

APPENDIX.

## EXAMINATIONS IN SANITARY SCIENCE FOR LOCAL SURVEYORS AND INSPECTORS OF NUISANCES.

### BOARD OF EXAMINERS.

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#### Registrar.

G. J. SYMONS, F.R.S.

THE great and increasing importance of the duties devolving upon Local Surveyors and Inspectors of Nuisances in connection with the various Acts relating to Public Health, the Sale of Food and Drugs Act, &c., has led the Council of the Sanitary Institute of Great Britain to establish Voluntary Examinations, to appoint a Board of Examiners, and to grant Certificates of Competency to Local Surveyors and Inspectors of Nuisances.

Visitors duly appointed by the Local Government Board and various bodies connected with the practical application of sanitary science are invited to be present at the Examinations.

The Examinations, which are arranged in two grades, are intended to enable Local Surveyors and Inspectors of Nuisances, or persons desirous of becoming such, or of obtaining the Certificate of the Institute, to prove their competency in the subjects of Examination. Successful Candidates will be placed on the Register of persons so certificated; this Register will be kept at the Offices of the Institute, and a copy will be forwarded to Local Boards and Sanitary Authorities on application.

Each Examination occupies a portion of two days. On the first day the Examination of Surveyors occupies four hours—viz., from 12 noon till 2 p.m., and from 4 p.m. till 6 p.m., and consists of written papers only. Inspectors of Nuisances have two hours' written examination on the first day—viz., from 2 p.m. till 4 p.m. On the second day the Examination, for both classes, commences at 11 a.m., and is

*riâ voce*, with one or more questions to be answered in writing, if deemed necessary. A Certificate of competency, signed by the examiners, is granted to successful Candidates, entitling them to be designated as "Certificated by the Sanitary Institute of Great Britain."

As one person may, under the Public Health Act, 1875, be both Local Surveyor and Inspector of Nuisances, the Examinations are so arranged that Candidates who desire to do so, can enter for both Examinations on the same occasion.

Candidates are required to furnish the Board of Examiners with satisfactory testimonials as to personal character, and to give two weeks' notice to the Registrar previous to presenting themselves for Examination, stating whether they wish to be examined as Surveyors, as Inspectors of Nuisances, or as both. The fee for Examination must be paid to the Secretary, by Post-Office order or otherwise, at least six days before the day of Examination. On the receipt of the fee, a ticket will be forwarded admitting to the Examination.

The fees payable for the Examinations are as follows:—

For Surveyors . . . . .	£5 5s.
For Inspectors of Nuisances . . . . .	£2 2s.

Unsuccessful Candidates are allowed to present themselves a second time for one fee.

Examinations are appointed to be held at the Rooms of the Institute:—

On Thursday and Friday, November 12th and 13th, 1885.

On Thursday and Friday, June 3rd and 4th, 1886.

Forms to be filled up by Candidates previous to Examination will be supplied on application to the Secretary, 74A, Margaret Street, W

#### SYLLABUS of SUBJECTS for EXAMINATION.

##### FOR LOCAL SURVEYORS.

**LAWS AND BYE-LAWS**—A thorough knowledge of the Acts affecting Sanitary Authorities, as far as they relate to the duties of Local Surveyors; also, of the Model Bye-Laws issued by the Local Government Board.

**SEWERAGE AND DRAINAGE**—The Sanitary principles which should be observed in the preparation of schemes for, and the construction of, Sewerage works; the ventilation and flushing of sewers and drains; the internal drainage and other Sanitary arrangements of houses, privies, water-closets, dry-closets, and the removal of refuse; the Sanitary details of Builders' and Plumbers' work.

**WATER SUPPLY OF TOWNS AND HOUSES**—The Sanitary principles which should be observed in the preparation of schemes for, and the construction of, Water-works; the various ways in which water is likely to become polluted, and the best means of ensuring its purity.

**REGULATION OF CELLAR DWELLINGS AND LODGING HOUSES**—General principles of Ventilation; the amount of air and space necessary for men and animals; the means of supplying air, and of ensuring its purity.

**HIGHWAYS AND STREETS**—The Sanitary principles which should be observed in the construction and cleansing of streets and roads.

All persons who have passed the above Examination and received the Certificate for Local Surveyors are, by virtue of having so passed, entitled to become Members of the Institute for Life, upon payment of Five Guineas (without Annual Subscription), in addition to the fee paid for the Examination.

##### FOR INSPECTORS OF NUISANCES.

A thorough knowledge of the Provisions of the Acts and Model Bye-Laws relating to the duties of Inspector of Nuisances—also of the working of the Sale of Food and Drugs Act.

A fair knowledge of the principles of Ventilation, and the simple methods of Ventilating Rooms—Measurement of Cubic Space.

A knowledge of the Physical Characteristics of Good Drinking Water—the various ways in which it may be polluted, and the means of preventing pollution—Methods of Water Supply.

A knowledge of the proper conditions of good drainage.

The advantages and disadvantages of various Sanitary Appliances for Houses—Inspection of Builders' and Plumbers' work.

A knowledge of what constitutes a Nuisance, arising from any Trade, Business, or Manufacture.

A fair knowledge of the characteristics of good and bad Food (such as Meat, Fish, Milk, Vegetables), so as to be able to recognise unsoundness.

Some knowledge of Infectious Diseases, and of the Regulations affecting persons suffering or recovering from such diseases.

A knowledge of the best Methods of Disinfection.

Methods of Inspection, not only for Dwellings, Cellar Dwellings, Dairies, and Milk-Shops, but of Markets, Slaughter-Houses, Cow-Sheds, and offensive Trades.

Scavenging and the Disposal of Refuse.

All persons who have passed the above Examination and received the Certificate for Inspectors of Nuisances are, by virtue of having so passed, entitled to become Associates of the Institute for Life, upon payment of Three Guineas (without Annual Subscription), in addition to the fee paid for the Examination.

LIST OF BOOKS SUGGESTED BY THE EXAMINERS AS USEFUL  
TO CANDIDATES.

SURVEYORS.

LAWS AND BYE-LAWS.

The principal Acts affecting Sanitary Authorities, viz:—

- |   |                                   |
|---|-----------------------------------|
| Gas Works Clauses Acts, 1847. Price 6d.   | } Sold by<br>Eyre & Spottiswoode. |
| Water Works " " 1847. Price 1s.; & 1863,<br>price 3d.                             |                                   |
| Public Health Act, 1875. Price 5s. 7½d.   |                                   |
| " " Water, 1878. Price 4½d.   |                                   |
| Rivers Pollution Act, 1876. Price 6d.   |                                   |
| Artizans' and Labourers' Dwellings Acts, 1868.<br>Price 7½d.; and 1875, price 1s. |                                   |

Local Government Board. Model Bye-Laws for Sanitary Authorities. *Eyre & Spottiswoode. Price 4s. 6d.*

- †CHAMBERS, GEORGE F. Digest of the Law relating to Public Health and Local Government. 7th Edition. *Stevens & Son. Price £1 8s.*
- †FITZGERALD, VESEY. Public Health Act and Local Government Act, 1875. 3rd Edition. *Waterlow Bros. & Layton. Price 12s. 6d.*
- †GLEN, W.C., Q.C. Public Health Act. *Knight. Price £1 16s.*
- †LUMLEY. Public Health Act, 1875. *Shaw & Son. Price £1 5s.*
- †MICHAEL & WILL. On Gas and Water. *Butterworth. Price £1 5s.*
- STRATTON'S Public Health Acts, 1875. 1880 Edition. *Knight. Price 3s. 6d.*
- †WOOLRYCH. On the Metropolis Local Management Acts. 2nd Edition. *Shaw & Son. Price £1 1s.*
- †SMITH, WILLIAM ROBERT, M.D., and SMITH, HENRY, M.B. The Laws Concerning Public Health. *Sampson Low & Co. Price £1 11s. 6d.*

SEWERAGE AND DRAINAGE.

- BOULNOIS, H. P., M.INST.C.E. The Municipal and Sanitary Engineer's Handbook. *E. & F. N. Spon. Price 12s. 6d.*
- BUCHAN, W. PATON. Plumbing. *Crosby, Lockwood & Co. Price 3s. 6d.*
- DENTON, J. BAILEY, M.INST.C.E. Sanitary Engineering. *E. & F. N. Spon. Price £1 5s.*
- FIELD, ROGERS, M.INST.C.E. Bye-Laws and Regulations with reference to House Drainage. *E. & F. N. Spon. Price 1s.*
- FOX, CORNELIUS B., M.D. Disposal of the Slop Water of Villages. *J. & A. Churchill. Price 1s. 6d.*
- GALTON, DOUGLAS, C.B., F.R.S. Observations on the Construction of Healthy Dwellings. *Henry Frowde. Price 10s. 6d.*
- HELLYER, S. S. The Plumber, and Sanitary Houses. 2nd Edition. *B. S. Batsford. Price 10s. 6d.*

KNIGHT & Co. Annotated Model Bye-Laws of the Local Government Board relating to—I. Cleansing of Privies, &c. II. Nuisances. III. New Buildings. *Knight & Co. Price 8s. 6d.*

LATHAM, BALDWIN, M.INST.C.E. Sanitary Engineering. *E. & F. N. Spon. Price £1 10s.*

RAWLINSON, ROBT., C.B. Suggestions as to Drainage, Sewerage, and Water Supply. *Knight. Price 3s.*

†Report of the Committee of The Local Government Board on Treatment of Town Sewage. *Hansard & Co. Price, Report 1s.; Plans 10s.*

RUSSELL, J. A. Two Lectures to Builders and Plumbers. *Simpkin, Marshall & Co., 1878. Price 1s. 6d.*

ROBINSON, HENRY, C.E., F.G.S. Sewage Disposal. *E. & F. N. Spon. Price 5s.*

WATER SUPPLY OF TOWNS AND HOUSES.

†BUCHAN, A. Introductory Text Book of Meteorology. 2nd Edition. *W. Blackwood & Sons. Price 4s. 6d.*

†HUMBER, WILLIAM, ASSOC.M.INST.C.E. Water Supply of Cities and Towns. *Crosby, Lockwood & Co. Price £6. 6s.*

PARRY, JOSEPH, C.E. Water: its Composition, Collection, and Distribution. *F. Warne. Price 2s. 6d.*

†Sixth Report of the Royal Commissioners on Pollution of Rivers. *Hansard & Co. Price 16s.*

REGULATION OF CELLAR DWELLINGS AND LODGING HOUSES,  
VENTILATION, &C.

GALTON, DOUGLAS, C.B., F.R.S. Observations on the Construction of Healthy Dwellings. *Henry Frowde. Price 10s. 6d.*

HARTLEY, W. NOEL. Air and its Relation to Life. *Longmans, Green & Co. Price 6s.*

†PARKES, E. A., M.D., F.R.S., and F. DE CHAUMONT, M.D., F.R.S. A Manual of Practical Hygiene (Chapters on Air). *J. & A. Churchill. Price 18s.*

HIGHWAYS AND STREETS.

BOULNOIS, H. P., M.INST.C.E. The Municipal and Sanitary Engineer's Handbook. *E. & F. N. Spon. Price 12s. 6d.*

COBRINGTON, T., M.INST.C.E. Maintenance of Macadamised Roads. *E. & F. N. Spon. Price 6s.*

GENERAL.

†PARKES, E. A., M.D., F.R.S., and F. DE CHAUMONT, M.D., F.R.S. A Manual of Practical Hygiene. *J. & A. Churchill. Price 18s.*

†WILSON, G., M.A., M.D. Handbook of Hygiene and Sanitary Science. *J. & A. Churchill. Price 10s. 6d.*

†MURPHY, SHIRLEY F. Our Homes, and how to make them Healthy. *Cassell & Co. Price 15s.*

## INSPECTORS OF NUISANCES.

The Principal Acts relating to the Duties of Inspectors, viz:—

- |  |                                   |
|--|-----------------------------------|
| Public Health Act, 1875. Price 5s. 7½d.  | } Sold by<br>Eyre & Spottiswoode. |
| Water, 1878. Price 4½d.  |                                   |
| "Canal Boats" Act, 1877. Price 3d.   |                                   |
| Sale of Food and Drugs Acts, 1875. Price 6d.; and 1879, price 3d.  |                                   |
| Rivers Pollution Act, 1876. Price 6d.  |                                   |
| Artizans' and Labourers' Dwellings Acts, 1868. Price 7½d.; and 1875, price 1s.   |                                   |
| Alkali, &c., Works Regulations Act, 1881. Price 5d.  |                                   |
| Nuisances Removal Acts, 1855. Price 1s.; 1860, price 3d.; and 1866, price 1½d.   |                                   |
| Local Government Board. Model Bye-Laws for Sanitary Authorities. Eyre & Spottiswoode. Price 4s. 6d.  |                                   |
| Local Government Board. General Orders relating to Duties of Inspectors of Nuisances, issued March 10th and 13th, 1880.  |                                   |
| Metropolitan Board of Works. Bye-Laws under the Slaughter-houses, &c., Act; eight in number.   |                                   |
| Metropolitan Board of Works. The Dairies Cowsheds, and Milkshops Order of July, 1879.  |                                   |
| STRATTON'S Public Health Acts, 1875. 1880 Edition. Knight. Price 3s. 6d.   |                                   |
| †WOOLRYCH. On the Metropolis Local Management Acts. 2nd Edition. Shaw & Son. Price £1. 1s.   |                                   |
| CORFIELD, W. H., M.A., M.D. The Laws of Health. Longman & Co. Price 1s. 6d.  |                                   |
| CORFIELD, W. H., M.A., M.D. Dwelling Houses: their Sanitary Construction and Arrangements. H. K. Lewis. Price 3s. 6d.  |                                   |
| F. DE CHAUMONT, M.D., F.R.S. Manuals of Health. The Habitation in Relation to Health. Society for Promoting Christian Knowledge. Price 1s.                                 |                                   |
| FIELD, ROGERS, M.INST.C.E. Bye-Laws and Regulations with Reference to House Drainage. E. & F. N. Spon. Price 1s.   |                                   |
| KNIGHT & Co. Annotated Model Bye-Laws of the Local Government Board relating to—I. Cleansing of Privies, &c. II. Nuisances. III. New Buildings. Knight & Co. Price 8s. 6d. |                                   |
| HARTLEY, W. NOEL. Water, Air, and Disinfectants. Society for Promoting Christian Knowledge. Price 1s.  |                                   |
| †PARKES, E. A., M.D., F.R.S., and F. DE CHAUMONT, M.D., F.R.S. A Manual of Practical Hygiene. (Chapters on Water, Air, Food, and Sewage). J. & A. Churchill. Price 18s.    |                                   |
| †MURPHY, SHIRLEY F. Our Homes, and how to make them Healthy. Cassell & Co. Price 15s.  |                                   |

† Books marked thus are Works of Reference.

It is not necessary that Candidates should study all the works mentioned in this List, as two or three are quoted in some subjects to afford greater facilities for obtaining the information.

## EXAMINATIONS FOR LOCAL SURVEYORS AND INSPECTORS OF NUISANCES.

The following Candidates received Certificates during the year 1884.

## LOCAL SURVEYORS.

- 1884, June 6, GILBY, C., Bath.  
 1884, Nov. 7, PHILLIPSON BURTON, R., Dublin.  
 1884, June 6, RADFORD, W. H., Nottingham.  
 1884, June 6, TATTERSALL, W., Accrington.  
 1884, Nov. 7, THOMSON, GILBERT, Glasgow.  
 1884, June 6, WILSON, J. B., Arlecdon, Carnforth.  
 1884, Nov. 7, WORTH, J. EDWARD, Burslem.

## INSPECTORS OF NUISANCES.

- 1884, June 6, AINGE, T. STYLES, Bristol.  
 1884, June 6, BECK, W. C., Hastings.  
 1884, Nov. 7, BROOKS, J., Lees Brook, near Oldham.  
 1884, June 6, CAMERON, KENNETH, Aberdeen.  
 1884, Nov. 7, DALY, W., Lees Road, Oldham.  
 1884, June 6, EASTON, C. J., Gosport.  
 1884, Nov. 7, FRASER, W., Liverpool.  
 1884, June 6, GIBBS, R., Portsmouth.  
 1884, June 6, HASLAM, T. TONGE, Bolton.  
 1884, Nov. 7, HOUGHTON, J., Moseley, near Birmingham.  
 1884, June 6, JEFFERY, R., Bedford Row.  
 1884, June 6, JOBLINGS, G. W., Sunderland.  
 1884, Nov. 7, KEAL, J., Sutton, Surrey.  
 1884, Nov. 7, LOACH, J., Handsworth, Birmingham.  
 1884, June 6, MALLINSON, J., Colne, Lancashire.  
 1884, Nov. 7, MARSHALL, J., Hornby, Lancaster.  
 1884, June 6, PARKER, J., Birmingham.

- 1884, Nov. 7, POTTER, BEN., Brixton.  
 1884, June 6, POULSON, F. T., Tottenham.  
 1884, Nov. 7, ROLLINSON, A. H., Chesterfield.  
 1884, June 6, SHADRAKE, W. A., Poplar.  
 1884, Nov. 7, SIMPSON, J. T., Hull.  
 1884, June 6, SUTCLIFFE, A., Thornton, near Bradford.  
 1884, June 6, TURNER, THOMAS, Bolton.  
 1884, Nov. 7, WHEAT, T., Sunderland.  
 1884, June 6, WHYTE, JAMES, Edinburgh.  
 1884, Nov. 7, WINNER, F. SAWYER, Charing Cross, S.W.

## EXHIBITIONS OF SANITARY APPARATUS AND APPLIANCES.

THE Exhibitions of Sanitary Appliances are held annually in connection with the Autumn Congress, and unpatented exhibits are protected by a certificate granted by the Board of Trade, under the Patents Designs and Trade Marks Act, 1883.

Judges are appointed by the Council to examine the several exhibits, and award Medals and Certificates of Merit to such objects as they may consider worthy.

In addition to the Ordinary Medals, a special Medal—the Richardson Medal—is offered by the Institute, for a selected exhibit from the entire exhibition, and will be awarded by the Judges in cases of pre-eminent merit only. Selected exhibits of such a nature as to require practical trials which cannot be carried out on the spot, are submitted to such trials upon the Exhibitors defraying the necessary expenses.

The Exhibits are arranged in the following Classes:—

### CLASS I.—BUILDING MATERIALS, CONSTRUCTION AND MACHINERY.

Materials and Construction.  
 Damp-proof Courses.  
 Paints and other Protectives.  
 Wall Papers and Coverings.  
 Flooring.  
 Decorative Materials.  
 Machinery adapted for Sanitary Purposes.  
 Laundry Appliances.

### CLASS II.—WATER SUPPLY AND SEWERAGE.

Apparatus for Water Supply.  
 Filtering and Softening Water.  
 Water Waste Preventors.  
 Flushing and Watering.  
 Sinks.  
 Baths and Lavatories.  
 Water Closets.  
 Urinals.  
 Drain Pipes.  
 Traps.  
 Dry Closets.  
 Sewage Treatment.  
 Miscellaneous Sanitary Goods.

### CLASS III.—HEATING, LIGHTING, AND VENTILATING.

Heating Apparatus.  
 Cooking Apparatus.  
 Smoke Preventing Appliances.

Lighting, including Electric Lighting.  
 Ventilating Gas Burners.  
 Ventilators.

### CLASS IV.—PERSONAL HYGIENE, FOODS, FILTERS & DISINFECTANTS.

Clothing.  
 Beds and other Furniture.  
 Hospital and Sick Room Appliances.  
 Domestic Appliances.  
 School Fittings.  
 Gymnastic Apparatus.  
 Foods.  
 Domestic Filters  
 Mineral Waters.  
 Soaps and other Detergents.  
 Antiseptics and Disinfectants.  
 Disinfecting Apparatus.

### CLASS V.—MISCELLANEOUS.

*Articles of Sanitary interest not included in the above Classes, such as:—*

Scientific Instruments.  
 Books and Periodicals.  
 Models and Drawings.  
 Prevention of Accidents.  
 Respirators and Face Guards for Unhealthy Occupations.  
 Fire-preventing Appliances.  
 Methods for the Disposal of the Dead, &c., &c., &c.

## EXHIBITIONS HELD IN CONNECTION WITH THE CONGRESSES OF THE INSTITUTE.

	1877. Leamington.	1878. Stafford.	1879. Croydon.	1880. Exeter.	1882. Newcastle.	1883. Glasgow.	1884. Dublin.
Number of Exhibitors ... ..	117	116	189	106	110	126	134
Number of Exhibits	294	319	710	500	600	750	900
Space occupied (in square ft.) ... ..	.....	.....	.....	9,725	14,520	20,000	40,000
Number of days Exhibition was open	14	16	17	19	25	25	19
Total number of Visitors ... ..	.....	.....	.....	8,955	8,373	20,000	35,000
Number of Medals awarded ... ..	13	13	12	12	15	21	13*
Number of Special Certificates ... ..	None.	6	9	7	4	13	11
Number of Certificates ... ..	None.	21	38	40	72	57	78*
Number of Exhibits deferred for further trial ... ..	.....	7	52	30	37	44	39

\* These numbers do not include any Medals or Certificates which may be awarded for Exhibits deferred for practical trial.

## CLASSIFIED LIST OF MEDALS AWARDED AT THE EXHIBITIONS.

## RICHARDSON MEDAL.

Siemens's Regenerative Gas Burner. Mather & Armstrong, *Newcastle-upon-Tyne*. NEWCASTLE, 1882.  
Griffiths' Patent White. Silicate Paint Company, *Cannon Street, E.C.* STAFFORD, 1878.

## SILVER MEDAL.

Offered by the Exeter Gas Company.

Dr. Bond's Euthermic Ventilating Gas Stove. Sanitary & Economic Supply Association, *Gloucester*. EXETER, 1880.  
Eureka Gas Cooking Stove Wright, J. & Co., *Birmingham*. DUBLIN, 1884.

## MEDALS AND SPECIAL CERTIFICATES.

In cases where awards are made at subsequent Exhibitions for the same Exhibits, only the name of the town and date are given. Exhibits which have already received Medals at previous Exhibitions of the Institute are excluded from awards of Medals; but those Exhibits to which a second Medal would otherwise be awarded receive Special Certificates, and these are distinguished in the following list by asterisks placed against the name of the town at which the Exhibition was held.

## CLASS I.—BUILDING MATERIALS, CONSTRUCTION AND MACHINERY.

## (1). Materials and Construction.

Aluminium Crown Metal. Aluminium Crown Metal Co., *Glasgow*. GLASGOW, 1883.  
Delta Metal. Alex. Dick, *London*. GLASGOW, 1883.  
Silicate Cotton (Slag-wool). J. A. G. Ross, *Newcastle-upon-Tyne*. NEWCASTLE, 1882.  
Scottish Asbestos. Scottish Asbestos Co., *Glasgow*. GLASGOW, 1883.  
Damp-proof Concrete Pavement. W. B. Wilkinson & Co. *Newcastle-upon-Tyne*. NEWCASTLE, 1882.  
Silica Glazed and Enamelled Fire Clay Bricks and Faience. Willcocks & Co., *Burmantofts, Leeds*. CROYDON, 1879.

## (2). Damp Proof Courses.

No awards.

## (3). Paints and other Protectives.

Griffiths' Patent White, and for their preparations of Silicate Paint, Enamel Paint, and Petrifying Liquid. Silicate Paint Company, Cannon Street, E.C. STAFFORD, 1878.

Leadless "Charlton White" Paint and Dryers. J. B. Orr & Co., Charlton, London. GLASGOW, 1883.

Arcanum Process of Silver Plating Steel. Jefferson Read, Birmingham. CROYDON, 1879.

## (4). Wall Papers and Coverings.

Paper Hangings free from Arsenic. Woollams & Co., High Street, Marylebone, London. CROYDON, 1879. \*NEWCASTLE, 1882. \*GLASGOW, 1883.

## (5). Flooring.

Economic Hollow Flooring. G. E. Pritchett, 20, Spring Gardens, London, S.W. STAFFORD, 1878. \*CROYDON, 1879.

## (6). Decorative Materials.

Colouring Patterns through the Substance of Wood. H. Chalk Webb, Worcester. EXETER, 1880.

Wedgwood Ornamental Tiles. W. B. Morrison, Glasgow. GLASGOW, 1883.

Art Pottery. Doulton & Co., London. DUBLIN, 1884.

## (7). Machinery adapted for Sanitary Purposes.

Improved Six-Ton Steam Road Roller. Aveling & Porter, Rochester, CROYDON, 1879.

Fryer's Destructor, Fryer's Carbonizer, and Firman's Dessicating and Rendering Apparatus. Manlove, Alliott, Fryer & Co., Nottingham. NEWCASTLE, 1882.

## (8). Laundry Appliances.

Improved Washer, with table complete. J. Borwell, Britannia Foundry, Burton-on-Trent. LEAMINGTON, 1877.

New "Shuttle" Steam Power Washing Machine. T. Bradford & Co., London and Manchester. LEAMINGTON, 1877. \*STAFFORD, 1878.

Washing Machines. Thomas Bradford & Co., London and Manchester. NEWCASTLE, 1882. \*GLASGOW, 1883. \*DUBLIN, 1884.

## CLASS II.—WATER SUPPLY AND SEWERAGE.

## (1). Apparatus for Water Supply.

Anti-percussion High Pressure Valves. Doulton & Co., Lambeth, London. CROYDON, 1879. \*EXETER, 1880. \*GLASGOW, 1883. \*DUBLIN, 1884.

Anti-percussion Ball Valve. Doulton & Co., London. NEWCASTLE, 1882.

Improvements in Well Sinking Apparatus. Le Grand & Sutcliffe, Bunhill Row, E.C. LEAMINGTON, 1877. \*CROYDON, 1879.

Buck's Automatic Rain-water Separator. C. G. Roberts, Haslemere Surrey. NEWCASTLE, 1882. \*GLASGOW, 1883.

## (2). Filtering and Softening Water.

No awards.

## (3). Water Waste Preventers.

Direct Acting Valveless Waste Preventer. A. T. Bean, 5, Cannon Row, S.W. EXETER, 1880. \*NEWCASTLE, 1882.

Siphon-action Water Waste Preventers. Shanks & Co., Barrhead, N.B. DUBLIN, 1884.

## (4). Flushing and Watering.

No awards.

## (5). Sinks.

Enamelled Fireclay Sinks. Craig, J. & M., Kilmarnock. DUBLIN, 1884.

## (6). Baths and Lavatories.

Hot-Air Bath. T. Galbraith, Crawford Square, Londonderry. LEAMINGTON, 1877.

Concrete Bath in one piece. W. H. Lascelles, Bunhill Row, E.C. CROYDON, 1879. \*EXETER, 1880.

Porcelain Bath. Joseph Cliff & Sons, Leeds. GLASGOW, 1883.

Fire-Clay Enamelled Bath. John Hall & Co., Stourbridge. GLASGOW, 1883.

Flushing Rim Lavatory Basin and Apparatus. J. Tylor & Sons, Newgate Street, E.C. EXETER, 1880.

## (7). Water Closets.

Excelsior Water Closet. D. T. Bostel, Duke Street, Brighton. LEAMINGTON, 1877. \*STAFFORD, 1878.

Full-flush Valveless Closet. Hayward, Tyler & Co., London. NEWCASTLE, 1882.

Household Water Closet. O. D. Ward, London. NEWCASTLE, 1882.

## (8). Urinals.

No awards.

## (9). Drain Pipes.

Stanford's Joints for Stoneware Pipes. Doulton & Co., Lambeth, London. STAFFORD, 1878. \*EXETER, 1880.

Stoneware Pipes with Stanford's Joint. J. Stewart, Sen., Glasgow. \*GLASGOW, 1883.

Acmo Sewer Pipes. H. Percy Boulnois, Portsmouth. GLASGOW, 1883.

## (10). Traps.

Exhibit of Stoneware Disconnecting Traps. J. Stewart, Sen., Glasgow. GLASGOW, 1883.



## (11). Dry Closets.

- Dry Earth Closets. British Sanitary Company, *Glasgow*.  
NEWCASTLE, 1882. \*GLASGOW, 1883. \*DUBLIN, 1884.
- Excreta Pail (oak) with Spring Lid. B. B. Harescough & Co., *Ben-  
tink Street, Leeds*. LEAMINGTON, 1877. \*STAFFORD, 1878.
- Dry Earth or Ashes Closet. R. R. Heap, *Manchester*.  
GLASGOW, 1883. \*DUBLIN, 1884.
- Dry Closet, suitable for Ashes or Disinfecting Powder. L. Moser,  
*Southampton*. EXETER, 1880.
- Moule's Earth Closets. Moule's Patent Earth Closet Company, *5a,  
Garrick Street, W.C.* STAFFORD, 1878. \*CROYDON, 1879.
- Moule's Earth Closet. Wippell Bros. & Row, 231 and 232, *High  
Street, Exeter*. \*EXETER, 1880.
- Dry Earth Closet. J. Parker, *Woodstock, Oxford*.  
LEAMINGTON, 1877.
- Portable Cinder Sifting Ash Closet, with Soil Pail. Sanitary Appliance  
Company, *Salford*. STAFFORD, 1878. \*CROYDON, 1879.

## (12). Sewage Treatment.

No awards.

## (13). Miscellaneous Sanitary Goods.

- Sanitary Appliances, Exhibit of. W. P. Buchan, *Glasgow*.  
GLASGOW, 1883.
- Sanitary and Domestic Appliances, Exhibit of. Maguire & Son,  
*Dublin*. DUBLIN, 1884.

## (14). Cisterns.

## CLASS III.—HEATING, LIGHTING, AND VENTILATING.

## (1). Heating Apparatus.

- Ventilating Tile Stove. Doulton & Co., *Lambeth, London*.  
EXETER, 1880. \*NEWCASTLE, 1882. \*GLASGOW, 1883.  
\*DUBLIN, 1884.
- Challenge Hot-water Boiler. J. Keith, *London and Edinburgh*.  
GLASGOW, 1883.
- Slow Combustion Stoves. Musgrave & Co., *Belfast*. DUBLIN, 1884.
- Dr. Bond's Euthermic Gas Stove. Sanitary & Economic Supply  
Association, *Gloucester*. EXETER, 1880.

## (2). Cooking Apparatus.

- Apparatus for Cooking by Gas. Billing & Co., *Hatton Garden, E.C.*  
STAFFORD, 1878. \*CROYDON, 1879.
- Economical Cooking Range. G. H. Harris, *Bristol Street, Birming-  
ham*. LEAMINGTON, 1877. \*STAFFORD, 1878.
- Phoenix Portable Range, and the Birmingham Range with Reducible  
Fire without Gas. Hassall & Singleton, *Birmingham*.  
STAFFORD, 1878.

- Apparatus for Cooking by Gas. S. Leoni & Co., *Strand*.  
STAFFORD, 1878.
- "Sine qua non" Open and Close Fire Range. A. Shaw & Son,  
*Glasgow*. GLASGOW, 1883.
- Artizan Cooking Range. Walker, Turnbull & Co., *Falkirk*.  
GLASGOW, 1883.
- Improved Open or Close Range Kitchener. W. P. Wenham, *Church  
Street, Croydon*. CROYDON, 1879.
- Wilson Portable Close Cooking Range. Wilson Engineering Com-  
pany, *Holborn, W.C.* EXETER, 1880.
- Improved Wilson Range with Steel Boiler and non-conducting  
Jacketing. Wilson Engineering Company, *London*.  
NEWCASTLE, 1882. \*GLASGOW, 1883. \*DUBLIN, 1884.
- Eureka Gas Cooking Stove. Wright, J. & Co., *Birmingham*.  
DUBLIN, 1884.
- Cooking Range with Revolving Fire for the Prevention of Smoke.  
Whyte & Bradford, *Bowness*. GLASGOW, 1883.

## (3). Smoke Preventing Appliances.

- Mechanical Stoker. G. Sinclair, *Leith*. GLASGOW, 1883.

## (4). Lighting, including Electric Lighting.

- Swan's Incandescent Electric Lights. Edmundson, J. & Co., *Dublin*.  
DUBLIN, 1884.
- Prismoidal Pavement and Floor Lights. Hamilton & Co., *Leaden-  
hall Street, E.C.* CROYDON, 1879.
- Siemens's Regenerative Gas Burner. Mather & Armstrong, *New-  
castle-upon-Tyne*. NEWCASTLE, 1882.
- Mercury Gas Governor. James Stott & Co., *Oldham*.  
NEWCASTLE, 1882.
- "Stott" Gas Governor. A. Brown & Co., *Glasgow*.  
\*GLASGOW, 1883.
- Stott's Mercury Gas Governor. Smallman, John L., *Dublin*.  
\*DUBLIN, 1884.

## (5). Ventilating Gas Burners.

No awards.

## (6). Ventilators.

- Conical Ventilators. J. E. Ellison, *Leeds*. STAFFORD, 1878.  
\*CROYDON, 1879. \*GLASGOW, 1883. \*DUBLIN, 1884.
- Auto-Pneumatic Ventilation. Nathan Hunt, *Bristol*. EXETER, 1880.
- Glass Louvre Ventilators. J. Moore, *St. James' Walk, Clerkenwell*.  
*E.C.* EXETER, 1880.

CLASS IV.—PERSONAL HYGIENE, FOODS, FILTERS  
AND DISINFECTANTS.

## (1). Clothing.

- Innocuously-dyed Woollen Goods. Donegal Industrial Fund.  
DUBLIN, 1884.

## (2). Beds and other Furniture.

Excelsior Spring Mattress. Chorlton & Dugdale, *Manchester*.  
LEAMINGTON, 1877. \*STAFFORD 1878. \*CROYDON, 1879.  
\*EXETER, 1880. \*NEWCASTLE, 1882. \*GLASGOW, 1883.  
\*DUBLIN, 1884.

"Swing" Woven Wire Mattress. Chorlton & Dugdale, *Manchester*.  
DUBLIN, 1884.

"Universal" Invalid Tubular Water and Air Bed. Pooock Bros.,  
*Southwark Bridge Road*. STAFFORD, 1878. \*CROYDON, 1879.  
Furniture, Exhibit of. Pim Bros., *Dublin*. DUBLIN, 1884.

## (3). Hospital and Sick Room Appliances.

Invalid Furniture. J. Carter, *6a, Cavendish Street, W.* EXETER, 1880.  
Hospital and Sick Room Appliances, Exhibit of. W. B. Hilliard &  
Sons, *Glasgow*. GLASGOW, 1883.

Ambulance Wheeled Litter. Maj. F. Duncan, *The Common, Wool-*  
*wich*. STAFFORD, 1878.

## (4). Domestic Appliances.

Machine for Washing and Cooling Butter. F. & C. Hancock, *Dudley,*  
*Worcester*. LEAMINGTON, 1877. \*STAFFORD, 1878.

Exhibit of Machines for Domestic use. F. & C. Hancock, *Dudley,*  
*Worcestershire*. GLASGOW, 1883.

Flat Webb Knitting Machine, and Rothwell Knitting Machines,  
*Rothwell, W., Bolton*. DUBLIN, 1884.

Friction Driving Attachment, for Sewing Machines. Singer Manu-  
facturing Company, *London*. GLASGOW, 1883.

## (5). School Fittings.

School Furniture. Colman & Glendenning, *Norwich*. EXETER, 1880.

## (6). Gymnastic Apparatus.

No awards.

## (7). Foods.

Powders for Peptonizing Milk. Burroughs, Wellcome & Co., *London*.  
DUBLIN, 1884.

## (8). Domestic Filters.

Filtre Rapide. P. A. Maignen, *Great Tower Street, E.C.*  
CROYDON, 1879. \*EXETER, 1880. \*GLASGOW, 1883.  
\*DUBLIN, 1884.

Bischof's Spongy Iron Filter. Spongy Iron Water Purifying Com-  
pany, *Oxford Street, W.C.* LEAMINGTON 1877.

## (9). Mineral Waters.

## (10). Soaps and other Detergents.

No awards.

## (11). Antiseptics and Disinfectants.

Calvert's Carbolic Acid for disinfecting purposes. Calvert & Co.,  
*Bradford, Manchester*. LEAMINGTON, 1877. \*CROYDON, 1879.  
\*EXETER, 1880. \*GLASGOW, 1883. \*DUBLIN, 1884.

Chemical Substances used for Disinfection. Mackey, Mackey & Co.  
*London*. DUBLIN, 1884.

Little's Soluble Phenyle. Morris, Little & Co., *Doncaster*,  
STAFFORD, 1878.

Sanitas Oil. Sanitas Company (Limited), *London*. NEWCASTLE, 1882.

Chemical Preparations and Apparatus. Société Française D'Hygiène,  
*Paris*. LEAMINGTON, 1877.

## (12). Disinfecting Apparatus.

Portable Disinfecting Apparatus. Fraser Bros., *Commercial Road, E.*  
CROYDON, 1879.

Acid Pump and Syphon. Chas. W. Walker, *Wandsworth Common*.  
CROYDON, 1879.

## CLASS V.—MISCELLANEOUS.

Articles of Sanitary Interest not included in the above Classes,  
such as:—

## (1). Scientific Instruments.

No awards.

## (2). Books and Periodicals.

Books on Hygiène. Société Française d'Hygiène, *Paris*.  
NEWCASTLE, 1882.

Sanitary Engineer of New York, Newspaper. H. C. Meyer, *New*  
*York*. GLASGOW, 1883.

## (3). Models and Drawings.

No awards.

## (4). Prevention of Accidents.

"Kredemnon" Life-saving Garments. F. Wentworth & Co., *London*.  
GLASGOW, 1883.

## (5). Respirators and Face Guards for Unhealthy Occupations.

Tyndall's Smoke Respirator. J. Sinclair, *Leadenhall Street, E.C.*  
CROYDON, 1879.

## (6). Fire Preventing Appliances.

## (7). Methods for the Disposal of the Dead.

## (8.) Sundries.

No awards.

## CERTIFICATES AWARDED AT THE EXHIBITIONS.

### CLASS I.—BUILDING MATERIALS, CONSTRUCTION AND MACHINERY.

#### (1). Materials and Construction.

- Adjustable Shoe and Regulating Spring Hinge for Swinging Doors. R. Adams, 7, *Great Dover Street, London, S.E.* CROYDON, 1879.
- Fanlight Openers and Casement Fasteners. R. Adams, 7, *Great Dover Street, London, S.E.* CROYDON, 1879.
- Norton Door Spring. R. Adams, *London.* DUBLIN, 1884.
- Adjustable Pivot for Fanlights. R. Adams, *London.* DUBLIN, 1884.
- White Enamelled Bricks. Bourtreehill Coal Co., *Dreghorn, Ayrshire.* DUBLIN, 1884.
- Granite Vitriified Bricks and Paving. Candy & Co., *Newton Abbot.* EXETER, 1880.
- Willesden Waterproof Paper and Canvas. W. Carson & Sons, *Dublin.* DUBLIN, 1884.
- Granite Concrete Pavement. T. Cordingley & Sons, *Bradford.* DUBLIN, 1884.
- White Enamelled Bricks. J. & M. Craig, *Kilmarnock.* DUBLIN, 1884.
- Silicon Tread For Steps. Doulton & Co., *Lambeth, London.* GLASGOW, 1883. DUBLIN, 1884.
- Cotton Machine Belting. M. Gandy, *Liverpool.* GLASGOW, 1883.
- Steil's Fastener for Machine Belting. M. Gandy, *Liverpool.* GLASGOW, 1883.
- Opener for Fanlights and Skylights. W. & R. Leggott, *Bradford.* GLASGOW, 1883. DUBLIN, 1884.
- Glazing without Putty. Pennycook Patent Glazing & Engineering Company, *Glasgow.* GLASGOW, 1883. DUBLIN, 1884.
- Revolving Shutters, with Balance Weight Motion. Salmon, Barnes & Co., *Ulverston.* EXETER, 1880.
- Hygeian Rock Building Composition. William White, *Abergavenny.* NEWCASTLE, 1882.
- Chain Belting for Machinery. W. Wilby, *Dublin.* DUBLIN, 1884.

#### (2). Damp Proof Courses.

#### (3). Paints and other Protectives.

No awards.

#### (4). Wall Papers and Coverings.

- "Lincrusta Walton." F. Walton & Co., *London.* GLASGOW, 1883.

#### (5). Flooring.

- Parquet Flooring. A. Gardner & Son, *Glasgow.* GLASGOW, 1883.
- Solid Oak Parquet Flooring. F. R. Scott & Co., *Dublin.* DUBLIN, 1884.

#### (6). Decorative Materials.

- Decorative Tiles for Covering Walls and Floors. Doulton & Co., *Lambeth, London.* CROYDON, 1879.
- Marsden Tiling for Wall Decoration. Maguire & Son, *Dublin.* DUBLIN, 1884.

#### (7). Machinery adapted for Sanitary Purposes.

- Improved Non-Absorbent Tub or Pail Van. J. B. McCallum, *Stafford.* EXETER, 1880.

#### (8). Laundry Appliances.

- "Vowel E." Bradford's Family Washing Machine. Garton & King, *Exeter.* EXETER, 1880.
- Paragon Washing Machine with Canadian Washer. Kirsop & Co., *Newcastle-upon-Tyne.* NEWCASTLE, 1882.
- Mitchell's Patent Steam Washer. James Mitchell, *Newcastle-upon-Tyne.* NEWCASTLE, 1882.

### CLASS II.—WATER SUPPLY AND SEWERAGE.

#### (1). Apparatus for Water Supply.

- Hydraulic Ram. W. Baird, *Dublin.* DUBLIN, 1884.
- Latham's Flap Valve. Doulton & Co., *London.* NEWCASTLE, 1882.
- Water-taps. J. Fell & Co., *Wolverhampton.* NEWCASTLE, 1882.
- Large Way Waste Plug, with Protective Cover. Finch & Co., *181, High Holborn, W.C.* CROYDON, 1879.
- Hose Reel. Headley & Sons, *Cambridge.* CROYDON, 1879.
- Improved Paragon Valve. W. Ross, *Glasgow.* GLASGOW, 1883.
- Improved Full-Way Stop Valve. J. Tylor & Sons, 2, *Newgate Street, E.C.* EXETER, 1880.
- Vacuum Flushing Cistern for Closet, with Seat-action Arrangement. Doulton & Co., *Lambeth, London.* DUBLIN, 1884.
- Anti-percussion High-pressure Bib Valves. Doulton & Co., *London.* NEWCASTLE, 1882.

#### (2). Filtering and Softening Water.

No awards.

#### (3). Water Waste Preventers.

- Waste-preventing Flushing Syphon. Henry Watson & Son, *Newcastle-upon-Tyne.* NEWCASTLE, 1882.
- Syphon for Water Closet Cisterns. Braithwaite & Co., *Leeds.* CROYDON, 1879.
- Bath Locking Valves, for preventing waste of water. Doulton & Co., *Lambeth, London.* NEWCASTLE, 1882.
- "Waste Not" Regulator Valve. J. Tylor & Sons, 2, *Newgate Street, E.C.* EXETER, 1880. NEWCASTLE, 1882.
- Bath Locking Valves for preventing Waste of Water. J. Tylor & Sons, *London.* NEWCASTLE, 1882.

## (4). Flushing and Watering.

Syphon Flushing Cistern. Wright & Stevens. NEWCASTLE, 1882.

## (5). Sinks.

Butler's Sink, lined with Block Tin. W. Baird, *Dublin*.  
DUBLIN, 1884.  
White Enamelled Fireclay Sinks. W. Baird, *Dublin*. DUBLIN, 1884.  
White Enamelled Fireclay Sinks. Bourtreehill Coal Co., *Dreghorn, Ayrshire*.  
DUBLIN, 1884.  
White Enamelled Fire Clay Sinks. J. & M. Craig, *Kilmarnock*.  
NEWCASTLE, 1882. GLASGOW, 1883.  
Cheap Glazed Stoneware Sinks. Doulton & Co., *Lambeth, London*.  
DUBLIN, 1884.  
"Artizans' Dwellings Sink." G. Jennings, *Stangate, London*.  
CROYDON, 1879.  
White Enamelled Fireclay Sinks. Maguire & Son, *Dublin*.  
DUBLIN, 1884.  
Swivel, Lock Plug, and Overflow for Sinks. Stidder & Co., 50, *Southwark Bridge Road, S E*.  
CROYDON, 1879.  
Cup Grating for Sinks. Thomasson & Key, *Worcester*.  
NEWCASTLE, 1882.  
Improved Enamelled Iron Slop Sink, with Regulator Supply Valve. J. Tylor & Sons, 2, *Newgate Street, London, E.C.*  
EXETER, 1880.  
Hospital Slop Sink with Waste-not Regulator Valve. J. Tylor & Sons, *London*.  
NEWCASTLE, 1882.  
Slop Sinks. T. Twyford, *Hanley*. DUBLIN, 1884.  
Fire-Clay Sanitary Sinks, and Water Troughs. Willecock & Co., *Burmantofts, Leeds*.  
CROYDON, 1879.

## (6). Baths and Lavatories.

Bath, with Shower Douche and Spray Fittings combined. W. Baird, *Dublin*.  
DUBLIN, 1884.  
Lavatory, with Shampooing Apparatus. W. Baird, *Dublin*.  
DUBLIN, 1884.  
Improved Horizontal-Pull Fittings to Baths and Lavatories. W. Baird, *Dublin*.  
DUBLIN, 1884.  
Jennings's Universal Shampooing Apparatus. Dinning & Cooke, *Newcastle-upon-Tyne*.  
NEWCASTLE, 1882.  
Locking Apparatus for Bath Fittings. Doulton & Co., *Lambeth, London*.  
DUBLIN, 1884.  
Tip-up Lavatory Basin. Doulton & Co., *London*. NEWCASTLE, 1882.  
Clark's Anti-splash Tip-up Lavatory Basin. J. Fell & Co., *Wolverhampton*.  
NEWCASTLE, 1882.  
Lavatory. Gillow & Co., *Oxford Street, W*. STAFFORD, 1878.  
Shower and Douche Bracket. Hayward, Tyler & Co., *London*.  
NEWCASTLE, 1882.  
"Universal" Shampooing Apparatus. G. Jennings, *Stangate, London*.  
CROYDON, 1879.

Lavatory Basin with Flushing Rim. C. T. Maling, *Newcastle-upon-Tyne*.  
NEWCASTLE, 1882.  
Enamelled Fire Clay Bath. Rimington Bros., & Co., *Newcastle-upon-Tyne*.  
NEWCASTLE, 1882.  
Porcelain Baths, moulded and glazed in one piece. Ruffard & Co., *Clay Works, Stourbridge*.  
STAFFORD, 1878.  
Cast Iron Bath. Shanks & Co., *Glasgow*. GLASGOW, 1883.  
DUBLIN, 1884.  
Porcelain Lavatories, with moveable caps for access to fittings. Shanks & Co., *Glasgow*.  
GLASGOW, 1883. DUBLIN, 1884.  
"Eureka" Spray and Plunge Bath. Shanks & Co., *Glasgow*.  
GLASGOW, 1883.  
Lavatory Basins. T. Twyford, *Hanley*. DUBLIN, 1884.  
Flushing-rim Lavatory Basin with Quick Waste. J. Tylor & Sons, *London*.  
NEWCASTLE, 1882.

## (7). Water Closets.

Artizan Closet. Beard, Dent & Hellyer, 21, *Newcastle Street, London, W.C.*  
CROYDON, 1879.  
Economical Flush-Out Closet. Doulton & Co., *Lambeth, London*.  
EXETER, 1880. NEWCASTLE, 1882.  
"Lambeth" Flush-out Closet. Doulton & Co., *Lambeth, London*.  
GLASGOW, 1883.  
"Lambeth" Trough Closet with Automatic Flush Tank. Doulton & Co., *Lambeth, London*.  
GLASGOW, 1883.  
Lambeth Combination Water Closet. Doulton & Co., *Lambeth, London*.  
DUBLIN, 1884.  
Improved Seat for Water Closets. E. & A. E. Gilbert, *Broughty Ferry, Forfarshire*.  
GLASGOW, 1883.  
Fowler's Water-closet. W. Harriman & Co., *Blaydon-upon-Tyne*.  
NEWCASTLE, 1882.  
"National" Water Closet. W. B. Morrison, *Glasgow*.  
GLASGOW, 1883.  
"Clear Way" Regulator Valve Water Closet, without overflow communicating with Valve Box. J. Tylor & Sons, 2, *Newgate Street, London, E.C.*  
EXETER, 1880.  
Terry's Pedal-action for Water-closets. J. Tylor & Sons, *London*.  
NEWCASTLE, 1882.  
"National" Water Closet. Henry Watson & Son, *Newcastle-upon-Tyne*.  
NEWCASTLE, 1882.  
"Crown" Cottage Water Closet. Henry Watson & Son, *Newcastle-upon-Tyne*.  
NEWCASTLE, 1882.

## (8). Urinals.

Flush-out Urinal Basin. J. Tylor & Sons, *Newgate Street, London*.  
NEWCASTLE, 1882.

## (9). Drain Pipes.

Large Fire-clay Drain-pipes. Straker & Love, *Newcastle-upon-Tyne*.  
NEWCASTLE, 1882.

- Stoneware Pipes. Branksea Island Pottery Company (Limited), *Poole, Dorset*, EXETER, 1880.  
 Improved Drain-pipe with Access Cover. W. P. Buchan, *Glasgow*, NEWCASTLE, 1882.  
 Salt-glazed Fire-clay Sewer-pipes, Exhibit of. J. Binnie, *Gartcosh, Glasgow*, GLASGOW, 1883.  
 Stoneware Drain Pipes. Bourtreehill Coal Co., *Dreghorn, Ayrshire*, DUBLIN, 1884.  
 London-made Stoneware Pipes. Doulton & Co., *Lambeth, London*, DUBLIN, 1884.  
 Cast-iron Drain Pipes, coated with Angus Smith's Preparation. Maguire & Son, *Dublin*, DUBLIN, 1884.  
 Maguire's Cradle Joint for Drain-pipes. J. & M. Craig, *Kilmarnock*, NEWCASTLE, 1882.  
 Cast Iron Channels for Stable Drainage. Dinning & Cooke, *Newcastle-upon-Tyne*, NEWCASTLE, 1882.  
 Joint for Drain-pipes. Doulton & Co., *London*, NEWCASTLE, 1882.  
 Artificial Stone Tubes. Patent Victoria Stone Company, *Kingsland Road, London, E.* CROYDON, 1879.  
 Rock Concrete Tubes. Sharpe, Jones & Co., *Bourne Valley Pottery, Poole, Dorset*, CROYDON, 1879.

## (10). Traps.

- Ventilating Drain Syphon. Beard, Dent & Hellyer, 21, *Newcastle Street, W.C.* CROYDON, 1879.  
 Disconnecting Drain Trap. W. P. Buchan, *Glasgow*, NEWCASTLE, 1882. GLASGOW, 1883.  
 Grease Trap for Kitchen Sinks. W. P. Buchan, *Glasgow*, GLASGOW, 1883.  
 Buchan's Disconnecting Trap. J. & M. Craig, *Kilmarnock*, EXETER, 1880. DUBLIN, 1884.  
 Buchan's Disconnecting Drain Trap and Drain-pipes, with Access Cover. J. & M. Craig, *Kilmarnock*, NEWCASTLE, 1882.  
 Exhibit of Stoneware Disconnecting Traps. J. & M. Craig, *Kilmarnock*, GLASGOW, 1883.  
 Disconnecting Gully, with back and side Entrances and iron grating. Doulton & Co., *Lambeth, London*, CROYDON, 1879.  
 Reversible Inlet Gully, with Dished Stoneware Cover and Iron Grating. Doulton & Co., *London*, NEWCASTLE, 1882.  
 Dean's External Drain Traps, with moveable receptacle. J. C. Edwards, *Trefnant Ruabon*, CROYDON, 1879.  
 Smith's Cast Lead Syphon Traps. J. Fell & Co., *Wolverhampton*, NEWCASTLE, 1882.  
 Hornibrook's Catchment Grating for Steep Gradients. Hammond & Hussey, *High Street, Croydon*, CROYDON, 1879.  
 "Eagle" Sanitary Trap, for superseding Bell Traps. Hygienic Stove and Grate Company, 15, *Peel Buildings, Birmingham*, CROYDON, 1879.

- Edinburgh Air-Chambered Sewer Trap. Potts & Co., *Handsworth, Birmingham*, STAFFORD, 1878.  
 Dean's Gully Trap. Rimington Bros. & Co., *Newcastle-upon-Tyne*, NEWCASTLE, 1882.  
 Disconnecting Chamber for House Drains, with open Stoneware Channels. J. Stewart, Sen., *Glasgow*, GLASGOW, 1883.  
 Weaver's Ventilating Sewer Air Trap. James Stiff & Sons, *Lambeth, London*, STAFFORD, 1878.

## (11). Dry Closets.

- Self-Acting Earth Closet. British Sanitary Company, *Glasgow*, EXETER, 1880.  
 Moser's Self-Acting Dry Closet. J. C. Onions (Limited), *Birmingham*, CROYDON, 1879.  
 Dry Earth Commode without Separator. J. Parker, *Woodstock*, EXETER, 1880.

## (12). Sewage Treatment.

- Iron Basket Sewage-strainer. T. Harnett Harrison, *Liverpool*, GLASGOW, 1883.  
 Pneumatic Liquid Ejector. Isaac Shone, *Wrexham*, STAFFORD, 1878.

## (13). Miscellaneous Sanitary Goods.

- Air-tight Man-hole Door. A. T. Angell, *London*, NEWCASTLE, 1882. GLASGOW, 1883.  
 Watts' Asphyxiator for Testing Drains with Smoke. Baird, Thompson & Co., *Glasgow*, DUBLIN, 1884.  
 Brian Jones's Joint for connecting Closet with Soil-pipe. Capper, Son, & Co., *London*, NEWCASTLE, 1882.  
 Enamelled Ware Open Channels for Manholes. Doulton & Co., *Lambeth, London*, DUBLIN, 1884.  
 Manhole for Drains, with connections complete. Doulton & Co., *Lambeth, London*, DUBLIN, 1884.  
 Improved method of connecting Lead Pipes with Stoneware Pipes. T. Harnett Harrison, *Liverpool*, GLASGOW, 1883.  
 Sanitary Earthenware. C. T. Maling, *Newcastle-upon-Tyne*, NEWCASTLE, 1882.  
 Drain-cleaning Rods, and Stoneware Horse Manger. Oates & Green, *Horley Green Fire Clay Works, Halifax*, STAFFORD, 1878.  
 India-Rubber Connection for joining Lead and Earthenware Pipes. T. Twyford, *Hanley*, DUBLIN, 1884.  
 Joint for Lead Pipes. J. Tylor & Sons, 21, *Newgate Street, London*, NEWCASTLE, 1882.

## CLASS III.—HEATING, LIGHTING AND VENTILATING.

## (1). Heating Apparatus.

- Gas Cooking Stove, lined with White Tiles. Arden Hill & Co., *Birmingham*, DUBLIN, 1884.

- Silicate Cotton Composition for Covering Steam Pipes. C. Cadlo, *Dublin*. DUBLIN, 1884.  
 Tortoise Slow Combustion Stoves. W. Carson & Sons, *Dublin*. DUBLIN, 1884.  
 George's Calorigon. Dinning & Cooke, *Newcastle-upon-Tyne*. NEWCASTLE, 1882.  
 Grates, Mantel-pieces, and Over-mantels. Dinning & Cooke, *Newcastle-upon-Tyne*. NEWCASTLE, 1882.  
 Glazed Ware Mantelpiece, with Slow Combustion Grate. Doulton & Co., *Lambeth, London*. DUBLIN, 1884.  
 Tortoise Slow Combustion Stoves. Hydes & Wigfull, *Sheffield*. GLASGOW, 1883.  
 Tortoise Laundry Stove. Hydes & Wigfull, *Sheffield*. GLASGOW, 1883.  
 Laundry Stove and Copper Boiler. Maguire & Son, *Dublin*. DUBLIN, 1884.  
 Steam Heating Apparatus, combining heating and ventilating. Mather & Armstrong, *Newcastle-upon-Tyne*. NEWCASTLE, 1882.  
 Warming and Ventilating Appliances. G. E. Pritchett, 20, *Spring Gardens, London, S.W.* STAFFORD, 1878.  
 Corrugated Iron Hot-Water Warming Appliances. G. E. Pritchett, 20, *Spring Gardens, S.W.* EXETER, 1880.  
 Thermhydic Ventilating Hot-water Open Fire Grate. H. Saxon Snell, *Southampton Buildings*. STAFFORD, 1878.  
 Tubular-Calorifer for Greenhouses. William Thornburn, *Borough Bridge*. NEWCASTLE, 1882.  
 Conservatory Boiler, with Hot-Water Pipe. Wippell Bros. & Row, *Exeter*. EXETER, 1880.  
 "Cozey" Portable Open Gas Fire, with Platinum Wire and Asbestos Packing. John Wright & Co., *Birmingham*. NEWCASTLE, 1882.  
 Ventilating Open Gas Fire. J. Wright & Co., *Birmingham*. DUBLIN, 1884.

## (2). Cooking Apparatus.

- Solid Flame Boiling Stove. Arden, Hill & Co., *Birmingham*. NEWCASTLE, 1882.  
 Combined Close Fire and Gas Cooking Range. Carron Co., *Falkirk*. GLASGOW, 1883.  
 "Sunlight Stove." Chorlton & Dugdale, 19, *Blackfriars Street, Manchester*. EXETER, 1880.  
 Devonshire Cooking Range. T. J. Constantine, *Fleet Street, E.C.* EXETER, 1880.  
 Tin Cooking Utensils. Mrs. A. Lewis, *Manchester*. CROYDON, 1879.  
 Dows' Close and Open Fire, Cooking Range. W. McGeoch & Co., *Glasgow*. GLASGOW, 1883.  
 Simplex Cooking Range. Walker, Turnbull & Co., *Falkirk*. GLASGOW, 1883.  
 Cooking Stove with Warm-Air Chamber. Thos. Waller, 47, *Fish Street Hill, E.C.* CROYDON, 1879.  
 Cottage Range. Wippell Bros. & Row, *Exeter*. EXETER, 1880.

## (3). Smoke Prevonting Appliances.

- Open Grate for consuming Smoke. James Smith, *Liverpool*. NEWCASTLE, 1882.

## (4). Lighting, including Electric Lighting.

- Improved Gas Burners. Bray & Co., *Blackman Lane, Leeds*. CROYDON, 1879.  
 Portable Gas Apparatus for Manufacturing Gas from Gasoline. F. W. Clarke's Portable Gas Apparatus Company (Limited), *Great Queen Street, London, W.C.* CROYDON, 1879.  
 Albo Carbon Light. William Forrest, *Newcastle-upon-Tyne*. NEWCASTLE, 1882.  
 Albo-Carbon Light. Osbert Henderson, *Glasgow*. GLASGOW, 1883.  
 Duplex Burner. T. Heron, *Manchester*. NEWCASTLE, 1882.  
 "Rheo-meter" Street Lamp Regulator. S. Leoni & Co., *Strand, W.C.* STAFFORD, 1878.  
 Hink's Duplex Lamp with Extinguisher. Mather & Armstrong, *Newcastle-upon-Tyne*. NEWCASTLE, 1882.  
 "Milwaukee" Glass Lantern or Hurricane Lantern. S. E. Ransome & Co., 10, *Essex Street, W.C.* CROYDON, 1879.  
 Gaseliers and Gas Brackets. Willey & Co., *Exeter*. EXETER, 1880.  
 Chappuis Daylight Reflector. Wippell Bros. & Row, 231, *High Street, Exeter*. EXETER, 1880.

## (5). Ventilating Gas Burners.

No awards.

## (6). Ventilators.

- Method of Costless Ventilation. Peter Hinckes Bird, 1, *Norfolk Square, W.* CROYDON, 1879.  
 Glass Revolving and Sliding Ventilators. H. W. Cooper & Co., *London*. GLASGOW, 1883.  
 Air Inlet Head for Drain Ventilation. H. S. Cregeen, *Bromley*. NEWCASTLE, 1882.  
 "Radiator" Ventilator, with Screw Action. J. E. Ellison, *Leeds*. GLASGOW, 1883. DUBLIN, 1884.  
 Double Current Ventilators. Hill & Hey, *Halifax*. GLASGOW, 1883.  
 Outlet Ventilator. C. Kite & Co. *London*. NEWCASTLE, 1882.  
 Noiseless Chimney Breast Outlet Ventilator. Kite & Co., *London*. GLASGOW, 1883. DUBLIN, 1884.  
 Wall Inlet Ventilator. C. Kite & Co., *London*. GLASGOW, 1883. DUBLIN, 1884.  
 "Imperial" Ventilating Window. U. Knell, 77, *Fore Street, E.C.* CROYDON, 1879.  
 Morgan's Stench Exhaust. Nailsworth Foundry Company, *Bristol*. NEWCASTLE, 1882.  
 Ventilating and Warming Appliances. G. E. Pritchett, 20, *Spring Gardens, S.W.* STAFFORD, 1878.  
 Ransome's Artificial Stone Air Brick. Wippell Bros. & Row, 231, *High Street, Exeter*. EXETER, 1880.

Ornamental Inlet Ventilators. C. H. Sharp & Co., *High Holborn, E.C.*, EXETER, 1880.  
Boyle's Mica-Valved Outlet Ventilator. Wenham & Co., *Church Street, Croydon.* CROYDON, 1879.

CLASS IV.—PERSONAL HYGIENE, FOODS, FILTERS,  
AND DISINFECTANTS.

(1.) Clothing.

Crocodile Hide Leather. Borongh Leather Warehouse Co., *London.* GLASGOW, 1883.  
Ventilatorium Waterproof Garments. Bartrum, Harvey & Co., *London.* STAFFORD, 1878.  
Ventilated Hats. W. Graham, *Dublin.* DUBLIN, 1884.  
Improved shape of Boot. J. Hotblack & Son, *Norwich.* DUBLIN, 1884.  
Pith Helmet. J. Morgan, *Dublin.* DUBLIN, 1884.  
Rhinoceros Hide "S" Boot. Patrick Short, *Dublin.* DUBLIN, 1884.  
Furs. Brooke Tyrrell, *Dublin.* DUBLIN, 1884.  
"Natural" Boot for Ladies. A. Webb, *Dublin.* DUBLIN, 1884.

(2.) Beds and other Furniture.

Spring Mattresses. Billington Bros., *Liverpool.* GLASGOW, 1883.  
Portable Bed, with Liverpool Spring Mattress. Billington Bros., *Liverpool.* DUBLIN, 1884.  
Central Tube Water Mattress. Brady & Martin, *Newcastle-upon-Tyne.* NEWCASTLE, 1882.  
Bed Rest with Movable Arms. Willam Brock & Co., *177, Fore Street, Exeter.* EXETER, 1880.  
"Nonsuch" Adjustable Chair. Willam Brock & Co., *177, Fore Street, Exeter.* EXETER, 1880.  
Spring Mattress. Bussey & Co., *Museum Works, Peckham, S.E.* CROYDON, 1879.  
"Excelsior" Ships' Berth. Chorlton & Dugdale, *Manchester.* GLASGOW, 1883.  
Pitch Pine Lath Mattress. Chorlton & Dugdale, *Manchester.* DUBLIN, 1884.  
Automaton Seat for Drapers. Colman & Glendenning, *Norwich.* EXETER, 1880.  
Combination Bedstead. W. Fleming, *Dublin.* DUBLIN, 1884.  
Spring Mattress. A. Gardner & Son, *Glasgow.* GLASGOW, 1883.  
Invalid "Grasshopper" Couch. William Hamilton, *Brighton.* STAFFORD, 1878. NEWCASTLE, 1882.  
Institution Bed, with Woven-Wire Mattress. Pearson & Co., *Dublin.* DUBLIN, 1884.  
Hinged Cot. Pim Bros., *Dublin.* DUBLIN, 1884.  
Furniture. Scott & Co., *Dublin.* DUBLIN, 1884.  
Fernby's "Paragon" Camp Furniture. Wippell Bros. & Row, *Exeter.* EXETER, 1880.

(3.) Hospital and Sick Room Appliances.

Metallic Tubular Bedsteads and Invalid Bedrests. Thomas Allen, *St. Augustine's Parade, Bristol.* STAFFORD, 1878.  
Folding Invalid Bed. Ansell Ball, *Spalding.* CROYDON, 1879.  
Absorbent Cotton and Antiseptic Sponges. Burroughs, Wellcome & Co., *London.* DUBLIN, 1884.  
"Invalid's" Adjustable Bed. Chorlton & Dugdale, *Manchester.* EXETER, 1880.  
Hospital Bed, fitted with Raising Appliances. Chorlton & DUGDALE *Manchester.* DUBLIN, 1884.  
Hospital Bed, with new Spring Mattress. Chorlton & Dugdale, *Manchester.* DUBLIN, 1884.  
Self-acting Sick Bed. E. K. Groves, *Bristol.* GLASGOW, 1883.  
Burn and Wound Boxes. W. B. Hilliard & Sons, *Glasgow.* GLASGOW, 1883.  
Isolating Curtain. W. B. Hilliard & Sons, *Glasgow.* GLASGOW, 1883.  
India Rubber Vessels for hospital use. H. A. Murton, *Newcastle-upon-Tyne.* NEWCASTLE, 1882.  
China Cups and other Vessels for invalid use. Townsend & Co., *Newcastle-upon-Tyne.* NEWCASTLE, 1882.  
Stypium Absorbent Antiseptic Surgical Dressings. Stephenson & Travis, *Liverpool.* DUBLIN, 1884.

(4.) Domestic Appliances.

Automatic Chariot for Children. William Bowden, *London,* NEWCASTLE, 1882.  
Revolving Shuttle for Sewing Machines. Bradbury & Co., *Oldham.* GLASGOW, 1883.  
Compostella Fire Lights for Lighting Fires. Compostella Fire Light Company, *Fenchurch Street, E.C.* STAFFORD, 1878.  
Bower's Potato Steamer. Groom & Co., *London.* DUBLIN, 1884.  
Self-Indicating Tea or Coffee Infuser. Groom & Co., *London.* DUBLIN, 1884.  
Stoneware Churns. F. Grosvenor, *Glasgow.* GLASGOW, 1883.  
Dough Kneading Machine. F. & C. Hancock, *Dudley, Worcester.* EXETER, 1880.  
New Propellor Churn. F. & C. Hancock, *Dudley, Worcester.* EXETER, 1880.  
Machine for Washing and Peeling Potatoes. F. & C. Hancock, *Dudley.* NEWCASTLE, 1882.  
Knitting Machines. Harrison Patent Knitting Machine Co., *Manchester.* DUBLIN, 1884.  
Pendulous Food Warmers. Osbert Henderson, *Glasgow.* GLASGOW, 1883.  
Various Inventions for Promoting Domestic Economy. W. H. Hilton, *Leamington.* STAFFORD, 1878.  
India Rubber Gas Tubing. A. Hutchinson & Co., *Great Winchester Street, London, E.C.* EXETER, 1880.  
Victoria Knitting Machine. Pim Bros. Limited, *Dublin.* DUBLIN, 1884.

"Noiseless Ware." Vernon's Patent China and Glass Company.  
London. GLASGOW, 1883.  
Improved Housemaid's Box with Sifter. Wippell Bros. & Row,  
High Street, Exeter. EXETER, 1880.

## (5). School Fittings.

School Desks with Shifting Seats. Colman & Glendenning, Norwich.  
STAFFORD, 1878.  
Dual Desk, with Separate Gangway Seat. Thomas Larmouth & Co.  
Salford. STAFFORD, 1878.

## (6). Gymnastic Apparatus.

Tricycles, W. Carson & Sons., Dublin. DUBLIN, 1884.  
Tricycles. Fletcher Bros., Dublin. DUBLIN, 1884.

## (7). Foods.

Pickles and Sauces. Beveridge & Co., Glasgow. GLASGOW, 1883.  
Currie Powders. J. Edmunds, London. NEWCASTLE, 1882.  
Cocoa Extract and Preparations of Chocolate. J. S. Fry & Sons,  
Union Street, Bristol. EXETER, 1880.  
Indian Tea. Indian Tea Co., Glasgow. GLASGOW, 1883.  
Mustard. Irvine & Co., Gateshead. NEWCASTLE, 1882.  
Midlothian Oat Flour. A. & R. Scott, Glasgow. GLASGOW, 1883.

## (8). Domestic Filters.

"Bijou" Filtre Rapide. P. A. Maignen, Great Tower Street, London,  
E.C. EXETER, 1880.  
Improved Filtre Rapide. P. A. Maignen, Great Tower Street, E.C.  
NEWCASTLE, 1882.  
Silicated Carbon Double Chambered Table Filters. Silicated Carbon  
Filter Company, Battersca, London. EXETER, 1880.  
Silicated Carbon Filtering Material. Silicated Carbon Filter Com-  
pany, London. NEWCASTLE, 1882.  
Carbonised Iron Stone Mound Filter for Water. J. A. Stephan,  
Worcester. EXETER, 1880.  
Artificial Stone Filters, for Cleansing Rain Water for Domestic Use.  
Thorn & Co., Stafford. STAFFORD, 1878.

## (9). Mineral Waters.

Potash, Soda and Seltzer Waters and Lemonade. British Mineral  
Water Company, Glasgow. NEWCASTLE, 1882.  
Preparations of Lime Juice, Aromatic Ginger Ale, and Quinine Tonic.  
Carter & Co., Old Refinery, Bristol. EXETER, 1880.  
Zoedone. (Patentee David Johnson, F.C.S.) Evans & Co., Wrexham.  
CROYDON, 1879.  
Lemonade, Lime Juice, and Ginger Ale. Gulliver & Co., Aylesbury.  
CROYDON, 1879.  
Seltzer Water. Jewsbury & Brown, Manchester. STAFFORD, 1878.  
Ginger Ale and Lemonade. Newry Mineral Water Company  
(Limited), Liverpool. CROYDON, 1899.

Seltzer, Soda, and Potash Waters, and Orange Quinine Tonic  
G H Skinner, 13, North Street, Exeter. EXETER, 1880.

## (10). Soaps and other Detergents.

Soaps. S. Boyd, Dublin. DUBLIN, 1884.  
Carbolic Soaps. F. C. Calvert & Co., Manchester. DUBLIN, 1884.

## (11). Antiseptics and Disinfectants.

Red Cross Yellow Fluid. Antiseptic Apparatus Manufacturing Co.,  
London. NEWCASTLE, 1882.  
Chemical Substances used in Disinfection. S. Boyd, Dublin.  
DUBLIN, 1884.  
50% Carbolic Disinfecting Powder. F. C. Calvert & Co., Manchester.  
GLASGOW, 1883.  
Soluble Cresol. F. C. Calvert & Co., Manchester. DUBLIN, 1884.  
Alum Cake. Dublin and Wicklow Manure Co., Dublin.  
DUBLIN, 1884.  
Jeyes' Perfect Purifier. Jeyes' Sanitary Compound Company, Bishops-  
gate Street, London, E.C. CROYDON, 1879. NEWCASTLE, 1882.  
GLASGOW, 1883. DUBLIN, 1884.  
Pixene. J. Wheeler, Ilfracombe. GLASGOW, 1883. DUBLIN, 1884.

## (12) Disinfecting Apparatus.

Improved Vaporiser for Disinfecting. F. C. Calvert & Co., Man-  
chester. EXETER, 1880.  
Dr. Scott's Disinfecting Apparatus. Maguire & Son, Dublin  
NEWCASTLE, 1882. DUBLIN, 1884.  
Lyon's Disinfecter. Manlove, Alliot, Fryer & Co., Nottingham.  
NEWCASTLE, 1882.

## CLASS V.—MISCELLANEOUS.

Articles of Sanitary Interest not included in the above Classes,  
such as :—

## (1). Scientific Instruments.

Large Legible Spirit Thermometer. P. Hinckes Bird, 1, Norfolk  
Square, London, N.W. EXETER, 1880.  
Instruments used by Medical Officers of Health. Brady & Martin,  
Newcastle-upon-Tyne. NEWCASTLE, 1882.  
New Oven Pyrometer. Joseph Davis & Co., London.  
NEWCASTLE, 1882.  
Thermometrical Instruments. G. E. Pritchett, 20, Spring Gardens,  
London, S.W. STAFFORD, 1878.  
Barometrical and Thermometrical Instruments. G. E. Pritchett, 20,  
Spring Gardens, London, S.W. CROYDON, 1879.



Improvements in Thermometrical and Barometrical Instruments,  
G. E. Pritchett, 20, *Spring Gardens, S.W.* EXETER, 1880.  
Webster's Photometer. Webster & Co., *Nottingham.* CROYDON, 1879.

## (2). Books and Periodicals.

Exhibit of Drawings and Books Relating to Disposal of Sewage  
in Paris. A. Durand Claye, *Paris.* GLASGOW, 1883.  
Publications. Ladies' Sanitary Association, *Berners Street, London, W.* STAFFORD, 1878.  
Sanitary Publications. Smith, Elder, & Co., *London.* NEWCASTLE, 1882. GLASGOW, 1883. DUBLIN, 1884.

## (3). Models and Drawings.

No awards.

## (4). Prevention of Accidents.

Leander Life Belt. J. W. Elvery & Co., *Dublin.* DUBLIN, 1884.  
Method of Rendering Timber Non-inflammable. A. Gardner & Son,  
*Glasgow.* GLASGOW, 1883.  
Safety Belt Shippers. Selig, Sonnenthal & Co. (Limited), *Lambeth Hill, Queen Victoria Street, London, E.C.* CROYDON, 1879.

## (5). Respirators and Face Guards for Unhealthy Occupations.

No awards.

## (6). Fire Preventing Appliances.

Dicks' L'Extincteur. J. Hildesheim, *Glasgow.* GLASGOW, 1883.  
Chemical Fire Exterminator. J. Sinclair, 104, *Leadenhall Street, London, E.C.* CROYDON, 1879.

## (7). Methods for the Disposal of the Dead.

"Earth to Earth" Coffins. London Necropolis Company, *Strand, London, W.C.* STAFFORD, 1878.  
Folding Bier and Car for Simplifying Funerals. S. Stretton, *Kidderminster.* CROYDON, 1879.

## ALPHABETICAL LIST OF MEDALS AWARDED AT THE EXHIBITIONS.

## RICHARDSON MEDAL.

Messrs. Mather & Armstrong, *Newcastle-upon-Tyne*, for Siemens's  
Regenerative Gas Burner. NEWCASTLE, 1882.  
Silicate Paint Company, *Cannon Street, E.C.*, for Griffiths' Patent  
White. STAFFORD, 1878.

## SILVER MEDAL.

Offered by the Exeter Gas Company.

Sanitary and Economic Supply Association, for Dr. Bond's Euthermic  
Ventilating Gas Stove. EXETER, 1880.  
Wright, J. & Co., *Birmingham*, for Eureka Gas Cooking Stove.  
DUBLIN, 1884.

## MEDALS AND SPECIAL CERTIFICATES.

In cases where awards are made at subsequent Exhibitions for the same Exhibits, only the name of the town and date are given. Exhibits which have already received Medals at previous Exhibitions of the Institute are excluded from awards of Medals; but those Exhibits to which a second Medal would otherwise be awarded receive Special Certificates, and these are distinguished in the following list by asterisks placed against the name of the town at which the Exhibition was held.

Aluminium Crown Metal Co., *Glasgow*, for Aluminium Crown Metal,  
GLASGOW, 1883.  
Aveling & Porter, *Rochester*, for Improved Six-Ton Steam Road  
Roller. CROYDON, 1879.  
Bean, A. T., 5, *Cannon Row, S.W.*, for Direct Acting Valveless Waste  
Preventer. EXETER, 1880.  
Billing & Co., *Hatton Garden, E.C.*, for Apparatus for Cooking by  
Gas. STAFFORD, 1878. \*CROYDON, 1879.  
Borwell, J., *Britannia Foundry, Burton-on-Trent*, for Improved  
Washer, with table complete. LEAMINGTON, 1877.  
Bostel, D. T., *Duke Street, Brighton*, for Excelsior Water Closet.  
LEAMINGTON, 1877. \*STAFFORD, 1878.

- Boulnois H., Percy, *Portsmouth* for "Acme" Sewer Pipes. GLASGOW, 1883.
- Bradford, T. & Co., *High Holborn, W.C.*, for New "Shuttle" Steam Power Washing Machine. LEAMINGTON, 1877.  
\*STAFFORD, 1878.
- " " for Washing Machines. NEWCASTLE, 1882.  
\*GLASGOW, 1883. \*DUBLIN, 1884.
- British Sanitary Company, *Glasgow*, for Dry Earth Closet. NEWCASTLE, 1882. \*GLASGOW, 1883. \*DUBLIN, 1884.
- Brown, A. & Co., *Glasgow*, for "Stott" Gas Burner \*GLASGOW, 1883.
- Buehan, W. P., *Glasgow*, for his exhibit of Sanitary Appliances. GLASGOW, 1883.
- Burroughs, Wellcome & Co., *London*, for Powders for Peptonizing Milk. DUBLIN, 1884.
- Calvert & Co., *Bradford*, for Calvert's Carbolic Acid for disinfecting purposes. LEAMINGTON, 1877. \*CROYDON, 1879.  
\*EXETER, 1880. \*GLASGOW, 1883. \*DUBLIN, 1884.
- Carter, J., *Ga, Cavendish Street, W.*, for Invalid Furniture. EXETER, 1880.
- Chorlton & Dugdale, *Manchester*, for Excelsior Spring Mattress. LEAMINGTON, 1877. \*STAFFORD, 1878.  
\*CROYDON, 1879. \*EXETER, 1880.  
\*NEWCASTLE, 1882. \*GLASGOW, 1883.  
\*DUBLIN, 1884.
- " " for "Swing" Woven Wire Mattress. DUBLIN, 1884.
- Cliff, Joseph & Sons, *Leeds*, for Porcelain Bath. GLASGOW, 1883.
- Colman & Glendenning, *Norwich*, for School Furniture. EXETER, 1880.
- Craig, J. & M., *Kilmarnock, N.B.*, for Enamelled Fireclay Sinks. DUBLIN, 1884.
- Dick, Alex., *London*, for Delta Metal. GLASGOW, 1883.
- Donegal Industrial Fund, for Innocuously-dyed Woollen Goods. DUBLIN, 1884.
- Doulton & Co., *Lambeth, London*, for Stanford's Joints for Stone-ware Pipes. STAFFORD, 1878. \*EXETER, 1880.
- " " for Anti-Percussion High Pressure Valves. CROYDON, 1879. \*EXETER, 1880. \*GLASGOW, 1883.  
\*DUBLIN, 1884.
- " " for Ventilating Tile Stove. EXETER, 1880.  
\*NEWCASTLE, 1882. \*GLASGOW, 1883. \*DUBLIN, 1884.
- " " for Anti-Percussion Ball Valve. NEWCASTLE, 1882.
- " " for Art Pottery. DUBLIN, 1884.
- Duncan, Maj. F., *The Common, Woolwich*, for Ambulance Wheeled Litter. STAFFORD, 1878.
- Edmunson, J. & Co., *Dublin*, for their exhibit of Swann's Incandescent Electric Lights. DUBLIN, 1884.
- Ellison, J. E., *Leeds*, for Conical Ventilators. STAFFORD, 1878.  
\*CROYDON, 1879. \*GLASGOW, 1883. \*DUBLIN, 1884.
- Fraser Bros., *Commercial Road, E.*, for Portable Disinfecting Apparatus. CROYDON, 1879.

- Galbraith, T., *Crawford Square, Londonderry*, for Hot-Air Bath. LEAMINGTON, 1877.
- Hall, John & Co., *Stourbridge*, for Fire-Clay Enamelled Bath. GLASGOW, 1883.
- Hamilton & Co., *Leadenhall Street, E.C.*, for Prismoidal Pavement and Floor Lights. CROYDON, 1879.
- Hancock, F. & C., *Dudley, Worcester*, for Machine for Washing and Cooling Butter. LEAMINGTON, 1877. \*STAFFORD, 1878.  
" for Machines for Domestic use. GLASGOW, 1883.
- Harescough, B. B. & Co., *Bentick Street, Leeds*, for Excreta Pail (oak) with Spring Lid. LEAMINGTON, 1877. \*STAFFORD, 1878.
- Harris, G. H., *Bristol Street, Birmingham*, for Economical Cooking Range. LEAMINGTON, 1877. \*STAFFORD, 1878.
- Hassall & Singeton, *Birmingham*, for Phoenix Portable Range, and the Birmingham Range with Reducible Fire without Gas. STAFFORD, 1878.
- Hayward, Tyler & Co., *London*, for Full-flush Valveless Closet. NEWCASTLE, 1882.
- Heap, R. R., *Manchester*, for Dry Earth or Ashes Closet. GLASGOW, 1883  
DUBLIN, 1884.
- Hilliard, W. B. & Sons, *Glasgow*, for Hospital and Sick Room Appliances. GLASGOW, 1883.
- Hunt, Nathan, *Bristol*, for Auto-Pneumatic Ventilation. EXETER, 1880.
- Keith, J., *London and Edinburgh*, for Challenge Hot-water Boiler. GLASGOW, 1883.
- Lascelles, W. H., *Bunhill Row, E.C.*, for Concrete Bath in one piece. CROYDON, 1879. \*EXETER, 1880.
- Le Grand & Sutcliffe, *Bunhill Row, E.C.*, for Improvements in Well Sinking Apparatus. LEAMINGTON, 1877. \*CROYDON, 1879.
- Leoni, S. & Co., *Strand*, for Apparatus for Cooking by Gas. STAFFORD, 1878.
- Mackey, Mackey & Co., *London*, for Chemical Substances used for Disinfection. DUBLIN, 1884.
- Maguire & Son, *Dublin*, for their exhibit of Sanitary and Domestic Appliances. DUBLIN, 1884.
- Maignen, P. A., 20 & 23, *Great Tower Street, E.C.*, for Filtre Rapide. CROYDON, 1879. \*EXETER, 1880. \*GLASGOW, 1883. \*DUBLIN, 1884.
- Manlove, Alliot, Fryer & Co., *Nottingham*, for Fryer's Destructor, Fryer's Carbonizer, and Firman's Dessicating and Rendering Apparatus. NEWCASTLE, 1882.
- Mather & Armstrong, *Newcastle-upon-Tyne*, for Sieman's Regenerative Gas Burner. NEWCASTLE, 1882.
- Meyer, H. C., *New York*, Sanitary Engineer of New York News-paper. GLASGOW, 1883.
- Moore, J., *St. James' Walk, Clerkenwell, E.C.*, for Glass Louvre Ventilators. EXETER, 1880.
- Morris, Little & Co., *Doncaster*, for Little's Soluble Phenyle. STAFFORD, 1878.
- Morrison, W. B., *Glasgow*, for Wedgwood Ornamental Tiles. GLASGOW, 1883.

- Moser, I., *Southampton*, for Dry Closet, suitable for Ashes or Disinfecting Powder. EXETER, 1880.
- Moulo's Patent Earth Closet Company, *5a, Garrick Street, W.C.*, for Earth Closets. STAFFORD, 1878. \*CROYDON, 1879.
- Musgrave & Co., *Belfast*, for Slow Combustion Stoves. DUBLIN, 1884.
- Orr, J. B. & Co., *Charlton, London*, for Leadless "Charlton White" Paint and Dryers. GLASGOW, 1883.
- Parker, J., *Woodstock, Oxford*, for Dry Earth Closet. LEAMINGTON, 1877.
- Pim Bros., *Dublin*, for their Exhibit of Furniture. DUBLIN, 1884.
- Pocock, Bros., *Southwark Bridge Road*, for "Universal" Invalid Tubular Water and Air Bed. STAFFORD, 1878. \*CROYDON, 1879.
- Pritchett, G. E., *20, Spring Gardens, S.W.*, for Economic Hollow Flooring. STAFFORD, 1878. \*CROYDON, 1879.
- Read, Jefferson, *Birmingham*, for Arcanum Process of Silver Plating Steel. CROYDON, 1879.
- Roberts, C. G., *Haslemere, Surrey*, for Rain-water Separator. NEWCASTLE, 1882. \*GLASGOW, 1883.
- Ross, J. A. G., *Newcastle-upon-Tyne*, for Silicate Cotton (Slag-wool). NEWCASTLE, 1882.
- Rothwell, W., *Bolton*, for Flat Web Knitting Machine, and Rothwell Knitting Machines. DUBLIN, 1884.
- Sanitary Appliance Company, *Salford*, for Portable Cinder Sifting Ash Closet, with Soil Pail. STAFFORD, 1878. \*CROYDON, 1879.
- Sanitary & Economic Supply Association, *Gloucester*, for Dr. Bond's Euthermic Gas Stove. EXETER, 1880.
- Sanitas Company (Limited), *London*, for Sanitas Oil. NEWCASTLE, 1882.
- Scottish Asbestos Co., *Glasgow*, for Scottish Asbestos. GLASGOW, 1883.
- Shanks & Co., *Barrhead, N.B.*, for Siphon-action Water Waste Preventer. DUBLIN, 1884.
- Shaw, A. & Son, *Glasgow*, for "Sine qua non" Open and Close Fire Range. GLASGOW, 1883.
- Silicate Paint Company, *Cannon Street, E.C.*, for Griffiths' White, and for their preparations of Silicate Paint, Enamel Paint, and Petrifying Liquids. STAFFORD, 1878. GLASGOW, 1883.
- Sinclair, G., *Leith*, for Mechanical Stoker. GLASGOW, 1883.
- Sinclair, J., *Leadenhall Street, E.C.*, for Tyndall's Smoke Respirator. CROYDON, 1879.
- Singer Manufacturing Company, *London*, for Friction Driving Attachment for Sewing Machines. GLASGOW, 1883.
- Smallman, John L., *Dublin*, for Stott's Mercury Gas Governor. \*DUBLIN, 1884.
- Société Française D'Hygiène, *Paris*, for Chemical Preparations and Apparatus. LEAMINGTON, 1877.
- " " *Paris*, for Books on Hygiène. NEWCASTLE, 1882.
- Spongy Iron Water Purifying Company, *Oxford Street, W.C.*, for Bischof's Spongy Iron Filter. LEAMINGTON, 1877.

- Stewart, J., Sen., *Glasgow*, for Stoneware Disconnecting Traps. GLASGOW, 1883.
- Stewart, J., Sen., *Glasgow*, for Stoneware Pipes with Stanford's Joint. \*GLASGOW, 1883.
- Stott, James & Co., *Oldham*, for Mercury Gas Governor. NEWCASTLE, 1882.
- Tylor & Sons, *Newgate Street, E.C.*, for Flushing Rim Lavatory Basin and Apparatus. EXETER, 1880.
- Walker, Chas. W., *Wandsworth Common*, for Acid Pump and Syphon. CROYDON, 1879.
- Walker, Turnbull & Co., *Falkirk*, for Artizan Cooking Range. GLASGOW, 1883.
- Ward, O. D., *London*, for Household Water Closet. NEWCASTLE, 1882.
- " " for Bean's Direct Acting Valveless Waste "Preventor." \*NEWCASTLE, 1882.
- Webb, H. Chalk, *Worcester*, for Colouring Patterns through the Substance of Wood. EXETER, 1880.
- Wenham, W. P., *Church Street, Croydon*, for Improved Open or Close Range Kitchener. CROYDON, 1879.
- Wentworth, F. & Co., *London*, for "Kredemnon" Life-saving Gargaments. GLASGOW, 1883.
- Whyte & Bradford, *Bowness*, for Cooking Range with Revolving Fire for the Prevention of Smoke. GLASGOW, 1883.
- Wilkinson, W. B. & Co., *Newcastle-upon-Tyne*, for Damp-proof Concrete Pavement. NEWCASTLE, 1882.
- Willcocks & Co., *Burmantofts, Leeds*, for Silica Glazed and Enamelled Fire Clay Bricks and Faïence. CROYDON, 1879.
- Wilson Engineering Company, *Holborn, W.C.*, for Wilson Portable Close Cooking Range. EXETER, 1880.
- " " for Improved Wilson Range. with Steel Boiler and non-conducting Jacketing. NEWCASTLE, 1882. \*GLASGOW, 1883. \*DUBLIN, 1884.
- Wippell Bros. & Row, *231, High Street, Exeter*, for Moule's Earth Closet. \*EXETER, 1880.
- Woollams & Co., *High Street, Marylebone*, for Paper Hangings free from Arsenic. CROYDON, 1879. \*NEWCASTLE, 1882.
- " " for Non-Arsenical Pigments and Paper Hangings. \*GLASGOW, 1883.
- Wright, J. & Co., *Birmingham*, for "Eureka" Gas Cooking Stove. DUBLIN, 1884.

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- Adams, R., 7, *Great Dover Street, S.E.*, for Adjustable Shoe, and Regulating Spring Hinge for Swinging Doors. CROYDON, 1879.
- " " for Fanlight Openers and Casement Fasteners. CROYDON, 1879.
- " " for the Norton Door Spring. DUBLIN, 1884.
- " " for Adjustable Pivot for Fanlights. DUBLIN, 1884.
- Allen, Thomas, *St. Augustine's Parade, Bristol*, for Metallic Tubular Bedsteads and Invalid Bedrests. STAFFORD, 1878.
- Angell, A. T., *London*, for Air-tight Man-hole Door. NEWCASTLE, 1882. GLASGOW, 1883.
- Antiseptic Apparatus Manufacturing Co. (Limited), for Red Cross Yellow Fluid. NEWCASTLE, 1882.
- Arden, Hill & Co., *Birmingham*, for Solid Flame Boiling Stove. NEWCASTLE, 1882.
- " " for Gas Cooking Stove, lined with White Tiles. DUBLIN, 1884.
- Baird, W., *Dublin*, for Butler's Sink, lined with Block Tin. DUBLIN, 1884.
- " " for White Enamelled Fireclay Sinks. DUBLIN, 1884.
- " " for Bath, with Shower Douche and Spray Fittings combined. DUBLIN, 1884.
- " " for Lavatory, with Shampooing Apparatus. DUBLIN, 1884.
- " " for Hydraulic Ram. DUBLIN, 1884.
- " " for Improved Horizontal-Pull Fittings for Baths and Lavatories. DUBLIN, 1884.
- Baird, Thompson & Co., *Glasgow*, for Watts' Asphyxiator for Testing Drains with Smoke. DUBLIN, 1884.
- Ball, Ancell, *Spalding*, for Folding Invalid Bed. CROYDON, 1879.
- Bartrum, Harvey, & Co., *London*, for Ventilatorium Waterproof Garments. STAFFORD, 1878.
- Beard, Dent, & Hellyer, 21, *Newcastle Street, W.C.*, for Artizan Closet. CROYDON, 1879.
- " " for Ventilating Drain Syphon. CROYDON, 1879.
- Beveridge & Co., *Glasgow*, for Pickles and Sauces. GLASGOW, 1883.
- Billington Bros., *Liverpool*, for Spring Mattresses. GLASGOW, 1883.
- " " for Portable Bed, with Liverpool Spring Mattress. DUBLIN, 1884.

- Binnie, J., *Gartcosh, Glasgow*, for Salt-glazed Fire-clay Sewer Pipes. GLASGOW, 1883.
- Bird, Peter Hinckes, 1, *Norfolk Square, N.W.*, for Method of Costless Ventilation. CROYDON, 1879.
- " " for Large Legible Spirit Thermometer. EXETER, 1880.
- Borough Leather Warehouse Company, *London*, for Crocodile Hide Leather. GLASGOW, 1883.
- Bourtnechill Coal Co., *Dreghorn, Ayrshire*, for Stoneware Drain Pipes. DUBLIN, 1884.
- " " for White Enamelled Fireclay Sinks. DUBLIN, 1884.
- " " for White Enamelled Bricks. DUBLIN, 1884.
- Bowden, William, *London*, for Automatic Chariot for Children. NEWCASTLE, 1882.
- Boyd, S., *Dublin*, for Soaps. DUBLIN, 1884.
- " " for Chemicals used in Disinfection. DUBLIN, 1884.
- Bradbury & Co., *Oldham*, for Revolving Shuttle for Sewing Machines. GLASGOW, 1883.
- Brady & Martin, *Newcastle-upon-Tyne*, for Central Tube Water Mattress. NEWCASTLE, 1882.
- " " for Instruments used by Medical Officers of Health. NEWCASTLE, 1882.
- Braithwaite & Co., *Leeds*, for Syphon for Water Closet Cisterns. CROYDON, 1879.
- Branksea Island Pottery Company (Limited), *Poole, Dorset*, for Stoneware Pipes. EXETER, 1880.
- Bray & Co., *Blackman Lane, Leeds*, for Improved Gas Burners. CROYDON, 1879.
- British and Foreign Mineral Water Company, *Glasgow*, for Potash, Soda and Seltzer Waters, and Lemonade. NEWCASTLE, 1882.
- British Sanitary Company, *Glasgow*, for Self-Acting Earth Closet. EXETER, 1880.
- Brock, W. & Co., 177, *Fore Street, Exeter*, for Bed Rest with Movable Arms. EXETER, 1880.
- " " for "Nonsuch" Adjustable Chair. EXETER, 1880.
- Buchan, W. P., *Glasgow*, for Improved Drain-pipe, with Access Cover. NEWCASTLE, 1882.
- " " for Disconnecting Drain-trap. NEWCASTLE, 1882. GLASGOW, 1883.
- " " for Grease Trap for Kitchen Sinks. GLASGOW, 1883.
- Burroughs, Wellcome & Co., *London*, for Absorbent Cotton and Antiseptic Sponges. DUBLIN, 1884.
- Bussey & Co., *Museum Works, Peckham, S.E.*, for Patent Spring Mattress. CROYDON, 1879.

- Cadle, C., *Dublin*, for Silicate Cotton Composition for covering Steam Pipes. DUBLIN, 1884.
- Calvert, F. C., & Co., *Bradford*, for Improved Vaporiser for Disinfecting. EXETER, 1880.
- " " for 50% Carbolic Disinfecting Powder. GLASGOW, 1883.
- " " for Carbolic Soaps. DUBLIN, 1884.
- " " for Soluble Cresol. DUBLIN, 1884.
- Candy & Co., *Newton Abbot*, for Granite Vitrified Bricks and Paving. EXETER, 1880.
- Capper, Son & Co., *London*, for Brian Jones's Joint for connecting Closet with Soil-pipe. NEWCASTLE, 1882.
- Carron Company, *Falkirk, N.B.*, for Combined Close Fire and Gas Cooking Range. GLASGOW, 1883.
- Carson, W. & Sons, *Dublin*, for their exhibit of Tricycles. DUBLIN, 1884.
- " " for Willesden Waterproof Paper and Canvas. DUBLIN, 1884.
- " " for Tortoise Slow Combustion Stoves. DUBLIN, 1884.
- Carter & Co., *Old Refinery, Bristol*, for Preparations of Lime Juice, Aromatic Ginger Ale, and Quinine Tonic. EXETER, 1880.
- Chorlton & Dugdale, *Manchester*, for "Sun-light Stove." EXETER, 1880.
- " " for "Invalids' Adjustable Bed. EXETER, 1880.
- " " for "Excelsior" Ship's Berth. GLASGOW, 1883.
- " " for Hospital Bed, fitted with Raising Appliances. DUBLIN, 1884.
- " " for Pitch Pine Lath Mattress. DUBLIN, 1884.
- " " for Hospital Bed, with New Spring Mattress. DUBLIN, 1884.
- Clarke, F. W., Portable Gas Apparatus Company (Limited), *Great Queen Street, W.C.*, for Portable Gas Apparatus for Manufacturing Gas from Gasoline. CROYDON, 1879.
- Colman & Glendenning, *Norwich*, for School Desks with Shifting Seats. STAFFORD, 1878.
- " " for Automaton Seat for Drapers. EXETER, 1880.
- Compostella Fire-Light Company, *Fenchurch Street, E.C.*, for Compostella Fire Lights for Lighting Fires. STAFFORD, 1878.
- Constantine, T. J., *Fleet Street, E.C.*, for Devonshire Cooking Range. EXETER, 1880.
- Cooper, H. W. & Co., *London*, for Glass Revolving and Sliding Ventilators. GLASGOW, 1883.
- Cordingley, T. & Sons, *Bradford*, for Granite Concrete Pavement. DUBLIN, 1884.
- Craig, J. & M., *Kilmarnock*, for Buchan's Trap. EXETER, 1880.

- Craig, J. & M., *Kilmarnock*, for Maguire's Cradle Joint for Drain pipes. NEWCASTLE, 1882.
- " " for Buchan's Drain-trap and Drain-pipes, with Access Cover. NEWCASTLE, 1882.
- " " for White Enamelled Fire-Clay Sinks. NEWCASTLE, 1882. GLASGOW, 1883.
- " " for Stoneware Disconnecting Traps. GLASGOW, 1883.
- " " for White Enamelled Bricks. DUBLIN, 1884.
- " " for Buchan's Disconnecting Trap. DUBLIN, 1884.
- Cregeen, H. S., *Bromley*, for Air Inlet Head for Drain Ventilation. NEWCASTLE, 1882.
- Davis, Joseph & Co., *London*, for New Oven Pyrometer. NEWCASTLE, 1882.
- Dinning & Cooke, *Newcastle-upon-Tyne*, for Cast Iron Channels for Stable Drainage. NEWCASTLE, 1882.
- " " for George's Calorigen. NEWCASTLE, 1882.
- " " for Jennings's Universal Shampooing Apparatus. NEWCASTLE, 1882.
- " " for Grates, Mantel-pieces, and Over-mantels. NEWCASTLE, 1882.
- Doulton & Co., *Lambeth, London*, for Decorative Tiles for Covering Walls and Floors. CROYDON, 1879.
- " " for Disconnecting Gully, with back and side Entrances and iron grating. CROYDON, 1879.
- " " for Economical Flush-Out Closet. EXETER, 1880.
- " " for Anti-Percussion High-pressure Bib Valves. NEWCASTLE, 1882.
- " " for Bath Locking Valves, for preventing waste of water. NEWCASTLE, 1882.
- " " for Latham's Flap Valve. DUBLIN, 1884.
- " " for Joint for Drain-pipes. NEWCASTLE, 1882.
- " " for Reversible Inlet Gully, with Dished Stone-ware Cover and Iron Grating. NEWCASTLE, 1882.
- " " for "Lambeth" Flush-out Closet. NEWCASTLE, 1882. GLASGOW, 1883.
- " " for Tip-up Lavatory Basin. NEWCASTLE, 1882.
- " " for "Lambeth" Trough Closet with Automatic Flush Tank. GLASGOW, 1883.
- " " for Silicon Tread for Steps. GLASGOW, 1883.
- " " for Glazed Ware Mantelpiece, with Slow Combustion Grate. DUBLIN, 1884.
- " " for Vacuum Flushing Cistern for Closet, with Seat-action Arrangement. DUBLIN, 1884.

- Doulton & Co., *Lambeth, London*, for cheap Glazed Stoneware Sinks. DUBLIN, 1884.  
 " " for Lambeth Combination Water-closet. DUBLIN, 1884.  
 " " for Enamelled Ware Open Channels for Manholes. DUBLIN, 1884.  
 " " for Manhole for Drains, with connections complete. DUBLIN, 1884.  
 " " for London-made Stoneware Pipes. DUBLIN, 1884.  
 Dublin & Wicklow Manure Co., for Alum Cake. DUBLIN, 1884.  
 Durand Claye, A., *Paris*, for Drawings and Books Relating to Disposal of Sewage in Paris. GLASGOW, 1883.  
 Edmunds, J., *London*, for Currie Powders. NEWCASTLE, 1882.  
 Edwards, J. C., *Trefynant, Ruabon*, for Dean's External Drain Traps, with moveable receptacle. CROYDON, 1879.  
 Ellison, J. E., *Leeds*, for "Radiator" Ventilator, with Screw Action. GLASGOW, 1883. DUBLIN, 1884.  
 Elvery, J. W. & Co., *Dublin*, for the Leander Life Belt. DUBLIN, 1884.  
 " " for Gentlemen's Ventilated Waterproof Overcoats. DUBLIN, 1884.  
 Evans & Co., *Wrexham* for Zoedone. (Patentee David Johnson, F.C.S.) CROYDON, 1879.  
 Fell, J. & Co., *Wolverhampton*, for Clark's Anti-splash Tip-up Lavatory Basin. NEWCASTLE, 1882.  
 " " for Smith's Cast Lead Syphon Traps. NEWCASTLE, 1882.  
 " " for Water-taps. NEWCASTLE, 1882.  
 Finch & Co., 181, *High Holborn, W.C.*, for Large Way Waste Plug, with Protective Cover. CROYDON, 1879.  
 Fleming, W., *Dublin*, for the Combination Bedstead. DUBLIN, 1884.  
 Fletcher Bros., *Dublin*, for exhibit of Tricycles. DUBLIN, 1884.  
 Forrest, William, *Newcastle-upon-Tyne*, for The Albo Carbon Light. NEWCASTLE, 1882.  
 Fry, J. S. & Sons, *Union Street, Bristol*, for Cocoa Extract and Preparations of Chocolate. EXETER, 1880.  
 Gandy, M., *Liverpool*, for Cotton Machine Belting. GLASGOW, 1883.  
 " " for Steil's Fastener for Machine Belting. GLASGOW, 1883.  
 Gardner, A. & Son, *Glasgow*, for Spring Mattress. GLASGOW, 1883.  
 " " for Parquet Flooring. GLASGOW, 1883.  
 " " for Method of Rendering Timber Non-inflammable. GLASGOW, 1883.  
 Garton & King, *Exeter*, for Vowel E. Bradford's Family Washing Machine. EXETER, 1880.  
 Gilbert, E. & A. E., *Broughty Ferry, Forfarshire*, for Improved Seat for Water Closets. GLASGOW, 1883.  
 Gillow & Co., *Oxford Street, W.*, for Lavatory. STAFFORD, 1878.  
 Graham, W., *Dublin*, for Ventilated Hats. DUBLIN, 1884.

- Groom & Co., *London*, for Bower's Potato Steamer. DUBLIN, 1884.  
 " " for Self-indicating Tea or Coffee Infuser. DUBLIN, 1884.  
 Grosvenor, F., *Glasgow*, for Stoneware Churns. GLASGOW, 1883.  
 Groves, E. K., *Bristol*, for Self-acting Sick Bed. GLASGOW, 1883.  
 Gulliver & Co., *Aylesbury*, for Lemonade, Lime Juice, and Ginger Ale. CROYDON, 1879.  
 Hamilton, W., *Brighton*, for Invalid "Grasshopper" Couch. STAFFORD, 1878. NEWCASTLE, 1882.  
 Hammond & Hussey, *High Street, Croydon*, for Hornibrook's Catchment Grating for Steep Gradients. CROYDON, 1879.  
 Hancock, F. & C., *Dudley, Worcester*, for New Propellor Churn. EXETER, 1880.  
 " " for Dough Kneading Machine. EXETER, 1880.  
 " " for Machine for Washing and Peeling Potatoes. NEWCASTLE, 1882.  
 Harriman, W., & Co., *Blaydon-upon-Tyne*, for Fowler's Water-closet. NEWCASTLE, 1882.  
 Harrison Patent Knitting Machine Co., *Manchester*, for Knitting Machines. DUBLIN, 1884.  
 Harriison. T. Harnett, *Liverpool*, for Iron Basket Sewage-strainer. GLASGOW, 1883.  
 " " for Improved Method of Connecting Lead Pipes with Stoneware Pipes. GLASGOW, 1883.  
 Hayward, Tyler & Co., *London*, for Shower and Douche Bracket. NEWCASTLE, 1882.  
 Headley & Sons, *Cambridge*, for Hose Reel. CROYDON, 1879.  
 Henderson, Osbert, *Glasgow*, for Albo-Carbon Light. GLASGOW, 1883.  
 " " for Pendulous Food Warmers. GLASGOW, 1883.  
 Heron, T., *Manchester*, for Duplex Burner. NEWCASTLE, 1882.  
 Hildesheim, J., *Glasgow*, for Dicks' L'Extincteur. GLASGOW, 1883.  
 Hill & Hey, *Halifax*, for Double Current Ventilators. GLASGOW, 1883.  
 Hilliard, W. B. & Sons, *Glasgow*, for Isolating Curtain. GLASGOW, 1883.  
 " " for Burn and Wound Boxes. GLASGOW, 1883.  
 Hilton, W. H., *Leamington*, for various Inventions for Promoting Domestic Economy. STAFFORD, 1878.  
 Hotblack, J. & Son, *Norwich*, for an Improved Shape of Boot. DUBLIN, 1884.  
 Hutchinson, A. & Co., *Great Winchester Street, E.C.*, for India Rubber Gas Tubing. EXETER, 1880.  
 Hydes & Wigfull, *Sheffield*, for Tortoise Slow Combustion Stoves. GLASGOW, 1883.  
 " " for Tortoise Laundry Stove. GLASGOW, 1883.  
 Hygienic Stove and Grate Company, 15, *Peel Buildings, Birmingham*, for "Eagle" Sanitary Trap, for superseding Bell Traps. CROYDON, 1879.







- Webster & Co., *Nottingham*, for Webster's Photometer. CROYDON, 1879.
- Wenham & Co., *Church Street, Croydon*, for Boyle's Mica-Valved Outlet Ventilator. CROYDON, 1879.
- Wheeler, J., *Ilfracombe*, for "Pixene." GLASGOW, 1883. DUBLIN, 1884.
- White, William, *Abergavenny*, for Hygeian Rock Building Composition. NEWCASTLE, 1882.
- Wilby, W., *Dublin*, for Chain Belting for Machinery. DUBLIN, 1884.
- Willcock & Co., *Burmantofts, Leeds*, for Fire-Clay Sanitary Sinks and Water Troughs. CROYDON, 1879.
- Willey & Co., *Exeter*, for Gaseliers and Gas Brackets. EXETER, 1880.
- Wippell Bros. & Row, 231, *High Street, Exeter*, for Ransome's Artificial Stone Air Brick. EXETER, 1880.
- " " for Conservatory Boiler, with Hot-Water Pipe. EXETER, 1880.
- " " for Cottage Range. EXETER, 1880.
- " " for Chappuis Daylight Reflector. EXETER, 1880.
- " " for Fernby's "Paragon" Camp Furniture. EXETER, 1880.
- " " for Improved House-maid's Box with Sifter. EXETER, 1880.
- Wright & Stevens, for Syphon Flushing Cistern. NEWCASTLE, 1882.
- Wright, John & Co., *Birmingham*, for "Cosy" Portable Open Gas Fire, with Platinum Wire and Asbestos Packing. NEWCASTLE, 1882.
- " " for Ventilating open Gas Fire. DUBLIN, 1884.

ADDRESSES AND PAPERS READ BEFORE THE INSTITUTE AT THE CONGRESS & OTHER MEETINGS DURING 1884.

SIR ROBERT RAWLINSON, C.B. President's Address to the Congress. DUBLIN, 1884.

T. W. GRIMSHAW, M.D.	Address to Section	I.	DUBLIN, 1884.
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CHARLES A. CAMERON, F.R.C.S., F.C.S., C.S.S.CAM.	" "	III.	DUBLIN, 1884.

- BARTLETT, H. C., P.H.D., F.C.S. Some of the present Aspects of Practical Sanitation. Read at the Anniversary Meeting, July 10, 1884.
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- Health Exhibition Literature, Vols. I.-XVI. INTERNATIONAL HEALTH EXHIBITION.
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LIST OF FELLOWS, MEMBERS, ASSOCIATES, AND SUBSCRIBERS  
ELECTED DURING THE YEAR 1884.

FELLOWS.

1884. Jun. BLYTH, A. Wynter, M.R.C.S., L.S.A., *Court House, Marylebone.*  
 1884. Apr. CRAWFORD, Director-General Thomas, M.D., 5, *St. John's Park, Blackheath.*  
 1884. May. FLOWER, Major Lamorock, 12, *Finsbury Circus, and 48, Holland Road, W.*  
 1884. Jun. HART, Ernest, M.R.C.S., 38, *Wimpole Street, W.*  
 1884. Jul. PRITCHARD, Edward, M.INST.C.E., F.G.S., 27, *Great George Street, and 37, Waterloo Street, Birmingham, S.W.*  
 1884. Jun. SHAW, George, 20, *King Edward Street, Newgate Street, E.C.*

MEMBERS.

\* Life Members.

† Passed Examination for Local Surveyors.

1884. Feb. BRANTHWAITE, Harrison, F.R.C.S., L.S.A., *Westbury House, Willesden, N.W.*  
 1884. Apr. CHORLEY, G., *Midhurst, Sussex.*  
 1884. Aug. \*CLARKE, Stephenson, 4, *St. Dunstan's Alley, St. Dunstan's Hill, E.C.*  
 1884. Aug. \*DUDFIELD, T. Orme, L.R.C.P.LOND., 8, *Upper Phillimore Place, Kensington.*  
 1884. Jan. \*EWART, Joseph, M.D., F.R.C.P., *Montpellier Hall, Montpellier Terrace, Brighton.*  
 1884. Apr. FURLONG, R. O'Brien, M.A., *Cloncvin, Killiney, Co., Dublin.*  
 1884. Jan. \*JENKIN, PROF. Fleeming, F.R.S., 3, *Great Stuart Street, Edinburgh.*  
 1884. May. KINSEY, W. Barnes, M.INST.C.E., 5, *Carteret Street, Queen Anne's Gate, S.W.*  
 1884. Jan. McARTHUR, SIR W., K.C.M.G., M.P., 79, *Holland Park, W.*  
 1884. Aug. MAIGNEN, P. A., 32, *St. Margaret Hill, Eastcheap, E.C.*

1884. Dec. MICHAEL, W. H., Q.C., 45, *Cornwall Gardens, Queen's Gate, S.W.*  
 1884. Dec. †\*PHILLIPSON, Burton R., *Baygot Street, Dublin.*  
 1884. Nov. POWER, J. Byrne, 1, *Roby Place, Kingstown, Co. Dublin.*  
 1884. Jul. †\*RADFORD, W. H., A.R.I.B.A., *Pelham Chambers, Angel Row, Nottingham.*  
 1884. Sep. SANKEY, Inspector-General, *Oakfield, Ailesbury Road, Dublin.*  
 1884. Dec. \*SHONKSMITH, John Henry, *Micklegate, York.*  
 1884. Jan. SWEETING, Richard Deane Roper, M.R.C.S.ENG., L.S.A.LOND., S.SC.CERT.CAMB, *Western District Fever Hospital, Scagrave Road, Fulham.*  
 1884. Jan. TUFNELL, E. Carleton, 26, *Lowndes Square, S.W.*  
 1884. Aug. WALFORD, Edward, M.D., L.S.A., S.SC.CAMB., 2, *Paragon, Ramsgate.*  
 1884. Sep. WEBB, William, M.D., 42, *St. Mary's Gate, Derby, and Worksworth, Derby.*  
 1884. Jul. †\*WILSON, J. B., *Kirklandhow, Arlecdon, Carnforth.*

ASSOCIATES.

\* Life Associates.

† Passed Examination for Inspectors of Nuisances.

1884. Jan. †\*ABRAMS, Henry, *Bromley Local Board, and 5, Westmorland Road, Bromley, Kent.*  
 1884. Feb. FRANCE, T. W. Chapman, 16, *Bristol Road, Edgbaston.*  
 1884. Nov. †\*FAIRCHILD, Samuel C. G., 569, *Wandsworth Road, Clapham, S.W.*  
 1884. Dec. †\*KEAL, J., 2, *St. Nicholas Road, Sutton, Surrey.*  
 1884. Aug. KITE, Charles, 31, *Baronsmere Road, East Finchley.*  
 1884. Jul. †\*SHADRAKE, W. A., 8, *Hind Street, Stainsby Road, Poplar, E.*  
 1884. Dec. †\*WINNER, F. Sawyer, 24, *Charing Cross, S.W.*

SUBSCRIBERS.

\* Life Subscribers.

1884. Aug. DOUGLAS, J., *Burham, Queensland, Australia.*  
 1884. Jun. \*DEBENHAM, F. G., *Cheshunt Park, Herts.*  
 1884. Feb. \*RYMER, Samuel Lee, L.D.S.E., *Croydon, Surrey.*  
 1884. Apr. SOUTH BLYTH DISTRICT LOCAL BOARD, *South Blyth, Northumberland.*

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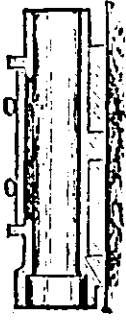
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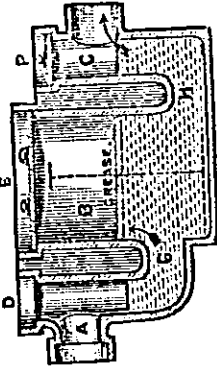
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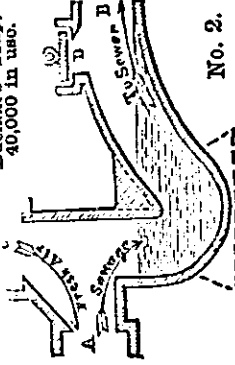
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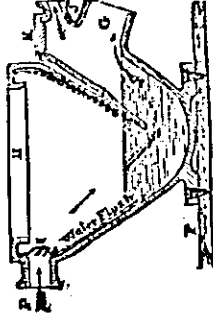


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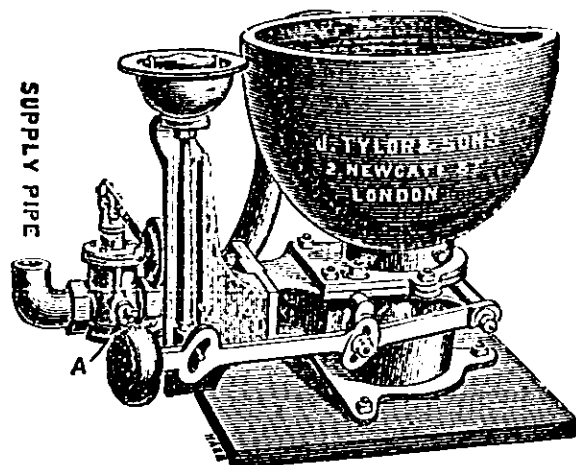


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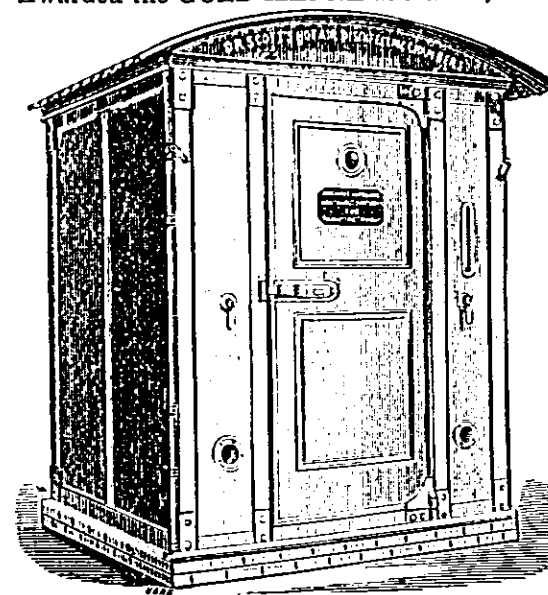
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BLACKROCK, DUBLIN.  
WEYMOUTH.  
BALLINA, &c., &c., &c.

Awarded The Diploma of Merit in competition at the International Medical and  
Sanitary Exhibition, London, 1881.

This Award is especially valuable on account of the high scientific standing and  
practical experience of the Judges, which eminently qualified them to decide on the  
merits of Dr. Scott's Patent System.

Judges—W. H. CORFIELD, M.D. WILLIAM EASSIE, C.E. ROGERS FIELD, C.E.  
R. THORNE THORNE, M.B. ERNEST TURNER, F.R.I.B.A.

Also, the Diploma of Merit of Sanitary Institute of Great Britain was awarded  
at Newcastle, 1882, and Dublin, 1884; and also the Gold Medal at Dublin, 1882.

*For the awards given by the Institute see Appendix, page 487.*

# LINCRUSTA-WALTON

THE MOST SANITARY AND MOST DURABLE

## WALL DECORATION.

13 PRIZE MEDALS

The Jurors at the Architectural and Building Trades Exhibition of the Society of Architects, 1885, say, "Lincrusta-Walton is so excellent a material, and so well known as to need but little special notice. Its great toughness and durability make it most suitable where much rubbing and wear may be expected."

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PATTERN-BOOK OF DECORATED DESIGNS NOW READY.

SHOW ROOMS:

No. 9, BERNERS STREET,  
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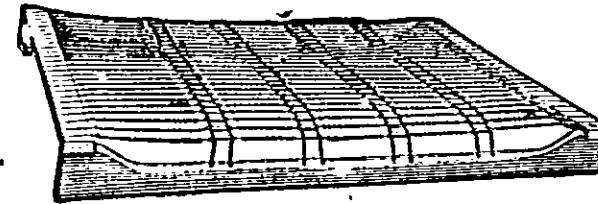
Sold Retail by all first-class House Furnishers and Decorators in the United Kingdom.

*For the awards given by the Institute see Appendix, page 474.*

Patronised by Royalty, the Nobility, and the Medical Profession.

## THE 'EXCELSIOR' PATENT SPRING MATTRESS.

AWARDS.  
12  
PRIZE MEDALS.



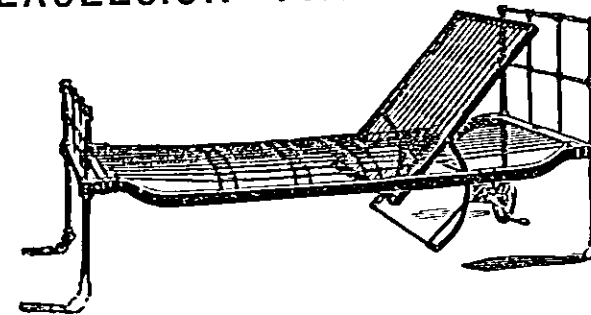
AWARDS.  
18  
CERTIFICATES  
OF MERIT.

Made any size to fit wood, brass, or iron bedsteads.  
The principle of arrangement permits the free movement of one sleeper without inconvenience to the other; admits of complete isolation of each, and effectually prevents depression in the centre.

## THE 'EASTERN' WOVEN WIRE MATTRESS,

With Patent corner fixings to allow of the Mattress being quickly taken to pieces.

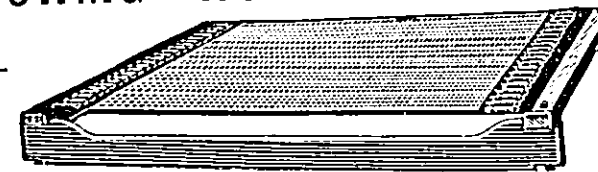
## THE 'EXCELSIOR' PATENT INVALID BED.



A patient reclining upon this bedstead is raised or lowered painlessly, easily, and immediately by one person; during the operation the entire length of the spine is evenly supported. The patented mechanical arrangement provides for the moveable back and shoulder rest being accurately adjusted and firmly secured in any desired position; accidents cannot occur from carelessness or lack of physical strength on the part of the attendant, as whenever the handle is released, by intent or otherwise, the mechanism is instantly interlocked, and the back and shoulder rest firmly fixed, it being again moveable only by motion communicated through the handle.

## THE 'SWING' WOVEN WIRE MATTRESS.

PRIZE MEDAL  
AWARDED  
AT THE



SANITARY  
EXHIBITION,  
DUBLIN,  
OCT., 1884.

This Mattress is an entire novelty in its conception and arrangement, and unquestionably embraces advantages possessed by no other elastic web or woven wire mattress. Its leading peculiarity is the unique combination of a woven wire central portion with helical springs of great strength and reliable temper. The addition of suitable helical springs to a woven wire mattress removes the great objections made to this kind of mattress, viz., that two sleepers are liable to be thrown or moved into the centre of the bed, and that the mattress depresses or becomes hollow from constant use.

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