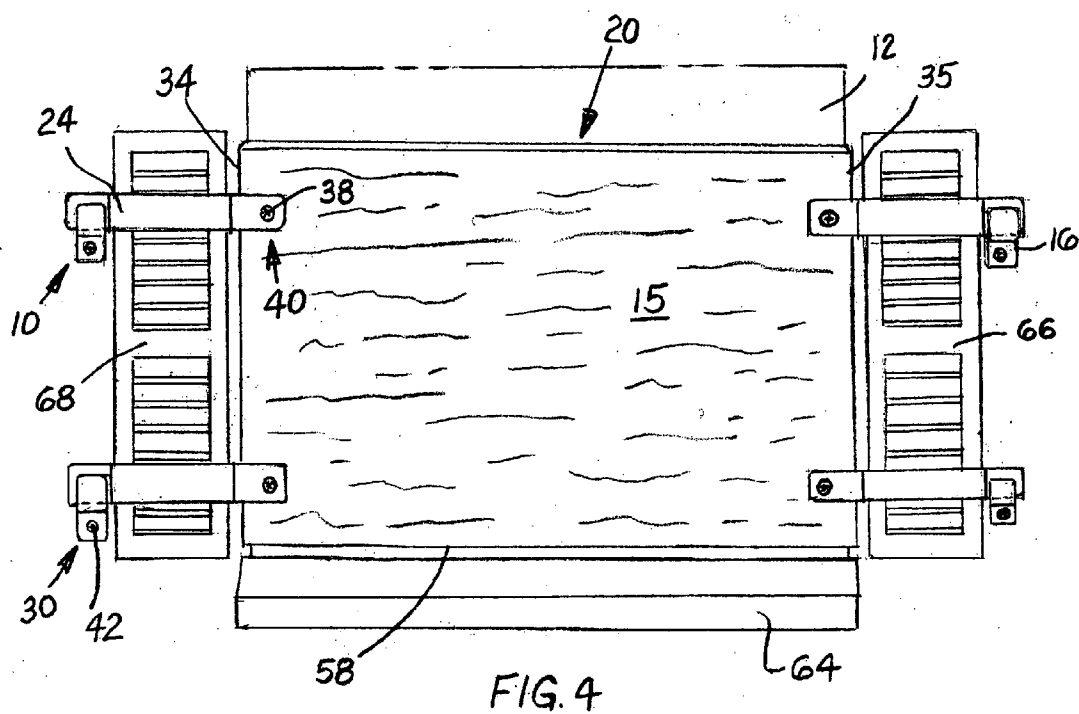
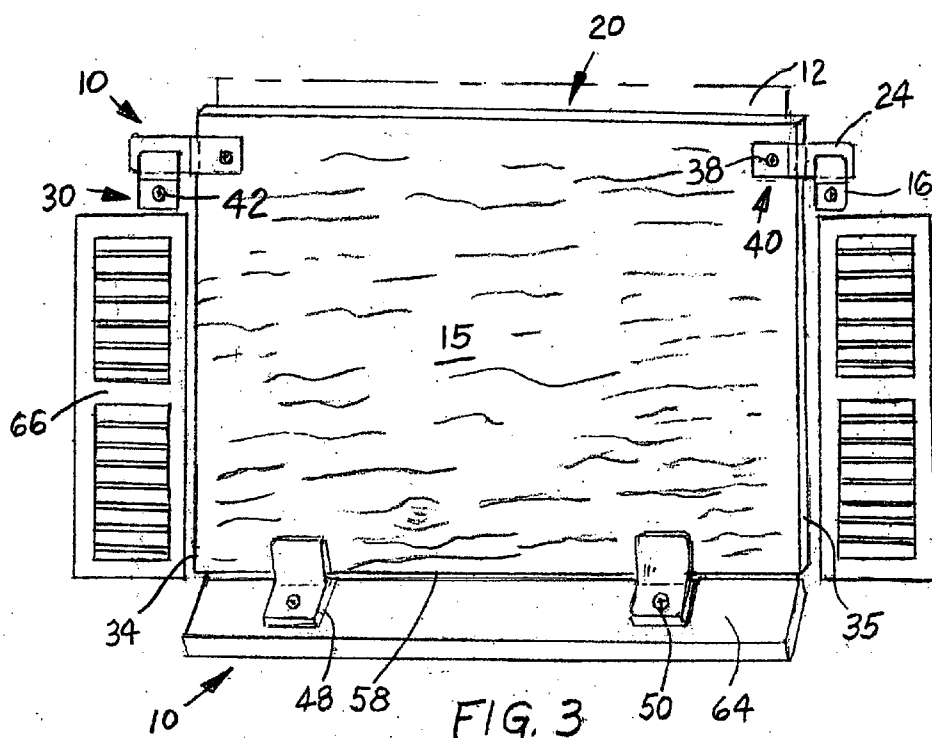
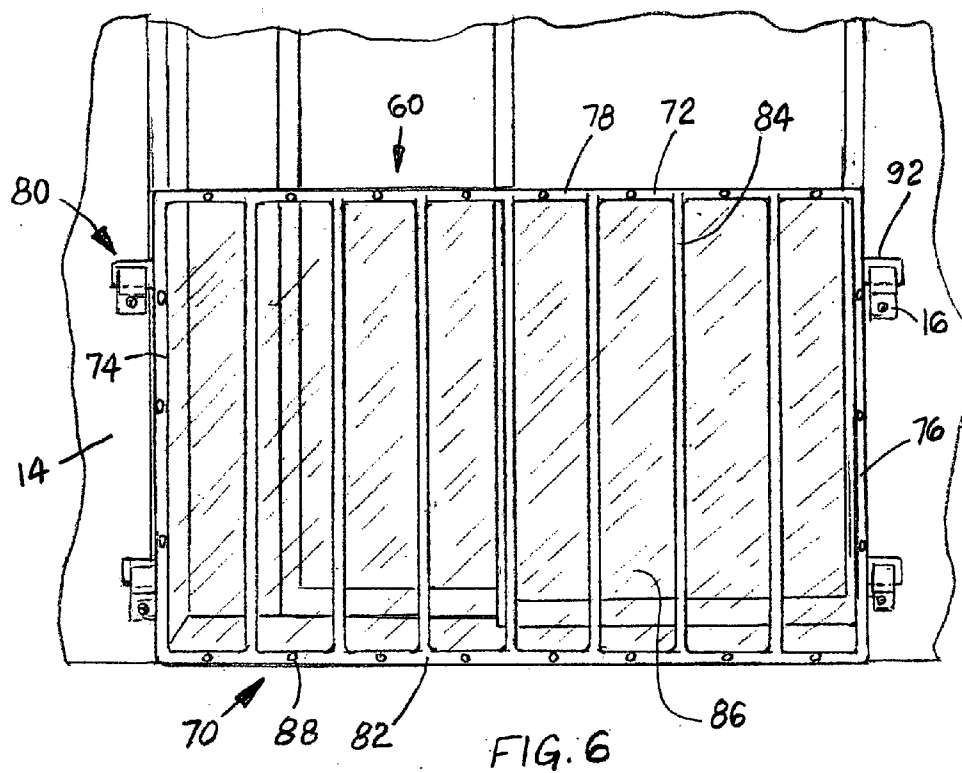
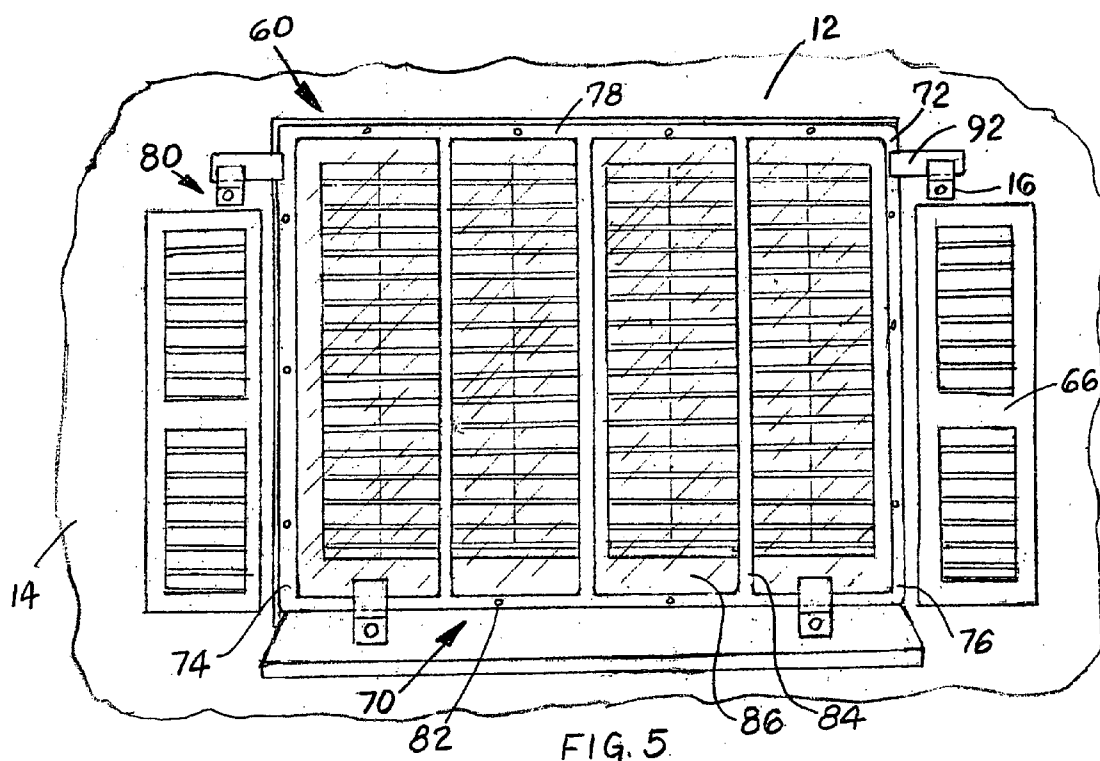


FIG. 2





PROTECTIVE COVER ASSEMBLY FOR SHIELDING WINDOWS DURING INCLEMENT WEATHER CONDITIONS

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application is closely related to and claims priority from U.S. Provisional Patent Application Ser. No. 60/808,352 filed on May 25, 2006 and U.S. Provisional Patent Application Ser. No. 60/816,026 filed on Jun. 23, 2006.

FIELD OF THE INVENTION

[0002] The present invention relates, in general, to protective coverings that are mounted over windows in a structure to shield them from high winds and debris during inclement weather conditions such as a hurricane and, more particularly, the invention relates to a reinforced, transparent protective cover assembly that shields a window from high winds and debris during a hurricane and, still more particularly, the invention relates to an interlocking bracket assembly that mounts a protective covering over a window without requiring such protective covering to be directly secured to the structure around such window.

BACKGROUND OF THE INVENTION

[0003] Protective coverings fastened over windows to shield them from high winds and debris during a hurricane, have been in use for many years prior to the conception and development of the present invention, as is generally well known in the prior art.

[0004] The number of hurricanes has been on the rise in recent years. For example, in 2005 there were a total of 27 hurricanes and over half that amount put the state of Florida and other coastal states at risk. It is a constant struggle to prepare homes and businesses in these areas for hurricane season in the months of June through November.

[0005] The most common window protection materials used during hurricane season are plywood and storm shutters. Plywood and storm shutters are secured directly to the home or building outside structure. Therefore, for those people who remain in their homes during a hurricane, there are generally few ways to escape quickly in the event of fire or other emergency situation were to occur.

[0006] In addition, the mounted plywood and storm shutters do not allow any natural light into the home. Therefore, during power outages, which often occur during such storms, flashlights and/or candles must be used for light. However, candles can be a fire hazard.

SUMMARY OF THE INVENTION

[0007] One aspect of the present invention provides an interlocking bracket assembly for removably securing a protective covering over a window in a structure that shields such window from at least one of damaging winds and flying debris during inclement weather conditions. The interlocking bracket assembly includes at least two Z-shaped bracket members made from a first predetermined material and having a first portion offset a predetermined distance from a second portion thereof. There is a first means for mounting the first portion of each of the Z-shaped bracket members to

such structure on opposite sides of such window. Further included are at least two Y-shaped bracket members made from a second predetermined material and having each of a first portion, a substantially parallel spaced second portion forming a slot for placing opposing sidewall portions of such protective covering therebetween and a third portion. There is also a second means for mounting such opposing sidewall portions of such protective covering between the first and second portions of each of the Y-shaped bracket members. The third portion of each of such Y-shaped bracket members is slidably inserted between a corresponding one of the second portion of each of the Z-shaped bracket members and such structure for removably securing such protective covering over such window.

[0008] A second aspect of the present invention provides a protective cover assembly for shielding a window in a structure from at least one of damaging winds and flying debris during inclement weather conditions. The protective cover assembly includes an outer frame member made from a first predetermined material and having each of a first side portion, a second side portion, a top portion and a bottom portion. There is a predetermined plurality of vertical members made from a second predetermined material and attached to the top and bottom portions of such outer frame member for supplying structure thereto. Further included is a transparent plastic member, having a predetermined thickness, attached to the outer frame member for shielding such window. There is also a means for securing the outer frame member to such structure over such window.

OBJECTS OF THE INVENTION

[0009] It is, therefore, one of the primary objects of the present invention to provide an interlocking bracket assembly that does not require the protective window covering to be fastened directly to the outside structure of the home or business.

[0010] Another object of the present invention is to provide an interlocking bracket assembly that after fastened allows the protective cover to be quickly and easily mounted and removed.

[0011] Still another object of the present invention is to provide an interlocking bracket assembly that enables someone to remove the protective covering from inside the home if needed.

[0012] Yet another object of the present invention is to provide a reinforced, transparent protective cover assembly that allows natural light to enter the structure.

[0013] Still yet another object of the present invention is to provide a reinforced, transparent protective cover assembly that is generally lightweight.

[0014] Even another object of the present invention is to provide a reinforced, transparent protective cover assembly that is relatively easy to mount.

[0015] In addition to the various objects and advantages of the present invention described with some degree of specificity above it should be obvious that additional objects and advantages of the present invention will become more readily apparent to those persons who are skilled in the relevant art from the following more detailed description of

the invention, particularly, when such description is taken in conjunction with the attached drawing figures and with the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] FIG. 1A is a perspective view of a double L-shaped bracket member used in conjunction with an interlocking bracket assembly of the present invention.

[0017] FIG. 1B is a perspective view of a Z-shaped bracket member used in conjunction with the interlocking bracket assembly of the present invention.

[0018] FIG. 1C is a perspective view of a Y-shaped bracket member used in conjunction with the interlocking bracket assembly of the present invention.

[0019] FIG. 2 is a plan view of the interlocking bracket assembly used to secure a protective covering over a window according to one embodiment.

[0020] FIG. 3 is a plan view of the interlocking bracket assembly used to secure a protective covering over a window where shutters are mounted on either side of the window.

[0021] FIG. 4 is a plan view of the interlocking bracket assembly used to secure a protective covering over a window according to another embodiment where shutters are mounted on either side of the window.

[0022] FIG. 5 is a plan view of a reinforced, transparent protective cover of the present invention mounted over a window using an interlocking bracket assembly wherein shutters are on either side of the window.

[0023] FIG. 6 is a plan view of a reinforced, transparent protective cover of the present invention mounted over a sliding glass door using an interlocking bracket assembly.

DETAILED DESCRIPTION OF A PRESENTLY PREFERRED AND VARIOUS ALTERNATIVE EMBODIMENTS OF THE INVENTION

[0024] Prior to proceeding to the more detailed description of the present invention it should be noted that, for the sake of clarity and understanding, identical components which have identical functions have been identified with identical reference numerals throughout the several views illustrated in the drawing figures.

[0025] Reference is now made, more particularly, to drawing FIGS. 1 through 4. Illustrated therein is an interlocking bracket assembly, generally designated 10, for removably securing a protective covering, generally designated 20, over a window 12 in a structure 14 that shields window 12 from damage including damaging winds and flying debris during inclement weather conditions, such as a hurricane or tropical storm. The protective covering 20 may be one of treated plywood and shatter resistant plastic such as polycarbonate commercially available as Lexan® plastic.

[0026] The interlocking bracket assembly 10 includes at least two Z-shaped bracket members 16 made from a predetermined material and having a first portion 18 offset a predetermined distance from a second portion 22 thereof. There is a first means, generally designated 30, for mounting first portion 18 of each of Z-shaped bracket members 16 to structure 14 on opposite sides of such window 12.

[0027] The interlocking bracket assembly 10 further includes at least two Y-shaped bracket members 24 made from a predetermined material and having each of a first portion 26, a substantially parallel spaced apart second portion 28 forming a slot 32 for placing opposing sidewall portions (34,35) of protective covering 20 therebetween and a third portion 36.

[0028] There is a second means, generally designated 40, for mounting such opposing sidewall portions (34,35) of protective covering 20 between the first and second portions (26,28) of each of the Y-shaped bracket members 24. The third portion 36 of each of such Y-shaped bracket members 24 slidably engages between a corresponding one of the second portion 22 of each of the Z-shaped bracket members 16 and such structure 14 for removably securing protective covering 20 over window 12.

[0029] Each of the Y shaped bracket member 24 and Z shaped bracket member 16 predetermined materials may be one of aluminum and steel. The mounting means (30,40) may be at least one of screws 38, stainless steel studs 42 and an adhesive.

[0030] Protective covering 20 is, preferably, mounted over window 12 about an inch higher than a bottom portion 44 of a frame 46 of window 12 so that in case of a need to evacuate structure 14 a person may place fingers under protective covering 20 and slide it up, releasing interlocking bracket assembly 10 and allowing protective covering 20 to be removed. The person can evacuate structure 14 through window 12.

[0031] In a presently preferred embodiment, the interlocking bracket assembly 10 further includes four Z-shaped bracket members 16 having two mounted to structure 14 on one side of window 12 and other two mounted to structure 14 on opposing side of window 12, and four Y-shaped bracket members 24 having two mounted on sidewall portion 34 of protective covering 20 and other two mounted on opposing sidewall portion 35 of protective covering 20.

[0032] In another embodiment, shown in FIG. 3, the interlocking bracket assembly 10 may further include two double L-shaped bracket members 48 made from a predetermined material and having each of a first portion 52, a substantially parallel spaced second portion 54 forming a slot 56 for placing a bottom sidewall portion 58 of protective covering 20 therebetween and a third portion 62. There is a third means, generally designated 50, for mounting the third portion 62 of each of the double L-shaped bracket members 48 to structure 14 on a bottom sill portion 64 thereof.

[0033] The third predetermined material used to make the double L-shaped bracket member may be one of aluminum and steel. Also, the third means 50 may be at least one of screws 38, stainless steel studs 42 and an adhesive.

[0034] If structure 14 includes a shutter 66 disposed on each side of such window 12, then each of the at least two Z-shaped bracket members 16 are mounted to such structure 14 on opposite sides of window 12 above shutters 66.

[0035] In yet another embodiment, shown in FIG. 4, when structure 14 includes a shutter 66 disposed on each side of window 12, each of the Z-shaped bracket members 16 can be mounted to structure 14 on opposite sides of such window 12 adjacent a predetermined side of shutters 66. In this

embodiment, the third portion 36 of each of the Y-shaped bracket members 24 is elongated and offset at each end thereof such that the elongated portion fits over a front face 68 of each of shutters 66.

[0036] Referring now, more particularly, to FIGS. 5 and 6 illustrated therein is a protective cover assembly, generally designated 60, for shielding window 12 in structure 14 from damage such as damaging winds and flying debris during inclement weather conditions. Protective cover assembly 60 includes outer frame member 72. Outer frame member 72 is made from a first predetermined material and has a first side portion 74, a second side portion 76, a top portion 78 and a bottom portion 82.

[0037] A plurality of vertical members 84, made from a second predetermined material, are attached to the top and bottom portions (78,82) of outer frame member 72 for support thereto. Transparent plastic member 86, having a predetermined thickness, is attached to outer frame member 72 for shielding window 12. Finally, there is a means, generally designated 70, for securing the outer frame member 72 to structure 14 over window 12.

[0038] Preferably, each of the first and second predetermined materials is one of aluminum and steel. The transparent plastic member 86 is shatter resistant. Preferably, it is a polycarbonate commercially available as Lexan® plastic having the predetermined thickness of generally about 1/8 an inch. Also, transparent plastic member 86, preferably, is attached to outer frame member 72 by one of rivets 88 and an adhesive.

[0039] The means 70 for securing such outer frame member 72 to such structure 14 over such window 12, preferably, is an interlocking bracket assembly, generally designated 80, that includes at least two Z-shaped bracket members 16 and first means 30 for mounting first portion 18 of each of the Z-shaped bracket members 16 to such structure 14 on opposite sides of such window 12.

[0040] Further included are at least two plate members 92 made from a predetermined material, first plate member 92 is attached to the first side portion 74 and second plate member 92 is attached to second side portion 76 of the outer frame member 72. Each of the plate members 92 is slidably engaged between a corresponding one of the second portion 22 of each of Z-shaped bracket members 16 and structure 14 for removably securing the protective cover assembly 60 over window 12.

[0041] The protective cover assembly 60 is, preferably, mounted over window 12 generally an inch higher than bottom portion 44 of frame 46 of window 12 so that in case of a need to evacuate such structure 14 a person may place fingers under the protective cover assembly 60 and slide it up releasing such interlocking bracket assembly 80 and allowing the protective cover assembly 60 to be removed.

[0042] The interlocking bracket assembly 80, preferably, includes four Z-shaped bracket members 16 having two mounted to structure 14 on one side of window 12 and other two mounted to structure 14 on opposing side of window 12, and four plate members 92 having two attached to the first side portion 74 of the outer frame member 72 and other two attached to the second side portion 76 of outer frame member 72.

[0043] In another embodiment, shown in FIG. 5, the interlocking bracket assembly 80 may further include two double L-shaped bracket members 48 having first portion 52, substantially parallel spaced second portion 54 forming slot 56 for placing the bottom portion 82 of such outer frame member 72 therebetween and third portion 62. Means 50 described above is used for mounting third portion 62 of each of the double L-shaped bracket members 48 to structure 14 on bottom sill portion 64 thereof.

[0044] If structure 14 includes shutter 66 disposed on each side of window 12, then each of the at least two Z-shaped bracket members 16 are mounted to structure 14 on opposite sides of window 12 above shutters 66.

[0045] While a presently preferred and various alternative embodiments of the present invention have been described in sufficient detail above to enable a person skilled in the relevant art to make and use the same it should be obvious that various other adaptations and modifications can be envisioned by those persons skilled in such art without departing from either the spirit of the invention or the scope of the appended claims.

1. An interlocking bracket assembly for removably securing a protective covering, with top, bottom and sidewall portions over a window in a structure that shields such window from damage, said interlocking bracket assembly comprising:

- (a) at least two Z-shaped bracket members made from a predetermined material and having a first portion offset a predetermined distance from a second portion thereof;
- (b) a first means for mounting said first portion of each of said Z-shaped bracket members to such structure on opposite sides of such window;
- (c) at least two Y-shaped bracket members made from a predetermined material and having each of a first portion, a substantially parallel spaced second portion forming a slot for placing opposing sidewall portions of such protective covering therebetween and a third portion; and
- (d) a second means for mounting such opposing sidewall portions of such protective covering between said first and second portions of each of said Y-shaped bracket members and said third portion of each of said Y-shaped bracket members for slidably engaging between a corresponding one of said second portion of each of said Z-shaped bracket members and such structure for removably securing such protective covering over such window.

2. An interlocking bracket assembly, according to claim 1, wherein said protective covering is one of treated plywood and shatter resistant plastic.

3. An interlocking bracket assembly, according to claim 1, wherein said Z shaped bracket and said Y shaped bracket predetermined material is one of aluminum and steel.

4. An interlocking bracket assembly, according to claim 1, wherein each of said first and second mounting means is at least one of screws, stainless steel studs and an adhesive.

5. An interlocking bracket assembly, according to claim 1, wherein such window has a frame and, wherein such protective covering is mounted over such window a predetermined distance, generally an inch above than a bottom

portion of said window frame so that a person may place fingers under such bottom portion of such protective covering and slide such protective covering up releasing said interlocking bracket assembly and allowing such protective covering to be removed.

6. An interlocking bracket assembly, according to claim 1, wherein said interlocking bracket assembly further includes four Z-shaped bracket members having two mounted to such structure on one side of such window and other two mounted to such structure on opposing side of such window, and four Y-shaped bracket members having two mounted on one sidewall portion of such protective covering and other two mounted on opposing sidewall portion of such protective covering.

7. An interlocking bracket assembly, according to claim 1, wherein such structure includes a window sill and wherein said interlocking bracket assembly further includes:

(a) two double L-shaped bracket members made from a predetermined material and having each of a first portion, a substantially parallel spaced second portion forming a slot for placing a bottom sidewall portion of such protective covering therebetween and a third portion; and

(b) a third means for mounting said third portion of each of said double L-shaped bracket members to such structure on a said bottom sill portion thereof.

8. An interlocking bracket assembly, according to claim 7, wherein such structure includes a shutter disposed on each side of such window and each of said at least two Z-shaped bracket members are mounted to such structure on opposite sides of such window above such shutters.

9. An interlocking bracket assembly, according to claim 7, wherein such structure includes a shutter disposed on each side of such window and each of said Z-shaped bracket members are mounted to such structure on opposite sides of such window adjacent a predetermined side of such shutters, said third portion of each of said Y-shaped bracket members includes an elongated portion and is offset at each end thereof such that said elongated portion fits over a front face of each of such shutters.

10. An interlocking bracket assembly, according to claim 7, wherein each of said Z-shaped, Y-shaped and double-L shaped brackets predetermined materials is one of aluminum and steel.

11. An interlocking bracket assembly, according to claim 7, wherein each of said first, second and third mounting means is at least one of screws, stainless steel studs and an adhesive.

12. A protective cover assembly for shielding a window in a structure from damage, said protective cover assembly comprising:

(a) an outer frame member made from a predetermined material and having each of a first side portion, a second side portion, a top portion and a bottom portion;

(b) a plurality of vertical members made from a predetermined material and attached to said top and bottom portions of said outer frame member;

(c) a transparent plastic member, having a predetermined thickness, attached to said outer frame member for shielding such window; and

(d) a means for securing said outer frame member to such structure over such window.

13. A protective cover assembly, according to claim 12, wherein each of said outer frame and vertical member predetermined material is one of aluminum and steel.

14. A protective cover assembly, according to claim 12, wherein said transparent plastic member is shatter resistant plastic having said predetermined thickness of generally about $\frac{1}{8}$ an inch.

15. A protective cover assembly, according to claim 12, wherein said transparent plastic member is attached to said outer frame member by one of rivets and an adhesive.

16. A protective cover assembly, according to claim 12, wherein said means for securing said outer frame member to such structure over such window includes an interlocking bracket assembly comprising:

(a) at least two Z-shaped bracket members made from a first predetermined material and having a predetermined first portion offset a predetermined distance from a second portion thereof;

(b) a first means for mounting said first portion of each of said Z-shaped bracket members to such structure on opposite sides of such window; and

(c) at least two plate members made from a second predetermined material, a first one attached to said first side portion and a second one attached to said second side portion of said outer frame member, each of said plate members for slidably engaging between a corresponding one of said second portion of each of said Z-shaped bracket members and such structure for removably securing said protective cover assembly over such window.

17. A protective cover assembly, according to claim 16, wherein such window has a frame wherein said protective cover assembly is mounted over such window a predetermined distance above the bottom portion of a said window frame generally an inch so that a person may place fingers under said protective cover assembly and slide said protective cover assembly up releasing said interlocking bracket assembly and allowing said protective cover assembly to be removed.

18. A protective cover assembly, according to claim 16, wherein said interlocking bracket assembly further includes four Z-shaped bracket members having two mounted to such structure on one side of such window and other two mounted to such structure on opposing side of such window, and four plate members having two attached to said first side portion of said outer frame member and other two attached to said second side portion of said outer frame member.

19. A protective cover assembly, according to claim 16, wherein such structure includes a sill wherein said interlocking bracket assembly further includes:

(a) two double L-shaped bracket members having a first portion, a substantially parallel spaced second portion forming a slot for placing said bottom portion of said outer frame member therebetween and a third portion; and

(b) a means for mounting said third portion of each of said double L-shaped bracket members to such structure on a said bottom sill portion thereof.

20. A protective cover assembly, according to claim 19, wherein such structure includes a shutter disposed on each side of such window and each of said at least two Z-shaped bracket members are mounted to such structure on opposite sides of such window above such shutters.