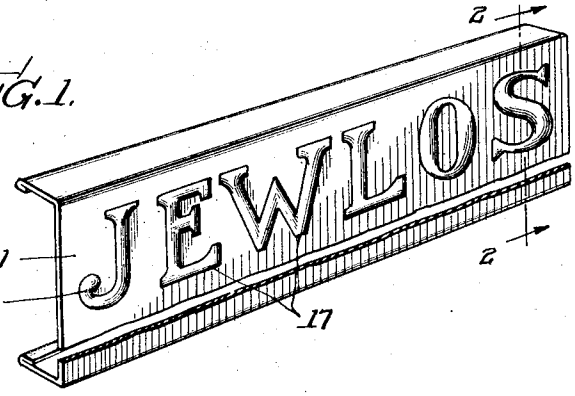
Feb. 7, 1933. J. E. WILLIAMS 1,896,131

CHANGEABLE LETTERS

Filed April 30, 1931

FIG. 1.



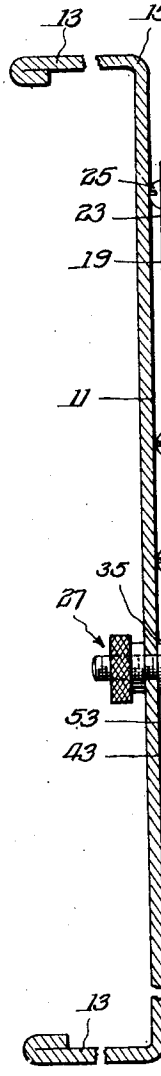


FIG. 2.

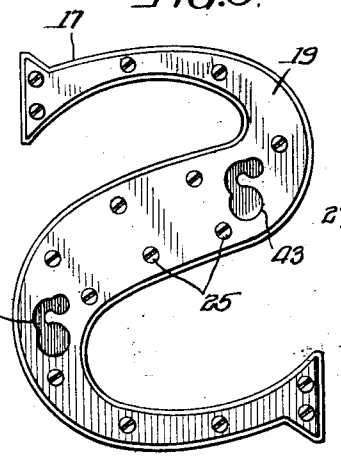


FIG. 3.

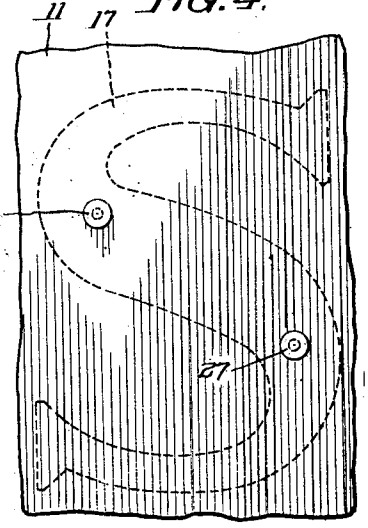


FIG. 4.

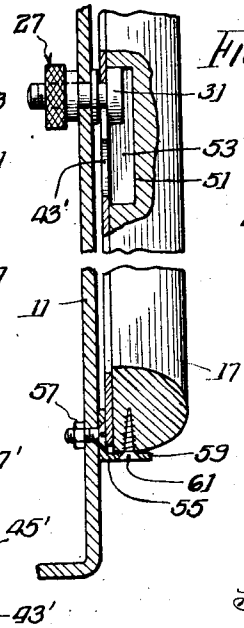


FIG. 6.

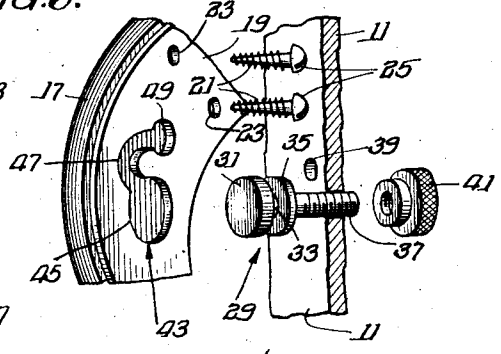


FIG. 5.

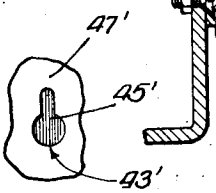


FIG. 7.

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Patented Feb. 7, 1933 1,896,131

UNITED STATES PATENT OFFICE

JOHN E. WILLIAMS, OF CHICAGO, ILLINOIS

CHANGEABLE LETTERS

Application filed April 30, 1931. Serial No. 534,005.

My present invention relates in general to signs and has more particular reference to the provision of detachable letters, which may be readily mounted on and demounted from the sign support in order to facilitate and reduce the cost of renovating the sign.

It is usually necessary to clean, repaint, and generally renovate an outdoor sign periodically, at intervals, the frequency of which depends upon the location of the sign. In large cities, where the atmosphere is comparatively dirty, it may be necessary to renovate a sign as often as twice a year in order to preserve the sightly appearance and most useful effect of the sign.

In outdoor signs, it is necessary to fix all the parts firmly to ensure that no part shall become detached from the sign assembly and drop upon and possibly injure a passerby, and in the outdoor signs heretofore provided it has been customary to firmly fix the letters upon the back ground by means of nails, brads, fastening screws, or the like in order to prevent the detachment of the letter from the sign. Whenever it is necessary to renovate such a sign, the entire sign, including the letters mounted thereon, must be taken down and returned to the factory where the letters are pried off and refinished and the back ground is repainted and the letters replaced. Such a proceeding is comparatively expensive and, in a sign of ordinary size, costs within 20% of the initial cost of the sign.

An important object of my invention therefore is to provide a sign construction which will eliminate the necessity of returning the sign to the factory for cleaning whenever renovation becomes necessary, the salient feature of the invention residing in the provision of means for detachably mounting the letters in the sign, said means being designed to permit the letters to be quickly and easily detached, yet, when the letters are assembled, to hold same firmly and rigidly in place so that the same will not become detached even during the wildest hurricane.

Another important object is to provide a sign in which the letters are supported in spaced relationship in front of the face of the letter support whereby a circulation of air may be obtained between the letters and the letter supporting member in order to prevent the accumulation of dirt and other foreign matter in the corners made by the sides of the letter and letter support backing member and further to provide means for quickly drying it if it becomes wet by the elements.

Another object of the invention is to provide a novel letter for detachably mounting in a sign, said letter being formed of readily workable material, such as wood and being provided with a backing plate, preferably of sheet material such as aluminum, whereby to attach the sign in place upon its supporting background.

Still another important object of the invention is to provide a letter for use in a sign of the class described, said letter having a perforation in its back to interlockingly receive the head of a projection formed in the letter supporting member whereby the letter may be quickly and easily demounted from the back ground and returned to the factory, or other central point for renovation, there being co-operating means formed on said back ground and on said letter whereby the latter may be interlockingly secured upon the former.

Still another important object of the invention resides in the particular configuration of the slot formed in the back of the letter for the purpose of co-operating with the projection of the letter support and wherein the configuration of the slot, in co-operating with the projection carried on the letter support, itself furnishes means for firmly locking the letter in place.

Yet another object of the invention is to provide a sign letter in which the letter may be firmly and interlockingly attached to and easily demounted from the sign by a simple rotational movement of the letter in the plane of the letter support member.

Other objects and advantages residing in the particular construction, which I employ in the device of my present invention, it is thought, will more clearly appear from the following description, which taken in connection with the accompanying drawing, dis-

closes a preferred embodiment of my invention.

Referring to the drawing:

Figure 1 is a perspective view of a portion of a sign embodying my present invention;

Figure 2 is a vertical section taken substantially along the line 2—2 in Figure 1;

Figure 3 is a back view of a letter embodying my present invention;

Figure 4 is a front view of the letter support to which the letter shown in Figure 3 is adapted to be mounted in the position illustrated in dotted lines;

Figure 5 is an exploded or assembly view illustrating in perspective, the several parts of the device; and

Figures 6 and 7 are respectively a sectional and fragmentary view illustrating a modified construction.

To illustrate my invention, I have shown on the drawing in Figure 1, a portion of a sign comprising a backing or letter supporting member 11 comprising a vertical plate preferably formed of galvanized iron and having rearwardly extending flanges 13 along its horizontal edges. The member 11 is or may be provided with a treated surface such as coat of paint, a film of enamel, or smaltz, such as is commonly used in signs of this general nature. The flanges 13 preferably make, with the vertical surface of the sign, a rounded corner 15 so that the finish will not chip from the member 11 at this point as is the case if a sharp corner is employed.

Letters 17 are mounted on the front face of the vertical portion of the member 11. These letters may be formed of any suitable material by any suitable process but I prefer to form them, as illustrated in Figure 2 of the drawing, out of a block of wood suitably fashioned to the form of the letter desired, the forward portion of the letter being rounded as illustrated and the rearward portion flattened and provided with a strip 19, preferably of sheet metal, which will not deteriorate when exposed to moisture or to the rigors of the outdoor atmosphere.

I prefer to form the plate 19 from a sheet of aluminum, the plate being punched from the sheet and configurated to conform with the general shape of the formed wooden letter. The plate is secured to the wooden portion of the letter by any suitable means, although I prefer to employ screws 21 penetrating perforations 23 formed in the plate, and taking into the body of the letter, the heads 25 of the screws remaining as projections on the rear face of the plate so that when the letter is applied against and fastened to the letter support 11, the screw heads 25 will engage the support member and will space the letter forwardly of its support sufficiently to provide a substantial air channel between the letter and its support. At the same time, the screw heads 25 are not sufficiently large to provide a shadow effect but the letter appears to be snugly fastened against its support. The channel provided between the letter and its back ground by the heads of the screws, acting as spacing means, is however, sufficient to prevent the accumulation of dirt between the letter and the back ground and also permits the sign to dry out quickly and thoroughly after a wetting.

The letters, of course, may be made from any suitable material. However, when I make them of wood and a backing plate, the wooden letter is dipped or soaked in oil in order to cure and preserve it. The letter is then preferably provided with a substantial coating of linseed oil and white lead, which strengthens the letter and adds to its durability and capacity for resisting deterioration. The back ground is then applied and secured in place by means of the screws. In order to fasten the letter detachably upon the support 11, the latter is provided with a plurality of studs 27 having heads projecting from the face of the support and the letters are provided with corresponding perforations in the backing plate to interlockingly receive the heads of the studs in order to firmly fasten the letter on the support. The studs 27 preferably comprise a forwardly projecting head 29 comprising an upper enlarged disc 31, an intermediate shank 33 and a lower collar 35 from the inner face of which projects a threaded shank 37 adapted to penetrate a perforation 39 formed in the support member 11 and a knurled nut 41 is provided for threadingly engaging upon the shank 37 behind the support member 11 to secure the stud thereto. These studs 27 are arranged in suitable positions in the support member, there being preferably two or more studs for each letter to be supported. The letters are also provided with perforations 43 in the backing plates 19 in position to interlockingly receive the heads of the studs 27.

In the embodiment illustrated in Figures 2 through 5, the perforation 43 comprising what I prefer to call the "pigtail" slot, since the same is in the form of a curly-cue comprising an enlarged, preferably circular, portion 45 of a size sufficient to permit the head of the stud to be introduced therethrough and an intermediate curved channel portion 47 entering the collar portion 45 diagonally and terminated at its opposite end in a smaller circular portion 49, which is large enough to receive the neck 33 formed in the head of the stud 27 but which is too small to permit the withdrawal of the upper portion 31 of the stud head therethrough. The curved channel portion 47 is wide enough to snugly receive the neck portion 33 of the stud head and it will be apparent that the letters 17

may be pressed bodily against the member 11 so that the heads of the proper studs will enter through the enlarged portions 45 of the slots 43, the body of the wooden portion of the letter immediately behind the slots 43 being cut away as at 51 to provide a chamber 53 for the reception of the portion 41 of the stud head behind the plate 19. If a circular motion is now imparted to the letter in the plane of the support, the neck 33 of the stud will be caused to travel through the curved channel 47 and into the small perforation 49 at the remote end thereof. When in this position, the letter will be firmly held to the support since the upper enlarged portion 31 of the stud extends behind the edge of the perforation 49 and retains the letter in place.

The parts are so formed that there is a certain amount of friction exerted by and between the heads 25 of the screws 21 which press against the forward face of the support and the head of the studs 27, which press upon the inner surface of the backing plate around the perforation 49 and this friction, together with the fact that the channel 47 is curved and is only just wide enough to receive the neck 33 of the stud head, will prevent the letter from becoming detached from its support unless it is moved in a certain circular manner. This will not occur unless a properly instructed workman imparts the necessary circular movement to the letter. No uninitiated person would be able to remove the letter except by accidentally discovering the exact movement required and no natural wind or weather condition will operate to detach the letter from assembled position, which, for all practical purposes, is permanently mounted on the support. It will thus be seen that the fastening means involves a device having the inherent capacity to lock the sign in assembled position.

In Figures 6 and 7, however, I have illustrated a modification wherein the slot 43′ for detachably engaging the head of the stud 27 does not have the curly-cue, self-locking construction present in the form illustrated in Figures 2 through 5 but comprises an enlarged portion 45′ similar to the portion 45 of the previously described form and a short narrow channel portion 47′ sufficiently wide to receive the neck portion 33 of the stud but small enough to prevent the head of the stud from being withdrawn from the neck of the slot when the head of the stud is moved into the channel 47′.

With a slot of this sort, it is merely necessary to lift the letters slightly in a straight line and, since the letter may be so shifted relatively easily by natural wind or weather conditions, I prefer to provide additional means for securing the letter in place on the sign in such a position that the neck portion 33 of the studs will be maintained in the narrower front portion 47′. These means preferably comprise a small angle member 55, one arm of which is secured to the support member 11 by any suitable fastening means such as the nut and bolt 57. The angle iron 55 is secured to the support opposite the edge of the letter when in assembled position on the support and has an upstanding arm 59 extending adjacent the side of a letter and this arm is adapted to receive a fastening member such as the screw 61, which may be inserted through the perforated portion of the arm 59 and fastened into the body of the letter to secure same in assembled position on the support and to prevent letter detaching movement with respect to the support.

When it becomes necessary to remove the sign, a properly initiated workman may quickly and easily remove all the letters by imparting the simple rotational movement necessary for the detachment of the letters. The sign support, after the removal of the letters, presents a substantially flat surface, which can quickly be washed or painted in place so that the expense of taking down the support, which is usually the largest and heaviest portion of the sign is eliminated. The letters themselves, which are not relatively bulky, may be returned to the factory for cleaning and it is not even necessary that the sign be out of commission while the letters are being returned, since duplicate letters may be mounted as quickly as the support is clean.

By employing the devices of my present invention, it is possible to quickly and easily renovate a sign in the fraction of the time and at a fraction of the expense heretofore found necessary in existing devices.

It is thought that the invention and numerous of its attendant advantages will be understood from the foregoing description and it is obvious that numerous changes may be made in the form, construction, and arrangement of the several parts without departing from the spirit or scope of my invention or sacrificing any of its attendant advantages; the form herein described being a preferred embodiment for the purpose of illustrating my invention.

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

1. In a sign, a letter comprising a formed piece of material, and a backing plate secured to said formed piece, fastening means connecting the backing plate to the formed piece and having portions extending outwardly of the backing plate to form spacing means, a letter support, to the surface of which the letter may be mounted and means to fasten said letter on said support in position such that the spacing means maintain the support and the letter in a pre-determined relative spacement for the purpose of providing an air channel therebetween.

2. In a sign, a letter comprising a formed piece of material, and a backing plate secured to said formed piece, fastening means connecting the backing plate to the formed piece and having portions extending outwardly of the backing plate to form spacing means, a letter support, to the surface of which the letter may be mounted and means to fasten said letter on said support in position such that the spacing means maintains the support and the letter in a pre-determined relative spacement for the purpose of providing an air channel therebetween, said plate having a perforation and the formed piece being hollowed out behind said perforation to form a chamber, said letter support having a stud projecting therefrom, said stud having an enlarged head in its outer most portions and an adjacent neck, said perforation having a portion large enough to permit passage of the enlarged part of the stud therethrough into said chamber, and a narrow portion into which the neck of the stud may be arranged by shifting the letter with respect to the support after said head is so assembled in said chamber.

3. In a sign, a letter comprising a formed piece of material, and a backing plate secured to said formed piece, fastening means connecting the backing plate to the formed piece and having portions extending outwardly of the backing plate to form spacing means, a letter support, to the surface of which the letter may be mounted and means to fasten said letter on said support in position such that the spacing means maintains the support and the letter in a pre-determined relative spacement for the purpose of providing an air channel therebetween, said plate having a perforation and the formed piece being hollowed out behind said perforation to form a chamber, said letter support having a stud projecting therefrom, said stud having an enlarged head in its outermost portions and an adjacent neck, said perforation having a portion large enough to permit passage of the enlarged part of the stud therethrough into said chamber and a restricted curved portion into which the neck of the stud may be positioned by shifting the letter with a circular movement with respect to the shaft after the head of the stud is so assembled in said chamber.

4. In a sign, a letter support member, a letter comprising a formed piece of material and a backing plate member secured to said formed piece, fastening means connecting the backing plate member to the formed piece and having portions extending outwardly of the backing plate to form spacing means, means to fasten said letter on said support member in position such that the spacing means maintains the support member and the letter in a predetermined relative spacement for the purpose of providing an air channel therebetween, said fastening means detachably interconnecting the backing plate member and the letter support member.

5. In a sign, a letter support member, a letter comprising a formed piece of material and a backing plate member secured to said formed piece, fastening means connecting the backing plate member to the formed piece and having portions extending outwardly of the backing plate to form spacing means, means to fasten said letter on said support member in position such that the spacing means maintains the support member and the letter in a predetermined relative spacement for the purpose of providing an air channel therebetween, said fastening means detachably interconnecting the backing plate member and the letter support member, said fastening means comprising a stud mounted on one of said members and having an enlarged head in its outermost portions and an adjacent neck adapted to enter a perforation formed in the other of said members, said perforation having a portion large enough to permit the passage of the enlarged part of the stud therethrough and a narrower portion into which the neck of the stud may be arranged by shifting the letter with respect to the support member after said head has passed through the larger portion of said perforation.

In witness whereof, I have hereunto subscribed my name.

JOHN E. WILLIAMS.