Berger's
Perfection
Luminous
Sidewalk and
Vault Light
Construction

The
Berger Manufacturing Co.,
Canton, Ohio.
COMPLETE CATALOGUE

of

BERGER'S

(PATENTED)

PERFECTION LUMINOUS

Sidewalk and Vault Light System

For Sidewalks, Vaults, Floors, Areaways, Skylights, Etc.

THE BERGER MANUFACTURING COMPANY
CANTON, OHIO
SOLE MANUFACTURERS

NEW YORK
BOSTON

BRANCHES:

PHILADELPHIA
ST. LOUIS

COPYRIGHT 1905
THE BERGER MANUFACTURING CO.
Berger’s Perfection Luminous Sidewalk
and Vault Lights

In presenting our system of lighting basement vaults and dark places under sidewalks, we offer a thoroughly tested, and, on the whole, the simplest and best construction on the market today.

Imperfect systems for lighting spaces under sidewalks and dark basements, have been discouraging to builders. The “Perfection Luminous System” has turned this comparatively useless room space into valuable rental property, brilliantly lighted, and hence a source of revenue to the owner of the property.

The Galvanized steel forms used in this construction afford a neat and cleanly ceiling for the underside of the sidewalk. They are the support for the concrete and glass, but the expansion and contraction of the metal in no way affect the concrete and glass, thus avoiding cracking, bulging, or loose glass. Hence it is waterproof. We guarantee our construction to carry specific loads.

The greater advantage, however, gained by the use of our Perfection Luminous Sidewalk, is the large amount of light obtained, there being approximately 75% of glass to the square foot.
Galvanized Steel Forms for the reception of Glasses or Prisms, used in constructing Sidewalk or Vault Lights.

**Sidewalk and Vault Construction Form and Glasses**

**No. 2**
3" square glass with 2\(\frac{3}{4}\)" Pendent Prism for reflecting light into dark basements.

**No. 3**
3" square glass, 1" thick, for Illuminating Vaults.

**No. 4**
3" square Multiprism, for shallow dark basements.
Berger’s Perfection Luminous Sidewalk
and Vault Light Construction

O ur PERFECTION LUMINOUS SIDEWALK LIGHT construction consists of a series of Heavy Galvanized Sheet Steel forms as shown on opposite page, with square spaces cut in top surface for receiving glass. The glasses have a projection on their lower surface, which fits into opening in steel form; also have projection on edges, thus preventing any leakage. The forms are made from No. 20 gauge galvanized steel, giving the under side a bright appearance, acting as a reflector and easily kept clean. The glasses are set in cement, and as glass and concrete have an equal expansion and contraction, there are no loose or broken glasses.

It is the lightest and strongest on the market, IS ABSOLUTELY WATER-TIGHT and will carry a safe load of 600 lbs. to the square foot. Full provision is made for expansion and contraction.

Perfection Luminous Sidewalk Lights are easy and simple to place in position. Expert labor is not required, the forms and glass being furnished ready to lay, each piece fitting in place.

After laying the steel forms upon their bearings, and putting in place the prisms or glass, a properly proportioned cement mixture is filled into the channels and around the glasses, permitted to harden, roughened slightly, and then the sidewalk is ready to use.

The steel form used with the Perfection Luminous System (illustrated on the opposite page) is made of 18 or 20 gauge open hearth galvanized sheets. Each form has a covering width of five inches.

Various forms of glass (illustrated herewith) are provided for our Luminous System.

Glass No. 2 has a drop pendent 2½ inches deep. This pendent prism is for reflecting the light into basement.

Glass No. 3 is flat, 3x3 inches square, one inch deep, and is used for vault lighting or general direct light purposes.

Glass No. 4 is 3x3 inches square, with a series of prisms underneath. It is formed on the multiprism principle and is used for shallow basements.
The galvanized forms used in our construction have in themselves great carrying strength. They are the support for the cement concrete and glass, but in no way affect the homogenous combination of glass and cement by expansion or contraction, as the metal nowhere binds the glass.

The cement concrete filling in the manifolds of the forms constitute a series of cement ribs that account for the great strength of our Perfection Sidewalk Light.

Directions for the proper admixture of cement for filling the forms will be found on page 16 of this catalogue.
Illuminating Vault Doors

Door Opened, with Ratchet Attachment.

Standard Sizes: 40” wide, length 48, 54, 60, 66 and 72”.
44” “ “ 44, 48, 52, 56, 60, 66 and 72”.
48” “ “ 48, 54, 60, 66 and 72”.
52” “ “ 52, 58, 64, 70 and 76”.

Illuminating vault doors are used in connection with our Perfection Luminous Sidewalk Lighting System.
The doors are fastened when not in use. They can be opened and closed with a key. Can be easily opened any distance for ventilation.
A lip all around edge of opening in frame prevents leakage into the basement.

Door Closed, Sets flush with Sidewalk

Our illuminating vault doors set flush into the sidewalk. There are no projections of any kind to hinder walking or cause stumbling.
They are strongly constructed and carry an immense weight.
They can be made in desired sizes.
Estimates and stock sizes furnished on application.
Some Buildings Where We Have Installed Vault Lights

We refer you to a few buildings, where we have installed the Perfection System of Vault Lights.

**PHILADELPHIA, PA.**

Keith’s Theatre, Areaways, Chestnut Street.
Stafford Building, 1114 Chestnut Street.
Craig-Heberton Building, 1615 Chestnut Street.
Mint Arcade Building, Juniper and Chestnut Streets.
Fidelity Trust Company, 325 Chestnut Street.
Strawbridge and Clothier Building, Eighth and Market Streets.
Jules Junker Building, Thirteenth and Chancellor Streets.
Horn & Horn Building, Market Street.
Liveright & Greenewald Building, Thirteenth and Arch Streets.
Marks Brothers’ Building, Eighth and Arch Streets.
City Fire House, Fifteenth and Parrish Streets.
Green Building, Fourth and South Streets.
Coca-Cola Building, 842 North Eighth Street.
Bisler Factory Building, 240 North Sixth Street.
Corn Exchange Bank, Second and Chestnut Streets.
Blenheim Building, Seventeenth and Chestnut Streets.
White Building, 1616 Chestnut Street.
S. Zweighaft Building, 210-212-214 North Eighth Street.
Bisler Factory Building, Arch Street.
Lippincott Building, Sixth and Locust Streets.

**BALTIMORE, MD.**

Ingram Building, Baltimore Street.
Armstrong & Cator Building, Baltimore Street.
Caswell Hotel, Baltimore Street.
W. H. Porter & Son, Charles Street.
J. H. Walsh & Bro., Charles Street.
Miller Building, Baltimore Street.
White Building, Baltimore Street.
Armstrong & Parker, Pratt Street.
Max Kohn, Charles Street.
Wheatland Hotel, Lancaster, Pa.
Schenk Building, Lebanon, Pa.
Ogden Wilkinson Bldg., Cor. State and Montgomery Sts., Trenton, N. J.
E. A. & L. Fisher, State Street, Trenton, N. J.
Wood Estate Building, State Street, Trenton, N. J.
Item Publication Building, Allentown, Pa.
Y. M. C. A. Building, Allentown, Pa.
J. D. Williams Building, Scranton, Pa.
Victor Talking Machine Company, Camden, N. J.
Erickson Building, Seattle, Washington.
City Hall, St. Louis, Mo.
Union Depot, St. Louis, Mo.
Dr. Eberle Bank Building, Ft. Smith, Ark.
Wm. Grundy Building, Winnipeg, Manitoba.
PERFECTION LUMINOUS SIDEWALK AND VAULT LIGHTS

Test Made at Our Factory Aug. 24, 1905

Showing maximum weight bearing power of our “Perfection Luminous Sidewalk Light Construction,” using the regular 3” manifold, No. 20 gauge, galvanized sheet, metal forms, with 3” x 3” x 1” flat glass, held by the forms and cement concrete.

The test was made on a 5’ span 4’ wide. Slabs of spelter, weighing 60 lbs. each, were piled upon this construction, care being taken that there should be no binding, thus obtaining the full pressure of the entire actual weight.

The enormous weight of 15,247 lbs., placed upon this section of lights, was distributed over the entire surface. The span showed a deflection of barely 1/4” when carrying the maximum weight. Upon removing the weight the construction returned normal, showing that the cement had not permanently set.

The “Perfection Luminous Sidewalk Light” form showed no fractures of any kind in the construction, on removal of load.

<table>
<thead>
<tr>
<th>Date</th>
<th>Span</th>
<th>Width</th>
<th>Area</th>
<th>Wt. Load</th>
<th>Wt. Sq. Ft.</th>
<th>Defl.</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-24-05</td>
<td>5 feet</td>
<td>4 feet</td>
<td>20 sq. feet</td>
<td>15247 lbs.</td>
<td>762.3 lbs.</td>
<td>1/4”</td>
</tr>
</tbody>
</table>
THE BERGER MANUFACTURING CO., CANTON, OHIO, SOLE MFRS.

Showing construction of Berger's Perfection Luminous Sidewalks, with Multiplex Steel Plate for Plain Sidewalk Support, Courtland Hotel, Canton, Ohio.
Berger's Perfection Luminous Sidewalk Lights in Practical Use

Perfection Luminous Sidewalk Lighting System used at the Zweighaft Building, 38 North Ninth Street, Philadelphia, Pa.

Sidewalk Lights and Vestibule Floors at White Building, 1616 Chestnut Street, Philadelphia, Pa.
For Lighting Areaways

This cut illustrates the area-way of Keith’s theater, Philadelphia, Pa., in which the Berger Perfection Luminous System of Vault Lighting is used.

This shows the practical manner in which our Perfection Luminous System of Vault Lighting can be adapted to lighting dark places under areaways.

There is not a nook or corner under the sidewalk which cannot be lighted through the use of our system.
Accessories for Sidewalk Construction

- **Coal Hole Door, Open**
- **Coal Hole Door, Closed**
  With or Without Lights.
  18 x 18” and 20 x 20”
- **Coal Hole Ring**
  16, 18, 20 and 24”
- **Coal Hole Top**
  (Illuminated)
- **Coal Hole Cover**
  Plain.
- **Street Crossing Plate**
  Any length or any width.
- **Cellar Grating**
  Ventilated Top
  12 x 12”; 12 x 24”
- **Grating**
- **Sidewalk Gutter Box**
  4 x 6” and 4 x 8”
Multiplex Steel Plate

Multiplex Steel Plate, used in conjunction with Perfection Luminous Vault Lights, where a solid pavement is required, is a substitute for brick arches and is extensively used for fire-proof floor construction, bridge floors, roofs, etc. We furnish it to carry any desired weight.

Multiplex Plate Used in its Simplest Form

Multiplex Plate is made in various gauges from No. 16 to No. 24. It is, beyond all question, the maximum realization of safety and strength at the minimum expense of weight, labor and money.

Plates are cut to fit and exactly cover floor space as per accompanying sketch. They are laid with end bearing on “I” beam or wall. All plates interlap at ends and sides. Concrete is then put on and slightly tamped, and left to set. Floor is then ready for any kind of finish required, whether wood, tile or cement.

Multiplex Steel Plate Construction is no longer an experiment. It has been specified by the best Architects, and used by the largest and most experienced Contractors, with results most satisfactory in every case.
Illustrating Test Made to Show Strength of Multiplex Steel Plate

Test of Multiplex Steel Plate, made at Canton, Ohio, July 28th, 1897, under the direction of Hallstead & McNaugher, successors to G. W. G. Ferris & Company, Civil Engineers, Pittsburg, Pa.
Concrete and Concrete Filling

Cement concrete as a building material, when properly mixed, set and hardened, possesses excellent qualities. While iron, stone, brick and timber suffer more or less from atmospheric and elemental action, no preparation is required to protect cement concrete. In the water, in the air, and, in fact, under all imaginable circumstances, the possibility of successfully using the same forms is one of the highest recommendations in its favor. Timber especially, even when protected from decay by some chemical preservative more remarkable for its promise than its performance, is too untrustworthy a building material for general use, and can and should only be used where unavoidable. Concrete adheres to sheet steel as glue does to wood. (see Van Emperger's Engineering Record, 1893.) A floor constructed with the union of concrete and the Multiplex Steel Plate is the exponent of strength and lightness, fire-resisting and insuring moderate cost.

Concrete mixtures for floors and roofs may consist of:

(a) 1 part Portland cement, 3 parts of sand, mixed with 5 parts of furnace slag, 1-2 inch screenings; weight per cubic foot, 90 pounds.
(b) 1 part of Portland cement, 3 parts sand, mixed with 5 parts of limestone or coarse gravel, 1-2 inch screenings; weight per cubic foot, 120 to 140 pounds.

Concrete mixture for sidewalk lights:

(c) 1 part Portland cement, 1 part crushed furnace slag, or small gravel.
If gravel is used, would recommend a small portion of sharp sand to be added; but if possible use crushed slag or stone which requires no sand.

HOW TO ORDER

Send sketch or blueprint of space to be covered showing the layout of the supporting walls, eye-beam or other support on which the ends of the galvanized forms are to rest. Forms should have 2” to 3” end bearing, and should run at right angles from building line, if possible.

Forms are cut to fit. Therefore, be very accurate in your measurements. Always state whether opening is in the clear or whether you have allowed for end bearing for the galvanized forms.

The regular forms are 3” high, making sidewalk 4” from bottom of form to top of glass.

All beams or walls to be used for bearings must be four inches below finished grade. Regular stock forms are used on spans of six feet or less. For large spans we make special forms four inches deep, which will require bearings five inches below finished grade.