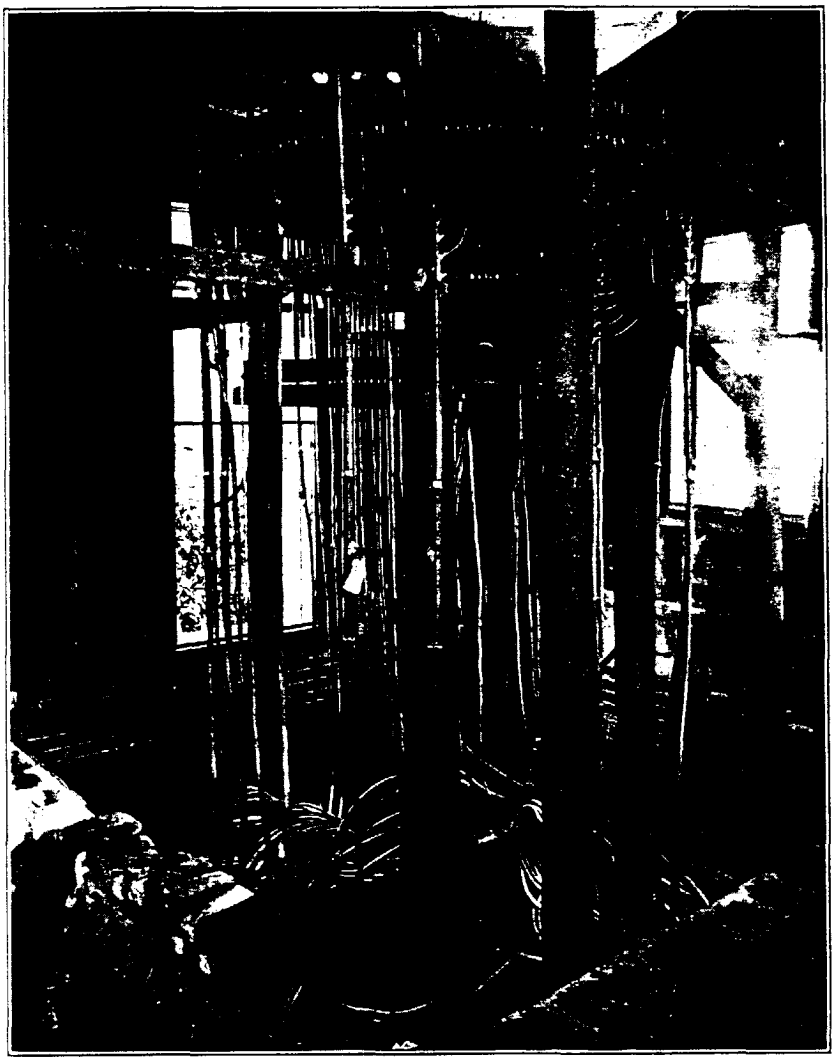
LEAD



THIS WATER DIVIDER AT BRATTLEBORO, VERMONT, IS A MAZE OF LEAD PIPE

Published by the

LEAD INDUSTRIES ASSOCIATION

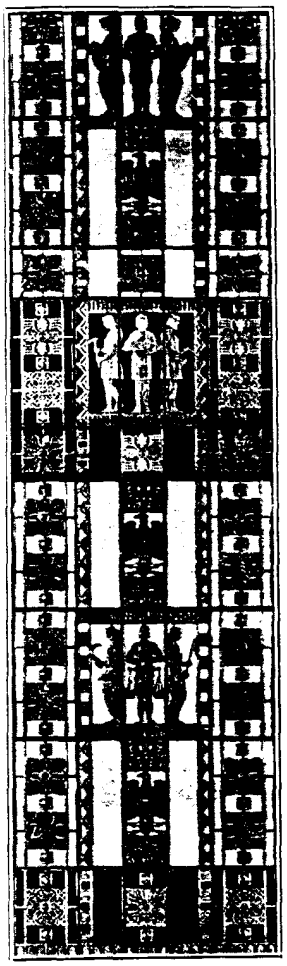
Graybar Building ✧ 420 Lexington Avenue ✧ New York

VOLUME I

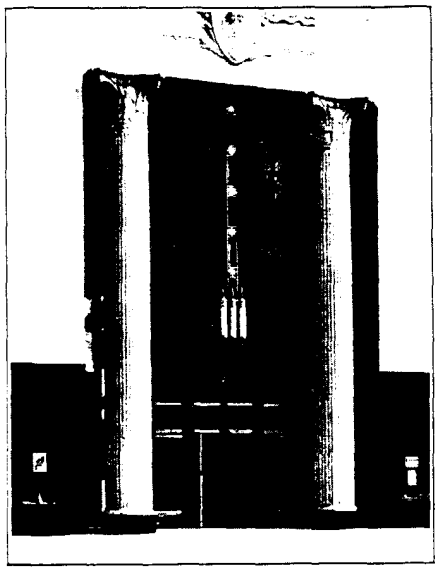
NUMBER 4

Decorative Leadwork on a Modern Bank

First National Bank & Trust Co. building in Hamilton, Ohio



A beautiful lead grille over the main entrance



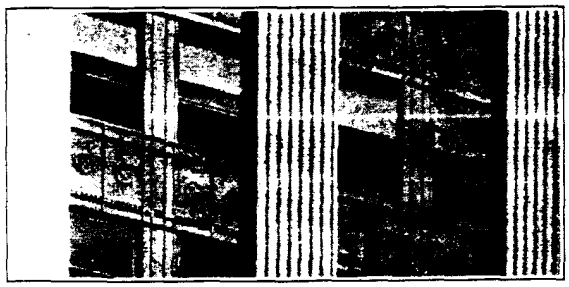
Main entrance to the bank, showing the ornamental lead grille

EXTENSIVE use has been made of lead for ornamental purposes by Childs and Smith, Chicago architects, on the First National Bank & Trust Company's building in Hamilton, Ohio. Lead spandrels and ornamental lead grilles are both used with great effectiveness.

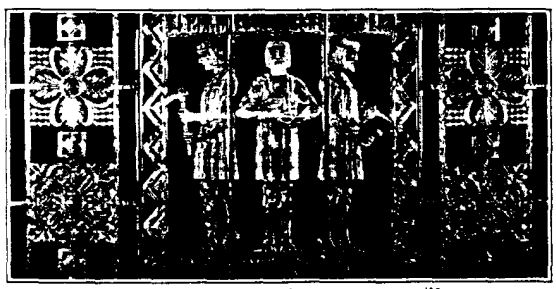
The trend toward metal spandrels and the advantages of lead for this purpose were pointed out in the January issue of LEAD. That leaden spandrels are applicable to buildings of moderate size, which the owners desire to be well built and to have character, is demonstrated by their use on this Ohio bank building. Stamped from 4-lb. hard lead sheets, these spandrels are built up over a 12-gauge sheet metal backing, which is reinforced with structural steel shapes anchored into the masonry construction. The Harry G. Knisely Co. of Chicago fabricated the spandrels.

Over the main entrance to the building are extremely interesting lead grilles. Together with the lead spandrels they harmonize perfectly with the light colored masonry, and lead, unlike most other metals, will not stain light masonry or paint. When it is considered that lead has been used for ornamental purposes, particularly in leaded windows, for centuries, it is strange that it has not been more widely applied in decorative grilles such as these. The soft lines and pleasing finish that can be attained with lead, and the ease with which it is worked, are causing it to be used more freely for this purpose now.

The Linden Company, also of Chicago, is responsible for the excellent craftsmanship shown in these grilles.



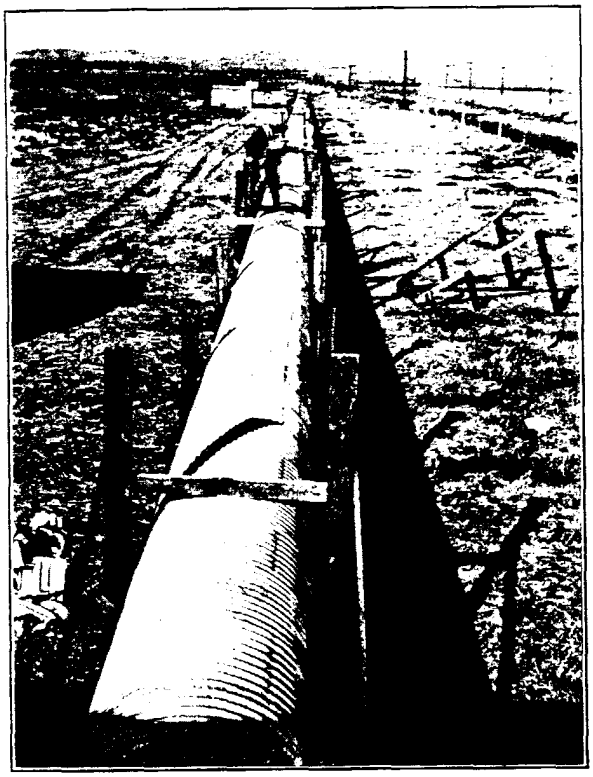
Lead spandrels are decorative features of the building



Detail of part of the entrance grille

Nearly Six Miles of Soldering Aids Science

ABOUT 30,000 ft. of soldering, exclusive of the 176,000 rivet heads, was necessary to assure the air-tightness of the mile-long pipe which the Mt. Wilson Observatory has constructed near Santa Ana, California, for Dr. Michelson's experiments on the velocity of light in a vacuum. Naturally air-tightness and strength are essentials of equipment to be used in such an experiment, strength to resist



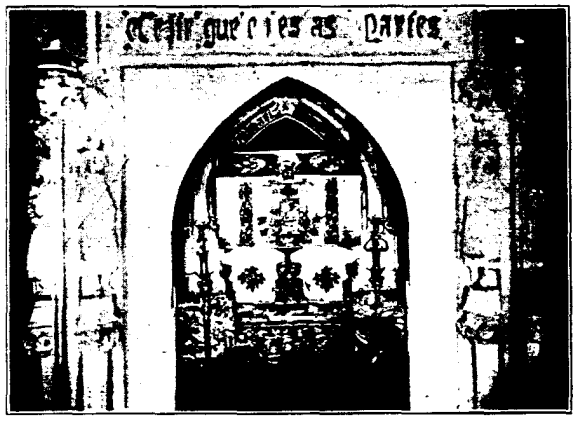
The mile-long pipe used in Dr. Michelson's experiments on the velocity of light

the tremendous crushing effect from outside when the air within the tube has been excluded, and air-tightness to make the vacuum possible. Fourteen-gauge corrugated ARMCO iron pipe, 3 ft. in diameter, has been used, the corrugations greatly increasing the strength. The pipe is double-riveted and soldered, and specially designed air-tight expansion joints connect the 60 ft. lengths. Approximately 1280 lbs. of half and half lead-tin solder were required for this job. The pipe was furnished by the California Corrugated Culvert Company, who did all of the soldering.

The shrine in Santo Domingo Cathedral where the remains of Columbus rest in their leaden casket

A Leaden Casket for the Great Discoverer

AS Christopher Columbus had requested, his remains were taken to Santo Domingo from Spain and were interred in the Cathedral there. Later it was believed that his bones were removed to the Cathedral in Seville. However, in repairing the Santo Domingo Cathedral at a subsequent date, a lead casket was discovered bearing the inscription, "Cristóbal Colón, Primera Almirante." This and other evidence have caused more credence to be given to the belief that the great discoverer remains where he had desired to rest. In the accompanying photographs are illustrated the tomb of Columbus, given by the Italian government, and the beautiful leaden box in which are preserved his last mortal remains.



The exquisite leaden box that is the great discoverer's casket

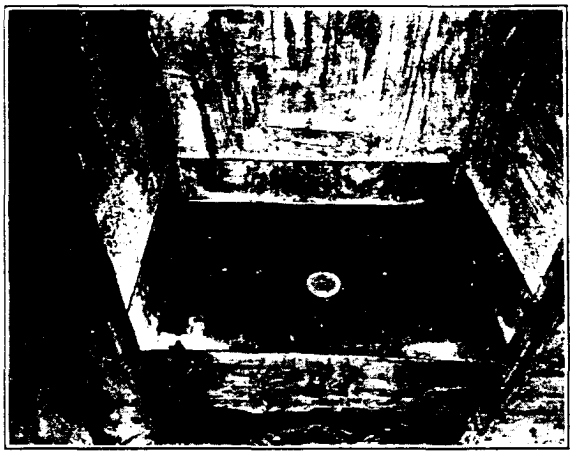
Waterproofing Shower Baths with Lead

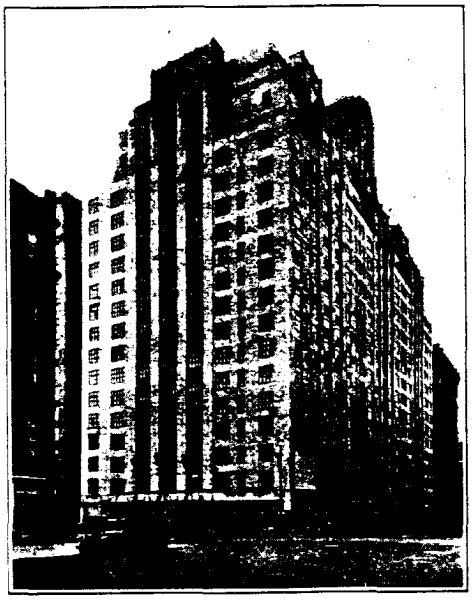
AN important feature of good plumbing is the lining of shower bath floors. Improper or poorly installed linings will allow seepage of moisture which may ruin expensive ceilings and walls below and cause deterioration of floor joists or other structural members hidden from view.

That is why Jarcho Brothers of New York, who have contracted for the plumbing in many of the city's finest and largest buildings, have used nothing but sheet lead for shower room linings since 1914, and are now installing it on the huge "New Amsterdam" apartments at Eighty-sixth Street and Amsterdam Avenue, New York City. Such enthusiasm for a material must attest to its high degree of serviceability. High resistance to the action of water, easy workability, and lead's quality of allowing itself to be laid flat, filling irregularities under it and leaving absolutely no voids below, are the inherent characteristics which make it so suitable for this work. The last feature is important, and often overlooked. If a more elastic material than lead is used, it may be pounded down to conform to the floor underneath, but it is likely to spring back to its original shape, leaving an air pocket. Then after the tile floor is laid over it and walked upon, the unsupported tile will settle and crack.

The following paragraphs describe the method used by Jarcho Brothers for installing the pans in the New Amsterdam apartments, which method they have found to be highly satisfactory. Sheet lead ⅛ in. thick is used and is delivered to the job cut to size, i.e., about 2 ft. larger in each dimension than the shower room floor. The sheet is then bent up a foot on each side. Instead of cutting a V out of the corners to make the bends possible, the corner is folded back upon itself in what is known as a "pig's ear," and soldered, as shown in the sketch. A rectangular lead pan is thus formed with sides a foot

A lead shower pan installed. Note that the under side has been painted with asphaltum and the upper surface is ready to receive a similar coating. The pan is soldered to the drain and at the corners.



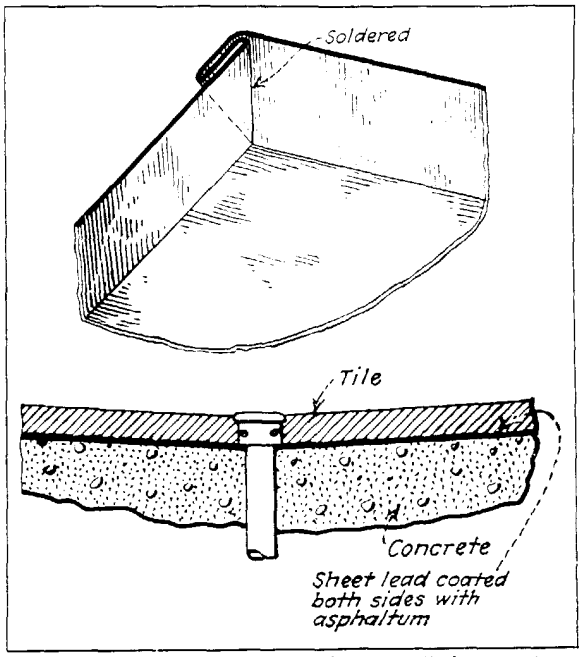


New Amsterdam Apartments, New York
Schwartz & Gross, *Architects*

Forming a shower pan before installing. The soft metal is quickly and easily shaped.

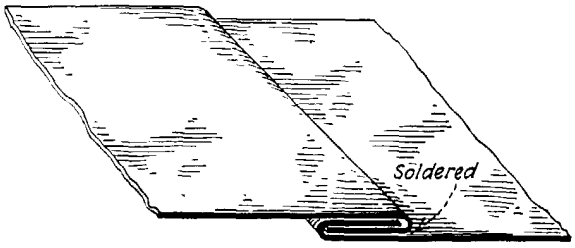
high. The height of these sides will vary with different specifications, some running higher. A hole is cut in the center of the pan bottom to receive the drain.

Asphaltum is then brushed over the lower side of the pan and the pan placed on the shower room floor. It is pounded down well to fit the floor, which slopes from all sides toward the drain, and is soldered to the drain. The drain has small holes drilled in its wall just above the lead to receive any moisture that may accumulate on the lead after penetrating the tile floor. After the pan is in place, its upper surface is coated with asphaltum, and it is ready to receive the finishing tile floor. The wire lath on the walls of the shower room should be allowed to hang down over the turned-up edges of the lead pan. Coating the lead both sides with asphaltum paint is an added precaution, for water which has come in contact with concrete or mortar containing much free lime is likely to injure the lead if oxygen is present. When there is a step leading into the shower stall, as is usually the case, the turned-up lead on this side is folded back over it before the step is tiled.



Cross-sectional sketch of a shower stall floor, and (above) the method of forming shower pan corners

If the room being lined is a larger shower room, or swimming pool, or some other area which cannot be covered with a single sheet of lead, ordinary folded seams should be made and soldered at the fold. This is also shown in an accompanying sketch.



The manner in which lead sheets are joined for use over large areas

Industrial Laboratories Find Lead Table Tops Economical

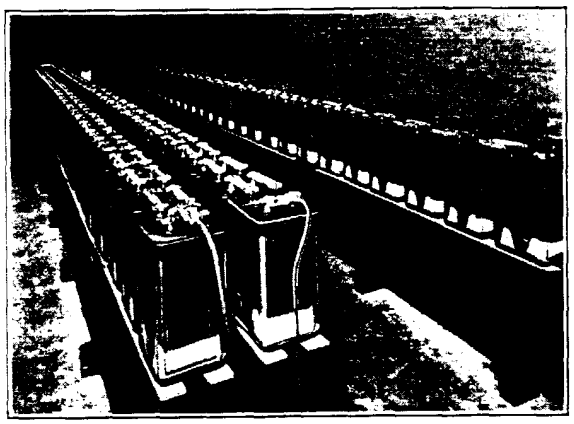
THE Anaconda Copper Mining Company uses lead extensively in its laboratories at Great Falls, Montana. Lead covers all tables and desks where acids are used, and hydrogen sulphide generators are also made of this metal. Lead-covered tables have been in use there for a good many years and have proven to be entirely satisfactory.

The advantages of lead for this purpose are several. It is highly resistant to the corrosive action of most chemicals. It is so easily worked and so low-priced that it makes inexpensive desk construction not only possible but entirely satisfactory. In addition, the softness of a lead table top eliminates much of the breakage of expensive glass beakers and consequent loss of solutions that may have required much time and trouble in the making. This breakage is often quite considerable where hard materials are used for table surfaces and sink linings.

Lead table tops in the Anaconda laboratories at Great Falls, Montana

Lead Stand-By Batteries in New Power Plant

ABOUT 14,400 pounds of lead are used in the large lead-acid stand-by battery illustrated on this page, which was recently placed in service at the C. R. Huntley No. 2 Plant of Buffalo General Electric Company. Batteries of this type are generally used to furnish auxiliary power when needed, for



Battery room in the new Huntley Station of the Buffalo General Electric Company

emergency lighting so that consumers' power supplies will not be interrupted, and to operate oil switches. They furnish power for automatic and central office telephone systems and large radio sending stations.

One of the outstanding advantages of the lead-acid type of battery is that the current can be put into the battery at low rates and taken out at comparatively high rates. Thus with a comparatively small generator and the proper type of storage battery, power is made available for emergency work, and the closing of large circuit breakers in power plants where the rate of current required in amperes is many times the capacity of the generator.

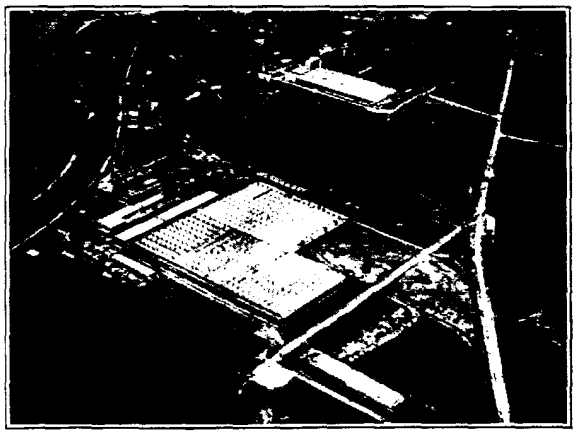
The battery at the Huntley Station contains 120 cells of 15 plates each. The plates are 10½ in. wide by 11½ in. high, the positives being ¼ in. thick and the negatives 3/16 in. The rated capacity is 532 ampere hours at the eight hour rate, i.e., 66½ amperes for eight hours. It will deliver 266 amperes for one hour to 1.75 volts per cell. The one minute rating to 1.75 volts per cell is 630 amperes; to 1.5 volts per cell 1,260 amperes.

The plates are separated by the use of Port Orford cedar in connection with perforated rubber veneer. A special sealed-in construction is employed which eliminates spraying of acid and thus greatly reduces the maintenance cost of wood battery racks and wiring in the battery room. It also reduces to a minimum the necessity of replacing battery electrolyte and eliminates the possibilities of dust, dirt and other foreign substances contaminating the electrolyte.

The C. R. Huntley Plant No. 2 of Buffalo General Electric Company has been built to furnish 60-cycle current for the City of Buffalo, N. Y., and incorporates the very latest developments in the way of equipment for the most efficient and economical production of electric current from steam power. This battery was supplied by the USL Battery Corporation of Niagara Falls, N. Y.

Extensive Lead Equipment in Rayon Manufacture

TWO large rayon manufacturers—the American Bemberg Corporation and the American Glanzstoff Corporation—located at Elizabethton, Tenn., have used more than 2,000,000 pounds of lead in the construction of their plants. In the production of rayon, highly corrosive chemicals are handled. Miles upon miles of lead pipe, ranging in size from ½ in. to 10 in. in diameter, transport the corrosive substances in the plants of these two companies. In addition, acid tanks, filter systems, spinning machines and other equipment required great amounts of sheet lead. The acid building of the American Glanzstoff Corporation, second unit, is entirely flashed with hard lead. This is to resist the action of acid fumes which would be highly destructive to other materials.

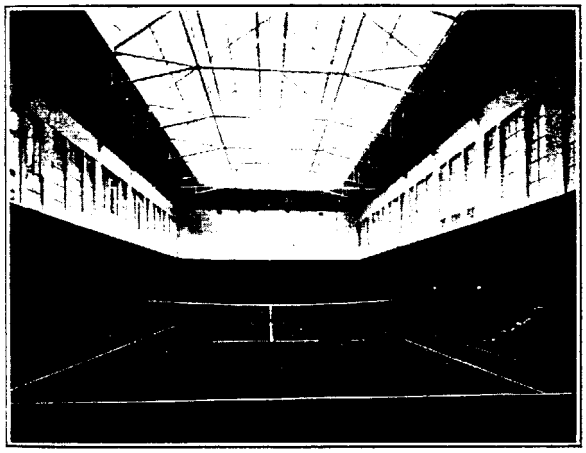


The American Bemberg and American Glanzstoff rayon plants at Elizabethton, Tenn.

The Glanzstoff Corporation manufactures rayon by the Viscose process and has an annual capacity of 8,000,000 pounds of yarn, while the Bemberg Corporation uses the Cupra-ammonium process and has a capacity of 4,000,000 pounds. Lockwood Greene Engineers, Inc., of New York, were the consulting engineers for the owners of these two projects, and O. G. Kelley & Co., of Everett, Mass., and New York, were the installation engineers on all lead requirements in both plants.

Lead Lines Give Permanence to Tennis Court Markings

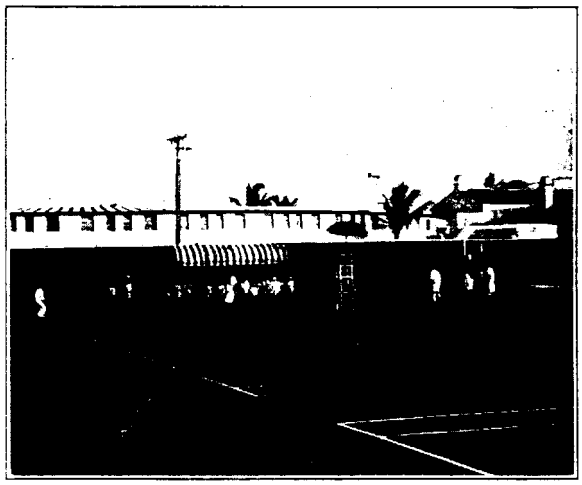
PERMANENT lead tapes are making rapid inroads on the ancient methods of marking clay tennis courts with liquid lime or canvas strips. Court markers must not only retain their clearness and



Bursco French Red indoor court with lead strip markers, H. C. Phipps estate, Roslyn, Long Island

sharpness under hard usage and add to the appearance of the court, but must not interfere with the play.

Old-fashioned canvas tape was a hazard to players, who often tripped over it, caused irregular bounces of the ball, and the tape was often torn, leaving great voids in the lines. Lime markers require much time and labor to keep them renewed and in satisfactory condition. Lead strips, 1½ in. wide and 1/32 in. thick, painted white with quick-drying enamel, surmount these difficulties. They need only be repainted once or twice a year. They are installed so that they are flush with the surface of the court and are held down by hook-headed nails spaced at 3 in. intervals on each side of the tape. The softness of the lead allows the heads of the



Bursco French Red Fast Drying courts with strip lead lines, Surf Club, Miami Beach, Florida

nails to be driven in so that they are level with the tape. An additional advantage of this type of marker is that the surface is not slippery either to the player's foot or to the ball, so that there is little difference between the lines and the court surfacing. The lead tape described is the Spalding No. RM and is the type used by the H. Robins Burroughs Co., Inc., in making their high-class Bursco red or green Fast Drying courts.

More Lead Pipe Over Half a Century Young

SIXTY-FOUR years ago, Hieronymus Mueller, founder of the Mueller Co., made and installed the water service connection shown in the accompanying photograph. It was recently discovered during the construction of a new boulevard entrance to Decatur, Ill. This corporation stop, with its lead gooseneck and wiped solder joints, is still in excellent condition after all those years of constant service in the ground.

COURTESY WESTERN PLUMBING AND HEATING JOURNAL

A lead gooseneck that has seen sixty-four years of constant service

Intricate Plumbing with Flexible Lead Pipe

A VERITABLE spider's web of lead pipe is the divider of the Western Aqueduct Water Association at Brattleboro, Vermont, illustrated on the cover. It divides water from the main into 180 equal parts and distributes it to this number of residences through lead pipe. Originally installed in 1826, the main line then consisted of pump logs. About fifty years ago the main was changed to 4 in. cast iron, and recently the divider itself, which formerly consisted of heavy wood tubs, was changed to one made of boiler iron.

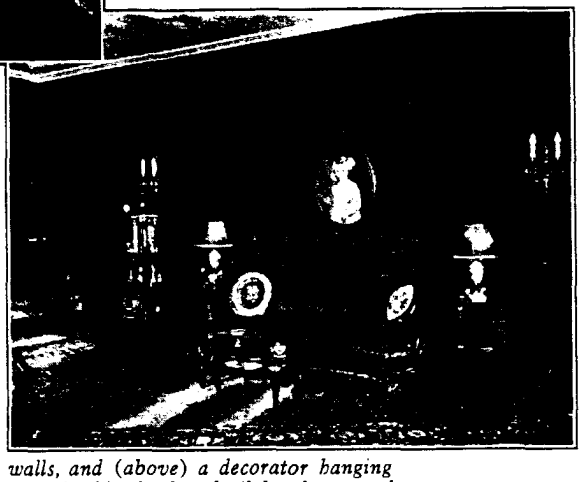
There are miles of lead pipe running from this and two other dividers in the district. According to W. J. Pentland of Brattleboro, who has had charge of this divider for over thirty years, a large percentage of this lead pipe is that which was originally installed. Some of these pipe lines, which once ran in pasture land, are now under the finest part of town and have been encountered during work on cellars and lawns. The illustration shows the numerous soldered joints and the great flexibility of lead pipe which make the intricate construction possible.

White Lead Foundation for New Panelling

LEAD plays an inconspicuous rôle in applying an interesting product of comparatively recent development — Flexwood — made by the Flexwood Company of Chicago. It consists of a thin veneer of genuine cabinet-wood, mounted on fabric, and treated to make it extremely pliable. It can be cut with scissors or a knife. This material, when properly mounted on room walls or other places where wood panelling is used, gives the appearance of solid panelling, at a much reduced cost. It can be applied by any competent decorator.

The walls must be sized with lead and oil paint (not flat paint), before the application of the lining cloth and Flexwood. After the Flexwood is on the wall it may be finished just as would any panelled surface, for it is real wood. It should be well sanded and then finished either with shellac and wax, brushing lacquer, flat varnish, or stains.

Although it is a comparatively new product, it has already found wide acceptance, and many homes, offices and public buildings have used it. It is also being used for finishing airplane cabin interiors, furniture, and many other purposes.



Two attractive rooms with Flexwood panelled walls, and (above) a decorator hanging the flexible wood panelling after a foundation coat of white lead and oil has been used

The Lead Industries Association invites inquiries on any subject relating to lead and will be glad to cooperate in the solution of your lead problems.

LIA25135