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STREET-NAME SIGNS



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In order to present technical information so that it will be of value to those who are not engineers, yet deal with technical problems, there are issued from time to time bulletins of special interest to the municipalities, industries and trades of the state. These bulletins are the result of investigations and tests; lectures or papers given during conventions or Extension Department short courses; or valuable information from other sources.

The Bureau also furnishes to the municipalities and industries special information and preliminary expert advice.

STREET NAME SIGNS

BY ROLLAND S. WALLIS.

No city or town can afford to overlook the desirability of clearly designating the names of its streets in some systematic way. That such designation of street names is a real need in every city, large or small, should be self-evident. Certainly this information, if not an actual necessity, is a decided convenience and a time saver to every person finding his way throughout a strange city, or even a strange district in his own city; and in no way can this information be given so quickly and accurately as by a good system of street-name signs, carefully designed and erected so as to best satisfy existing conditions. Especially helpful, also, to all messengers and delivery-men whose daily work involves the continued locating of different addresses, is a good system of street designation. In fact it is difficult to understand how any city possessing anything resembling a truly progressive spirit can ignore the need of giving careful attention to this important detail of civic equipment.

In addition to pointing out certain common faults in the displaying of street-names it is the object of this bulletin to illustrate and to describe as wide a variety of street-name signs in use at the present time as is consistent with space limitations. This information is given so that as much real assistance as possible may be afforded municipal authorities, as well as others who may be interested, in the selection of a type of sign to best satisfy the specific set of conditions under consideration.

In order that the information given on these pages might be as indicative as possible of the best practice of American cities as to street-name designation, circular letters were sent out to representative cities in this country. The information gathered in this way has been supplemented by selected designs and data that have appeared from time to time in municipal literature, and also by the personal ob-

servations of the writer in various cities. While it will not be practicable to give specific credit for all the valuable information so kindly given, the writer takes this means of expressing his appreciation of the uniform courtesy of the various municipal officials, manufacturers, and others who have cheerfully furnished much of the material summarized in this bulletin.

REQUIREMENTS OF STREET-NAME SIGNS

In the matter of street-name signs, as is the case with most municipal problems, conditions vary so widely that no one solution can be expected to fill the requirements of all other cities, or even of all districts in any one city. However, it may be well to summarize at this point the general qualities that should be possessed by the ideal street-name sign. These qualities may be briefly stated as (1) legibility, (2) durability, (3) attractive appearance and (4) low cost.

LEGIBILITY

Street-name signs must serve several kinds of traffic under varying conditions, and at all times the quality of legibility is of prime importance. There are at least five factors which should be considered as affecting the legibility of street-name signs, there being (1) the size and (2) the style of the lettering placed on the signs, (3) the color combinations used for the letters and background, (4) the placing of the signs and (5) their illumination at night. These points will be discussed briefly with the end in view of stating the best practice of our representative cities at the present time.

SIZE OF LETTERING

The size of the letters or characters used on street-name signs is a very important detail from the standpoint of desired legibility. In height the figures commonly used vary from 2 inches to 4 inches on ordinary signs, while an instance of the use of letters and figures 5 and 8 inches high is encountered in the case of the "flange" signs used in Cleveland, Ohio. Characters 3 inches high may be said to be standard on the very widely used enameled-iron signs, and it is questionable whether letters smaller than this should

ever be used for street-name signs. With city streets carrying an ever-increasing amount of rapidly-moving motor-driven traffic, street-name signs that can be read at a glance are essential if the needs of traffic are to be met satisfactorily.

LAYNE AVE.

- a -

LAYNE AVE.

- b -

Fig. 1.—Incorrect (a) and corrected (b) spacing of letters.

STYLE OF LETTERING

The question as to the best style or shape of the characters to be used in making up the street-name sign is customarily settled by the selection of bold letters of the type known as "block" letters. The easy-reading qualities of this style are due, in a large measure, to the fact that all parts of the letters are of uniform width and, for this reason, visible to a uniform distance. Incidentally, the question of the spacing of the letters themselves is of importance, it being a too common practice, especially in the case of the enameled-iron signs, to crowd the letters too closely together in order that a long street-name may be lettered on a sign of standard length. It should be noted, in this connection, that the custom of specifying a uniform spacing between the various letters going to make up the street-name is erroneous, and a satisfactory result is not always obtained when such a rule is observed. Compare Fig. 1a with the same wording better spaced in Fig. 1b. To secure a good appearance the open spaces formed by the adjacent outlines of each pair of letters should be kept as uniform as possible.

Wider letters and spacing than are customary have been used to bring out this principle clearly.

In most cases where the common enameled-iron sign is used, combinations of straight strokes are substituted for the curved outlines of certain letters. It is unfortunate that this practice results in a sign less legible than if the true form of the letters were retained—this being due, principally, to the fact that the various letters affected lose, to a certain extent, their identity, and tend to become too similar in appearance for easy reading at a distance.

The Roman style of letter, such as was used in the cement-concrete wall-plate shown in the front cover illustration, does not possess the easy-reading qualities of the block letter described, this disadvantage being very apparent when both styles of letters of equal heights are compared as to legibility at equal and increasing distances. Mainly for this reason the Roman style of letter is less frequently employed for street-name signs.

COLOR COMBINATIONS

If the maximum legibility is to be obtained in a street sign it is essential that strongly contrasting color combinations be used. Black and white naturally suggest themselves as meeting this requirement; and it should be stated that this combination is widely used, usually with black lettering on a white background. A combination more popular at the present time is that of white letters on a ground of royal or ultramarine blue—by far the greater portion of the common enameled-iron street-name signs being furnished in these colors. This combination of colors is very legible by day or night, and is somewhat ahead of black and white on the score of attractiveness, though it must be admitted that much of the dingy appearance of many street-name signs painted in black and white is due to the lack of permanency possessed by the pigments used rather than to the color combination.

The combination of silver gray or aluminum on a black background is particularly effective, especially after dark, and is a color combination that promises to be more widely used than at present. One example—a sign having raised

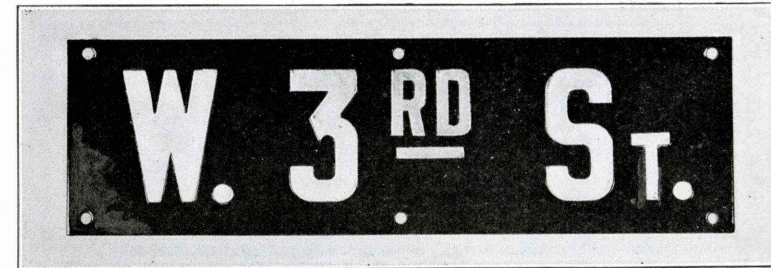


Fig. 2.—Sheet-steel letters welded to a heavy steel plate. A black-enameled sign with letters finished with aluminum bronze.

letters coated with aluminum bronze on a black enameled steel plate—is illustrated in Fig. 2. Perhaps more common is the practice of placing gilt or gold-leaf letters on a black background, another dignified and, at the same time, effective combination. The wooden signs used in Boston, illustrated in Fig. 3, are of this description.

The use of red in street-name signs is very limited, one example of its use, however, being furnished by Washington, D. C., where blown ruby glass with clear glass letters is used in one of the several types of signs employed. Some use of red letters has also been made in Washington on the ground-glass plates used in the frames of the old gas lamps. In place of these glass plates black-japanned zinc plates with letters in gold-leaf are sometimes substituted.

Washington also uses a cast-aluminum sign in which the standard and the sign are painted a slate gray with the letters outlined with gold-leaf. The very legible combination of black and yellow, especially with black letters on a yellow ground, is seldom if ever used for street-name signs, probably due to a preference for the quieter combinations mentioned.

Certain other color combinations are effected simply by the use, in making up the sign plate, of materials of contrasting color. Aluminum letters on black enameled steel plates are used in Rochester, N. Y., while in Fall River, Mass., zinc letters are used in combination with black-lacquered sign plates.

San Francisco seems to be unique in using white letters

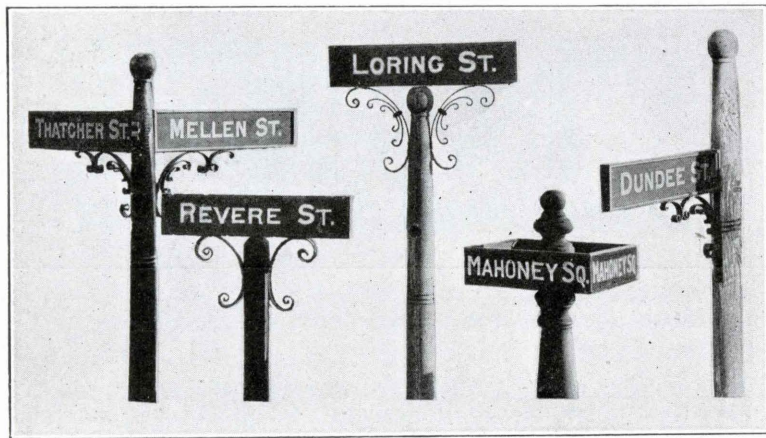


Fig. 3.—Wooden signs and sign posts. Gilt letters on a black board.

on brown-enameled plates. These are slipped into bronze frames so as to form the very neat and legible sign illustrated in Fig. 4. The cast-iron signs used in Minneapolis are painted green, together with the standard, and the letters given a coat of aluminum bronze; while in certain other cities similar signs are painted black with the letters painted white or aluminum.

PLACING OF THE SIGN

The placing of street-name signs is an important detail that must be carefully studied if the signs are to serve fully their purpose of designating the street names to the passing traffic. Various places are selected for these signs, and all have certain good points or advantages. Some places are better than others, for example, in that they display the sign to more kinds of street traffic. It should be recognized at the outset that the problems of marking business and residential streets are essentially different.

Street-name plates, or signs, are quite commonly fastened to the corners of buildings that are on or near the corners of the property at street intersections. This practice, while possessing the merits of simplicity and economy, is open to several objections. For example, the permission of the property owner is necessary and cannot always be obtained;

while much more serious is the objection that it is frequently necessary to place the signs so far back from the street that it is difficult to read them, especially at night, when, due to shadows and poor illumination, it is often almost impossible to locate them. In Columbus, Ohio, names are placed on buildings only when "not over 20 feet from the corner designated."



Fig. 4

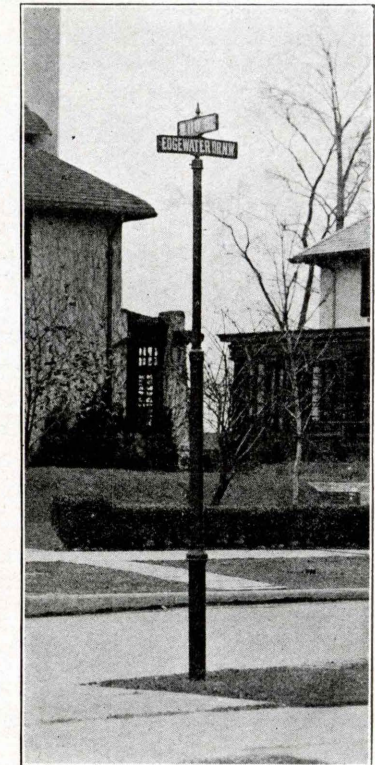


Fig. 5

Fig. 4.—Brown-enameled plates with white letters in bronze frame.
Fig. 5.—A sign post made of three sections of wrought-iron pipe.

Uniformity of placing, a feature highly desirable for the best appearance and best service to street traffic, is apt to be lacking when this plan is followed. This is due to the fact that the corner lots are not always built upon and that

the securing of a uniform height for the signs is usually impracticable. In a general way it may be stated that the custom of placing street-name signs on the corners of buildings, except in well built-up business districts, has proved unsatisfactory and is losing favor in this country. Even in the case of the business district it is questionable whether these wall-plates of various sorts are of any appreciable value other than to pedestrian traffic. When, as is frequently the case, these name-plates are partially concealed by awnings, decorations, or advertising signs, the presence of even this value is questionable. Obstructions of this sort also tend to decrease the illumination on the wall-plates, though in a general way there is usually abundant illumination available in such districts. This practice, however, is fairly common in the business districts of most of our large cities, the name-plates being placed on the buildings on all four corners at each street intersection.

Common practice in American cities favors the erection of street-name signs on posts or poles located near the curb-line at street intersections. In this position they seem to serve best all types of street traffic. The signs may be placed on special standards, or they may be on the poles which carry electric wires of various sorts, the signs being attached to these poles by bolting, nailing, or by some sort of bracket adapted to the conditions. Various schemes for supporting street-name signs on posts or poles will be described and illustrated on the pages which follow.

On business streets where the constantly increasing volume of traffic tends toward congested conditions, anything that adds to the street obstruction already existing is rightly looked upon with disfavor. Any scheme that permits one pole to serve several purposes recognizes this necessity of keeping traffic streets as clear of obstructions as is possible; and for this reason we find it almost a universal practice to place the street-name signs on trolley poles, electric-light poles, or the standards of electroliers on such streets. Many cities continue this practice from the central to the outlying districts, while others erect special standards of various sorts for these signs throughout the residential districts, even where other posts and poles are available. This prac-

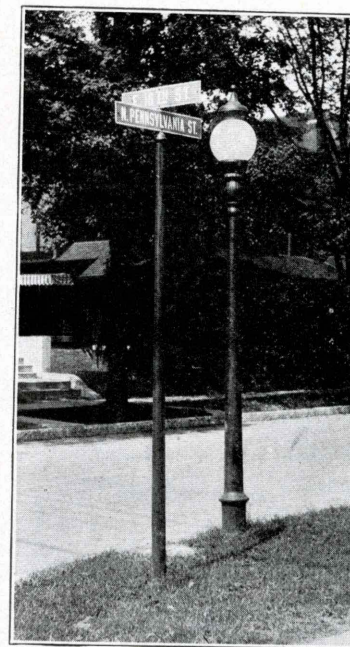


Fig. 6

Fig. 6.—Two pairs of enameled-iron signs supported on a galvanized-iron post.



Fig. 7

Fig. 7.—This electrolier illuminates a sign on which is indicated the block number as well as the street name.

tice, while of course more expensive, makes for the better appearance of the signs, a very desirable uniformity thus being obtained.

In many cities the standards used for these signs consist simply of iron pipe in sizes of three inches and smaller, two or more sizes joined with reducing couplings being used for each standard. This type is illustrated in Fig. 5. A neater appearing result may be obtained by the use of tapering galvanized-steel posts, these being obtainable in lengths up to 11 feet and costing, for this length, from about 60 cents each to about \$1.80 each, depending on the diameter and weight of the post. A 10-gauge galvanized-steel post of this description, is shown in Fig. 6. An economical post, often used where available, consists simply of lengths of second-hand boiler tubes.

All brackets and supports for signs that are to be attached to public-service poles of various sorts should be strong enough to permit the linemen, who must climb these poles at times, to stand on the supports, as they are very apt to do this even though it may not be strictly necessary.

Experience has demonstrated that double-faced signs should be placed one above the other for easy reading. When on the same level one sign tends to obstruct the other when viewed from an angle. This condition is very objectionable.

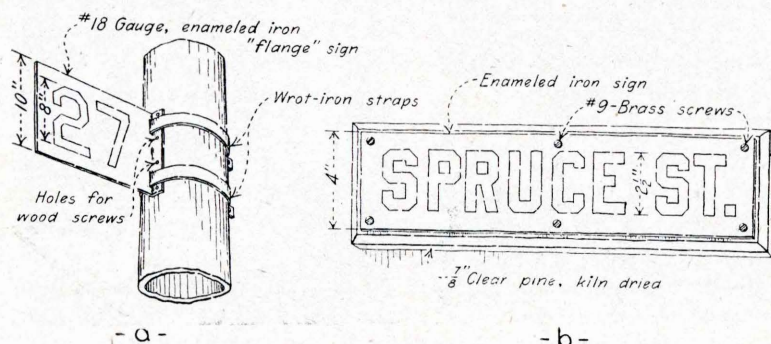


Fig. 8.—(a) Enameled-iron "flange" signs used on trolley poles. (b) Enameled-iron signs mounted on wood.

The type of sign illustrated in Fig. 8a, known as the "flange sign," has been used with satisfactory results in the city of Cleveland, Ohio. These signs are fastened to the trolley poles along street-car routes and are easily read by street-car passengers. They are fastened to wooden poles with screws or clamped to metal poles with thin metal straps as illustrated, and are used to supplement the ordinary street signs placed at the street intersections.

Often in downtown districts the street names are stenciled directly on the poles near the street intersections, the letters being arranged vertically. White paint is usually used for this lettering to contrast with the black-painted surface of the poles. This method is used throughout the business district of Chicago and, in the case of Memphis, Tenn., throughout the entire city. In the latter instance the plan has proven satisfactory and inexpensive, repainting being required about once in two years.

NUMBER OF SIGN POSTS NECESSARY

When the street-name signs are placed on posts it is exceptional to find signs on all four corners at street intersections, unless in the case of very wide streets or boulevards. In Chicago, for example, the signs are placed on one corner only, except on what are known as base-line streets from which intersecting streets are to be known as N. or S., E. or W., when signs are placed on diagonally opposite corners. Oakland, Cal., which follows the same plan in residence districts, uses two sets of signs at intersecting streets in the downtown district. Los Angeles, Cal., on important intersections uses two sets of transparent illuminated signs on two diagonally opposite corners, while the ordinary signboards are placed on the posts below the lights on the other two corners for better daylight service. Toledo, Ohio, uses two sign-posts at each street intersection, except in the business district where the signs are placed at the four corners on buildings.

Two street-name sign-posts at each intersection seem almost universally to be considered sufficient. Indeed, on minor residential streets it would hardly seem necessary, or even desirable, to use more than one set of signs if they were well placed and legible from across the street. On the other hand, the congested traffic conditions of the business streets of our larger cities frequently warrant the use of four sets of signs.

HEIGHT OF SIGNS

In summarizing the data collected relative to the height at which street-name signs are placed, considerable variation is noted. The minimum height stated was 7 feet and the maximum 12 feet, while 8 to 10 feet seemed to be the average height of the ordinary street-name sign above the ground. In general, the lower figures refer to signs placed on independent standards, a condition more commonly encountered in residential districts; while heights of 10 to 12 feet are in relatively common use for "flange" signs and those making use of available trolley poles, electroliers and other poles for support. There seems to exist a tendency to place street-name signs somewhat higher throughout

business districts, presumably so that traffic will tend less to obstruct the easy reading of the signs. Often they are placed so high that those riding in street cars on crowded streets, especially when standing, find it difficult to read them.

In residential districts it might be advisable to exceed somewhat the low height of 7 feet, or 7 feet 6 inches, in order that boys may not be tempted to jump and hang from the signs, a troublesome practice that has required the repairing of signs and posts in certain instances.

In this connection experience seems to show that the sign standards are frequently planted in the ground to an insufficient depth. A minimum depth of 3 feet is suggested, while undoubtedly 4 feet—as specified in Columbus for 4x4 wood posts—would be better. Small posts of pipe or cast-iron are best set in concrete, a depth of 2 to 3 feet being sufficient ordinarily, with 6 or 8 inches of concrete on each side of the post. Common practice provides an iron pin through the buried portion of the post, or some similar device, to prevent its turning.

Street-name signs on buildings are usually placed about as high as the top of the first story, or—as in Fall River, Mass.—at the height of the first-story windows.

SIGNS ON SIDEWALKS

Street-names are frequently set into the surface of the sidewalks near the curbing at street intersections. This plan, while a fairly convenient one for the pedestrian, is of little or no value to persons riding in the street. Hence, any sign of this sort must needs be supplemented by signs that serve this very important class of traffic. A serious objection to this plan, in northern cities, is the hiding of the lettering due to accumulations of snow and ice during the winter season. Toronto, Canada, discontinued the practice after some years trial, and, even in cities having a comparatively light snowfall, public sentiment tends to discount this plan.

Signs of this description are obtained in various ways. One plan, not popular on account of the expense, consists in setting brass or cast-iron name-plates into and flush with

the surface of the sidewalk. Such a plan has been used considerably in Charleston, S. C. Another and slightly cheaper plan usually makes use of tile or composition letters of contrasting color which are set in cement walks during construction. This has been a common practice in Indianapolis for the past four years, this city also making use of the method of stamping the street names into the walks while the concrete is green. This is commonly done with brass impression-dies, such as are furnished by firms supplying concrete-finishing tools. This method is inexpensive and gives a clear and permanent impression. Kansas City and Boston also make use of sidewalk signs, though they can hardly be said to be in general use in these cities.

SIGNS ON GUTTER PLATES

A custom that is rather unique, is that of having the street-names on the cast-iron plates used to cover the gutters at street crossings for pedestrians. Such a plan is used in Fremont, Neb., the general type of such gutter-plates being indicated in Fig. 9. Obviously this scheme is open to the same objections as have been cited for sidewalk signs.

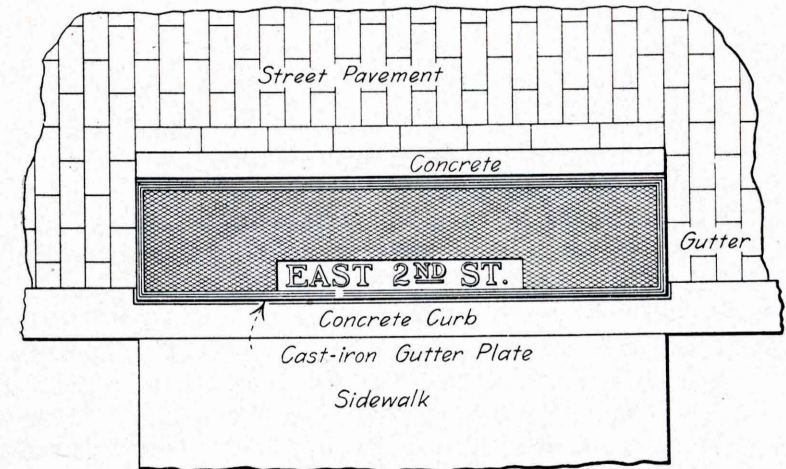


Fig. 9.—A cast-iron gutter plate carrying a street-name sign.

SIGNS ON CURBS

Street-names are frequently placed on the street curbs, now so uniformly constructed of concrete. The merits of the plan largely depend on whether the top surface or the vertical face is selected for the sign. When the names are placed on or in the top face the plan is open to the same objections as were mentioned in connection with the discussion on sidewalk signs, and the methods of marking or setting the names are the same. The usual arrangement of such signs is indicated in Fig. 10a. As in the case of the sidewalk signs, none of these methods are suited to cities that have much of the curbing already constructed.

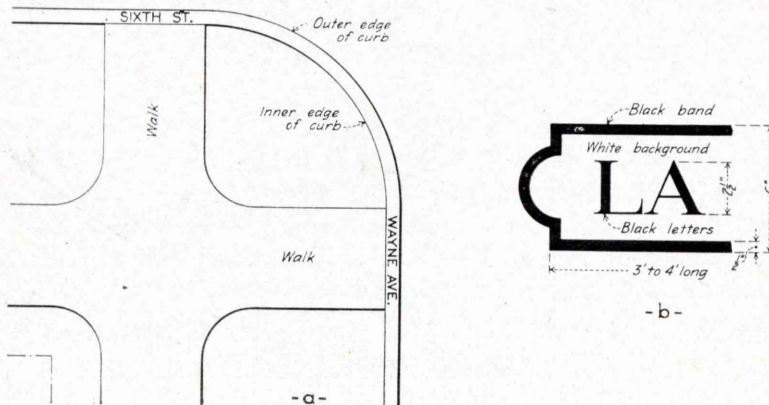


Fig. 10.

The use of the vertical face of the curb for designating street names has several advantages over the use of the top face. Signs so placed are visible in a reasonable degree to all classes of street traffic, with the possible exception of the traffic in congested down-town streets. The names are usually painted or stenciled on, and hence the method can be adopted after the curbing has been put in. The first cost is small and the cost of renewals in keeping. This type of sign, while not adapted to cities having much heavy snow-fall, is not so easily concealed by a light fall of snow as are the sidewalk signs. They are attractive in appearance and very legible.



Fig. 11.—A street-name sign painted on the vertical face of the concrete curbing. Black letters on a white ground.

Curb signs of various sorts are widely used in the cities of southern California. In Pasadena much use is made of signs of the sort shown in Fig. 11, where the letters are painted in black on a white background. In certain other cities the letters are simply stenciled on the curb without this white background, but the signs so produced are lacking in contrast and neat appearance. The more elaborate and attractive style shown in Fig. 10b and Fig. 12 is used in Ocean Park, Santa Monica and Venice, Cal. The face of the curb is first washed thoroughly, and then given two coats of white paint especially prepared for concrete. When this is dry the black letters are applied with a common stencil. The average cost of these signs is about 25 cents, and they are repainted once a year. In certain instances dark blue has been substituted for the black, but this color combination does not possess the easy-reading qualities of the black letters on the white ground. Nor does the combination of white letters on a black background result in a sign so easily read as the black on white. Painted curb signs on paved streets are well adapted to cities of suitable climate, but would be of doubtful life and value in the crowded and dirty street conditions encountered in most business districts.

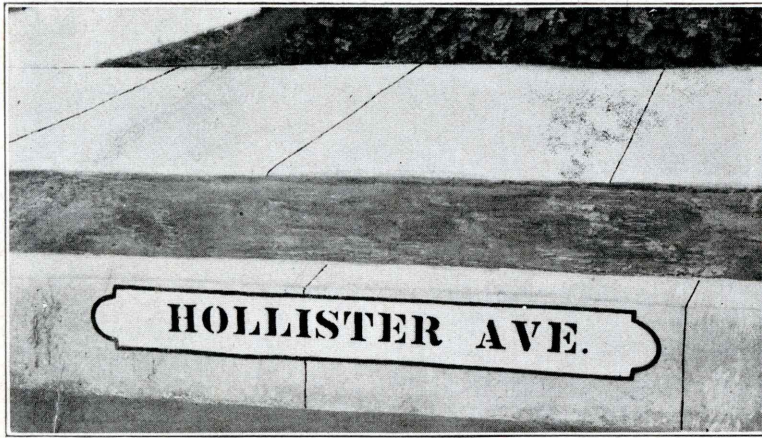


Fig. 12.—A more elaborate painted curb sign with black stenciled letters on a white ground.

The following description, from the *Engineering Record*, October 30, 1915, of another style of curb sign is of interest in this connection:

A sidewalk name plate that has recently been received with much favor in Western cities consists of an angle-iron set horizontally in the curb, one face flush with the sidewalk surface and the other flush with the vertical face of the curb. The iron is painted black and on the vertical face the name of the street appears in raised letters painted white to make them stand out. This type is never hidden underfoot and lasts indefinitely.

A new type of curb street-sign, illustrated in Fig. 13, a few of which have been installed experimentally in San Francisco and Los Angeles, shows illuminated letters in the vertical face of the curb after dark. The sign consists of a waterproof cast-iron box, 40 inches long and 8 inches high, with the front face perforated so as to outline the letters of the street name. The illumination is furnished by three tubular electric lamps connected with the city lighting system, and the box is provided with a removable top plate so that the lamps are readily accessible. The street name is very legible at night, being at the same time out of the way and well protected. This sign is, however, but little better adapted to cities where heavy snowfall is to be expected than are the other curb signs mentioned.



Fig. 13.—An illuminated street-name sign set in the curbing.

ILLUMINATION OF SIGNS

The desirability of illuminating the street-name signs at night has led to much use of transparent, translucent, or perforated signs of various types, supported in metal frames or brackets about the street lamps. This custom dates from the time when gas lamps were widely used for street illumination. During the period when streets were commonly lighted by suspended lamps the custom naturally fell into disuse, only to be taken up again when, in recent years, street illumination by incandescent lighting began to be universally adopted.

When cluster incandescent electroliers are used these illuminated signs are usually placed around the upper and central globe. With single-globe lighting units it is an inexpensive and a fairly common practice to paint or stencil the street names directly on the face of the globe, this giving a clear sign and one well illuminated at night. This practice is followed in Indianapolis, Ind., where the street names are also frequently blown in the glass globes. Fig. 7 illustrates a single-globe electrolier carrying illuminated signs and used in Pasadena, Cal.

In Fig. 14 is shown the standard type of incandescent-lamp post used in Washington, D. C., carrying a square cop-

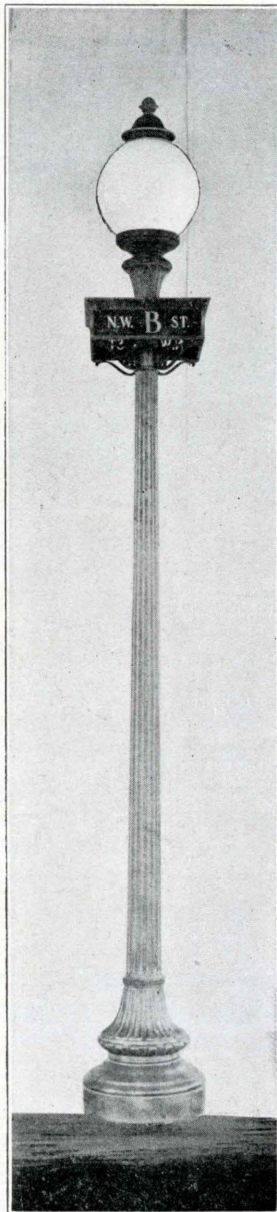


Fig. 14

Fig. 14.—Blown-glass signs. Clear letters in ruby glass held in square copper frame.

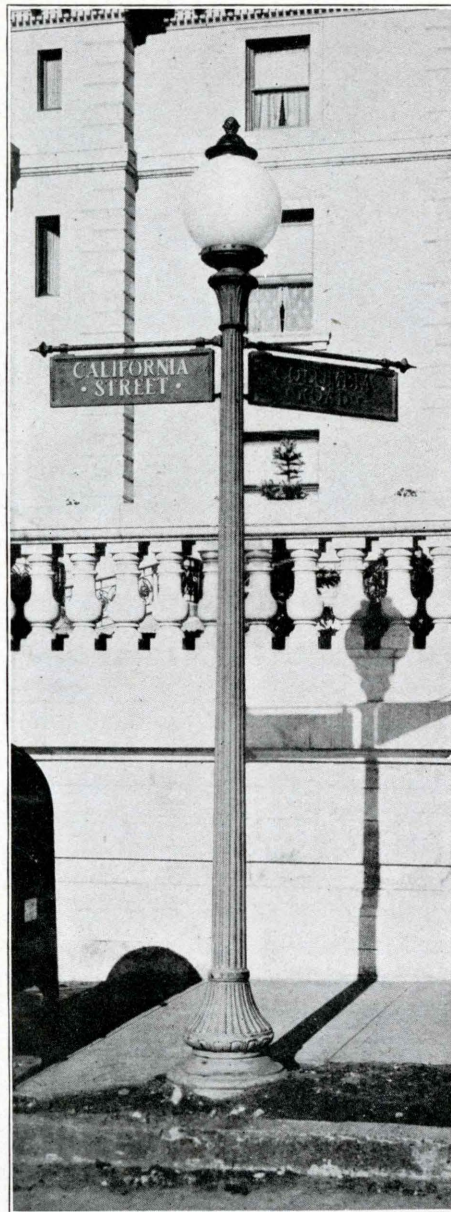


Fig. 15

Fig. 15.—Cast-aluminum sign plates with raised letters. Slate-gray posts and signs with gold-leaf letters.

per frame in which are placed blown-glass signs, these being used on all right-angle street intersections. Where the older type of arc lamp is used for lighting the street, it is customary in Washington to place square frames on the old gas-lamp posts at the street intersections, somewhat as shown in Fig. 16. The signs are, in some cases, of glass with white letters on a ruby ground; in others, of black-japanned zinc



Fig. 16

Fig. 16.—Street-name signs on "dead" gas lamp posts. Gold-leaf letters on black-japanned zinc.

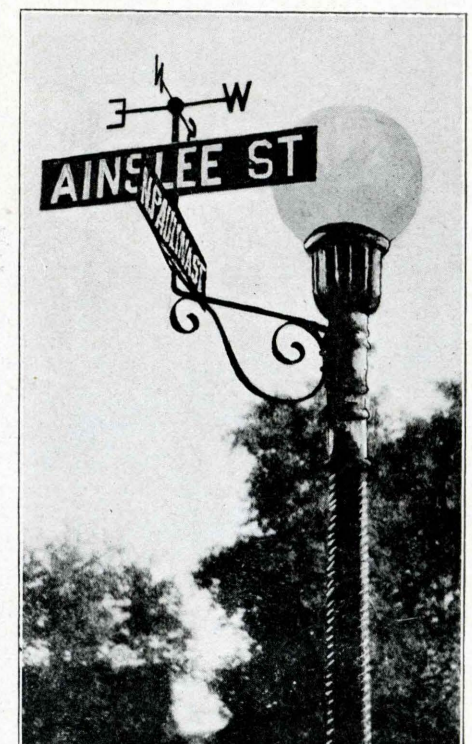


Fig. 17

Fig. 17.—A street-name sign arrangement, standard in Chicago. Two pairs of blue and white enameled-iron signs back-to-back.

with gilt letters. On the more important corners of such streets a lantern similar to that shown in Fig. 18 is used, and a small gas or electric lamp burned therein in order to illuminate the signs at night. These signs are generally of ground-glass with the letters painted in black. On all street

intersections lighted by mantle gas-lamps, signs of ground-glass are used, being placed in a square frame over the lantern.

DURABILITY AND COST

Durability is highly desirable in street-name signs. Those that require a regular renewal of paint, for example, must, for a fair portion of the time, be somewhat unsatisfactory in appearance. The question of durability is so dependent on the materials used, that it will prove convenient to divide the discussion by considering separately the nature and use of the various materials available for the manufacture of street-name signs.

Strictly speaking, there is no ideal material for this purpose, although several materials are at hand that possess qualities which make them especially well adapted to meet certain conditions of service. The cost of a material or product may be the vital advantage or disadvantage connected with its use, and for this reason and to save needless repetition, such cost data as are available will be stated in connection with each type of sign. Such costs, of course, can only serve as a general guide, as small differences in details, materials, and local conditions in a large measure determine them. The amount that a city can afford to spend for street-name signs depends on the character of the locality and of the traffic making use of its streets. As one correspondent points out, a city might feel justified in using better signs on high-class thoroughfares used by sight-seeing tourists than on unimportant streets.

WOOD SIGNS

Wood very commonly enters into the construction of street-name signs, the entire sign and support frequently being of this material. Previous to the introduction of the enameled-iron signs, wooden signs were the type commonly used, this being principally due to the low cost of the material, painting and erection—the lettering being painted or stenciled on a suitable background in contrasting color and the signs simply nailed to the support provided.



Fig. 18.—The lantern type of street-name sign used at the more important street intersections in Washington, D. C.

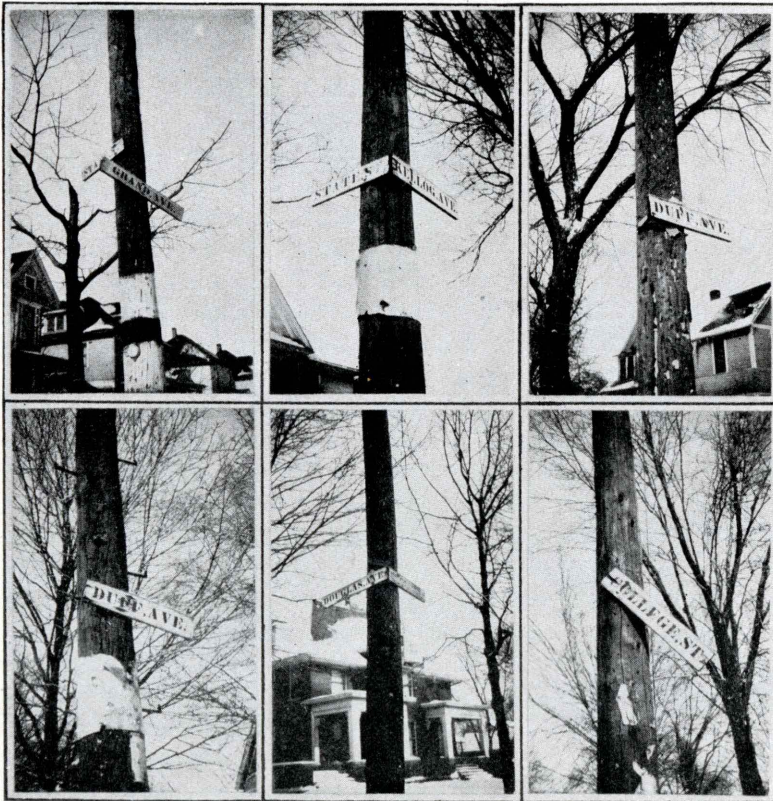


Fig. 19.—A common type of wooden street-name sign. The street names are stenciled in black on white-painted boards. Such signs are easily broken and are eventually defaced by the action of the weather on the painted wood.

While such signs, if properly erected, are fairly durable, the rapid fading of most paints soon results in an unsatisfactory sign as to legibility and general appearance. Wooden signs should not be fastened to round poles without gaining out the pole, as they are very apt to acquire a tilted position and to present something of the poor appearance of certain of the wooden signs illustrated in Fig. 19.

Cambridge, Mass., uses sign boards of pine, 8 inches wide, framed with a pine moulding. The sign and frame are painted black with the lettering laid on in gold-leaf, this

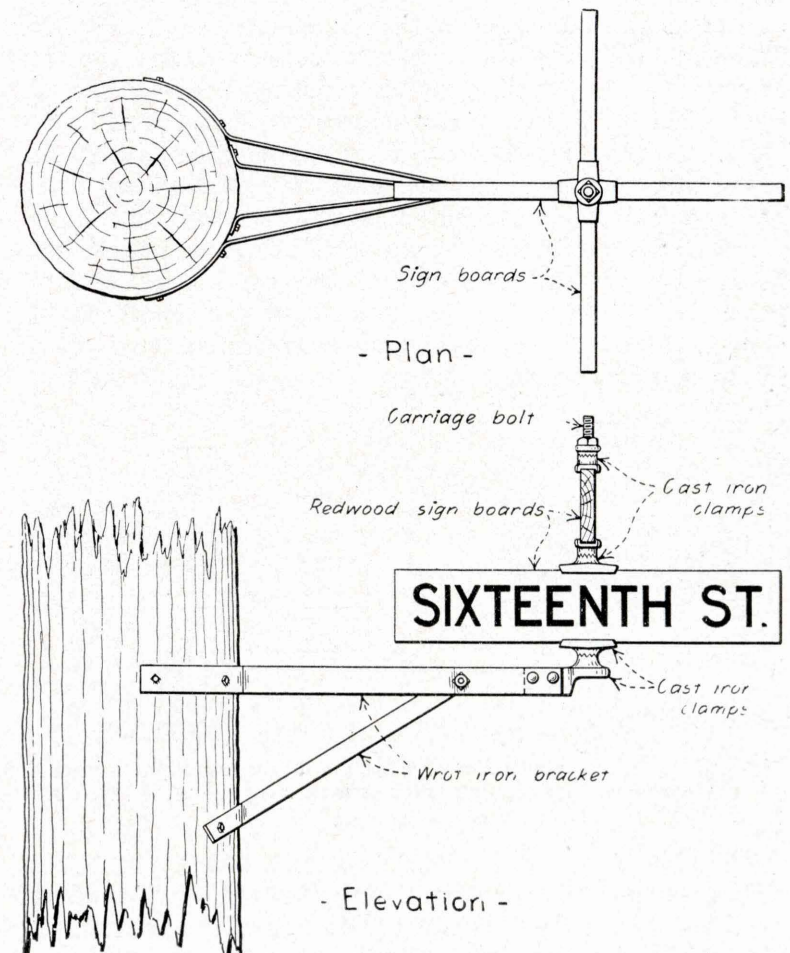


Fig. 20.—Wooden signs with bracket as used in Oakland, Cal. White letters on a blue-sanded background.

combination giving a neat and legible result. These signs cost \$1.50 each, complete, without the post.

After trying out a number of different types of street-name signs, the city of Oakland, Cal., finally adopted a painted redwood sign, 4 inches wide by 20 to 22 inches long and $\frac{3}{4}$ inch thick, the name being in white on a dark blue sanded background. These signs are commonly attached to poles and electroliers, but where these are not available a

wrought-iron pipe post is used. The general arrangement of the signs and brackets used is illustrated in Fig. 20. These wooden signs have proven most satisfactory and cost the city 20 cents each, painted, while the brackets cost 72 cents each. The signs are "kept in good condition by repainting every four or five years at a cost of 12½ cents for repainting, to which must be added the cost of taking down and replacing." On the other hand, in Providence, R. I., where the signs are now nearly all of wood, with 3-inch black letters on a white ground, the city is preparing to place about 3,000 of the enameled-iron signs, together with several hundred cast-iron box signs which are to be placed in the central district.

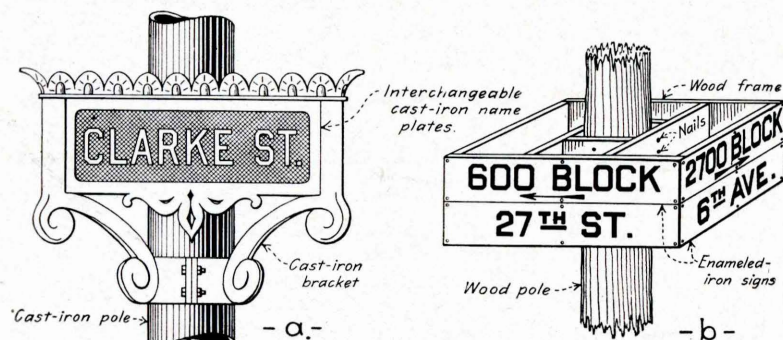


Fig. 21.—(a) A cast-iron box sign with blue letters on a white ground.
(b) A wooden box sign carrying four sets of enameled-iron signs.

Wooden street-name signs, as illustrated in Fig. 3, are used in Boston, Mass., the letters being gilt on a black-painted background. Most of these signs are lettered on both sides. The sign lettered "Mahoney Sq." in the figure carries four lettered signs and is affixed to electric light poles. The wooden posts supporting the remaining signs are standard in Boston for this purpose.

Worcester, Mass., reports the use of an ordinary white-painted sign board with black letters, while both Los Angeles, Cal., and Denver, Colo., make use of painted wooden signs on wooden supports in their outlying district and on minor residential streets not traversed by street cars.

In Fig. 19 is illustrated a type of wooden sign charac-

teristic of the practice of many of our smaller cities and, for that matter, of a surprising number of our larger cities as well. With this type of sign the street name is stenciled in black upon a white-painted board, usually with letters that are too small for easy reading.

Wood is frequently used as a backing for signs of enameled iron. In Fig. 8b is shown a sketch of one such sign, as installed in Columbus, Ohio. In Syracuse, N. Y., a wooden frame, similar to that shown in Fig. 21b, is nailed or bolted to the wooden or metal posts. On this frame are fastened four sets of enameled-iron signs.

A square wooden post carrying the names of the streets painted vertically, as in Fig. 28, has been found to be the most satisfactory sign in the outlying districts of Spokane, Wash., while a similar sign is used in Los Angeles, Cal., for corresponding districts. Posts of this sort are cheap, readily renewed or replaced, and are fairly well adapted to use on minor streets, drives, etc., as they are neat in appearance and seem to prove satisfactory under the rather severe conditions frequently encountered in outlying districts.

GLASS SIGNS

Glass has been widely used as a material for street-name signs, due principally to its transparency and the consequent ease with which matter lettered on it may be illuminated. At first this illumination was obtained by placing the glass plates carrying the street-names in metal frames supported around the gas lamps once widely used for street lighting. Four curved ground-glass signs of the style illustrated in Fig. 22 are used in connection with such gas lamps as are operated in New Haven, Conn. The signs cost 25 cents each, the letters being painted on the glass.

At the present time, as has already been noted, a similar method is being used in connection with the electroliers now so popular and desirable for the better illumination of city streets. Certain instances of this method have already been pointed out.

In Syracuse, N. Y., are used a few signs with cast-iron frames in which are placed stencils and opal glass, but these have not proved very satisfactory as the glass gets broken,



Fig. 22.—Curved ground-glass signs used around gas lamps. Black painted letters.

the signs require considerable attention, and cost about \$8.00 a set. These signs are in use on ornamental street-light poles, so arranged that the light shines through the opal glass and stencil at night.

In Washington, D. C., glass signs are used to a considerable extent, Fig. 14 illustrating a four-way sign attached to the standard incandescent lighting posts at street intersections where the streets meet at right angles, or nearly so. This sign consists of a copper frame carrying four blown-glass signs with white letters on ruby glass.

In brief, the chief advantage of glass signs is that they are easily illuminated; while against this quality stands their fragility and the high cost of constantly replacing such signs as are broken accidentally or maliciously. Glass signs seldom give satisfactory service in outlying districts.

Porcelain plates have been used to a limited extent for street-name signs, the lettering being burnt in, usually with blue letters on a white ground. This material is sometimes used instead of glass for signs to be placed around street lights so as to be illuminated at night. Such signs are said to have the advantages over glass signs of being more durable, somewhat more distinct during the day and at the same time presenting a neater appearance.

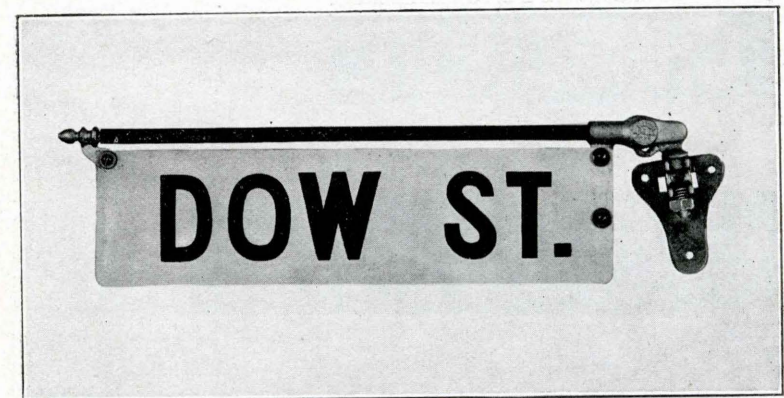


Fig. 23.—A patented sign with black letters on a white painted plate.

SHEET METAL SIGNS

In sheet-metal form, such materials as iron or soft steel, zinc, tin and aluminum are more or less commonly used in the manufacture of street-name signs. For convenience in discussion they are grouped under the above heading and will be taken up in the order mentioned.

Sheet-iron or steel, which will be referred to simply as sheet-iron, is very widely used for street-designating signs. The thickness of the metal is commonly 16 or 18-gauge, U. S. Standard. To prevent rusting it is either painted or enameled.

The painted signs are durable, and are generally reasonably satisfactory. As in the case of all painted signs, the use of first-class pigments is necessary to prevent a rapid fading of the paint used. If signs of this description are to be kept in good condition they must be repainted at regular intervals.

The painted sign used in New Haven, Conn., together with the bracket for attaching it to trolley and wooden poles throughout the city, is shown in Fig. 23. This sign costs 75 cents complete, and lasts from two to three years unless broken by those who have occasion to climb the poles.

Portland, Oregon, has recently employed a sign painter to do all city sign work, including street-name signs. These

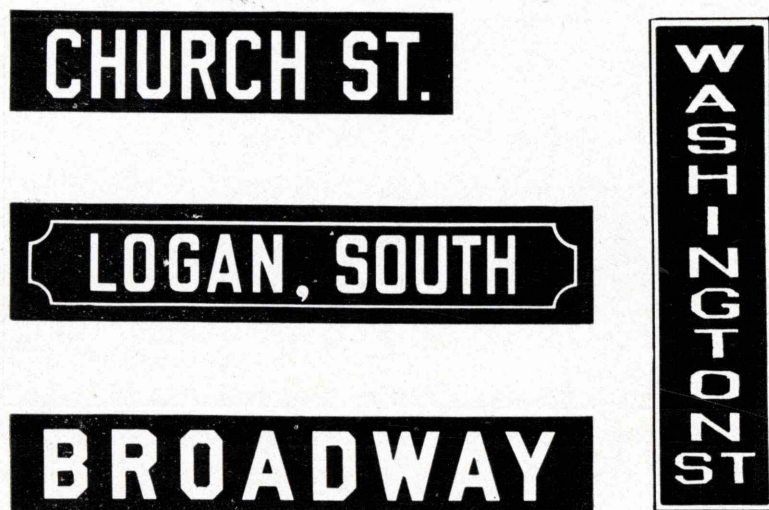


Fig. 24.—Variations in style and arrangement of lettering on enameled-iron signs.

are painted on sheet-iron at a cost of about 18 cents each for labor and materials. The signs are given two coats of white lead, and the cobalt-blue background filled in. A saving of about 9 cents per sign, over the cost of enameled-iron signs is effected; and the painted signs are held in higher favor, as they are not defaced as easily as the enameled signs in use.

The well-known enameled-iron signs are used very extensively. Of the cities from which data for this bulletin were obtained, more than one-half use enameled-iron signs, at least to some extent. When carefully made this type of sign is neat in appearance and, if not abused, very durable. Good vitreous enamels carefully applied, each coat being fused or baked on at high temperature, are essential if a satisfactory degree of permanence is to be obtained. This quality is not apt to be secured if the cheapest signs on the market are purchased, as these often develop such faults as the fading, tarnishing, chipping or peeling of the enamel, together with the rusting of all exposed metal. In some signs the blue background fades nearly white when the sign

is exposed to the weather for a few years. This is said to be due to the presence of a chemical used in the enamel to give it a high gloss.

A good enameled-iron sign, if not abused, should last easily from five to ten years in a satisfactory condition as to legibility and appearance. Reliable manufacturers usually guarantee their signs for a period of ten years against the defects mentioned in the preceding paragraph.

Best results with this type of sign are secured where they are backed with wood or some other material so that they are not easily bent and the enamel cracked and chipped, as any appreciable bending of the sign must result in breaking the enameled surface.

Single-faced enamel signs of standard width and quality range in price from 25 cents to 35 cents each, depending principally on the quantity purchased. Double-faced signs, with the name lettered on each side, may be obtained at an advance of 60 to 80% over the prices named for the single-faced signs. This latter style is seldom used, however, the commoner practice being to place two single-faced signs back-to-back. When this is done, it is customary to fasten the signs together so that the standard comes between the signs rather than across the lettering of one face. Various other brackets used in supporting enameled-iron signs are illustrated in Fig. 25.

The ten-inch number "flange" signs are used on the trolley poles in Cleveland, Ohio, and shown in sketch form in Fig. 8a, cost 50 cents each, while the eight-inch name "flange" signs, used in a similar way for the "named" streets, cost 75 cents. The iron bands for holding these enameled-iron signs cost 7 cents each.

The most serious objection to the use of enameled-iron signs rests on the fact that the vitrified enamel coating is so brittle as to crack and chip under the treatment that many signs receive. The unfortunate combination of stones and small boys usually results in a defaced and illegible sign, and for this reason enameled-iron signs frequently do not give satisfactory service in outlying districts.

Some trouble is also experienced in fastening these signs in place, the pressure applied by the holding screws fre-

quently causing the enamel to chip. With the ordinary style of sign, it is advisable to use leather, fiber or rubber washers in connection with round-headed brass screws or bolts. Nails should not be used in attaching signs of this description. The specifications used by Chicago require that the holes drilled for the screws "be cushioned with brass eyelets to prevent screws from chipping the enamel." Another device, illustrated in Fig. 25e, consists in flanging up the metal just around the screw holes. This is claimed to permit the screws to bear firmly against the metal without cracking or chipping the enamel.

The street-name signs used in Colorado Springs, Colorado, "consist of a metal plate five inches in width and of varying length, to accommodate the different number of letters. To these plates, which are painted black, are attached, by punching and brazing, gray galvanized letters. These are bolted to a two and one-half inch gas pipe, which is set in a block of concrete one foot square and two feet deep. This makes a satisfactory sign, inasmuch as the letters stand out clearly by day or night."

Strips of sheet zinc, with the letters of the street-name perforated or punched out, are sometimes employed to replace the glass signs used around street lamps, this practice giving fairly satisfactory results as to legibility with little cost of upkeep as compared with the renewal of the glass signs. This plan, of course, carries with it the objection that a certain amount of light is cut off by the opaque metal.

Letters cut from sheet zinc, tacked to black-painted wooden strips, or brazed, riveted or wired to lacquered or painted metal plates, are used in certain cities. In Fall River, Mass., for example, these letters are wired to black-lacquered plates. Such signs are easily and quickly worked up into any desired combination. Black-japanned zinc strips with gilt letters are used on "dead" gas-lamp posts in Washington, after the manner illustrated in Fig. 16.

Street-name signs of tin are seldom used. In Washington, D. C., however, some use has been made of this material to replace ground-glass signs. These signs are japanned black with letters of gold-leaf.

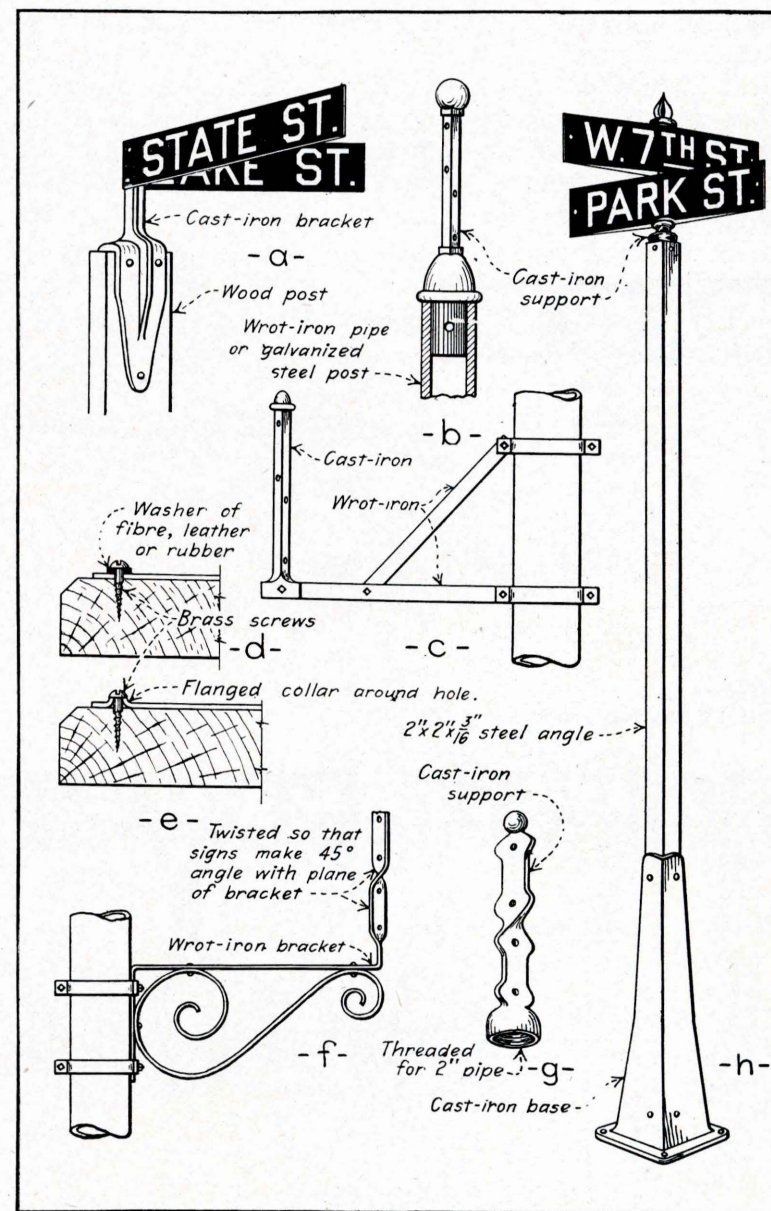
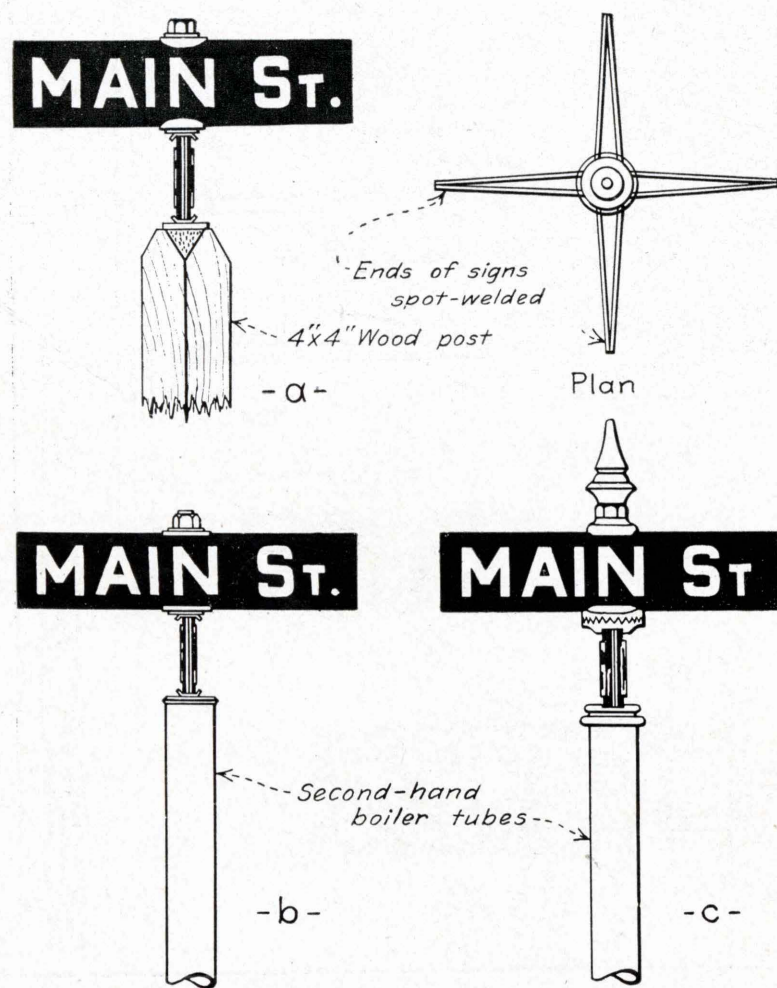


Fig. 25.—Various devices used for supporting enameled-iron signs.

In Rochester, N. Y., is used a black-enameled steel plate carrying 3-inch aluminum letters riveted on. These signs are attractive and fairly durable, costing 50 cents each. Most of these signs are carried on special iron standards. Worcester, Mass., uses a few signs of similar construction which, however, have not proved entirely satisfactory.

A similar appearing type of sign is made by welding 3-inch block letters, die-cut from sheet iron, to a heavy 14-



gauge iron plate, the raised letters virtually becoming a part of the plate. One of these signs is shown in Fig. 2. The background of the sign is coated with black bicycle-enamel, baked for three hours at a temperature of 460 degrees. The letters are coated with a bright aluminum bronze claimed to be weather-resisting and non-tarnishing. The aluminum letters, as has been pointed out, are well adapted for night reading. Signs of this sort may be made with lettering on both sides by welding two single-faced signs back-to-back. A flat price of 5 cents per letter is the usual charge for signs of this character, it being customary to prepay the freight charges on lots of 50 or more signs.

Denver, Colorado, uses a sign of this description arranged as indicated in Fig. 26c. Four of the signs are placed back-to-back, being spot-welded together at the ends.

There is also on the market a patented type of street-name sign with the lettering outlined by holes closely drilled into the material of the sign, usually a soft-steel plate. These holes are filled with a white composition in such a way as to leave the letters depressed below the face of the sign. Fig. 27 serves to illustrate the general appearance of

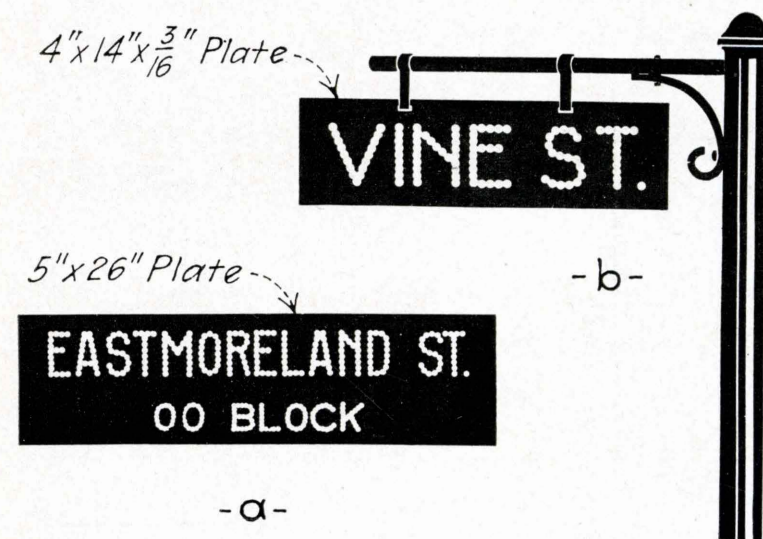


Fig. 27.—(a) A drilled-in letter sign suitable for a curb or post sign. (b) A suggested design for a suspended double-faced sign with drilled-in letters.

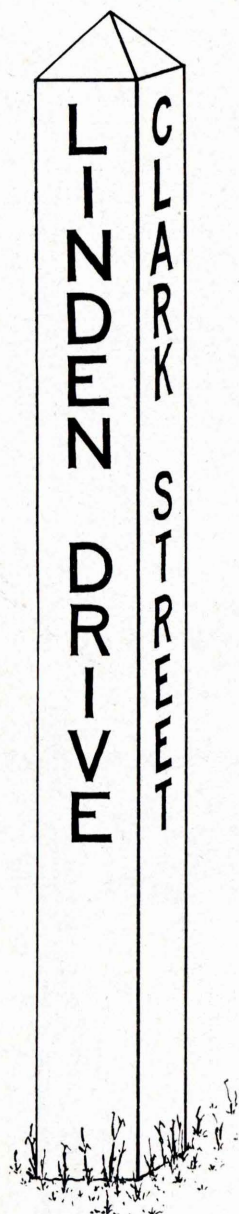


Fig. 28

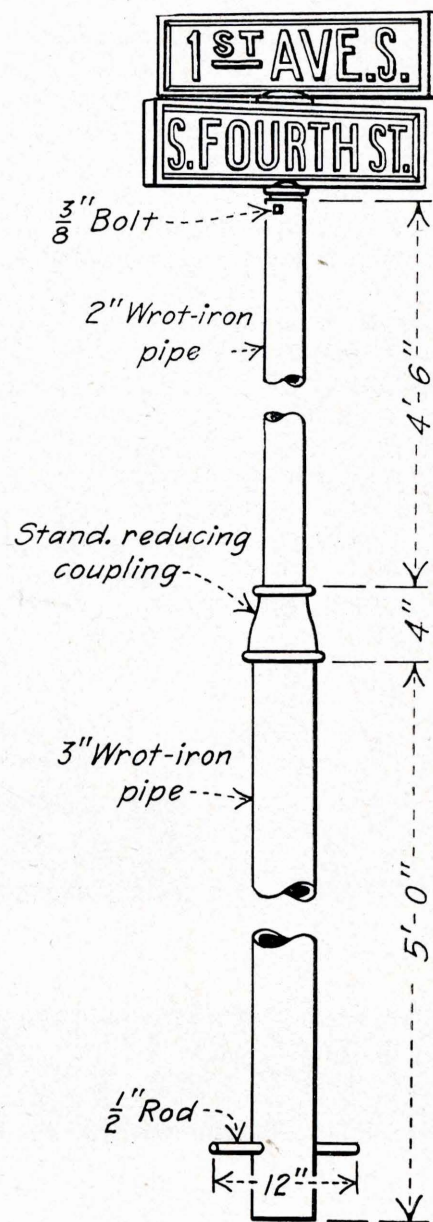


Fig. 29

Fig. 28.—A square wooden post, painted white with black lettering.
 Fig. 29.—Double-faced cast-iron signs that can be clamped at any angle.
 Green-painted post and sign with white letters.

this type of street-name sign. Two pairs of sign plates of this sort may be placed back-to-back in a galvanized swivel-holder and bracket similar to that illustrated in Fig. 20, or supported on a 2-inch galvanized-steel post.

These signs can be refinished without removing the sign from the pole or post, it being possible to coat the background without affecting the depressed lettering, a special roller being used for this purpose. It is claimed that this type of sign is very legible, showing up clearly at night, that they are practically boy-proof, and that they do not rust or corrode.

CAST METAL SIGNS

Cast-iron is, naturally enough, considerably used for street-name signs; and numerous instances of the use of bronze and aluminum may be cited. Of these materials cast-iron has the important advantage of cheapness, while the other materials mentioned are, in their natural state, somewhat more attractive in appearance. Cast-metal signs of all sorts, however, are relatively expensive when compared with most other types.

Cast-iron name-plates for fastening directly to buildings, as in business districts, have had only a limited use in this country, it being a commoner practice to erect the sign

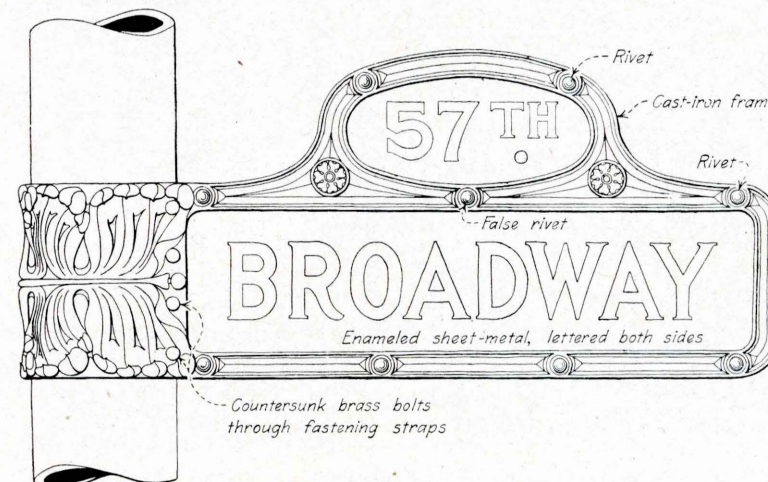


Fig. 30.—One wing of New York standard sign. White letters on a blue ground.

plates on poles. The style of sign used in Minneapolis, illustrated in Fig. 29, is of this description. In this instance the names are cast in raised letters on both sides of the signs, which are fastened to the pole with a swivel clamp that per-

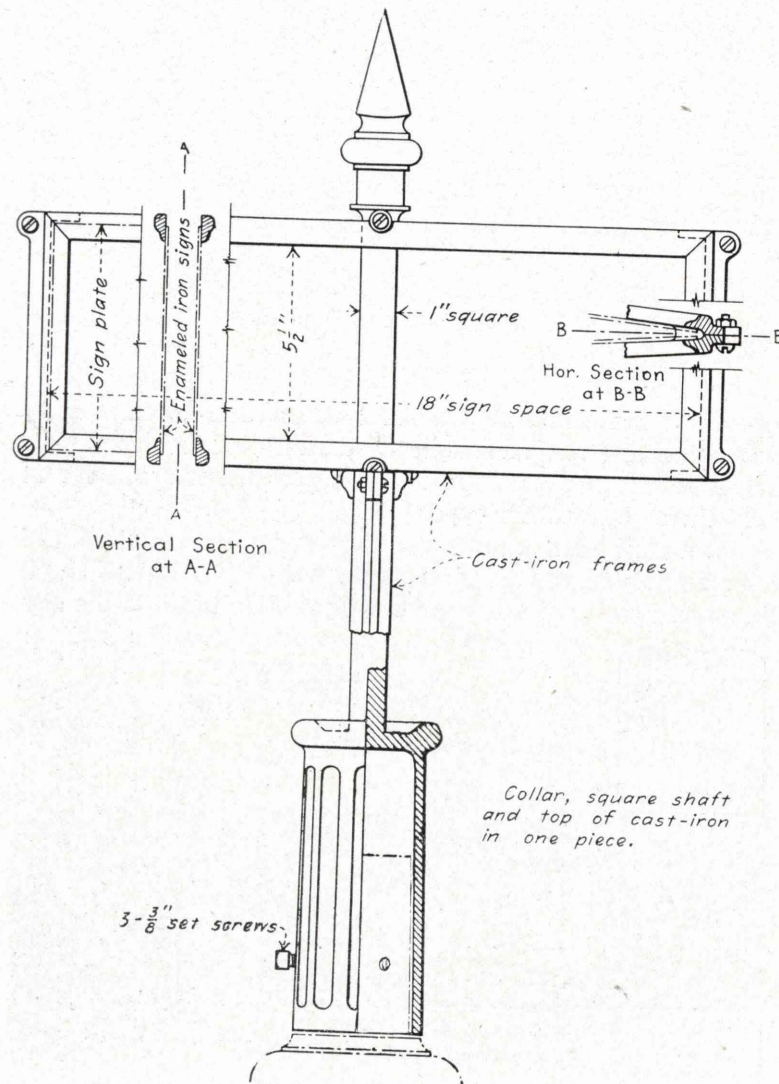


Fig. 31.—A cast-iron frame to hold four enameled-iron signs. Compare with Fig. 32.

mits the signs to be set at an angle corresponding to that of the streets. The sign and post are first painted green and the letters then given a coat of aluminum bronze. This sign cost the city \$3.58, complete, about 800 being purchased at one time.

Buffalo, N. Y., for the most part uses a cast-iron frame, 12 inches square, carrying four cast-iron name-plates with 2-inch letters and supported by a post built up of 3-inch and 2-inch wrought-iron pipe.

In Fig. 21a is illustrated the cast-iron box sign used in the central district of Providence, R. I. These signs have interchangeable name-plates on all four sides of the frame, with letters in blue on a white ground. They are placed "on the ornamental posts supporting the magnetite street lamps at the height of about 10 feet." These signs, of which several hundred were installed, cost \$8.00 complete.

The use of cast-iron gutter plates, carrying street names,



Fig. 32.—Four blue and white enameled-iron signs held in two cast-iron frames. Compare with Fig. 31.

has already been mentioned, as has also the cast-iron curb sign used in San Francisco. Another application of this material is found in the new style of street-name signs used in New York City, illustrated in Fig. 30. Here a two-piece cast-iron frame is riveted together with a double-faced enameled-iron sign placed between. The two wings of the sign, only one of which is illustrated, are set at an angle slightly exceeding 93 degrees for right-angled streets. This sign is also used in a similarly shaped frame built up of soft-rolled steel spot-welded together and provided with a similar ornament of pressed steel at the pole. The general appearance of these signs, erected, is shown in Fig. 37, the malleable-iron frames being obtained for \$5.00 a set, and the enameled signs for 77 cents. The cast-iron signs have cost for furnishing and erecting \$5.75 to \$6.91.

Along similar lines is the standard sign used in San Francisco, Cal., and illustrated in Fig. 4. The sign

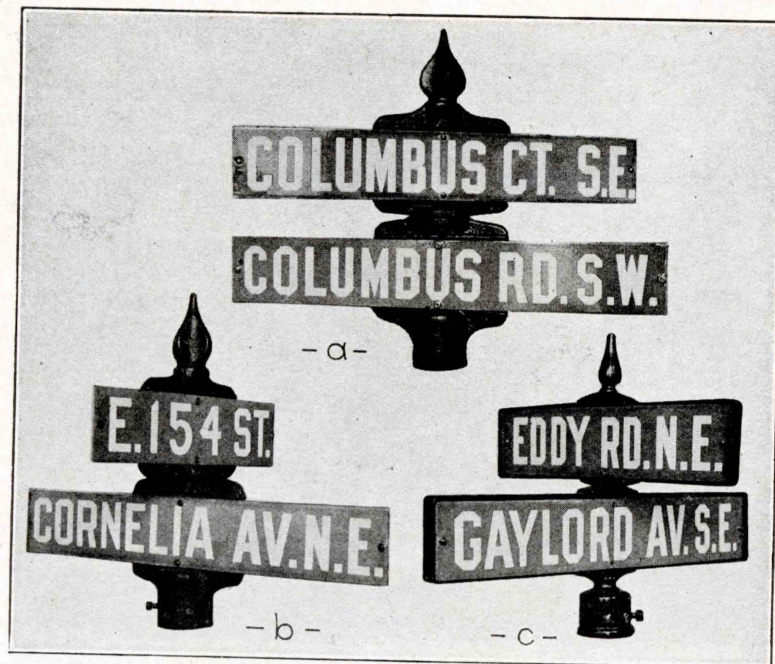


Fig. 33.—(a) A cast-iron swivel cap used for two pairs of enameled-iron signs. (b) A one-piece cast-iron cap. (c) A seven-piece cap.

proper is of enameled-iron, white letters on a brown ground, held in a frame of bronze. These neat and legible signs are placed to read from the far side of the street and cost the city \$1.75, erected.

Cast-iron frames for enamel signs of the sorts used in Washington and Pittsburgh are shown in Fig. 31 and Fig. 32, respectively. The two signs differ principally as to the method of support, a wrought-iron pipe being used in connection with the Pittsburgh sign, while the Washington sign-frame illustrated is placed on a cast-iron standard.

Somewhat simpler are the cast-iron caps used in Cleveland, Ohio, and illustrated in Fig. 33. The one-piece cap shown as Fig. 33b is the simplest of these, costing 50 cents each. Fig. 33a shows a similar appearing swivel cap, costing 72 cents, while the more elaborate cap shown as Fig. 33c, made up of seven pieces, costs \$1.50. The appearance of this latter type, mounted on a post of wrought-iron pipe, is illustrated in Fig. 5.

The bronze name-plate used in the down-town district of Denver, Colo., seems to be unique as to form and position. This sign, illustrated in Fig. 34, is cast in one piece, has polished letters on a dark background, and carries two street-names. It is fastened to the combination light and trolley poles at each street intersection, being placed so as to be read from the sidewalk side. These signs cost \$3.50 each, set in place. Bronze plates carrying street names are sometimes sunk into the surface of sidewalks, as mentioned in connection with the discussion on sidewalk signs.

Many streets in Washington, D. C., do not intersect at right angles. In such cases street-name signs of cast-aluminum are attached by means of brass rods and fastenings to the standard single-light electroliers, after the manner illustrated in Fig. 15. The supporting rods are set into the post so as to form the desired angle. The sign plates are painted a slate gray, the same as the lamp posts, while the raised letters are outlined in gold-leaf.

CEMENT CONCRETE SIGNS

The use of cement-concrete as a material for constructing street-name signs is distinctly novel at the present time;

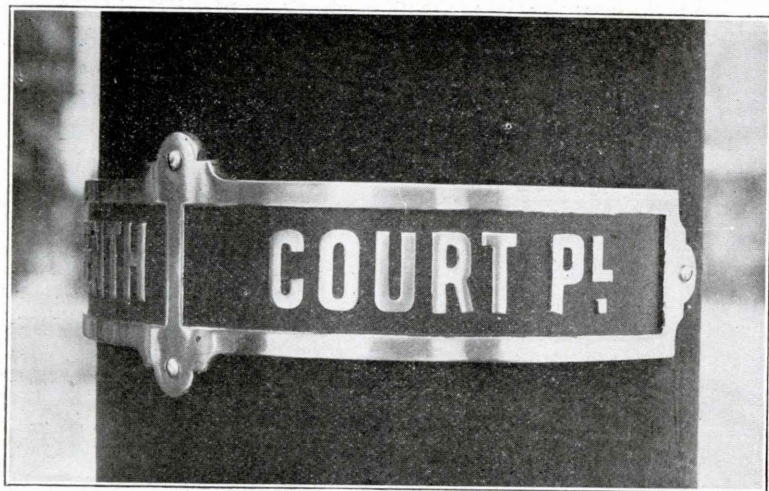


Fig. 34.—A polished bronze plate fastened to a cast-iron trolley pole.

but the fact that such signs have been made successfully, indicates that the future will see a much wider use of concrete for this purpose.

The Department of Public Works of Pittsburgh has recently designed and installed two very interesting and artistic types of street-name signs in which not only the post, but the sign-board as well, is of granite-finished concrete. These designs are illustrated in Figs. 35 and 36, the former showing one of these designs modified as a Lincoln Highway marker. The sign plates are separate from the post, being so constructed that they swing about a vertical axis and are clamped at any desired angle. These signs and posts are well reinforced with steel wire and rods. The letters, of a black cement composition of permanent color, the exact make-up of which has not been made public by the manufacturer, are about $\frac{3}{8}$ -inch thick and dovetailed securely into the concrete of the background. A street-name plate, designed by the same manufacturer for erection on buildings, is shown as the front cover illustration. Wall plates of this description can be obtained for \$1.00 each, in moderate quantities, while standards and signs similar to those erected in Pittsburgh may be obtained for \$15.00 each, or

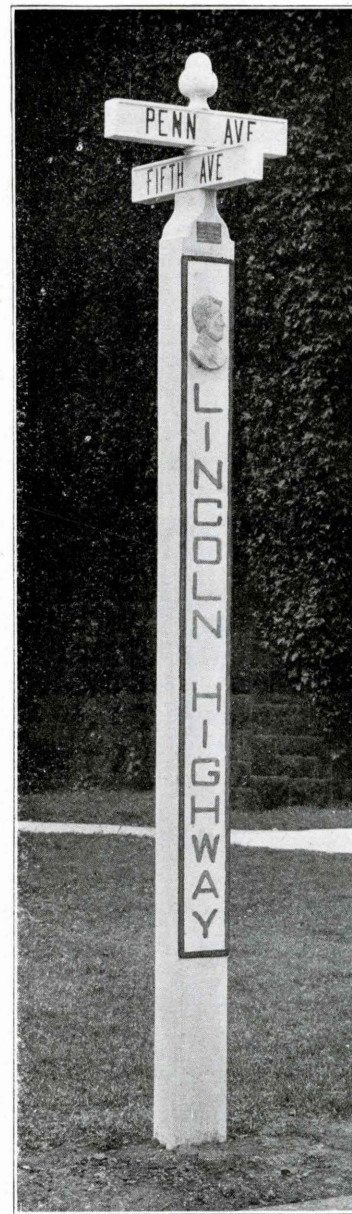


Fig. 35

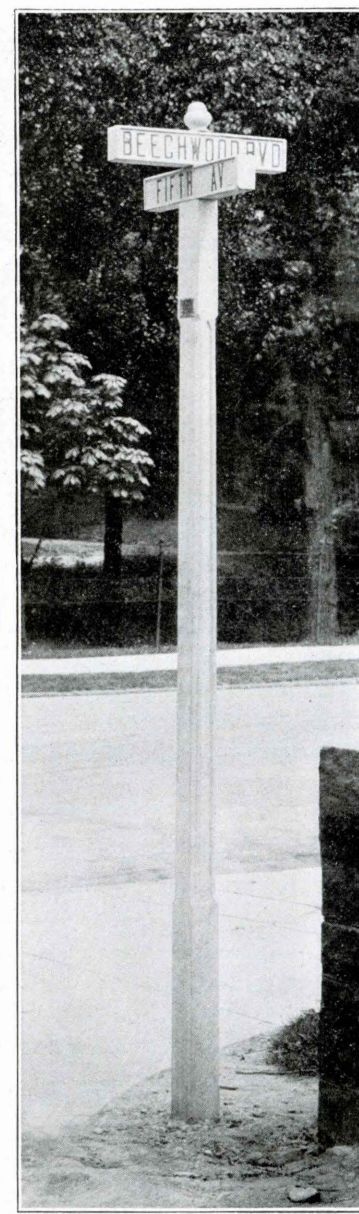


Fig. 36

Reinforced concrete signs and posts used in Pittsburgh. The black composition letters are dovetailed into the concrete.

less, depending on the number purchased. Signs of this sort are practically everlasting, being of such strength and construction as to successfully withstand all ordinary conditions of use or abuse.

In Fig. 38 is shown a criss-cross street-name and highway sign made of concrete by the manufacturer of the concrete signs recently introduced in Pittsburgh, which serves to illustrate another type of an all-concrete sign.

A simple sign post, patterned after the 4 x 4 wooden post illustrated in Fig. 28, might well be constructed of reinforced concrete with letters inset after the manner of the concrete signs already described. Such a design would be especially well suited to the conditions prevailing in outlying residential districts, as it would couple the highly desirable features of permanency and relative cheapness. It would seem that such a sign post should be proof against the abuses of the small boy, as it would be a rather difficult undertaking to injure it seriously. Further, it is doubtful whether the cost would be relatively much higher, permanency considered, than the wooden post previously described. If the item of the inset letters proved too expensive, the post could be painted white with black letters stenciled on this background as in the case of the wooden post, its maintenance involving only an occasional painting.

APPEARANCE OF THE SIGN

There exists a constantly growing demand for street furniture of good appearance, the public having rightly decided that there is little reason for the use of ugly designs when neat and artistic ones may be obtained at practically the same cost. This applies to street-name signs and fixtures with particular force, because these, to be effective, must be made fairly conspicuous. It must be admitted that this feature is one much noted by strangers who are apt to carry away opinions of a city based largely on the impressions created by the appearance of its streets.

Certainly a good system of street-name signs, providing signs that are neat in appearance and legible, is a constant advertisement for the initiative and the progressive spirit so desirable in city administration.

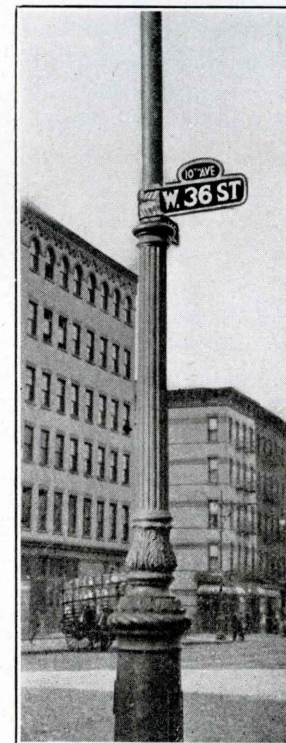


Fig. 37

Fig. 37.—New York standard street-name sign.

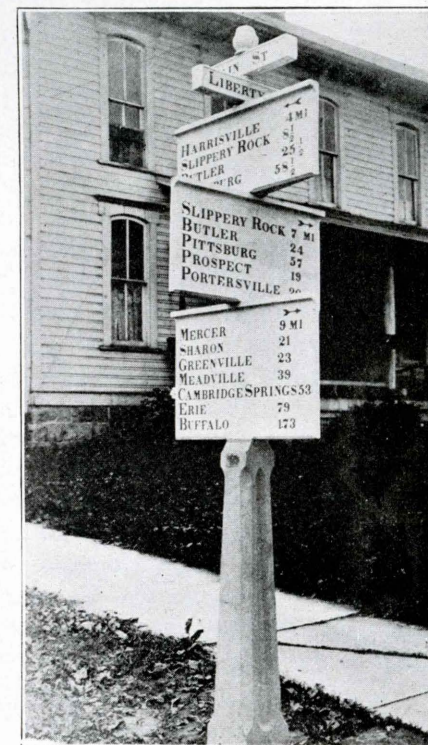


Fig. 38

Fig. 38.—Criss-cross concrete street-name and highway sign.

Quite often busy municipal officials are helped in improving such details as street-name signs by the various local art societies, their membership usually having the necessary time and artistic ability to consider these matters carefully. In many progressive cities, both large and small, regularly appointed art commissions, serving without pay, are available for help and suggestions in the selection of artistic and suitable designs for civic improvements of all kinds.

MATTER ON THE SIGN

The traffic that proceeds along a street is interested particularly in recognizing readily the names of the inter-

secting streets crossed rather than that of the street being traversed. Street-name signs, then, should give prominence to the names of these side or cross streets. Placing the signs parallel to the streets designated, as is commonly done, accomplishes this reasonably well, although the objection is often made that such signs are hard to read from trolley cars. If, as has been suggested, the cross street name sign is placed parallel with the street traversed, the result is apt to prove confusing; and the plan is, for this reason, seldom followed.

There seems to be a growing tendency to show the names of both intersecting streets on each wing of the street sign, as is illustrated in the case of the New York sign in Fig. 30. A decided prominence is given to the name of the cross street, the name of the street traveled being subordinated in size and position. This style would seem to be a fairly good solution, as there is little chance for misinterpreting its meaning.

It is held by many that street-name signs should, in addition to designating the street names, indicate the range of the house numbers within the block. Such a plan is illustrated in the type of sign sketched in Fig. 21b. The use of arrows to indicate the direction in which the numbers run is of value in this connection. Another application of this idea is illustrated in Fig. 27a.

The city of Chicago provides a set of four direction letters, E, W, N and S, above its street-name signs, as may be noted in Fig. 17. This scheme would be of even more value in such cities as have many streets irregular as to direction in respect to the points of the compass.

STREET CORNER DIRECTORIES

In connection with a discussion of street-name signs, it seems desirable to make brief mention of street-corner directories, a very practical novelty that is being introduced in the congested business districts of certain cities at street intersections.

Quoting from the *Municipal Journal* of April 8, 1915:

A system of street corner directories is being installed in Los Angeles so that now, when a person wants to know the location of some building nearby he does not have to dodge the automobiles to

get into the middle of the street to consult a traffic officer. Each of these directories give the location of the business houses for three blocks, street cars passing the corner, the principal office buildings at the street intersections in the shopping district. These directories are placed on corner buildings in metal frames, enclosed in glass. They are corrected monthly. There are now eighty-seven corner directories placed, and others are being put up as rapidly as possible.

The system has been indorsed by the traffic department, and the officers on the street claim that it is a great protection to the public, not only for the party who wishes to inquire some address, but for the general public, as it leaves the traffic policeman free from these inquirers to watch the moving vehicles exclusively.

Without doubt, such directories as have been described would prove to be a decided convenience to the public at the crowded street intersections to be found in any of our larger cities. It seems rather likely, unless care is taken to make them fairly conspicuous, that they might fail in being of use to the stranger most needing them on account of their not being noticed.

This objection, of course, will lose weight if the custom becomes more common throughout our large cities, as the public will then be more on the lookout for such assistance as these directories afford. The probable value of such directories to the public, taken in consideration with the comparatively low cost of such a system, seems to warrant their installation under the street conditions noted.

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