The WARMING & VENTILATING of VICTORIAN & EDWARDIAN CHURCHES

Section 3: Part 1

MANUFACTURERS & INSTALLERS

Renton Gibbs & Co Limited, St James Works, Mill Street, Liverpool, prob.1890s
[Paul Yunnie Collection]
THE WARMING & VENTILATING of VICTORIAN & EDWARDIAN CHURCHES

Manufacturers & Installers

Records of church heating are sketchy. An advertisement from around 1890 by J L Bacon & Co of London illustrates a church interior, where heating pipe coils and coil cases can be seen, the firm describing itself as “Manufacturers of Hot Water Apparatus for Warming...Churches, Chapels.” Their methods of working are also explained: “Estimates will be given, free of charge, for warming any building, the plans of which are sent to the office”; alternatively, “A competent Person will be sent to inspect any Building where no Plans exist, and make an Estimate; his Travelling Expenses only being charged.”

However, in 1897 (the year of the founding of the Institution of Heating and Ventilating Engineers) many heating apparatus manufacturers and installers referred in their advertisements to their involvement in this particular sector of the market. A M Perkins & Son Ltd of London the pioneer of high pressure hot water heating systems, refers to being “established over 60 years” with “many thousand apparatuses erected,” and lists some religious buildings heated by their “patent small-bore system.”

J Wonter-Smith Gray & Co of London manufacturers of the Finsbury radiator, put churches first on the list of building types where their “high and low pressure hot water apparatus for warming” should be considered. T C Williams of Reading announced they provide “estimates and plans for warming” churches. Similarly, Messenger & Company of Loughborough, Leicestershire state “plans and estimates prepared for heating” of churches.

The name John Grundy of London features frequently in connection with church heating, and he claims his warming and ventilating stoves provide “Pure Warm Air ...to upwards of three thousand Places of Worship.” Another famous heating firm was The London Heating and Ventilating Company Ltd “Proprietors of Gurney Stoves for Warming Churches, &c., as specified by leading Architects, and as used in St Paul’s, Salisbury, Exeter, Gloucester, Lincoln, Llandaff Cathedrals, York Minister, St George’s Chapel, Windsor, &c. Twenty-two Cathedrals, and over 10,000 Churches, Schools, Government and other public and private buildings successfully warmed by our system.”

The Bristol firm of Vincent Skinner, later Skinner & Board, provided heating in many West Country churches around the latter part of the Victorian era.

In a turn-of-the-century catalogue, the little known firm of John Metcalf, Heating Engineer of Preston (established 1873), lists over 100 religious buildings heated by them, and illustrates their system of “Duplex Pipes fixed on a level with the floor in Churches, &c., with solid grating top.”
Acme & Spherical Ventilators, Smoke Cures, and High Pressure Heating.

Fig. 1.—Amcor Ventilators in Carved Acme Looms. Close, without chafe, for Corrosion, Walls, etc.

Section of Acme Patent Ventilation, showing the arrangement of the wind and exhaust.

Acme Ventilating & Heating Co., LIVERPOOL.

Apply for further particulars:


From Jones 1904 [Note HPHW heating furnace, upper right]
CATALOGUE AND PRICE LIST

by

AMERICAN RADIATORS

for

WARMING ALL CLASSES OF BUILDINGS BY WARM WATER,
OR BY LOW PRESSURE STEAM.

MANUFACTURED BY

AMERICAN RADIATOR COMPANY

EUROPEAN BRANCH:
143 Queen Victoria Street,
LONDON, E.C.

Catalogue 1897 [Heritage Group Collection]
ON
WARMING AND VENTILATING;
WITH
DIRECTIONS FOR MAKING AND USING
THE
THERMOMETER-STOVE,
OR
SELF-REGULATING FIRE,
AND
OTHER NEW APPARATUS.

By NEIL ARNOTT, M.D., F.R.S., &c.
PHYSICIAN EXTRAORDINARY TO THE QUEEN;
Author of the "Elements of Physics," &c.

LONDON:
LONGMAN, ORME, BROWN, GREEN, AND LONGMANS,
PATERNOSTER ROW.

1838.

Textbook 1838 [Heritage Group Collection]
Many years since, this principle was perfected at our Works under the direct superintendence of Dr. Arnott, and though many new plans for economically and efficiently heating apartments, churches, &c., have since been introduced, the continued and steady sale of these, prove, that they still compete successfully, with the many newer methods.

With these Stoves you reduce the supply of air to the smallest that can be, to support combustion; thus reducing to the minimum the amount of heat lost to use by escaping through the flue.

By Cook's Patent Compound Bar, you actually make your fire regulate itself, for as it begins to burn too fiercely, the Compound Bar becoming heated curves gradually and thus shuts off the supply of air.

An advertisement by Comyn Ching for an Arnott stove
NEIL ARNOTT

Neil Arnott, 1788-1874

An Arnott stove

Edwards's Arnott's Stove.
MEDAL AWARDED 1865 and 1881.

HEATING APPARATUS.

ATTWOOD'S IMPROVED EXPANSION JOINT

INVENTOR,
PATENTEE,
MANUFACTURER.
PIONEER OF THE
EXPANSION JOINT
HOT-WATER TRADE.

BEWARE OF IMITATIONS.

J. ATTWOOD.

Engineer, &c.,
FOSTER STREET,
STOURBRIDGE.

TO

MERCHANTS,
IRONFOUNDERS,
IRONMONGERS,
HOT-WATER ENGINEERS,
HORTICULTURAL BUILDERS:

USE MY SPECIALITIES.

NOT CONNECTED
WITH ANY OTHER
FIRM TRADING
EVER IN MY
NAME OR IN
ARTICLES OF MY
INVENTION.

CATALOGUES FREE.

From Dye 1891
J. L. BACON & CO.

Manufacturers of Hot Water Apparatus for Warming Churches, Chapels, Schools, Hospitals, Private Houses, Offices, Manufactories, &c., &c.

Estimates will be given free of charge for various kinds of apparatus. A competent person will be sent to inspect any building where no Plans exist, and make an Estimate, his travelling expenses only being charged.

OFFICES & SHOW ROOMS:
34, UPPER GLOUCESTER PLACE, LONDON, N.W.

Advertisement, c.1890 [Heritage Group Collection]
Ventilation
and Heating.

BY
JOHN S. BILLINGS, A.M., M.D.,
L.L.D. EDINBURGH AND HARVARD. D.C.L. OXON.
MEMBER OF THE NATIONAL ACADEMY OF SCIENCES.
SURGEON U.S. ARMY, &c.

LONDON:
THE ENGINEERING RECORD,
(PRIOR TO 1889 The Sanitary Engineer).
1896.

Head Office:
277, Pearl Street, New York.
FIG. 151.—PLAN OF BASEMENT OF FIFTH AVENUE PRESBYTERIAN CHURCH.
NEW YORK CITY.

A.—Fresh-air supply shaft from tower.
B.—Entrance for air 75 feet above ground.
C.—Fan.
D.—Air chamber.
E.—Heating coil, 4,000 feet of 1-inch pipe.
F.—Coal.
G.—Air duct.
H.—Engine.

Textbook 1896 [Heritage Group Collection]
Fig. 154.—HEBREW TEMPLE, KENESETH ISRAEL, BROAD STREET, ABOVE COLUMBIA AVENUE, PHILADELPHIA, PA.

1.—Fresh-air inlets.
2.—Dampers for controlling fresh air to blower.
3. Dampers for controlling air from auditorium and blower.
5. Blower.
6. Air chamber.
8. Radiators.
9. Ducts for aspirating air from auditorium.

Textbook 1896 [Heritage Group Collection]
ROBERT BOYLE & SON LTD

ROBERT BOYLE
& SON, LTD.

VENTILATING ENGINEERS.

64, HOLBORN VIADUCT,
LONDON, E.C.
110, BOTHWELL STREET,
GLASGOW.

Telegrams: "Hypostyle, London".
Cable Code: A.N.C.

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Catalogue c.1900 [Heritage Group Collection]
Ventilation of Churches.

"Pure air ensures health and happiness; foul air disease and death."—Parkes.

The vitiated atmosphere usually found in imperfectly ventilated churches is the principal cause of the draughtiness with which many of the congregation are overcome before the service is over, and the fainting fits which so frequently occur in certain churches. This is due to a deficiency of oxygen in the air and an excess of carbonic acid gas, water vapour, and fossil organic matter, combined, when the gas is lighted, with the poisonous products of combustion. A feeling of oppressive closeness and heat is also generally experienced under such conditions.

To the deleterious quality of the air found in so many churches is to be ascribed what is known as "clergyman’s headaches," and the feeling of lassitude and morose irritation so commonly experienced during and after the services.

Badly ventilated churches and halls are, more than any other cause, responsible for the dissemination of disease and many people abstain from attending on that account alone who would be only too glad to be present if the air was but in a healthy state.

All this might be avoided if proper means were employed to remove the vitiated air as fast as it was generated, and to provide a sufficient supply of fresh pure air to take its place. This is now neither a difficult nor an expensive matter with the improved appliances which are in existence, and which utilise the natural forces ready to our hand to be our good servant if but properly managed. There is not the slightest necessity to resort to costly mechanical arrangements.

The immutable and beneficent laws of nature, if but properly understood and intelligently adapted, will do all that is required—silently, continuously and effectively.

The vitiated air should be extracted at the highest part of the church, to where it naturally ascends, and the fresh air admitted at or below the breathing level in an upward direction and at a low velocity through brackets or tubes distributed round the walls to secure more perfect diffusion and an equitable distribution and movement of the air throughout the church.

Where simple openings are made in the ceiling or the roof and the air is admitted at the upper part of the windows through glass hopers, downward currents of cold air invariably result, which press down and return the ascending expired air, to be reducted along with the products of combustion and other impurities.

In cold weather, downward currents of air may arise from the condensation of the warm air on the windows, walls, or open roof. This might to a great extent be overcome by thickly felt and double boarding the roof, having the walls thoroughly warmed by means of radiant heat and the windows double glazed or a radiator, or hot water or steam pipes placed underneath them to cause a counter and upward current of heated air. Where extraction ventilators are employed they are sometimes blamed for the down-draughts which arise from these causes.

Hot air should never be employed to heat a church as it is injurious to health owing to the high temperature required for effective heating, and which destroys and deteriorates a part of the oxygen required for the proper maintenance of health. Breathing warm air also accelerates and lowers the tone of the system, rendering it more susceptible to disease. (See page 20)
The "Boyle" System of Concealed Roof Ventilation and Fresh Air Warming as applied to a Church.

This form of ventilation should only be used when, for aesthetic reasons, the turreted form of the "Air-Pump" Ventilator—which is the more effective—cannot be employed.

Catalogue c.1900 [Heritage Group Collection]
REPORTS ON
The "Boyle" System of Ventilation
AS APPLIED TO CHURCHES.

The "Boyle" System of Ventilation has been successfully applied to over 5,000 Churches.

Rt. Rev. Baring Gould,
Ascot, St. Michael's Church, Blackheath Park, London.
"I beg to say that the Air-Pump Ventilators which you so kindly offered for our Church are thoroughly effective. At the close of a Sunday evening service the atmosphere of the Church and surroundings is positively pleasant, easy, however warm it is mentally sweet and fresh. Their general success is unanswerable."

Rav. Richd. Bulmer,
Congregational Church, Lavender Hill, London.
"Your Ventilating Apparatus applied to my Church has proved very successful. It has certainly maintained the purity and freshness of the atmosphere better than any other system of Church Ventilation that I have known."

Rav. W. Skinner,
Congregational Church, Forest Gate, London.
"I do not believe there is a better ventilated Chapel or Church in our district."

Rav. Gilbert C. Talbot,
Church of the Annunciation (R.C.), Warwick, N.W. London.
"Since your Air-Pump Ventilators were applied to the Church of the Annunciation, Warwick Street, we have been entirely free from the hale-dragues which before were very unpleasant, and the Church has been far better ventilated in the winter when all windows are closed."

Rev. A. Coopman,
Highly's Chapel, Walthamstow, London.
"I have much pleasure in lending my unqualified testimony as to the value of your Ventilators for ecclesiastical buildings. My Chapel is regularly used, and the doors open to the air at the evening service make the building almost unbreathable but two of your Ventilators on the east have entirely cleared the atmosphere. The change is most marked and highly appreciated, and which is a high recommendation there is no comment."
PRACTICAL VENTILATION AND WARMING,
WITH ILLUSTRATIONS AND EXAMPLES,
AND SUGGESTIONS ON THE CONSTRUCTION AND HEATING, &c., OF DISINFECTING ROOMS AND TURKISH BATHS.

BY JOSEPH CONSTANTINE,
MANCHESTER.

LONDON:
J. & A. CHURCHILL, NEW BURLINGTON STREET,
1881.
Richard Crittall & Co.,
20, Baker St., London, W.
Heating, Lighting, & Ventilating Engineers.

SOLE MANUFACTURERS (FOR ENGLAND) OF
Honeyman's Patent Ventilator.

Largely used by the following eminent Architects:—

J. Macygar Anderson, Esq.,
Sir A. W. Blomfield, A.R.A., & Sons,
Messrs. Carpenter & Ingelow,
Basil Champneys, Esq., B.A.,
Percival Currey, Esq., and many others.

Among the numerous Buildings where this Ventilator has been adopted
may be mentioned:—

" Law Courts Branch.
" Liverpool Branch.
Eton College.
Newnham College, Cambridge.
Mansfield College, Oxford.
The Charterhouse, Godalming.
Banorof Schools, Woodford.

Wellington College.
Old St. Pancras Church.
Parish Church, Warminster.
Church of St. John the Baptist,
Crewthorne, Berks.
St. Andrew's Church, Worthing.
Brooks' Club.
&c., &c., &c.

Price list, etc., post free on application.

From Dye 1891
John Grundy, established c.1870. Claimed to have provided warm air heating to upwards of 3000 places of worship.

From Dye 1897
JOHN GRUNDY

John Grundy, established c.1870. Claimed to have provided warm air heating to upwards of 3000 places of worship.

Schemes and Estimates submitted free of charge for installations of Warm Air, Low Pressure Hot Water or Steam Apparatus.

PERFECT EFFICIENCY GUARANTEED.

JOHN GRUNDY,

... Heating and Ventilating Engineer,

MANUFACTURER AND PATENTEE OF

"HELIOS" and "SIRIUS" Smoke Consuming Grates for Chimney Pieces.

"HESTA" Stove and Quick Combustion Portable Wood and Ventilating Stoves.

"CALORIFIER" and the well-known "GRUNDY" Smoke Consuming Central Fresh Warmed Air Heating Apparatus for Public Buildings and Private Dwellings.

27 MEDALS HAVE BEEN AWARDED.

Makers of Boilers, Ward Stoves,

Radiators, Ventilators, & Ranges.

BOOK CONTAINING A THOUSAND TESTIMONIALS

FORWARDED ON APPLICATION.

The well-known firm of HAMPTON & SONS. Pall Mall East, London, S.W.,

write:

Mr. John Grundy, St. Dunstan Terrace, London, E.

Nov., 30th, 1904.

Dear Sir,

In replying to your letter of the 1st inst., we have much pleasure in stating that the heating Apparatus is used with great success at our factories of

Buckingham. The main point of our success lies in the fact that our Heating

Apparatus is installed into the original heads of Buckingham stone in courses of

expanding. We are of opinion that for all kinds and all useful purposes, your

products are safe and very efficient. We have pleasure in giving you this testimonial,

and wish you the success your services deserve.

Yours truly,

HAMPTON & SONS,

W. HAMPTON, Managing Director.

Head Office: 30, DUNCAN TERRACE, CITY ROAD, N.

Show Rooms and Work Rooms:

Torrens Street, Islington, N., & 393a, City Road, London, N.

Factory: THE TYLDESBURY IRON WORKS, MANCHESTER.

Telegrams: "J OHN GRUNDY," LONDON. National Telephone: No. 553, KINGS CROSS.

From Jones 1904
JOHN GRUNDY
John Grundy, established c.1870. Claimed to have provided warm air heating to upwards of 3000 places of worship.

EIGHTY YEARS
OF
CHURCH
HEATING

by

JOHN
GRUNDY
LIMITED
393 CITY ROAD
LONDON
EC1

An early brochure
JOHN GRUNDY

John Grundy, established in 1870. Claimed to have provided warm air heating to upwards of 3000 places of worship.

WINTER WARMTH AND COMFORT.

HEATING APPARATUS.
GRUNDY'S SPECIALTY.
PURE WARM AIR.

Upwards of One Thousand Testimonials received.

Combination of Pure Warm Air and Hot Water, as supplied to LONDON BURY CATHEDRAL, TRING CATHEDRAL, CARDIFF NEW CATHOLIC CATHEDRAL, KILMORE CATHEDRAL, STANLEY CATHEDRAL, PASSEY PARISH.


Mr. Grundy's heating apparatus is the best in the market. The heat is evenly distributed throughout the house, and there is no draft or draught. The apparatus is simple and cheap, and can be installed in any house.

From: REV. Dr. ROSS, Bishop of Ely, March, 1889.

Your apparatus is the best I have ever seen. The heat is evenly distributed throughout the house, and there is no draft or draught. The apparatus is simple and cheap, and can be installed in any house.

An early advertisement
JOHN GRUNDY

John Grundy, established c.1870. Claimed to have provided warm air heating to upwards of 3000 places of worship.

John Grundy’s Patent Warm Air Sectional Heating Apparatus
JOHN GRUNDY

John Grundy, established c. 1870. Claimed to have provided warm air heating to upwards of 3000 places of worship.
G. N. HADEN & SONS
Engineers.

MANUFACTURERS OF
HEATING & VENTILATING APPARATUS.

ORIGINAL PATENTEES OF
THE EXPANSION JOINT.

Buildings of every description treated according to their special requirements, and success guaranteed.

HEATING
BY HOT WATER, WARM AIR, COMBINED AIR AND WATER, AND STEAM.

VENTILATION
BY MECHANICAL OR AUTOMATIC ARRANGEMENTS.

Other branches of Engineering Work carried out, including Hot Water Service, Laundry and Cooking Work, Engines, Pumps and Cold Water Supply, Hydrant Service, &c. &c.

HOT WATER RADIATORS of special designs.

PLANS AND ESTIMATES GIVEN.

Contractors to H. M. Government and the Crown Agents for the Colonies.

G. N. HADEN & SONS,
ENGINEERS,
TROWBRIDGE.

BRANCH OFFICES—
LONDON... 123 Cromer Street, W.C.
MANCHESTER... 4 Albert Square.
BIRMINGHAM... Lower Temple Street.

From Dye 1897
Views of G N Haden in Trowbridge [top] St George’s Works [bmn] St George’s Foundry

From Hadens of Trowbridge, Ferris, Roberts & Yinnie
Haden stove, discovered being used as a post box not far from Tyntesfield House, Wraxall, near Bristol [photo: Frank Ferris]
Hadens of Trowbridge
The family and the firm 1816-2004

Cover of a book by the Heritage Group for Haden Young, 2004
Haden portraits (top, l-r): George, James, George Nelson
(bottom, l-r) Wm Nelson, Chas Ingham, G Nelson
Haden family group, c.1897, including William and Charles Ingham with their wives and children
[Trowbridge Museum]