A rail clip for connecting a horizontal fence rail to a vertical fence post. The rail clip comprises a housing that is slidably engaged with a mounting base secured to the fence post. The clip further includes a L-shaped mounting bracket, a first leg of which is inserted into the housing between the mounting base and the rail clip, and a second leg which abuts the underside of the housing. An end of the rail is inserted into a chamber formed in the housing and a fastener is used to secure the second leg of the mounting bracket, the housing and the end of the rail together. The mounting bracket aids in preventing the rail and rail clip from dislodging from each other and from the fence post when a lateral force is applied to the rail.
BACKGROUND OF THE INVENTION

1. Technical Field

This invention generally relates to fencing systems. More particularly, the invention relates to a mounting clip for securing a fence rail to a fence post. Specifically, the invention relates to a mounting clip that includes an angled mounting bracket that reduces the tendency of the clip to release the end of the rail when a lateral force is applied thereto.

2. Background Information

A variety of rail clips have been proposed in the prior art for connecting vinyl fence rails to vinyl fence posts. These clips have typically included a mounting base portion that is secured to the rail and which includes a rail-end shaped receptacle to receive the end of the rail therein. One of the reasons these rail clips have been used is to provide a neat, finished connection between the two components. The clips hide incorrectly cut rail ends, evidence of previous attempts to connect the rail and post together and the apparent elimination of gaps between the connected rail ends and the posts. In order to provide a more aesthetically-pleasing device, it is common for the rail clip to be in the magnitude of one to two inches deep. Rail clips that are deeper than this tend to give the rail a cumbersome appearance.

A second consideration when connecting fence rails to fence posts is the existence of rules and regulations governing building standards. In recent years, building codes have required that the rail clip provided must ensure that the end of the rail cannot pop out of the rail clip when a lateral force is applied to the rail. In other types of rail connectors, the rail clip itself is slidably engaged with a mounting base that is first secured to the post. In this type of situation, the rail clip has tended to pop off the mounting base, thereby releasing the rail.

There is therefore a need in the art for a rail clip that will connect a horizontal rail to a vertical post and that will resist the tendency for the rail to pop out of the clip when a lateral force is applied to the rail.

SUMMARY OF THE INVENTION

The device of the present invention is a rail clip for connecting a horizontal fence rail to a vertical fence post. The rail clip comprises a housing that is slidably engaged with a mounting base secured to the fence post. The clip further includes a L-shaped mounting bracket, a first leg of which is inserted into the housing between the mounting base and the rail clip, and a second leg which abuts the underside of the housing. An end of the rail is inserted into a chamber formed in the housing and a fastener is used to secure the second leg of the mounting bracket, the housing and the end of the rail together. The mounting bracket aids in preventing the rail and rail clip from dislodging from each other and from the fence post when a lateral force is applied to the rail.

BRIEF DESCRIPTION OF THE DRAWINGS

The preferred embodiments of the invention, illustrative of the best mode in which applicant has contemplated applying the principles, are set forth in the following description and are shown in the drawings and are particularly and distinctly pointed out and set forth in the appended claims.

FIG. 1 is a perspective view of a fence rail connected to a fence post using the mounting clip of the present invention;

FIG. 2 is a partial cross-sectional bottom view of the fence rail and mounting clip of FIG. 1;

FIG. 3 is a cross-sectional side view of a fence rail being engaged with the mounting clip of the present invention;

FIG. 4 is a bottom view of the mounting clip through line 4-4 of FIG. 3;

FIG. 5 is a rear view of the mounting clip and mounting clip of the present invention through line 5-5 of FIG. 3;

FIG. 6 is cross-sectional side view of the rail being inserted into the mounting clip;

FIG. 7 is a cross-sectional side view of the rail secured to the mounting clip;

FIG. 8 is a rear view of the mounting clip engaged with the mounting clip through line 8-8 of FIG. 7;

FIG. 9 is top view through line 9-9 of FIG. 7.

DETAILED DESCRIPTION OF THE INVENTION

Referring to FIG. 1, there is shown a mounting clip in accordance with the present invention and being generally indicated at 10. Mounting clip 10 is shown in FIG. 1 securing a substantially horizontal fence rail 12 to a substantially vertical fence post 14. Both rail 12 and post 14 are preferably manufactured from vinyl or fiber composite fencing materials.

Referring to FIGS. 2-4, mounting clip 10 preferably includes a housing having a perimeter wall that comprises a top wall 16, a bottom wall 18, and side walls 20. Walls 16, 18 and 20 extend outwardly away from a rear wall 22. These walls preferably are integrally manufactured with each other by a process such as molding. The walls 16-22 surround and define an interior chamber 24 that is adapted to receive an end of rail 12 therein. Chamber 24 is complementarily sized and shaped to snugly receive the end of rail 12 therein.

Mounting clip 10 is designed to be secured to post 14 by two components, namely a mounting base 26 and a L-shaped mounting bracket 28. Base 26 is a substantially planar member having a front surface 26a and a back surface 26b and a peripheral wall 26c. As may be seen from FIGS. 3 and 5, peripheral wall 26c tapers from front surface 26a to back surface 26b. Base 26 preferably is manufactured from the same material as mounting clip 10. Bracket 28 comprises a substantially L-shaped member having a first leg 30 and a second leg 32. Preferably, bracket 28 is manufactured from a suitable metal. Mounting clip 10 is designed to engage both base 26 and bracket 28. Mounting clip 10 includes a complementary tapered first recess 34 that is configured to tightly receive base 26 therein. Mounting clip further
includes a second recess 36 that is differently shaped to first recess 34, and is configured to receive the first leg 30 of bracket 28 therein. First and second recesses preferably are substantially continuous with each other. Furthermore, second recess 36 is also substantially continuous with interior cavity 24 of mounting clip 10. An opening 38 (FIG. 4) to both of first and second recesses 34, 36 is provided in bottom wall 18 of mounting clip 10. Recess 34 preferably also has an opening 40 (FIG. 5) in rear wall 22 of mounting clip 10. Opening 40 is smaller than the back surface 26 of base 26 so that base 26 cannot pass through opening 40.

[0021] Referring to FIG. 3, mounting clip 10 is used in the following manner to secure rail 12 to post 14. Back surface 26 of base 26 is placed into abutting contact with the outer surface 14 of post 14. The first leg 30 of the L-shaped bracket 28 is placed into abutting contact with front surface 26a of base 26. Fasteners 42 are used to secure both first leg 30 of bracket 28 and base 26 to post 14. It will be understood that both the first leg 30 and base 26 preferably are provided with appropriate holes for receiving fasteners 42 there-through, so that the correct positioning of the two components is ensured. Alternatively, however, holes may be drilled through first leg 30 and base 26 during installation of mounting clip 10. When bracket 28 and base 26 are secured to post 14, the second leg 32 of bracket 28 extends outwardly away from the exterior wall of post 14 and substantially at right angles thereto.

[0022] Rear wall 22 of mounting clip 10 is then placed in abutting contact with outer surface 14a of post 14 and is slid downwardly in the direction of arrow “A” (FIGS. 3 & 5). This downward movement causes the uppermost ends of base 26 and first leg 30 of bracket 28 to enter first and second recesses 34, 36. Mounting clip 10 is moved downwardly until bottom wall 18 abuts second leg 32 of bracket 28. An end of rail 12 is then inserted into cavity 24 of mounting clip 10 (FIG. 6). Once the outermost end 12a abuts a portion of rear wall 22 of mounting clip 10 and first leg 30 of bracket 28, a second fastener 44 is inserted through hole 46 in bracket 28 and is screwed through bottom wall 18 of mounting clip 10 and into rail 12 (FIG. 7). This securesment substantially prevents rail 12 from being withdrawn from cavity 24. Furthermore, the fastener 44 also prevents rail 12 from being moved laterally and causing rail 12 and mounting clip 10 to be dislodged from base 26.

[0021] In the foregoing description, certain terms have been used for brevity, clearness, and understanding. No unnecessary limitations are to be implied therefrom beyond the requirement of the prior art because such terms are used for descriptive purposes and are intended to be broadly construed.

[0024] Moreover, the description and illustration of the invention is an example and the invention is not limited to the exact details shown or described.

1. A rail clip for securing a fence rail to a fence post; said rail clip comprising:

a housing having a perimeter wall and a rear wall which define an interior chamber that is adapted to receive an end of the rail therein;

a mounting bracket having a first leg and a second leg angled from the first leg; whereby the mounting bracket is adapted to secure the housing to the rail; and

at least one fastener for securing the mounting bracket to the housing and the rail.

2. The rail clip as defined in claim 1, wherein the perimeter wall comprises a top wall, a bottom wall and opposing side walls which extend outwardly away from the rear wall of the housing; and wherein said bottom wall defines a first aperture therein; and said first leg of said mounting bracket is receivable through said first aperture; whereby said second leg extends forwardly away from the rear wall and adjacent the bottom wall of the housing.

3. The rail clip as defined in claim 2, wherein the mounting bracket is substantially L-shaped with the second leg extending outwardly away from the first leg at an angle of ninety degrees; and when the first leg is received through the first aperture, the second leg is disposed in abutting contact with the bottom wall of the housing.

4. The rail clip as defined in claim 1, further comprising a mounting base that is engageable with the rear wall of the housing; and wherein the housing is adapted to engage the fence post by way of the mounting bracket.

5. The rail clip as defined in claim 4, further comprising at least one second fastener; and wherein said second fastener is adapted to secure the mounting base and the first leg of the mounting bracket to the fence post.

6. The rail clip as defined in claim 5, wherein the mounting base has a front surface and a rear surface and a peripheral wall extending therebetween; and wherein a first portion of the first leg of the mounting bracket extends outwardly beyond the peripheral wall of the mounting base when the first leg and mounting base are secured to the fence post.

7. The rail clip as defined in claim 6, wherein the peripheral wall of the mounting base is tapered so that the rear surface of the mounting base is smaller in dimension than is the front surface of the mounting base.

8. The rail clip as defined in claim 7, wherein the rear wall defines a second aperture therein, and said second aperture extends downwardly in the rear wall and terminates in the bottom wall; and wherein a portion of the rear wall surrounding the second aperture is tapered so as to be complementary in shape to at least a portion of the peripheral wall of the mounting base.

9. The rail clip as defined in claim 8, wherein the first aperture is sufficiently wide enough to receive both the first leg and the mounting base there through.

10. The rail clip as defined in claim 9, wherein an interior surface of the rear wall of the mounting bracket includes a recessed area surrounding the tapered portion of the rear wall; said recessed area being complementary sized and shaped to receive the first leg of the mounting bracket therein.

11. The rail clip as defined in claim 10, wherein the first leg of the mounting bracket and the mounting base frictionally engage the rear wall of the housing.

12. The rail clip as defined in claim 1, wherein the mounting bracket is manufactured from metal.

13. In combination:

a substantially vertical fence post;

a substantially horizontal fence rail;

a rail clip mounted on the fence post; and wherein the rail clip comprises:
a housing having a perimeter wall which defines a chamber that is complementary sized and shaped to receive an end of the rail therein; and wherein said perimeter wall defines a first aperture therein;

a mounting bracket having a first leg and a second leg disposed substantially at right angles to each other; wherein the first leg of the mounting bracket is received into the first aperture in the perimeter wall; and the second leg of the mounting bracket extends outwardly away from the first leg and abuts an exterior portion of the perimeter wall;

a first fastener which secures the first leg to the fence post; and

a second fastener which secures the second leg to both the portion of the perimeter wall and to the end of the fence rail.

14. The combination as defined in claim 11, wherein the mounting bracket is made from metal.

15. The combination as defined in claim 11, wherein the housing includes a rear wall that abuts the fence post and the combination further includes a mounting base having a front surface, a rear surface and a peripheral wall that tapers from the front surface to the rear surface; and wherein the mounting base is secured by the first fastener between the first leg of the mounting bracket and the fence post.

16. The combination as defined in claim 13, wherein the rear wall of the housing includes a second aperture that is configured to receive the mounting base therein, such that the rear surface of the mounting base is substantially coplanar with an exterior surface of the rear wall.

17. The combination as defined in claim 14, wherein the first aperture in the perimeter wall is configured to receive both the mounting bracket and the first leg therethrough.

18. The combination as defined in claim 15, wherein the mounting bracket and first leg frictionally engage in a recessed area within the rear wall of the housing.

19. In combination, a fence rail, a fence post and a rail clip for connecting the post and rail together; wherein the rail clip comprises a housing configured to receive an end of the rail therein; and a metallic mounting bracket that is partially received within the housing and partially extends along a portion of an outer surface of the housing; wherein the mounting bracket is secured by first fasteners to the post and by second fasteners to both the housing and the rail held therein; whereby the mounting bracket secures the housing and rail against being disengaged from each other and from the fence post when a lateral force is applied against the rail.

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