

Dec. 13, 1927.

1,652,415

J. SCHENKER

UNDERGROUND SUPPORT

Filed Dec. 26, 1924

2 Sheets-Sheet 1

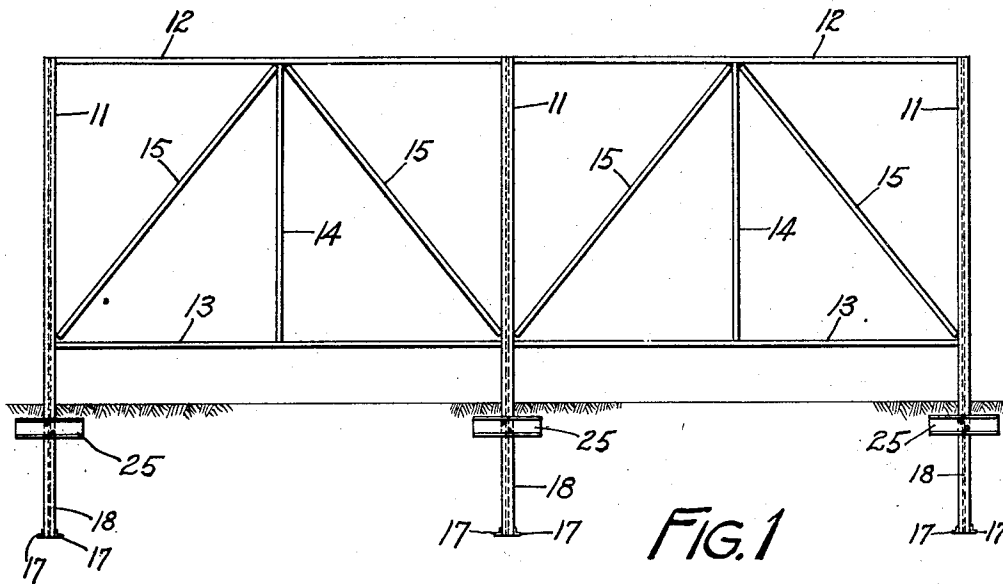


FIG. 1

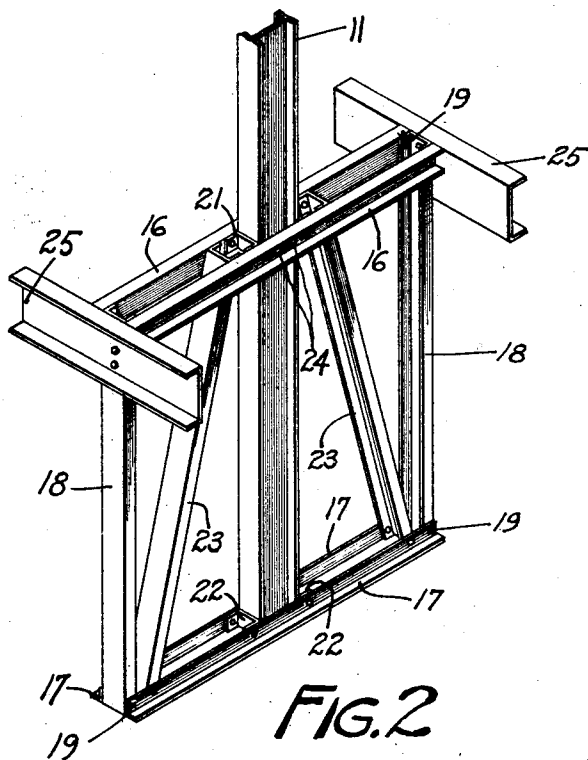


FIG. 2

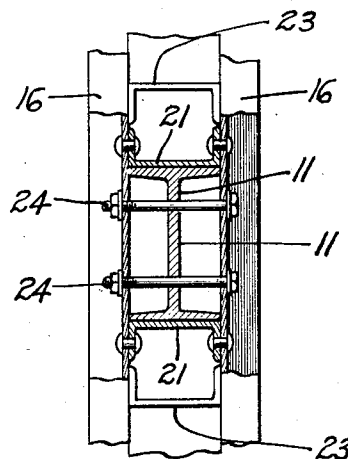


FIG. 3

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2 Sheets-Sheet 2

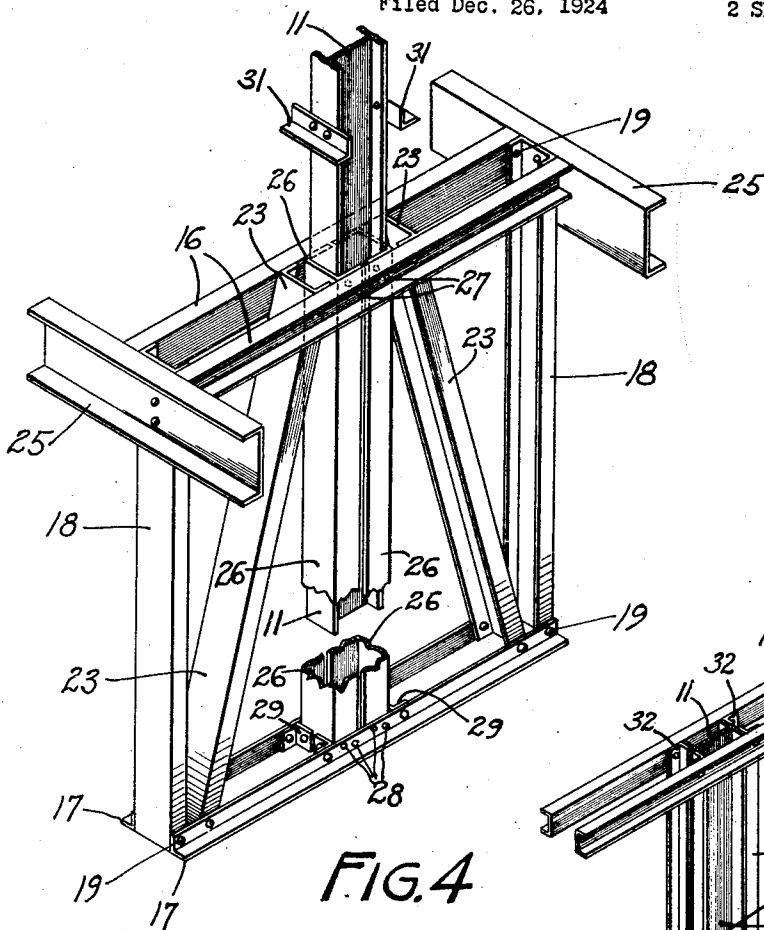


FIG. 4

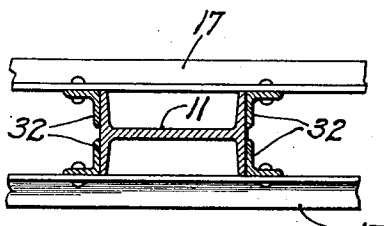


FIG. 6

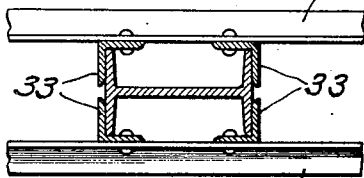


FIG. 7

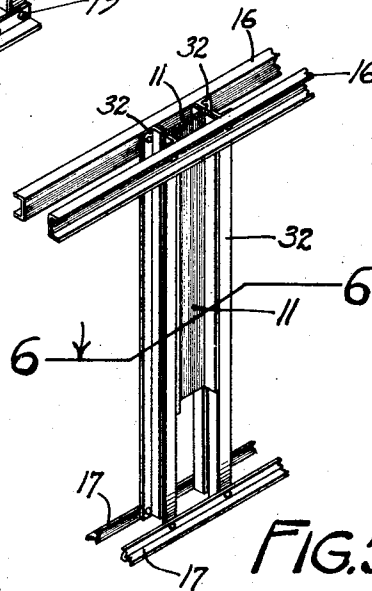


FIG. 5

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## UNITED STATES PATENT OFFICE.

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## UNDERGROUND SUPPORT.

Application filed December 26, 1924. Serial No. 758,189.

This invention relates to new and useful improvements in underground supports adapted to support upright members, such for instance, as the uprights of a sign-board of the general form shown in my prior patent, filed January 8, 1923; Patent No. 1,511,429. The form of sign-board featured in the above-mentioned patent, is of the type commonly erected along public highways, railroad rights-of-way, etc., which usually are of considerable size and, therefore, must have a very substantial foundation in order to resist the strains of high wind pressures directed against the display surface of the sign-board.

The novel underground support disclosed in this invention is preferably of the all-metal type, and is particularly designed for use to support the uprights of such a sign-board; an underground support preferably being employed for each upright of the sign-board. By thus employing a support for each upright, the sign-board may be erected in units or sections to provide a structure having one or more panels, as desired, dependent upon the amount of display surface required. Such sign-boards are often erected in agricultural districts along highways and it is, therefore, desirable that no diagonal braces be employed above the ground level to support the sign-board against wind pressures, all such bracing preferably being provided beneath the earth's surface. Owing to the very high wind pressures to which such sign-boards are often subjected, the underground supporting means must be very substantial and rugged in order to prevent the sign-board from being blown down, or, to an inclined position as a result of such wind pressures.

The primary object of this invention is particularly directed to the provision of an underground supporting means for uprights, such for instance, as may be employed to support a sign-board, and its construction is such that it will retain its normal upright supporting position regardless of wind pressures directed against the surface of the supported member, thereby providing an underground supporting means which will retain the supporting member substantially in an upright vertical position.

The object therefore, of the invention is to provide an improved underground sup-

port for uprights particularly adapted to support a sign-board.

Other objects of the invention will appear from the following description and the accompanying drawings and will be pointed out in the annexed claims.

In the drawings there has been disclosed a structure designed to carry out the objects of the invention but it is to be understood that the invention is not confined to the exact features shown as various changes may be made within the scope of the claims which follow.

In the drawings:

Figure 1 is a view showing the improved underground supporting means as used to support the uprights of a sign-board;

Figure 2 is an enlarged view in perspective, showing the underground supporting means and particularly the thrust members oppositely arranged on the structure;

Figure 3 is an enlarged detailed sectional view of the upper central portion of the supporting means shown in Figure 2;

Figure 4 is a view similar to Figure 2 showing a modified construction having a socket to demountably receive the upright supporting member;

Figure 5 is a fragmentary detailed view showing another method of demountably securing the upright supporting posts of a sign-board to the underground supporting means;

Figure 6 is a detailed sectional view on the line 6-6 of Figure 5; and

Figure 7 is a similar view showing a modified socket construction.

In the selected embodiment of the invention here shown, for purposes of disclosure, there is illustrated in Figure 1, a skeleton frame structure of a sign-board comprising the upright posts 11, which are preferably of I-beam cross section, as shown in Figures 2 and 3. The upper and lower horizontal rails 12 and 13 are preferably interposed between the upright posts 11 and have their ends suitably secured thereto. Intermediate upright members 14 are provided between the upper and lower horizontal frame members 12 and 13 to retain such members in spaced parallel relation. Diagonal braces 15 are also preferably provided, having their lower ends preferably secured to the upright posts 11 and to the lower horizontal rails

13 while the upper ends of the braces are similarly secured to the intermediate upright members 14 and to the upper horizontal rails 12, thereby providing a very rugged and substantial frame structure, comparatively light in weight. The frame structure above-described, and as shown in Figure 1, is arranged for two panels. Obviously, it may be constructed of any number of such panels or sections, or, if desired, a single section may be used dependent upon the amount of display surface required for advertising purposes.

An important feature of this invention resides in the novel means provided for supporting the sign-board in an upright position regardless of wind pressures directed against the surface of the signboard. As shown in Figure 2, such means preferably consists of a rectangular frame structure comprising the upper spaced parallel beams 16, preferably U-shaped in construction, and the lower rails 17 which preferably are of angle iron cross sections. The opposite ends of the U-shaped beams 16 and the base rails 17 are rigidly connected together by means of upright channel bar posts 18 preferably by means of rivets 19. U-shaped brackets 21 are interposed between the U-shaped beams 16 to provide a seat therebetween for the upright post 11 of the sign-board. Similar brackets 22 are likewise interposed between the base rails 17 to provide a similar seat therebetween for the lower end of the post 11 when positioned therein, as shown in Figure 2. The brackets 21 and 22 are preferably located mid-way between the terminals of the beams 16 and rail 17 thereby providing a symmetrical frame structure. Diagonal braces 23 are preferably provided on each side of the post 11 and have their upper ends secured to the beams 16 adjacent the brackets 21, and the lower ends suitably secured to the base rails 17 adjacent the upright posts 18, clearly shown in Figure 2. The upright post 11 may be secured to the supporting frame above described by such means as the bolts 24, shown in Figure 3.

The outstanding feature of this invention resides in the novel means provided for preventing the supporting frame from changing its upright sign-board supporting position when the sign-board is subjected to high wind pressures. Such means preferably consists in the provision of a thrust member 25 on each end of the supporting frame substantially in alinement with the upper U-shaped beams 16 thereof. As shown in Figure 2, these thrust members are preferably U-shaped in cross section and are of suitable length and size to provide sufficient surface to positively prevent the supporting frame from being moved edgewise when embedded in the earth, as shown in Figure 1.

When erecting the sign-board, the support-

ing frame will be positioned beneath the ground level as shown in Figure 1, and the earth will be securely tamped or packed around the frame and particularly against the opposed faces of the two thrust members. Thus, when the broad side of the signboard is subjected to a high wind, one of the thrust members 25 will be forced against the earth and as a result of its increased area it will positively prevent the upper frame beams 16 from being longitudinally moved beneath the surface of the ground. Thus, by the provision of this novel sign-board supporting means, it will be unnecessary to provide braces above the ground level to support the sign-board against high wind pressures. The sign-board and its supporting frame are preferably constructed of rust proof material, thereby providing a structure which will be very desirable and capable of long service.

Figure 4 shows a sign-board supporting frame of modified construction wherein a socket is provided for demountably receiving the upright supporting post 11 of the sign-board. As here shown, the socket is preferably formed by means of two U-shaped members 26 centrally arranged with their flanges adjacent each other between the U-shaped beams 16 and base rails 17. The upper ends of these socket members are preferably secured to the beam 16 by means of rivets 27 while their lower ends are similarly secured to the base rails 17 by rivets 28; and the angular clips 29, also riveted thereto and to the base rails. When the socket type of supporting frame is employed, as shown in Figure 4, the upright post 11 of the sign-board will preferably be provided with the stop members 31 which are adapted to engage the upper faces of the beam 16 and the socket members 26, and thereby limit the downward movement of the post. By the use of this novel form of supporting frame, the upright post may readily be removed from its supporting means for repairs or other purposes.

In Figure 5, there is shown another modified form of supporting frame adapted to demountably receive the upright post 11 of the sign-board. As here shown, and particularly in Figure 6, in place of the socket shown in Figure 4, a guideway is provided by means of the opposed angle bars 32 which are similarly mounted between the beams 16 and the base rails 17 and are secured thereto.

Figure 7 shows another modification wherein the angle bars 33, providing the guideway for the upright post 11, are arranged in reversed relation to that shown in Figure 6.

Having thus described my invention, what I claim as new and desire to secure by Letters-Patent, is:

1. In combination, a pair of anchoring frames earth-embedded, and arranged in

spaced relation and having faces of greatest area substantially parallel, each frame having horizontally disposed anchoring irons, one at the upper end of each vertical end face, crosswise thereof and projecting laterally at opposite sides of said face, and a sign frame having spaced posts, a post socketed one in each frame, said anchoring irons being substantially parallel with those faces of the sign frame of greatest area.

2. In combination, a pair of narrow anchoring frames earth-embedded, and arranged in spaced relation and having their faces of greatest area substantially parallel, each frame having a vertically disposed socket and each having horizontally disposed anchoring irons, one at the upper end of each vertically end face, and projecting laterally at opposite sides of said face, and a sign frame having spaced posts, a post engaged in each frame socket, said irons being perpendicular to the faces of greatest area of the frames.

3. In combination, a pair of frames, arranged in spaced relation, with their faces of greatest area substantially parallel, each frame having horizontally disposed projecting anchoring irons, one at the upper end of each end face, and a sign frame having spaced posts, a post secured to each frame,

the long dimension of said irons being substantially parallel with those faces of the sign frame of greatest area.

4. A framed element for the purpose set forth, comprising a structure including top and end rails and a post secured to the framed element and projecting from the top rail in perpendicular relation, and intermediate the end rails, channel irons one for each end rail arranged adjacent the ends of the top rails and adapted to be disposed horizontally when the frame is operative, and when the post is in substantially vertical position.

5. A device of the class described comprising superposed pairs of horizontal irons connected in spaced relation by vertically disposed end irons all to form a frame structure, a post secured between the pairs of horizontal irons parallel with the end irons, and channel irons as anchors secured at the top and outer side of the vertical connecting end irons, horizontally crosswise thereof, and substantially at right angles to a plane parallel with the sides of greatest area of the frame.

In witness whereof, I have hereunto set my hand this 22nd day of December 1924.

JOSEPH SCHENKER.