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Tubular Sign Frame

Abstract

An ultra lightweight tubular sign frame entirely made from polyvinyl chloride otherwise known as PVC. This material is very strong, yet extremely lightweight. Tubular sign frame is comprised of hollow tubing and hollow fittings that can be assembled by hand in just minutes. It's an upright design and completely free standing allowing it to be easily transported in a vehicle or stored in a garage. Tubular sign frame is designed to hold, exhibit and display two dual sided, double stacked separate sign boards one above the other. This unique design concept ensures the tubular sign frame to stand tall and achieve maximum visibility. Pre-drilled holes at the top of the frame are supplied to insert mini flags to further enhance and maximize exposure of the complete tubular sign frame. The design also has removable threaded cement-filled stands which can easily be attached or detached from the frame in seconds.

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Background/Summary

FIELD OF INVENTION

[0001] This invention relates to modular, portable display signs in general.

BACKGROUND OF INVENTION

[0002] Typical signs are used to advertise, display, exhibit, and communicate in various kinds of businesses or personal uses. Examples of such use include: a yard sale, garage sale, home for rent, home for sale, open house, etc. They come in a variety of styles, shapes, sizes, and configurations, and are also made from different materials. Such materials include metal, steel, wood, or heavy plastics. Some of these signs have their drawbacks, challenges and limitations.

[0003] For example, an A frame can be heavy, bulky, and typically sit low to the ground resulting in obstruction of its exposure and visibility. Additionally, some are known to buckle if not fully opened properly. They are also limited to displaying one sign per side. Some may have one sign and smaller rider per side.

[0004] Wood signs may also be heavy, bulky, more fragile, break easily and may also result in splinters.

[0005] Steel A frames may contain similar characteristics to a plastic frame but also tend to rust.

[0006] In addition, there are steel upright signs which need to be hammered into the ground. This specific sign may require tools in order to be installed if the soil is frozen, has pebbles or rocks. If it is not pounded deep enough into the ground, it may topple over due to a lack of stability.

[0007] The subject invention will provide a practical and permanent solution to most of the drawbacks, challenges and limitations described above with the previous sign frames.

[0008] Subject invention is a tubular sign frame made entirely from polyvinyl chloride otherwise known as PVC. The sign is strong yet ultra lightweight, water resistant and will not rust or conduct electricity.

[0009] The design will include two dual sided, double stacked sign boards, which make the sign stand tall and more visible. Two small vertical holes on the top of the sign are pre-drilled to insert mini flags giving further exposure to the sign which can be seen from afar. Removable threaded cement filled stands is another great benefit to this design. To fasten the stands together, turn them clockwise and to remove the stands, turn them counterclockwise. This also makes it simple and easy to transport in a vehicle or store in a garage. Despite the fact that the frame is ultra lightweight, the added weight of the cement-filled stands make it hold firm to the ground or floor without toppling over. The subject invention can be utilized in any type of business, for both inside or outside use.

BRIEF SUMMARY OF THE INVENTION

[0010] Said invention is a tubular sign frame entirely made from polyvinyl chloride plastic (PVC). The tubular sign frame consists of 17 separate pieces with four hollow vertical tubes. Each tube has machined sign grooves to insert various types of sign boards, such as, thin plywood, cardboard, chipboard, aluminum and corrugated plastic, which is the most commonly used for this application.

[0011] Additionally, there are three hollow horizontal support bridge tubes—one of them having two small pre-drilled vertical holes to insert a mini flag pole in each hole, thus, giving the entire tubular sign frame maximum visibility and exposure.

[0012] Lastly, there are 10 hollow fittings which connect and join all of the tubes mentioned above. The sign consists of two elbows, four 3-way T-connectors, two internal connecting sleeves and two threaded male adaptors. There are no tools required to assemble the tubular sign frame, it's all done by hand and takes minutes to do so.

[0013] This frame is ultra lightweight, very strong, sturdy, durable, weather resistant, water resistant and will not rust, corrode, or conduct electricity.

[0014] The design displays two dual sided, double stacked sign boards simultaneously, one above the other. This design ensures that the tubular frame sign stands tall and allows for maximum visibility. For example, you can insert an open house sign on the top portion of the frame and a real

estate firm sign on the bottom portion of the frame or vice versa. Another example includes a restaurant or coffee shop name on top and menu or pricing on the bottom portion. Signs historically attract customers, increase revenue and business, create jobs etc. Another great feature of this tubular sign frame are the threaded cement-filled stands. These stands easily attach or detach from the frame by simply turning clockwise to install them or turning counterclockwise to remove them, making the entire tubular sign frame easy to transport in a vehicle or store in a garage.
[0015] Each set has two stands. Each stand consists of five parts each: two end caps, two cement-filled tubes and one female threaded 3-way T-connector.
[0016] The Standard stands are optimal for indoor use in places such as: malls, stores, banks, shops, offices, car dealers, etc.
[0017] The Heavy Duty (optional) stands with a wider stance and thicker tubing are designed for outdoor use and are more resistant to wind.
[0018] This tubular sign frame is compatible with both types of stands.
[0019] When it is windy outside, the empty spaces above and below the center horizontal support bridge tube help wind flow through the frame in order to maintain stability. Round tubes and round fittings also give tubular sign frames an aerodynamic benefit by reducing drag and enhancing its stability. Under windy conditions the frame will also have some flexibility as well. Despite the fact this tubular sign frame is ultra lightweight, the added weight of the cement-filled stands aid in making it hold firmly to the ground or floor.
[0020] In conclusion, this is a completely free standing, triple support bridge designed tubular sign frame. This distinct design offers versatility, innovation, is user friendly and has unique features that no other sign frames offer.

Description

BRIEF DESCRIPTION OF THE DRAWINGS
[0021] FIG. **1** Isometric view: Tubular sign frame with heavy duty stands. Displaying open house signs, and mini flags. (Please note) Mini Flags and open house signs are for illustrative purposes only, as per present invention.
[0022] FIG. **2** Exploded view: Tubular sign frame with reference numbers. As per present invention.
[0023] FIG. **3** Top view: Standard stands (cement-filled). As per present invention.
[0024] FIG. **4** Top View: Heavy duty stands (cement-filled). As per present invention.
[0025] FIG. **5** Top View: Horizontal bridge tube with two drilled vertical holes at opposite ends of each other, connected between two 90 degree elbows each having drilled vertical holes. Both said holes aligning with each other. As per present invention.
[0026] FIG. **6** Side View: Horizontal tube with machined sign groove. As per present invention.
BRIEF DESCRIPTION OF STANDS
[0027] All stand parts are permanently bonded together with PVC cement glue and thus making all stands pre-assembled.
(Standard Stands): **001**
[0028] Each stand consists of two end caps **118** connected to two equal length tubes, cement-filled **117**. They are then horizontally inserted into both smooth sides of the 3-way T-connector **116**. The vertical female threaded side of **116** attaches or detaches to and from **115** male threaded adapter on frame by simply turning clockwise to attach or counterclockwise to detach.
(Heavy Duty Stands): **002**
[0029] Each stand consists of two end caps **124** connected to two equal length tubes, cement-filled **123**. They are then horizontally inserted into both smooth sides of the 3-way T-connector **122**. The vertical female threaded side of **122** attaches or detaches to and from **115** male threaded adapter on

frame by simply turning clockwise to attach or counterclockwise to detach.

BRIEF LIST OF REFERENCE NUMBERS PERTAINING TO THE DRAWINGS

[0030] **110**: Tubular Sign Frame (without stands) [0031] **111**: Mini flag pole vertical holes, 2-ea. On top of 90 degree elbows (**112**) [0032] **111***a*: Mini flag pole holes on top of horizontal bridge tube (**120***a*) [0033] **112**: 90 degree elbow, 2-ea (with mini flag pole vertical holes) [0034] **113**: 3-way T-connector, 4-ea. [0035] **114**: Internal connecting sleeve, 2-ea. [0036] **115**: Threaded (male) adapter, 2-ea. [0037] **116**: 3-way T-connector one side (Female) threaded, used for Standard stands, (**001**) 2-ea. [0038] **117**: Standard Stand arm tubes (cement-filled), 4-ea. [0039] **118**: End caps connected to (**117**) stand arms tubes, 4-ea. [0040] **119**: Machined sign grooves into vertical tubes (**121**),4 ea. (sign board not included) [0041] **120**: Horizontal bridge tubes, 2-ea. [0042] **120***a*: Horizontal bridge tube with mini flag pole vertical holes (**111***a*) 1-ea. [0043] **121**: Vertical tubes with machined sign grooves (**119**) 4-ea. [0044] **122**: 3-way T-connector one side (Female) threaded for Heavy Duty stands (**002**) 2-ea. [0045] **123**: Heavy Duty stand arm tubes (cement-filled), 4-ea. [0046] **124**: End caps connected to (**123**) stand arm tubes, 4-ea. [0047] **001**: Standard Stands. [0048] **002**: Heavy Duty Stands.

DETAILED DESCRIPTION OF THE INVENTION

[0049] The following will describe the essence and embodiment of a sign frame utilized in many different fields, businesses, and industries, including personal uses. Tubular sign frame is a modular, triple support bridge design. The entire frame is made from polyvinyl chloride plastic, otherwise known as PVC.

[0050] The tubular sign frame is composed of 17 individual pieces, seven hollow tubes and 10 hollow fittings. Because of its unique design it is lightweight, strong and weather resistant. It weighs less than 2.5 pounds without stands **001** and **002** and 3 pounds with two corrugated plastic sign boards also without stands **001** and **002**. Additionally, the design concept allows it to sit upright and completely free standing. It is also extremely versatile since two different types of removable stands may be attached to tubular sign frame **110**.

[0051] FIG. **1** depicts an isometric view of tubular sign frame **110** with sample open house sign boards and sample mini flags (which are being displayed for illustrative purposes only). Because these two items may vary in styles, shapes, sizes, and colors, they can easily be switched or interchanged to fit the needs and wants of an individual. Mini flag poles are simply inserted into provided vertical holes **111** which are slightly narrower than the thickness of a soft drink straw.

[0052] FIG. **2** is an exploded view of the tubular sign frame **110**, composed of 17 individual pieces within. At the top of the frame are two 45 degree angle elbows **112** with holes **111** drilled at the top side of each elbow. Horizontally inserted between both elbows is a support bridge tube **120***a* with vertical holes **111***a* drilled on opposite sides of the tube which are also aligned with drilled elbow vertical holes **111** to display two mini flags, one on each side providing maximum visibility. There are a total of four vertical tubes **121**. All tubes are of equal length and diameter and also have machined sign grooves **119** to receive and hold a sign board which will be inserted into said groove. The first two vertical tubes **121** are inserted vertically into each elbow **112**. The bottom end of each said tube **121** left and right are inserted into the center 3-way T-connectors **113**. There are a total of four 3-way T-connectors **113**, two are in the center section of the frame and two are at the bottom section of the frame. Horizontal tube **120** is then inserted between the two center 3-way T-connectors **113**. There are a total of three horizontal supporting bridge tubes. Two are described as **120** and the third one previously described as **120***a*. The next two remaining vertical tubes **121** which also contain machined sign grooves **119** are inserted between the center 3-way T-connector **113** and bottom 3-way T-connectors **113**. The third remaining bottom horizontal support bridge tube **120** is then inserted between the two bottom 3-way T-connectors **113**. Internal connecting sleeves **114** are inserted and permanently bonded into the bottom portion of 3-way T-connectors **113** both left and right side. Lastly, the smooth sides of threaded male adaptors **115** are each connected and permanently bonded to both of the internal connecting sleeves left and to the right

side of the internal connecting sleeves **114**. At this point the tubular frame is complete and either stands **001** or **002** can be attached to Tubular sign frame **110**.
[0053] FIG. **3** depicts a top view of standard stand **001** sharing the same diameter tubing as the tubular sign frame **110**. In which two stand arm tubes **117** both being of equal length and cement-filled are horizontally inserted and permanently bonded into one 3-way T-connector **116** in which the vertical side is female threaded, allowing attachment with threaded male adaptor **115**. End caps **118** are then mated and permanently bonded to stand arm tubes **117**.
[0054] FIG. **4** depicts a top view of heavy duty stand **002** which utilizes a longer and thicker diameter of tubing on said stands. Thus, translating to a greater capacity of cement, and making tubular sign frame **110** more wind resistant and stable. The two stand arm tubes **123**, both being of equal length and cement-filled are horizontally inserted and permanently bonded into one 3-way T-connector **122** in which the vertical side is female threaded, allowing attachment with threaded male adaptor **115**. End caps **124** are then mated and permanently bonded to stand arm tubes **123**. Both removable stands **001** and **002** easily attach to the tubular sign frame **110** by simply mating the internal threads of stand to external threads of **115** at the bottom of the tubular sign frame **110** and then turning it to the right in a clockwise motion until it comes to a stop. After both left and right stands are fully fastened to the frame, then both stands may be aligned making sure they are perpendicular to the tubular sign frame. This is a quick, simple, and easy procedure only taking seconds to complete. To remove either set of stands **001** or **002** simply turn to the left in a counterclockwise motion until stands separate and are fully detached from external threads **115** of the tubular sign frame **110**.
[0055] FIG. **5** depicts the top view of tubular sign frame **110**. Whereas two 45 degree elbows **112** are joined together by a horizontal support bridge tube **120***a*. Elbows **112** and horizontal support bridge tube **120***a* both have drilled vertical holes **111** and **111***a*, which are perfectly aligned with each other for mini flags to be inserted into each vertical hole. These flags ensure maximum visibility and exposure of the tubular sign frame **110**.
[0056] FIG. **6** depicts vertical tube **121**, which contains a total of four: an upper right, upper left, lower right and lower left. All four have the same diameter and length. All four have the same machined sign grooves **119**.
[0057] Different types of sign boards may be inserted into said grooves **119**, such as, thin plywood, plastic, cardboard, aluminum, particle board, or corrugated plastic, which is the most commonly used for its main characteristic of being ultra lightweight. This tubular sign frame **110** displays two dual sided, double stacked separate sign boards, potentially having four different displays simultaneously. This design allows for the frame to stand tall, maximizing its visibility and exposure. Additionally, tubular sign frame **110** is versatile, allowing users the flexibility to decide what type of sign they'd like to utilize, therefore, achieving multiple possibilities.
[0058] The tubular sign frame will also offer flexibility under mild winds. The empty spaces above and below the center horizontal support bridge tube **120** help wind flow through the tube frame, which assists in keeping it stable. Round tubes and round fittings also serve as an aerodynamic benefit, which help reduce drag and enhance stability of said tubular sign frame **110**. Despite the fact tubular sign frame **110** is ultra lightweight, the added weight of either cement-filled stands **001** or **002** make it hold firmly to ground or floor. The cement-filled stands also assist in achieving great balance and equilibrium.
[0059] Tubular sign frame **110** is hand assembled, only taking a few minutes to complete without the need of any tools. Since tubular sign frame **110** contains an all white tubing frame, any type of sign displayed will be visually enhanced.

Claims

1. A tubular sign frame apparatus able to carry, hold, retain, display and advertise by the adaptation of mini flags and sign boards. Corrugated plastic is the most commonly used for this type of application. a. A frame able to display two dual-sided sign boards, independent from each other that may be inserted into said tubular frame one above the other. b. A set of mini flags may be inserted into said tubular sign frame. c. A tubular frame structure entirely made from polyvinyl chloride plastic, thus making said frame ultra-lightweight. d. A removable cement filled set of stands are incorporated within said tubular sign frame design. Referenced stands have two types of configurations.

2. A tubular sign frame according to claim 1, wherein said sign boards are nestled between vertical frame tubes each having elongated grooves running parallel with said tubing to insert and display said sign boards.

3. A tubular sign frame according to claim 1, wherein said frame has two separate sections, an upper and a lower section, thus permitting the insertion of two dual sided separate independent standard sized boards.

4. A tubular sign frame according to claim 1, wherein vertical pre-drilled holes have been implemented in the upper section of said frame for the sole purpose of inserting mini flags.

5. A tubular sign frame according to claim 1, wherein the entire tubular frame structure is comprised of seventeen individual pieces made from polyvinyl chloride, otherwise known as PVC. Thus, achieving an ultra lightweight category.

6. A tubular sign frame according to claim 1, wherein two configurations of removable cement filled stands are incorporated within said design of tubular sign frame.

7. A tubular sign frame according to claim 6, wherein configurations of said stands consists of a standard set of stands and a second set of heavy duty stands. Both configurations of stands are cement filled and compatible with the same frame.

8. A tubular sign frame according to claim 6, wherein all stands are attachable and detachable by means of male threads of said frame and female threads within stands. Turning stands clockwise to attach or counterclockwise to detach.