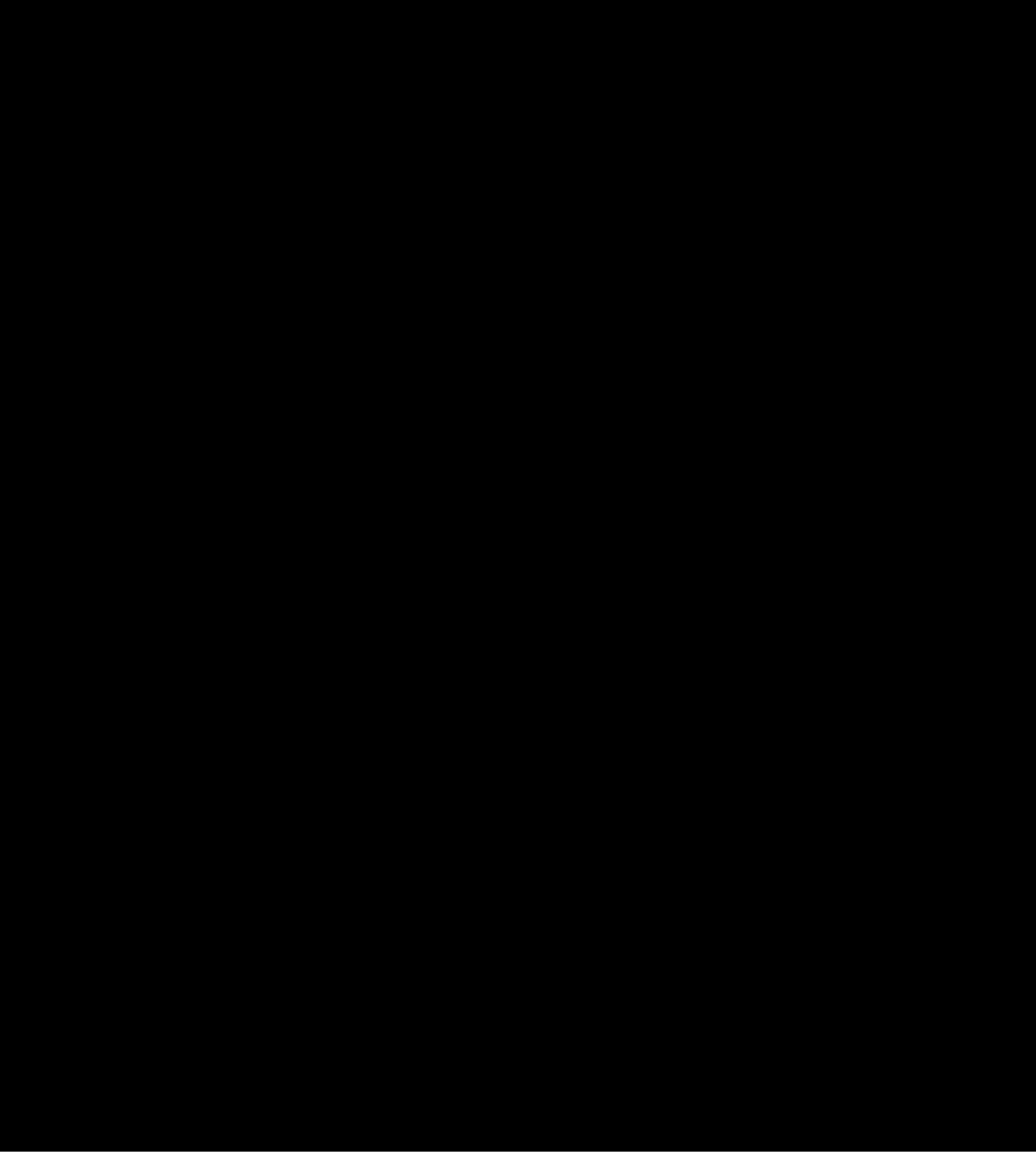




Illinois Master Plumbers Pass Resolution Favoring Lead

AT the annual convention of the Illinois Master Plumbers' Association held at Quincy, Ill., Jan. 16-18, 1934, a resolution of intense interest to plumbers was adopted, urging the greater use of lead wherever it is most appropriate in plumbing systems, including water services. The convention of this state association, which has just concluded a year of remarkable growth and accomplishment under the leadership of its president, Mr. Henry P. Reger of Chicago, just elected for a third term, was highly successful.



Mr. Henry P. Reger of Chicago, President of the Illinois Master Plumbers' Association for a third term.

The business program and speeches were instructive and useful to the members, while the social program of the convention was exceptionally enjoyable.

The resolution relating to the use of lead was introduced by Mr. Seward Best, President of the Quincy Master Plumbers' Association. Its adoption was on a motion by Mr. William J. Lang of Chicago, whose astute foresight is exemplified by the fact that he was among the first master plumbers to urge the establishment of a permanent office for the National Association. Mr. Lang's motion was seconded by Mr. J. C. Naughton of Chicago, Ill. Among those who spoke vehemently in favor of the object of the resolution was the veteran Peoria master plumber, Mr. Dan O'Connor. The resolution follows:

"WHEREAS, through the introduction of inferior devices in the plumbing field which are known to be of relatively short life when compared with lead, causing the property owner much trouble and expense due to repairs and replacements of the concealed parts of plumbing systems, which trouble and expense are not his when lead wastes and round wiped solder plumbers' joints are used to provide the known and necessary trouble-free permanence of lead installations, and



"WHEREAS, such inferior devices require little technical ability to install or repair, thus lessening the knowledge and mechanical requirements for install-

Mr. William J. Lang of Chicago, who moved adoption of the resolution relating to lead.

ing and repairing plumbing installations, resulting in poorer workmanship to the detriment of the property owner and introducing into the plumbing business the unfair competition of unskilled labor, now therefore be it

"RESOLVED by the Illinois Master Plumbers' Association in Annual Meeting assembled at Quincy (Ill.) this 18th day of January, 1934, that it is to the best interests of the property owner to have a plumbing system properly designed and installed with fixed connections and branch wastes and vents

and with water services and water supplies of new Lead Industries Association Standard lead waste or water pipe of weights suitable for the several purposes, such pipe to be installed by journeymen plumbers skilled in the art of installing and connecting by means of round wiped plumbers' joints; and to that end be it further

"RESOLVED that copies of this resolution be placed in the hands of every member of this organization with request that the purpose of it be brought to the attention of the proper authorities in their several jurisdictions, to the end that the use of lead rough work and water supply be increased as rapidly and to as great an extent as may be possible.

"AND BE IT FURTHER RESOLVED that the incoming Executive Board advance this resolution at their zone meetings."

As this issue of LEAD goes to press, the annual convention of the Wisconsin Master Plumbers' Association at Milwaukee took action similar to that of the Illinois Association. A complete report of this action will be given in LEAD when all details are available.

The Ohio State Association of Master Plumbers has also just adopted a like resolution which will be reported in full at a later date.

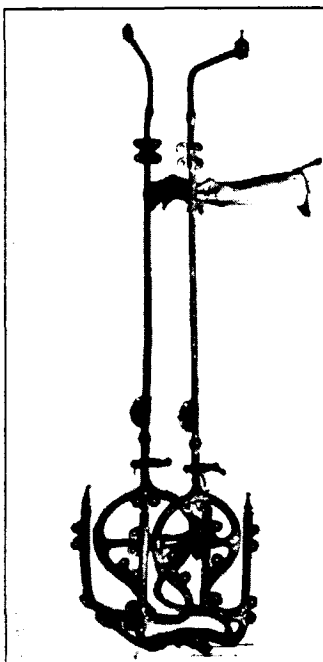
Mr. Seward Best of Quincy, President of the Quincy Master Plumbers' Association, who sponsored the resolution.



Intricate 80-Year Old Shower Made of Lead

AT FIRST glance the accompanying photograph may look like a Rube Goldberg contraption, but it is just a shower bath of 80 year old vintage made of lead pipe. It was recently removed from an old building in Arlington, N. J., by Mr. E. P. Ingram, plumbing contractor of Jersey City and Arlington.

It is a fine example of the ingenuity and skill of the plumbers of the last century and of the adaptability of lead and the way in which lead served them. An explanation of the operation of this shower and mixing valve arrangement is complicated but illustrates how the plumber who made it devised an excellent mixing valve.



WURTS BROS.
A shower bath 80 years old
made by bending and wiping
lead pipe.

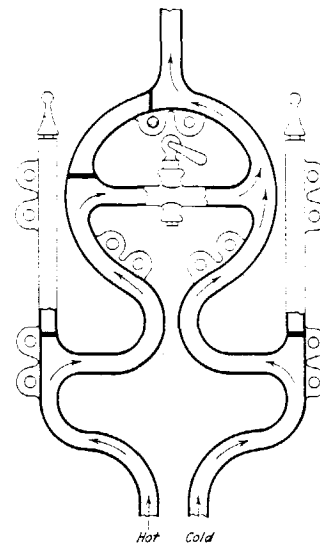
Hot water entered through one of the pipes at the bottom and cold through the other. The two upright pieces of pipe with ornamental tops are blocked off where the pipe turns inward and are simply for ornamentation. The tops were ornamented by the plumber by beating and soldering closed. The cold water flowed directly from the intake up to the shower head. The hot water, however, was directed through the horizontal section of pipe at the center by blocking off the short

curved section of pipe between one end of the horizontal pipe and the vertical pipe at the top. That section of pipe is simply there for symmetry. By adjusting the valve on the horizontal section of pipe the amount of hot water allowed to mix with the cold was regulated. The faucet on the vertical pipe was for draining.

All joints are wiped and in perfect condition, showing that danger of leakage from this type of joint is nil, even in 80 years, because wiped joints make a continuous piece of the pipes joined and because they cannot vibrate loose. Cast lead clips which supported the shower are soldered to the pipe.

Even today, with all the improvements that have been made in plumbing installations in the last 80 years, competent plumbers find that the flexibility and adaptability of lead are essential to good work and that lead work helps them to maintain the plumbing business on a high level of craftsmanship.

Through the maintenance of skill in the plumbing business the plumber protects an intangible asset which he can sell and which no one but a competent plumber can supply. At the same time the property owner benefits by having his sanitary installations made by one who can make them truly sanitary.



Hot Cold
Sketch showing flow of water
in the complicated old
shower bath.

Lead Gaskets Used to Quiet Manhole Covers

EVERYONE has noticed that manhole covers are capable of making objectionable noise when traffic passes over them. The Reading, Pa., Water Department used lead to prevent it. The Department had a supply of old lead on hand for which it had no other use. It was melted up and cast into gaskets the size of the manhole covers. When these were placed under the edges of the covers, the object-

tionable noise was eliminated, as lead is noted for its sound deadening effect. Lead gaskets have an advantage over other types in being practically indestructible and the sound deadening properties are not impaired by the passage of time and exposure. This is a good illustration of the salvage value of lead. There are many uses to which old lead can be put or there is always a ready market for it.

Long Established Painter Strong Advocate of White Lead

MR. CHARLES BUSSE, of C. L. Busse Co., Milwaukee, painters and decorators, says, "We are strong believers in pure white lead paint and it has been our policy to use it for more than 50 years." His firm, founded by his father more than half a century ago, has been highly successful and numbers many of Milwaukee's most prominent citizens among its customers. This success can be attributed to adherence to a policy of fine workmanship and high quality materials like pure white lead. This policy has assured the company of many satisfied customers, who not only remain customers but spread the word to new ones.

The quotation above, coming from one recognized as a leader in his craft in Milwaukee, is typical of successful painters in all parts of the country. A painting business, to be successful over any length of time, must be founded on the principle of high quality work. Otherwise, dissatisfied customers soon drift elsewhere and business wanes. Certainly the experience of a firm successful for more than half a century is well worth considering by architects, property owners and painters everywhere.

White lead, being an all-purpose paint material, has another advantage to the painter in that it eliminates many items from a painter's stock of supplies, so that the minimum amount of money need be tied



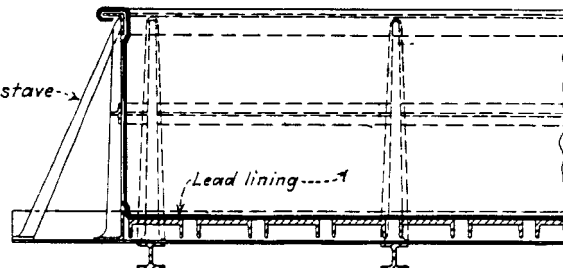
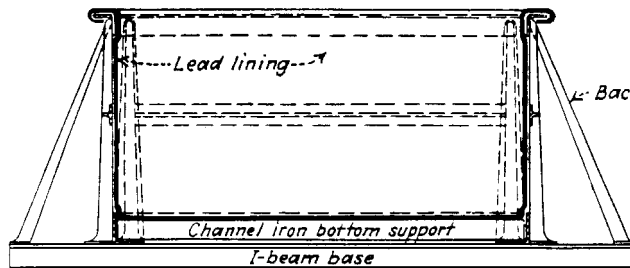
KUHL
Office and shop of C. L. Busse Co. of Milwaukee, strong advocates of white lead, who have been in business more than a half century.

up in material. It also simplifies the supplies that need be taken out on any job. Tested in actual service for centuries, the excellent performance of white lead applied by skilled painters is assured. By using white lead a painter does not make a testing laboratory of his customers for paint without this background of real service testing with the consequent danger of losing a customer.

Economical Lead-Lined Pickling Tank Introduced

LEAD helps to make an economical type of pickling tank that has been designed by the Dietzel Lead Burning Co. of Pittsburgh, Pa. It is constructed of steel members, most of which are probably available as scrap or short ends around many industrial plants. I-beams, rails or other structural shapes may be used. The lead lining is installed just as it would be in any other lead-lined tank, being turned over the upper edges of the tank.

The average company can probably construct such a tank with its own help and from materials on hand, while the sheet lead lining costs no more than it would for a solid tank. The designers point out that maintenance costs would be reduced because all parts of the tank are readily accessible and any part could be repaired or replaced without disturbing the rest of the tank. Lead linings are used to handle a wide variety of corrosives.



Construction of lead-lined pickling tank made of convenient steel shapes.

Many Decorative Effects Produced with White Lead

THE walls in the office of Mr. John Gordon, Glen Cove, Long Island, N. Y., painting contractor, show what can be done with white lead paint in the hands of an expert craftsman. These walls are



WURTS BROS.
Paneled walls painted with white lead on plaster board in the office of John Gordon, Glen Cove, N. Y., painter.

simply sheet rock. Using tinted white lead paint they have been knotted and grained to a perfect imitation of panelling. Without the closest inspection, an observer would be convinced that he was in an expensively paneled room.

This is only one example of the many interesting wall finishes that can be obtained with white lead. Textured surfaces like caenstone, travertine, water wave, various weaves, tapestry and many others require little but white lead and imagination. Tiffanies, two-tone glazes, modernistic designs and murals all can be produced to the best effect by the use of white lead. The color possibilities of this material are unlimited.

Naturally most special paint finishes run up the cost of a job because of the additional skill and labor involved. It is therefore an economic folly to use cheap, short lived materials for such work. White lead not only gives the most beautiful results, but will last longer than cheaper materials and its appearance can be kept attractive by washing.

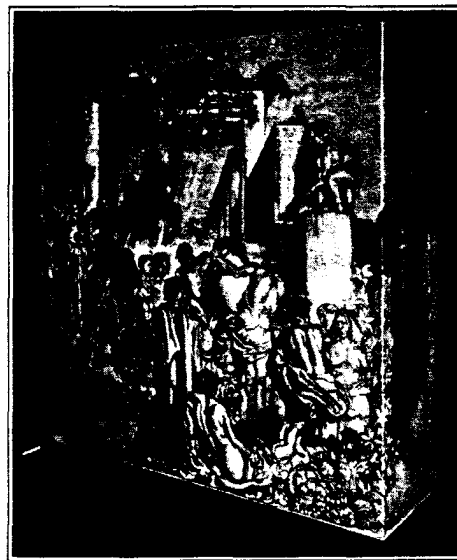
White Lead-Varnish Best Cement to Mount Murals

THE method used to hang the beautiful murals in Rockefeller Center, New York, illustrates the best practice as used by leading decorators, who employ white lead-varnish cement for the purpose. Murals are generally painted on very heavy canvas which can not be secured to walls by any ordinary paste, which accounts for the reason for resorting to the extremely strong and adherent cement that is made from white lead and varnish.

The wall is first given a priming coat of white lead and oil paint to seal the pores just as any wall is prepared for painting. Then Dammar varnish is mixed with paste white lead to make a thick paste of a consistency that can just be brushed. This mixture is brushed onto the wall to form a thick coating. Some decorators prefer to trowel it on. Before it dries the canvas is applied just like wall paper and rolled out to a flat surface. The white lead-varnish layer is perhaps 1/16 in. thick after the operation is completed.

A canvas applied in this way adheres very strongly to the wall. In fact it is almost impossible to remove it without pulling plaster with it.

Mural in the R.C.A. Building, Rockefeller Center, after being affixed with white lead and varnish as shown on the cover.



WURTS BROS.

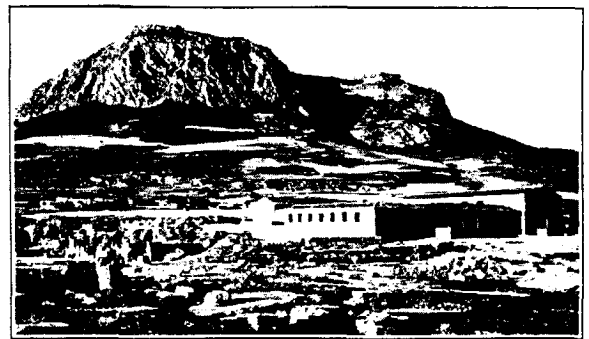
White lead-varnish cement is popular wherever a particularly strong, tough adhesive is required. It is used extensively, for instance, in setting marble and other fine stone work. This cement can be tinted to a variety of colors by the addition of small amounts of strong tinting pigments, which is often an advantage when invisible joints are desired.

American Architect Uses Much Lead Flashing Abroad

THE photographs shown are foreign buildings designed and built by W. Stuart Thompson of Thompson & Churchill, Architects, New York City. In all of these buildings lead was used for flashings, counter-flashings, flat decks and for waterproofing at the base courses. The architects have found lead the practical and most durable metal for these uses and use lead as standard practice for practically all kinds of waterproofing conditions.

The first building lead flashed by Mr. Thompson was the American School of Classical Studies at Athens, Greece, finished in 1916. This job has never shown any signs of leaks and with lead flashings no leaks are expected for years to come.

The Morris Schinasi Hospital at Manisa, Turkey, has just been completed. It was built under a be-



Corinth Museum, Corinth, Greece, where lead was used for flashing and other purposes.

being easily formed and dressed into position on the job at a great saving in labor cost over metals more difficult to handle.

In ancient Greece the use of lead was understood and it was used by the architects of the Parthenon and Erechtheum erected four centuries B.C. All marble work was erected without the use of cement and the blocks were fastened together with iron or bronze clamps securely held in place by molten lead. Strange to say, one of the principal reasons for the destruction of many ancient buildings was the quest for this lead in medieval times to make into bullets. The ancient Greeks used sheet lead for giving wall blocks an even true bed, and used molten lead to fill spaces and securely bed the blocks after they were set. The general method was to cut a smooth bed about 1 in. wide back from the



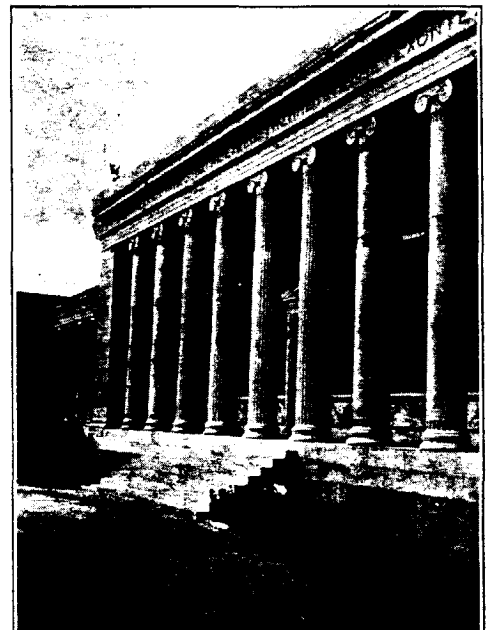
Architects model of Schinasi Hospital at Manisa, Turkey.

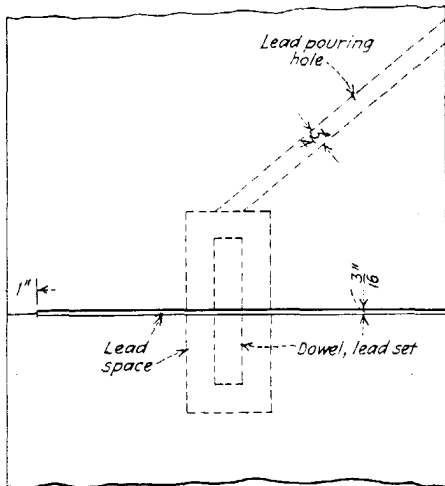
quest of the late Morris Schinasi of Larchmont, N. Y. All flashings and small flat roof surfaces are 4 lb. sheet lead. The architects find the color of lead attractive and it will not stain adjacent masonry. Lead offers the additional advantage of



Corinth Museum viewed through columns of the Temple of Apollo set in the Seventh Century B.C. in lead which is still there after 27 centuries.

Gennadius Library at Athens. The columns and marble work are set with lead in the ancient Greek manner.





Method
of
setting
marble
work
with
lead.

face of the marble. The rest of the bed is then recessed so that when the blocks fit together the

bed fits absolutely snugly for 1 in. and for the rest of the bed a $\frac{3}{16}$ in. space is left. The blocks are lead wedged and dowels and clamps inserted. Molten lead is then poured through pouring holes cut into the marble to make a solid tight bed. In setting marble columns the same method is used except as the marble blocks are in contact all around the edges, sheet lead is used to fill the recess.

In the photograph of the Corinth Museum at Corinth, Greece, the existing ancient columns of the Temple of Apollo are shown. These columns were set with lead in the Seventh Century B.C. In the Gennadius Library at Athens built in 1925 the architects set all columns and marble work in the Ancient Greek manner using lead for setting and for fastening. In this way cement was avoided for marble joints and one block of marble fits tightly to the next.

Lead Goosenecks Perfect After Many Years' Service

A $1\frac{1}{4}$ in. lead gooseneck installed in 1906 in Highland Park, N. J., was recently taken up and found to be in perfect condition. This is nothing unusual for lead service pipe as there are miles of it that has been in the ground for much more than the 27 years of this gooseneck. This particular gooseneck, however, has far from finished its useful service to the Highland Park Water Department. It was removed because the rigid service it connected to the main was completely choked up with rust and had become pitted through. The same lead gooseneck is to be installed again in a new service line.

Also in Highland Park, a $\frac{3}{4}$ in. lead gooseneck was recently removed which had been installed in 1879, 55 years ago, by the uncle of the present plumbing inspector, Mr. A. H. Smally, who reports these incidents. This piece of lead pipe is likewise in a perfect state of preservation. The only thing that keeps it from being used again is that all tapings smaller than $1\frac{1}{4}$ in. have been discontinued. The reason for removing this gooseneck is the same as in the other case; the rustable pipe it connected to the main had failed.

Certainly these occurrences definitely illustrate the ultimate economy of using durable lead for service connections, for in the same line of pipe under exactly the same conditions lead has here outlasted less durable pipe many times over. Over a number

Lead goosenecks 27 and 54 years in service which are in perfect condition and ready to go back into the ground again.

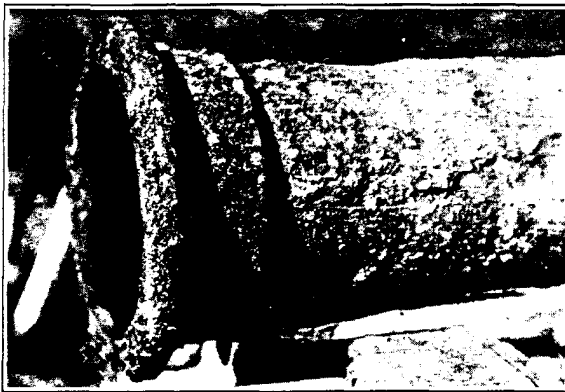
of years, then, more money will actually be spent for the less durable, cheaper pipe, and in addition the cost of re-installing the pipe one or more times must be included. Once installed, lead services are there almost indefinitely, except

in unusual cases, so that the cost of the first pipe and installation constitutes the entire expenditure. That is why, on a yearly basis, the cost of lead service pipe is probably the lowest of any service pipe materials. The comparatively thick walls of all lead service pipe offer sufficient metal to resist all forms of attack for a long time and remove danger of quick penetration or rapid weakening.



WURTS BROS.

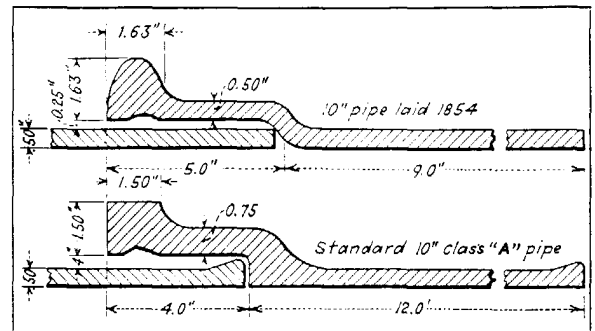
Cast Iron Main with Lead Joints Trouble-Free for 78 Years



IN 1932 the Pennichuck Water Works at Nashua, N. H., in order to install larger pipe, removed a 10 in. cast iron pipe line with calked lead joints which was laid in 1854. The 78 year old line was in excellent condition and could have served many more years had not increased capacity been necessary.

The records of the company, which was formed in 1852, show that in 1853 committees were appointed to determine the length of the socket of the pipe and "to make investigations as to the best material for packing the pipe" (evidently calking). The bell, as adopted, was an inch deeper than modern bells with only a shallow groove, and there was no bead on the spigot end of the pipe. There was also only $\frac{1}{4}$ in. clearance between the outside of the spigot and inside of the bell as against 0.4 in. in modern pipe. For this reason probably the joints were not very uniform, sometimes the depth of lead varying from 1 in. to 4 in. in the same joint. Despite these handicaps the reliability of lead joints is demonstrated by the fact that, so far as is known, no trouble was ever experienced with the joints.

Pressures of 50 to 55 lb. were kept on this line most of the time and they were occasionally stepped up to 75 or 80 lb. Although the weight of the pipe



At the left, one of the 78-year old cast iron pipe bells and, above, a sketch comparing the design of the old bell with the modern standard.

is equivalent to pipe which would be used for 43 lb. maximum pressure today, no failures and only one repair are recorded. The repair was made to a longitudinal crack by bending a thin piece of metal to the shape of the outside of the pipe, placing white lead between it and the pipe, and then strapping it in place. As this repair was made at least 30 years ago and has never given trouble, it seems to be a satisfactory method.

When this pipe line was removed the lead joints were salvaged and much of the original lead used again to joint the new 24 in. line taking its place. It is certainly an economical jointing material that will give absolutely trouble-free service for 78 years and then be used again to render no one knows how many more years of useful service.

This interesting installation has been completely described by Mr. D. C. Calderwood, Engineer, Pennichuck Water Works, in a paper read before the New England Water Works Association last year and appearing in Vol. XLVII, No. 2, of the Journal of that Association.



LEFT
Cast iron pipe line with lead joints laid in 1854 at Nashua, N. H.

RIGHT
A couple of sections of the 78-year-old veteran water main, which was cast iron with lead joints.



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