THE GAS LIGHTNING OF TOWER BRIDGE
From 1864, relit 1901 and upgraded all the way to 1966

CHRIS SUGG
DESIGN AND CONSTRUCTION

Tower Bridge is a combined bascule and suspension bridge.
Sept 24th 1892
Bascule girders under construction and granite masonry cladding being applied
Suspension chains under construction. All wooden scaffolding and steam cranes.
1893 Progress with towers now clad and suspension chains in place.
Large lanterns on the pillars are positioned to shine onto the water and passing boats when the bascules are lifted.
Lamp standards and embellished ‘Lambeth’ lanterns, the twin pair await their burners. The gas supplies are in evidence as are some wood blocks which will become the road surface.
The back of this photo says that on the left is Worsfold traveller (London) & the bowler hatted man 4\textsuperscript{th} from the left is Ted Nurse, Foreman Fitter.

Final stages of the William Sugg installation.
Vincent Works, 67 – 73 Regency Street Westminster

William Sugg with family & senior staff at the opening of the new building 1888 not long before the Tower Bridge project.
150 ton weight test 1894 caused a deflection of only 1.5" 38 mm
Lighting already installed before heavy work completed

Probably because work was let in separate contracts
“The Eve of Completion: Clearing away Scaffolding”

Drawing for The Graphic’s special supplement
30 June 1894

Drawing by Henri Lanos
Shortly before the opening. Workmen leaving site?
The completed bridge prior to opening.

You can just see the open flame burner in the nearest lamp.
OFFICIAL PROGRAMME.
By Order of the Lord Chamberlain.

Souvenir

Opening of
The Tower Bridge
By Their Royal Highnesses
The Prince and Princess
of Wales

City Arms, High Level, South
Middlesex Aqueduct, West Side.
The text says:
The Tower Bridge and its approaches are lighted entirely by gas, by means of upwards of 200 Sugg’s patent high-power flat flame gas lamps. All the work supplying and running gas and water mains and supplying and fixing lamps, ornamental lamp standards and columns, hydrants, tanks and hand-pumps was carried out by William Sugg & Co.
The Royal procession viewed from specially constructed stands, - doubtless for the great and the good but Suggs did receive 14 tickets! Don't miss the lamps!
MECHANISM AND HOW IT WORKS

RAISING AND LOWERING THE BASCULES

Diagram detailing the machinery involved in raising and lowering each of the bascules.
The huge space into which the counter weight swings when the bridge opens
It took until 1972 for electric motors to replace steam.
The original control cabin with an interior gas lamp.
The original control cabin as preserved today – without its gas lamp!
Early traffic is already having to negotiate the central refuge to overtake the slower transport.
Morning traffic building. Good view of the square lamps with policeman by the refuge.
Traffic waiting for the bridge to close. Note the motorbike & sidecar first designed in 1893 - so an early example.
RETOFITTING WITH HIGH PRESSURE GAS AND UPRIGHT MANTLES
AND LATER WITH INVERTED CLUSTERS

The Journal of Gas Lighting, Water Supply, etc – generally known as the JGL carried this advert on December 10th 1901

The photo is the SAME one as was used in 1894 for the original advert which shows a certain care in expenditure perhaps!

The Times extract says ‘The Bridge (Blackfriars) itself is lighted by High-Pressure lamps on the Sugg system. These last, which at least hold their own in regard to illuminative effect with both the County Council’s and the City of London Company’s efforts in Electric Lighting, have only recently been installed, and were brought into use last night for the first time ...
William Sugg decided that he could improve on the Welsbach mantle by increasing the pressure. It was these burners that were retrofitted to several bridges including Tower Bridge.
THE GREAT REVOLUTION
The introduction of the gas mantle by in 1887 gave 5 times the illumination of the flat flame burner. Shortly after William Sugg designed the famous Windsor lamp with an all metal roof and a full width reflector specifically for this ‘revolution’.

The “WINDSOR” Lamp with Upright Burner.

The greatly increased light given by the upright mantle allowed lamps of much smaller dimensions to be introduced and the common use of large lanterns became a thing of the past except for central positions, refuge lighting and railway yards or similar.

The “CHERTSEY” Lamp.

SUGG’S “REGENT” LAMP

Introduced 1903 with large No.4 or even No.6 individually fed inverted mantles, this lamp was to become the Littleton when converted to the superheated cluster of small mantles in 1911

The great wave of converting street lamps to the Inverted superheated cluster dates from 1912
Inverted, superheated, cluster burners
Inverted mantle burner

Passing the time of day. On average it took 6 minutes for the bridge to open and close.

One of the reasons why pedestrians gave up using the high level walkway.
Waiting to cross 1933

A Keith & Blackman High Pressure gas lamp.
Lighting innovation. Circled are gas floodlights for the bascule roadway.

Also a centrally suspended Rochester lamp with traversing & lowering gear.
Opposite side of the same tower with the floodlights shows an original post that has been extended by at least half again carrying one of the new lamps with a superheated cluster burner

Judging by the dirty glass the old lamps look as if they are no longer in use
Taken from the same side but a little later, the large lamps have been removed, witness the 3 new pieces of clean stone that remained until the whole bridge was cleaned in 1976 by Stoneguard Projects.
1930’s with inverted cluster burners  
2013 with electric lamps
1930’s with inverted cluster burners

2013 with electric lamps
Wartime damage exposing the hydraulic & gas pipework laid by the Sugg company some 50 years earlier.
Charles Ford, one of the last of Tower Bridge’s Lamplighters, lighting a Sugg Windsor Lamp in a photo from 1949.

The gas lamps were not finally replaced until 1966.
REFERENCES, RECENT PICTURES AND TOWER BRIDGE MUSEUM

1988
TOWER BRIDGE
HONOR GODFREY

1977
THE TOWER BRIDGE

1994 Centenary Souvenir Guide
New book for the 125th anniversary 1894-2019
These pictures were all taken in 2019 and show that William Sugg’s lanterns, then 125 years old, can still be viewed in their original location in the north & south towers of Tower Bridge.
William Thomas Sugg
1832 – 1907
Managing Director,
1881 - 1907