HAYWARD'S PAVEMENT LIGHTS

It is of the utmost importance to ARCHITECTS, ENGINEERS, and OWNERS of PROPERTY, to ensure the best results and increase in letting value of Business Property, HAYWARD'S PATENT "SEMI-PRISM" LIGHTS should be clearly and distinctly specified, otherwise inferior imitations may be employed, which will cause disappointment.

Hayward's Pavement and Floor Lights Illuminate Basements, Cellars, and Underground Offices; they will throw good light far back, and greatly increase the Convenience and Value of buildings.

Strongly constructed, of best materials, with scientifically made prisms, they are the best articles of their kind manufactured, and no trouble or expense is spared in their production.

Hayward's Lights are sent out glazed, ready for the builders to fix.

Hayward's Patent "Pludelux" Prism Lights are used where the very best results are required, as the prisms in every pocket produce a solid reflecting surface from the whole area of the underside of the Pavement Light to back of basement.

Hayward's Patent "Semi-prism" Lights are used where the daylight is required to be thrown to the back of basement—at same time with good overhead and best distributed light.

Hayward's Convex Lens Lights are used where best overhead and diffused light is required.

Hayward's Rough Plate Lights are used where good overhead light is required with neatness and economy.

enquiries and Orders should state:—Sight opening and direction light is to be reflected.
Number of pattern and letter of section.
Water bars and ventilation wanted.

In taking out Quantities, allow 2 in. extra in length and depth for each flange, resting on curbs, or to break joint with stallboard beyond the "sight size," also allow sufficient depth beyond the fascia line into reveals of pilasters, windows, doors, etc.

The Lights will carry themselves to 6 ft. or 7 ft. in length without support along the back; it is preferable to support them generally on three sides (front and each end), and avoid fixing a longitudinal girder along the back, which impedes the light very considerably.

Lights that have to be in two parts are better arranged to be carried by a transverse bearer under joint, if possible, than by a longitudinal bearer along the back.

The LIGHTS are complete in themselves, and require bearings generally on three sides only.

The FLANGES rest on the curb-stone, and are bedded in Portland cement.

It is recommended to cut the rebates of curbs after the Light is at site; rebate 2 in. on by about ¾ in. deep.

Any size can be made to order at 1/- per ft. super over "Stock Sizes." Water Bar 6d. per ft. run extra. Lights of irregular shapes or stopped out are charged as square, and curved lines extra; parts of inches in length and depth are charged as full inches.

Use Stock Sizes, that is, Frames in stock, which avoid extra costs and delay and can be glazed and despatched two or three days after receipt of order.

HAYWARDS LTD.
Engineers & Ironfounders
UNION ST., BOROUGH, LONDON, S.E. 1.

Manufacturers of:
Pavement Lights.
Iron Staircases.
Heating and Ventilating.
Steel Casements and Sashes.

Collapsible Gates.
Puttyless Boot Glazing.
Skylights and Lanterns.
Lead Lights and "Copperites."
HAYWARD’S PAVEMENT LIGHTS

Applied scientifically greatly improve the convenience and value of Buildings.

The illustrations and names below indicate some examples.

HAYWARD’S “PLUDELUX” LIGHTS, etc., have been fixed at:

Royal Liver, Liverpool.
Playhouse Theatre.
Polytechnic, Regent Street.
Tiled Lights, Princes St.
At Messrs. Smith’s, Strand.
“Daily Mail” Offices.
“Daily Telegraph” Offices.
“Morning Post” Offices.
Nottingham Corporation.
Sheffield Corporation.
Bradford Corporation.
Glasgow Markets.
Leeds Markets.
Birmingham Markets.
Hotel Metropole, London.
Midland Hotel, Manchester.
Caledonian Hotel, Glasgow.
St. Bartholomew’s Hospital.
South Manchester Hospital.
Royal Infirmary, Glasgow.
Metropolitan Electric Supply, Corporation Electric Supply.
Electric Supply Corporation.
Peter Robinson, London.
Waring & Gillow, London.
Bobby & Co., Margate.
Snow Hill Station, Birmingham.
Waterloo Station, London.
Victoria Station, London.
Manchester Underground Conveniences.
Liverpool Underground Conveniences.
Glasgow Underground Conveniences.
Manchester Sorting Office.
Edimboro’ County Buildings.
Glasgow Corporation.
Gaiety Theatre, London.
Playhouse Theatre, London.
Hippodrome Theatre, London.
British Museum.
Victoria & Albert Museum, Etc., etc., etc.

Hayward’s Pavement Lights.
Iron Staircases.
Heating and Ventilating.
Steel Casements and Sashes.

Manufacturers of:
Collapsible Gates.
Puttyless Roof Glazings.
Skylights and Lanterns.
Lead Lights and “ Copperlites.”

Haywards Ltd. Engineers & Ironfounders
Union St., Borough, London, S.E. 1.
Telephones: Hoy 3842 (3 lines).
Telegrams: “Hayward Brothers, London.”
DEAR SIRS,

I have pleasure in stating that, acting upon instructions from this Vestry, I recently tested Hayward's Pavement Lights as to their construction, the Vestry being advised by the Local Government Board that those recently fixed at the underground convenience in Charing Cross Road should be strengthened.

A duplicate Light, measuring 5 ft. 9½ in. x 3 ft. 10½ in. over all, and glazed with 4 x 4 in. Lenses, was experimented upon, and loaded with a distributed weight of pig iron equal to 699 lbs. per superficial foot. This remained on the Light for three days without any sign of fracture, when an additional load was applied, equal to 1132 lbs. per superficial foot, which was left on for another three days, and as far as I could see there was no sign of fracture. When the weight was removed, the frame was uninjured, and only nineteen of the Lenses were splintered.

I consider this test eminently satisfactory, and have had no hesitation in advising the Vestry that the fears of the Local Government Board are groundless. Needless to say we have not thought it necessary to put additional supports to the Lights in question.

Yours faithfully,

(Signed) CHARLES MASON,
**HAYWARD'S LIGHTS, No. 1 Pattern.** 3 × 3 in. Lenses.

Special Strong Pattern, designed for public underground conveniences for the London Commissioners of Sewers. This Pattern is also suitable for positions where light vehicles pass over.

---

**HAYWARD'S ROADWAY LIGHTS, No. 11 Pattern.** 3 × 3 in. Lenses.

Extra Strong Frames, with Stout Nibs, Extra High. For Heavy Cart and Wagon Traffic.

---

**HAYWARDS LTD. Engineers & Ironfounders**

**Union St., Borough, London, S.E. 1.**

Telephones: Hop 3642 (3 lines).

Telegram: "Hayward Brothers, London."
Vague or indefinite wording is unsatisfactory to Client, Contractor and Manufacturer.

Architects should specify:—

Provide and fix HAYWARD’S PATENT LIGHTS, manufactured by Haywards, Ltd.

No. 18 PATTERN LIGHT. 4 x 3 Lenses. Centres about 4½ x 3½ in.

<table>
<thead>
<tr>
<th>Ordering Number</th>
<th>Price per super. ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 P “Pludelux”</td>
<td>8/6</td>
</tr>
<tr>
<td>18 B Semi-Prism</td>
<td>7/6</td>
</tr>
<tr>
<td>18 K Union Lens</td>
<td>6/-</td>
</tr>
<tr>
<td>18 K &amp; C Union and Convex Lens</td>
<td>5/6</td>
</tr>
<tr>
<td>18 C Convex Lens</td>
<td>5/-</td>
</tr>
<tr>
<td>18 D Rough Plate Glass</td>
<td>4/-</td>
</tr>
</tbody>
</table>

No. 19 PATTERN LIGHT. 6 in. x 3 in. Centres.

<table>
<thead>
<tr>
<th>Ordering Number</th>
<th>CEMENT SURFACE. Price per super. ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>19 P “Pludelux” and Cement</td>
<td>9/-</td>
</tr>
<tr>
<td>19 B Semi-Prism</td>
<td>8/-</td>
</tr>
<tr>
<td>19 C Convex</td>
<td>7/-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ORDERING NUMBER</th>
<th>CEMENT SURFACE. Price per super. ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>19 P “Pludelux” and Tiles</td>
<td>10/6</td>
</tr>
<tr>
<td>19 B Semi-Prism</td>
<td>9/6</td>
</tr>
<tr>
<td>19 C Convex</td>
<td>8/-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ORDERING NUMBER</th>
<th>MOSAIC SURFACE. Price per super. ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>19 P “Pludelux” and Mosaic</td>
<td>14/6</td>
</tr>
<tr>
<td>19 B Semi-Prism</td>
<td>13/6</td>
</tr>
<tr>
<td>19 C Convex</td>
<td>12/6</td>
</tr>
</tbody>
</table>

All prices shown are pre-war, and are subject to current advances.

No. 51 PATTERN TILE LIGHT. 4 in. x 4 in. Centres.

<table>
<thead>
<tr>
<th>Ordering Number</th>
<th>Glazing. Plain Tiles. Price per super. ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>51 P “Pludelux”</td>
<td>10/-</td>
</tr>
<tr>
<td>51 B Semi-Prism</td>
<td>10/-</td>
</tr>
<tr>
<td>51 K “Union”</td>
<td>9/-</td>
</tr>
<tr>
<td>51 C Convex</td>
<td>9/-</td>
</tr>
<tr>
<td>51 D Rough Plate</td>
<td>8/-</td>
</tr>
</tbody>
</table>

Marble Tiles, add to above 2/- per ft. Mosaic, add 3/- per ft.

Instructions for Orders, see page 2.

Special Quotations for Quantities or for Ornamental Tiled Borders.

**Haywards, Ltd.**

Engineers & Ironfounders

Union St., Borough, London, S.E. 1.

Telephones: Hop 3642 (3 lines).

Manuactors of:

- Pavement Lights.
- Iron Staircases.
- Heating and Ventilating.
- Steel Casements and Sashes.
- Collapsible Gates.
- Puttyless Roof Glazings.
- Skylights and Lanterns.
- Lead Lights and "Copperites."
HAYWARD'S FLOOR LIGHTS.

"Stock Sizes."—Frames in stock to even lenses and flanges on four sides, which can be glazed in two or three days. Any size made to order at 1s. per ft. super. over stock sizes. Irregular shapes are charged square and curved lines extra.

Use HAYWARD'S LIGHTS. Best value and results.

**No. 8 Pattern.** 6 in. x 12 in. centres.
Nibbed Frames.

Useful for gaining Light in Offices, Corridors, Warehouses and Factories.
Strong, cheap, light-giving floorings easily fixed.

See also page 6, Tiled-Lights for high-class Floorings in Hotels, Restaurants, Mansions, etc.

**No. 9 Pattern.** 6 in. x 6 in. centres.
Nibbed Frames.

All Prices shown are pre-war, and are subject to current advances.

HAYWARDS LTD. Engineers & Ironfounders
UNION ST., BOROUGH, LONDON, S.E. 1.

Manufacturers of:
- Pavement Lights
- Iron Staircases
- Heating and Ventilating
- Steel Casements and Sashen
- Collapsible Gates
- Puttysless Roof Glazings
- Skylights and Lanterns
- Lead Lights and "Coppertites"
HAYWARD’S FLOOR & ROOF LIGHTS

METRICAL "FLOOR LIGHT" PATTERNS to Centres of \( \frac{1}{2} \) & \( \frac{1}{4} \) Mètre.

No. 25 has Centres 9\(\frac{3}{4}\)27 in. and Lenses 9\(\frac{3}{4}\) in. square.
No. 33 ,, ,, 13\(\frac{1}{4}\)26 in. ,, ,, 12\(\frac{1}{2}\) in. square.

The frames have the advantage of being readily assembled in continuous ranges with bolted butt joints (see section below), and are not made with flanges. If desired, angle irons can be bolted to the outside bars as shown, but these are not included in the prices below, often being procured locally; or the lights are fixed in concrete with caulking, or screwed in rebates in wood mouldings or beams, etc.

The illustrations show perspective views of No. 25 with 4 lenses to the metre, from above; and an underside view of No. 33 pattern, having 3 lenses to the metre.

Stanard Sizes, No. 25 Pattern. No. 33 Pattern (overall sizes).

<table>
<thead>
<tr>
<th>Depth and Lenses</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lenses and Lengths</td>
<td>ft. in.</td>
<td>ft. in.</td>
<td>ft. in.</td>
<td>ft. in.</td>
<td>ft. in.</td>
</tr>
<tr>
<td>2 ft. 7(\frac{1}{2}) in.</td>
<td>1 (\frac{7}{8})</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3 (\frac{5}{8})</td>
<td>1 (\frac{7}{8})</td>
<td>2 (\frac{3}{8})</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4 (\frac{3}{8})</td>
<td>1 (\frac{7}{8})</td>
<td>2 (\frac{3}{8})</td>
<td>3 (\frac{3}{8})</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5 (\frac{7}{8})</td>
<td>1 (\frac{7}{8})</td>
<td>2 (\frac{3}{8})</td>
<td>3 (\frac{3}{8})</td>
<td>4 (\frac{7}{8})</td>
<td>-</td>
</tr>
<tr>
<td>6 (\frac{11}{8})</td>
<td>1 (\frac{7}{8})</td>
<td>2 (\frac{3}{8})</td>
<td>3 (\frac{3}{8})</td>
<td>4 (\frac{7}{8})</td>
<td>4 (\frac{11}{8})</td>
</tr>
</tbody>
</table>

Nos. 25 or 33 Lighthouse Lens per super. ft., 6s. 6d.

Small ribs on surface.

Nos. 25 or 33 D Rough Plate Glass, per super. ft. 4s.

Prices shown are pre-war, and are subject to current advances.

Haywards Ltd.
Engineers & Ironfounders
Union St., Borough, London, S.E. 1.

Manufacturers of:
Pavement Lights.
Iron Staircases.
Heating and Ventilating.
Steel Casements and Sashes.
Collapsible Gates.
Puttyless Roof Glazings.
Skylights and Lanterns.
Lead Lights and "Copperlites."
USE HAYWARD'S.

28 MEDALS AWARDED.

No. 14EE. "GLASGOW" PATTERN.
6 x 6 in. Centres.

No. 14 E. "CHECKERED LENS" PATTERN.
6 x 6 in. Centres.

GLASS FLOORING FOR ELECTRICAL STATIONS.
For Switchboard Platforms, Galleries, Sub-Station, Etc., Etc.

STRONG, DURABLE, SAFE and CLEAN.

Specially recommended for use with all Electrical Machinery, and particularly for High Voltage Switchwork, around Dynamos, Converters, Batteries, etc.

Easily fixed on steel joists, stanchions, concrete, etc.; the cables, gear, etc., can pass through openings made by omitting glasses, singly or in sets, as the circumstances require.

Both patterns shown are splendid insulators, but the 14 EE is perhaps the best for high-tension work, on account of holding the feet off the general level of the floor.

In these Lights the iron frame is kept entirely below the surface of the glasses, as shown in the illustrations, and the lenses are set as close together as is practically possible; the narrow spaces or joints between them are run in with a specially prepared composition, which is a non-conductor of electricity, thus forming an entirely insulated surface. The cast-iron frames are made sufficiently strong to stand any strain likely to be put on them.

PRICE, 7/- per ft. super,
to stock sizes and centres.

(PRE-WAR PRICE—SUBJECT TO CURRENT ADVANCES.)

Besides giving increased safety, Hayward's Insulating Lights greatly enhance the handsome appearance of Electrical Stations and Machinery, and make for cleanliness and efficiency.

USED IN ALL THE BEST ELECTRIC GENERATING STATIONS.

Haywards Ltd. Engineers & Ironfounders
Union St., Borough, London, S.E. 1.

Manufacturers of:

Pavement Lights. Collapsible Gates.
Iron Staircases. Puttyless Roof Glazings.
Heating and Ventilating. Skylights and Lanterns.
Steel Casements and Sashes. Lead Lights and "Copperlites."
HAYWARD'S INSULATING LIGHTS

FOR ELECTRICAL GENERATING STATIONS, ETC.

The following are some of the Generating Stations where Hayward’s Switchboard Lights, Staircases, etc., have been supplied:

MARYLEBONE BOROUGH COUNCIL.  
CITY OF LONDON ELECTRIC LIGHTING CO.  
COUNTY OF LONDON ELECTRIC SUPPLY CO.  
WESTMINSTER ELECTRIC SUPPLY CORPORATION.  
LONDON UNITED TRAMWAYS.  
CAMDEN TOWN.  
CANNING TOWN.  
DUKE ST., MAYFAIR.  
HIGHGATE ROAD.  
WILLESDEN.  
ST. PANCRAS.  
WEST HAM.  
EAST HAM.  
WHITECHAPEL.  
WANDSWORTH.  
FULHAM.  
TOWER STREET.  
NORTH STREET.  
FISHER STREET.  
PRATT STREET.  
ASHTON-UNDER-LYNE.  
NEWCASTLE-UNDER-LYNE.  
NEWCASTLE-ON-TYNE.  
WALLSEND-ON-TYNE.  
KIDDERMINSTER.  
WOLVERHAMPTON.  
MANCHESTER (several Stations).  
OLDHAM.  
PRESTON.  
SHEFFIELD.  
BIRMINGHAM.  
SCARBOROUGH.  
ABERDEEN.  
BRIGHTON.  
GLASGOW (several Stations).  
CAMBRIDGE.  
WORCESTER.  
HARROGATE.  
ERITH.  
SUTTON, Surrey.  
WOKING.  
KEIGHLEY.  
EARL OF DUDLEY’S MILLS.  
SYDNEY, New South Wales.

At Glasgow Corporation Station.  
(3,000 ft. super Hayward’s Lights.)

At Fisher Street, W., Station, Met. Elec. Corp’n.  
(Hayward’s Lights also at North St. and Tower St.)

At Brighton Corporation Station.

Hayward’s Iron Staircases, Door, Glazing, etc.

Also use "Copperlite" Fire-Resisting Glazing; Hayward’s Steel Collapsible Gates for Ends and Backs of Switchboards, etc., for Protecting Access to Terminals, Cables, etc.; Hayward’s Steel Doors; Steel Sashes and Hayward’s Fireproof Iron Staircases.

HAYWARDS LTD. Engineers & Ironfounders

UNION ST., BOROUGH, LONDON, S.E. 1.

Telephone: Hop 3643 (3 lines).  
Telegram: "Hayward Brothers, London."
HAYWARD'S PATENT CELLAR FLAPS.

No. 18 PATTERN. 4 x 3 in. Lenses.

USE HAYWARD'S LIGHTS.
23 MEDALS AWARDED.

Large Opening Flaps in four-sided frame, fitted with rack gear for opening and closing.

Opening Flaps in three-sided frame with movable bar, used in conjunction with Stallboard Doors.

The Illustrations show HAYWARD'S Patent Flaps in guttered curb frames on four sides, or three sides with movable bearing bar, for clearance of bulky packages, if required.

A hole is drilled and tapped in lowest front corner of gutter to attach pipe to drain.

Larger sized flaps can be balanced by means of springs, at a small extra charge.

<table>
<thead>
<tr>
<th>Ordering Number</th>
<th>Approximate Prices</th>
<th>Measured Over All</th>
<th>Price per Super, ft. Stock Store</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 K.</td>
<td>“Union” Lens, Small Semi-Prisms</td>
<td>11 0</td>
<td></td>
</tr>
<tr>
<td>18 K. &amp; C.</td>
<td>“Union” and Convex Lenses</td>
<td>10 6</td>
<td></td>
</tr>
<tr>
<td>18 C.</td>
<td>Convex Lenses</td>
<td>10 0</td>
<td></td>
</tr>
<tr>
<td>18 D.</td>
<td>Special Quality Rough Plate Glass</td>
<td>9 6</td>
<td></td>
</tr>
</tbody>
</table>

Rack Gear fitted to special large-sized Flaps at an extra charge.

HAYWARD'S Prismatic Pavement Lights and Reflecting Stallboards. Doors opening inwards, fitted in three-sided frame, and with top row of louvre vent panels in lieu of lenses.

HAYWARD'S Outward-Opening Stallboard Doors and Pavement Flaps with three-sided gutter frame and movable bar; open work vent panels in tops of doors, and arrangement of bulkhead behind.

Prices shown are pre-war, and are subject to current advances.

HAYWARDS LTD. Engineers & Ironfounders

UNION ST., BOROUGH, LONDON, S.E. 1.


MANUFACTURERS OF:

Pavement Lights.
Iron Staircases.
Heating and Ventilating.
Steel Casements and Sashes.

Collapsible Gates.
Futuview Roof Glazings.
Skylights and Lanterns.
Lead Lights and "Copperlites"
**HAYWARD'S REFLECTING STALLBOARD LIGHTS.**

No. 28 PATTERN. 6 x 6 in. Centres.

---

Stallboard Lights are ornamental iron frames, glazed with various lenses to reflect a strong light into the basement. The Stallboards are complete in themselves, readily fixed, are ornamental, and give a good effect to fronts. The ordinary area windows can be entirely dispensed with, and the basement continued out to the area wall.

The above illustration shows a Stallboard with opening, hopper arrangement to obtain ventilation, which is far neater, simpler, and more efficient than anything hitherto produced. The Stallboard frame is completed all through, and prevents anyone getting through or tampering with the Hopper arrangement on the inside—which is opened and closed by a rack and pinion, and when closed the whole front presents an uniform appearance, as if there was no portion to open at all.

**SPECIFY HAYWARD'S CONCEALED HOPPER IN STALLBOARD — X — SQUARES.**

Stock Sizes:

- Frames in stock can be glazed in two or three days.
- Sizes made to order 1s. extra; irregular shapes charged square.

---

**HAYWARD'S STALLBOARD DOORS.**

Doors to open outwards or inwards, in 3 or 4-sided Frame.

---

**HAYWARDS \textsuperscript{TD.}**

Engineers & Ironfounders

UNION ST., BOROUGH, LONDON, S.E. 1.

Telephones: Hopt 3042 (3 lines).

Telegrams: "Hayward Brothers, London."

---

**MANUFACTURERS OF:**

- Pavement Lights
- Iron Staircases
- Heating and Ventilating
- Steel Casements and Sashes
- Collapsible Gates
- Puttyless Roof Glassings
- Skylights and Lanterns
- Lead Lights and "Copperlites."
The full utilisation of Daylight Lighting by means of Hayward's Prismatic and other Lights, to project daylight into basements and from Light Wells, etc., with the use of Reflectors, Prismatic Stallboards, Canopies and Prism Glazings for windows, for throwing the light back into rooms, halls, and corridors, when arranged with scientific knowledge and experience, ensure the maximum economy of artificial light and saving of money continuously, whilst rendering the buildings more valuable, convenient and healthy.

This diagram indicates why Hayward's Prismatic Glazings bring daylight into buildings and throw it horizontally into the rooms, greatly increasing the illumination. The prisms so catch and bend the rays of light from the sun, that it is as if in the dotted position and shining directly in.

Light is subject to Reflection back from bright surfaces, or Refraction when passing through from one medium to another.

**Reflection.**—Light is reflected from a surface, in the same plane and at an equal and opposite angle to that at which it strikes. This occurs directly with Reflectors.

With Prismatic Lights, the slanting surfaces of the prisms act as reflectors, causing the light rays striking through on to them to be deflected off at an equal angle, and thus emerge in a more horizontal direction, to where it is wished to throw the light, such as with pavement lights far back, to illuminate basements, etc.; whereas without the prisms, it would pass through in an almost direct line and become nearly all lost on the floor underneath the opening.

**Refraction** is the bending of the light rays, on passing at an angle, from one medium to another.

Thus in Fig. 41, with plain glass, of two sides of a beam of light, A B, the upper would be retarded at E on passing into the denser medium, glass; whilst the lower side continuing in the rarer medium, air, would reach H, and thus the beam swings round. But when the lower side also reaches the glass the whole will be retarded alike, and the beam will proceed as before, but slower, and in a different direction. As the beam emerges from the denser medium, the reverse of what has been described occurs, and the beam proceeds in a path parallel with its former course.

If, however, the inner surface of the glass presents angles, as in Fig. 42 (and as in Hayward's "Pludelux" Prismatic Glass, Stallboards, Prismatic Copperlites, etc.), the upper side of the beam of light is still further retarded, and therefore the beam must swing round again, and pass out in quite a different direction to that of entry, so that a beam of light passing through a prism is permanently deflected.

It will therefore be evident from Fig. 41 that, with the usual plain window glazing, the light available from outside—perhaps reduced and contracted because of the narrowness of the street or great height of buildings opposite—proceeds \( \text{in the } A B \) direction, and strikes the floor just inside the window, when four-fifths of it generally becomes absorbed and lost, only about one-fifth being reflected towards the ceiling, and down again in useful manner.

On bringing the light through prism plates it takes the course indicated in Fig. 42 by letters A B, when it will be seen that all the light is available for lighting the room in directions that enable all parts to be illuminated.
HAYWARD'S "PLUDELUX" PRISMATIC GLASS

DAYLIGHT versus ARTIFICIAL LIGHT,
in Offices, Warehouses, etc.

USE HAYWARD'S.
23 Medals Awarded.

This is of the greatest importance to all occupying premises or buildings, and too much attention cannot be directed to it.

HAYWARDS Ltd., have recently enlarged their extensive premises, and an inspection would give architects and clients a good idea of some of the great opportunities often thrown away, which might be utilized with little or no extra cost, if looked into or considered in good time when drawings for new buildings are being prepared.

Hayward's "Pludelux" Sheet Glass

should be fixed in windows and sashes to throw a strong light to the back of floors, and gives a wonderful increase of light, especially in streets where there are buildings opposite impeding the light.

HAYWARD'S "COPPERLITE" FIRE-RESISTING GLAZINGS.

These "Copperlite" Prism Plates give the maximum transmission of light, with neat appearance, combined with strength and fire-resisting qualities. Recommended for large Shops, Stores, etc. 7,000 ft. super used at Selfridge's.

Made up with 4 in. square Prism Lenses glazed into "Copperlite" bars in a special manner, and subjected to electro-deposition, they are strong and handsome.

PRICES.

<table>
<thead>
<tr>
<th>Description</th>
<th>Per ft. super.</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Copperlite&quot; Plain Glazing in polished plate</td>
<td>3/9</td>
</tr>
<tr>
<td>&quot;Copperlite&quot; Fire-resisting Prism Plates</td>
<td>6/-</td>
</tr>
<tr>
<td>&quot;Copperlite&quot; Stallboard Plates with 5½ in. square Prism Lenses, in steel outside frames</td>
<td>9/-</td>
</tr>
</tbody>
</table>

EXTRAS.

- Angles, curves, and odd shapes. Packing and carriage.

For further information as to the British Fire Prevention Certificate won by HAYWARD'S "COPPERLITES" and references, etc., see pages under that heading.

Prices shown are pre-war, and subject to current advances.

HAYWARDS LTD. Engineers & Ironfounders
UNION ST., BOROUGH, LONDON, S.E. 1.

Manufacturers of:
Pavement Lights. Collapsible Gates.
Iron Staircases. Puttyless Roof Glazing.
Heating and Ventilating. Skylights and Lanterns.
Steel Casements and Sashes. Lead Lights and "Copperlites."
HAYWARD'S DAYLIGHT REFLECTORS.
SUPERSede ARTIFICIAL LIGHT DURING DAY-TIME
IN BADLY-ILLUMINATED
OFFICES, SHOW-ROOMS, AND APARTMENTS.

The utility of Daylight Reflectors, when properly and scientifically applied, is now universally acknowledged. It is also known that the vertical light from the sky is ten times as effective as ordinary light through side windows. Reflectors have been fixed at most of the Government Offices, at the Post Offices, British Museum, Dover and Windsor Castles, and the Tower of London. Many of the West-End Clubs have adopted them, and they have long been in use in many of the dark offices of merchants and tradesmen in London and elsewhere. The reflecting surface, by the Patent Process of Silvering, is all that can be desired.

Outside view of a Reflector.
Inside view of Hayward's Reflectors throwing in light.

Architects cannot give too much attention to this matter of Daylight Lighting of buildings, which is all-important to clients. Where streets are narrow and direct light poor, good results are often obtained by the judicious use of Outside Reflectors. 

HAYWARD's manufacture reflectors in several qualities:—

No. 1 Quality, Ribbed Glass Silvered Reflector, 4/- per ft. super.—Suitable for places where a moderate amount of light is sufficient, viz., basements, kitchens, bedrooms, etc.

No. 2 Quality, Corrugated Glass Silvered Reflector, 5/- per ft. super.—A thoroughly good and effective Reflector in almost all situations, i.e., offices, warehouses, and private dwellings.

No. 3 Quality, “Luxor,” Glass Silvered Reflector 6/- per ft. super.—The most powerful of all Daylight Reflectors, and manufactured of moulded sheets of crystal, coated with a deposit of pure silver, and reflecting 20 per cent. more light than No. 2 quality.

Fittings extra, each Reflector, 3/6.

Prices shown are pre-war, and subject to current advances.

HAYWARDS LTD. Engineers & Ironfounders
UNION ST., BOROUGH, LONDON, S.E. 1.
Telephones : Hop 3662 (3 lines).
Telegram : "Hayward Brothers, London."
HAYWARD'S COAL PLATES
AND CIRCULAR LIGHTS, &c.

Hayward's Improved Safety Coal Plates, with deep rim and ring, and 2ft 6in. chain and staple.

Hayward's Patent "Self-Locking," "Non-Slip" Coal Plates, requires ring to be complete.

For Stone.

For Asphalt.

HAYWARD'S D. Solid. No. 5 C. Ventilating. No. 5 B. Illuminating.

PRICES. No. 1 Pattern. No. 5 Pattern. No. 10 Pattern.

Architects should specify Hayward's Patent "Self-Locking" Coal Plates,........dia. No...............pattern with deep rim for (stone or asphalt), or Hayward's Improved Safety Coal Plate with ring, chain and staple.

HAYWARD'S CIRCULAR FLOOR OR PAVEMENT LIGHTS.

Specify Hayward's Circular Vault Lights ............... diam, glazed with diamond lenses, manufactured by Haywards, Ltd., Union Street, S.E.

Hayward's Circular Vault Lights, sizes... Glazed 3 C "Diamond" Lenses...

All prices shown are pre-war, and are subject to current advances.

HAYWARDS LTD. Engineers & Ironfounders
UNION ST., BOROUGH, LONDON, S.E. 1.

Manufacturers of:
Pavement Lights. Collapsible Gates.
Iron Staircases. Puttyless Roof Glazings.
Heating and Ventilating. Skylights and Lanterns.
Steel Casements and Sashes. Lead Lights and "Copperlites."

Telephones: Hop 3942 (3 lines). Telegrams: "Hayward Brothers, London."
HAYWARD'S IRON STAIRCASES.

LARGEST MAKERS.
MAXIMUM VALUE.

HAYWARD'S FIREPROOF STAIRCASE

GREATEST EXPERIENCE.
MINIMUM COST.

HAYWARD'S IRON STAIRCASE

23 Medals awarded to Hayward's Products for General Excellence.

HAYWARD'S IRON STAIRS,
Made in all Forms and Designs.
Circular Staircases,
Straight Staircases,
Balconies, Ladders, etc.
Adapted for all requirements —
Public Buildings,
Hotels and Mansions,
Houses and Shops,
Factories,
Warehouses, etc.

Architects and others will be interested to note from these photographs, Actual and Severe Tests of Hayward's Iron Fireproof Escape Staircases, thus realising the best guarantee of excellence of construction and sterling worth that it is possible to obtain. The two views above show a Hayward's Escape Staircase at Derby Corporation Silk Mills after a disastrous fire that completely gutted the premises; the remarkable strength of the staircase will be noted and that it remained intact, though standing over-hanging and unsupported at the top, while the wall lower down seems to have been kept from falling owing to support from the staircase. On the rebuilding of the Mills, the staircase was taken down and re-erected just as it was.

The lower view shows two Hayward's Escape Stairs at Seafold House, Liverpool, after the fire that caused damage to the extent of £80,000; though the flames beat on the staircases they remained intact.

Hayward's offer unrivalled experience in the construction and adaptation of Iron Staircases to all needs and circumstances (see illustrations and lists of many examples given on following pages). No trouble or expense is spared in manufacture, and moderate prices and best value are assured for all orders, large or small.

HAYWARDS
Engineers & Ironfounders
UNION ST., BOROUGH, LONDON, S.E. 1.

Manufacturers of:
Fawcett Lights.
Iron Staircases.
Heating and Ventilating.
Steel Casements and Sashes.

Collapse Gates.
Puttyless Roof Glazings.
Skylights and Lanterns.
Lead Lights and "Copperlites."
HAYWARD'S IRON STAIRCASES FOR FACTORIES, &c.
FOR FIRE-ESCAPE AND SERVICE.
TO THE REQUIREMENTS OF THE L.C.C. AND OTHER PUBLIC BODIES.

As Supplied to:

L.C.C. Tunnel ... ... Woolwich.
L.C.C. Premises ... ... Regent Street, W.
Cross & Blackwells ... ... Bermondsey, S.E.
Printing Works ... ... Bethnal Green, E.
PARKINSON'S GAS-METER WORKS ... ... Lambeth, S.E.
Spratt's Biscuit Works ... ... Poplar, E.
Mosers, Ltd. ... ... Borough, S.E.
Petty Wood & Co. ... ... Southwark, S.E.
Toogood's Medical Works ... ... Tooley Street, S.E.
Hobson & Sons ... ... Osney Road, S.E.
Falkner & Sons ... ... Clapham, S.W.
Cigarette Works ... ... King's Cross, N.
Times Laundry ... ... Greenwich, S.E.
Linoleum Works ... ... Park Royal, W.
Electric Supply Corporation ... ... Marylebone & Willesden.
COPN. ELEC. SUPPLY ... ... Manchester.
McIntyre's Warehouse ... ... Basinghall Street, E.C.
Warehouse Premises ... ... Great Portland Street, W.
Morgan Crucible Co. ... ... Battersea, S.W.
Sandow's Cocoa Works ... ... Hayes.
Kodak Co. ... ... Harrow.
British American Factory ... ... Westminster.
Corporation Silk Mills ... ... Derby.
Harrison's Factory ... ... Birmingham.
Birkin & Co. ... ... Nottingham.
Soole's Joinery Works ... ... Richmond, Surrey.
Railways ... ... L & N.W., L & S.W., G.W., S.E., & C., L.B. & S.C., etc.

Hayward's Iron Service Staircase.
MESSRS. McVITIE'S BISCUIT WORKS, WILLESDEN.

Hayward's Iron Fire-Escape Staircase.
MESSRS. ROBINSON & CLEAVERS, REGENT STREET, W.

HAYWARD'S STAIRCASES FOR FIRE-ESCAPE AND FACTORY USES.

Haywards Ltd., having the largest experience in this work, are able to offer the best advice and construction.

Complete sets of patterns to comply with all requirements are available, and quantities of standard steps and other parts are kept in stock, to enable Staircases to be quickly made up and delivered.

On receipt of the necessary information, drawings and estimates are submitted free of charge; and where required, experienced Representatives are sent to the site to ensure the accurate and economical treatment of each case.

STOCK SIZES OF TREADS.

Type No. 151.

<table>
<thead>
<tr>
<th>Width</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 ft 0 in</td>
<td>3 ft 0 in</td>
</tr>
<tr>
<td>2 3' 3' 3' 3'</td>
<td>3 3' 6'</td>
</tr>
<tr>
<td>2 9' 4' 0'</td>
<td>4 ft 6 in</td>
</tr>
</tbody>
</table>

See also next page for prices.

These treads and landings, of perforated iron, are of a new non-slip pattern, giving secure foothold; they allow of the passage of light through them, and comply with L.C.C. regulations, etc.

MANUFACTURERS OF:

Pavement Lights.
Iron Staircases.
Heating and Ventilating.
Steel Casements and Staircas.
Collapsible Gates.
Pyritic Roof Glazing.
Skylights and Lanterns.
Lead Lights and "Copperlites."
Hayward's Improved Straight Iron Staircases.

Complying with L.C.C. requirements, Suitable for Public Buildings, Hotels, Factories, and General Purposes.

Hayward's Standard Between-Strings Type No. 151 Iron Staircases, for Fire Escape or Service, are designed to suit all circumstances and requirements.

The construction is in accordance with L.C.C. regulations throughout.

The Treads are of square chequer pattern, with openings not exceeding ¾ in. width; their “goings” are 10 in. and rises 7 in.

These, with the landings to match, are strongly bolted to steel stringers, supported on “dead bearings” by steel joists, stan—

cheons or cast-iron columns.

Balusters are at regulation centres and heights, where such apply.

Risers of “close” or slotted pattern are often used, though large numbers of stair—

cases are constructed with open risers, which are quite acceptable and satisfactory, and give least obstruction of light.

Hayward's Iron Staircases have great strength.

The illustration below indicates the efficient “Non-slip” character of Hayward's No. 151 Type Treads, with chilled nibbed surf—

face, superior to all other treads on the market, in giving perfectly secure foothold, and obviating the necessity of fitting special nosings, and thus saving the extra cost of same.

Balusters may be of various types and styles, but looped or straight wrought iron bars are most in favour.

Specification.

Hayward's Iron Staircase No. 151 Type, with slotted risers, hand—rail and loop balusters, on left-hand side.

The illustration on the right shows a usual form of plain iron stairs for Areas, Workshops, Service, etc.

All prices shown are pre-war, and are subject to current advances.

Hayward's Fire-Escape Staircases, Sandow's Cocoa Works, Hayes, Middlesex.

<table>
<thead>
<tr>
<th>SIZE Between strings</th>
<th>With Open Risers</th>
<th>With Close Risers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Balusters One Side</td>
<td>Balusters Both Sides</td>
</tr>
<tr>
<td>2 ft. 6 in.</td>
<td>23/- 24/- 25/- 26/-</td>
<td>28/- 29/- 30/- 31/-</td>
</tr>
<tr>
<td>2 ft. 9 in.</td>
<td>24/- 25/- 26/- 27/-</td>
<td>29/- 30/- 31/- 32/-</td>
</tr>
<tr>
<td>3 ft. 0 in.</td>
<td>25/- 26/- 27/- 28/-</td>
<td>30/- 31/- 32/- 33/-</td>
</tr>
<tr>
<td>3 ft. 3 in.</td>
<td>26/- 27/- 28/- 29/-</td>
<td>32/- 33/- 34/- 35/-</td>
</tr>
<tr>
<td>3 ft. 6 in.</td>
<td>27/- 28/- 29/- 30/-</td>
<td>33/- 34/- 35/- 36/-</td>
</tr>
</tbody>
</table>

Landings, Columns, Brackets, and Fixing, etc., extra as required. Estimates on application.

Hayward's Workshops, ... Union St., Borough, London, S.E. 1.

Telephones: Hap 3642 (3 lines). Telegrams: "Hayward Brothers, London."
Hayward's Iron Fire-Escape Staircases

For Hotels, Hospitals, Schools, Asylums, &c., to requirements of the L.C.C. and other Authorities.

Complete sets of patterns to comply with all requirements are available; and quantities of standard steps and other parts are kept in stock.

**Standard Sizes (No. 151 Type).**

<table>
<thead>
<tr>
<th></th>
<th>2 ft. 6 in. wide.</th>
<th>2 ft. 9 in. wide.</th>
<th>3 ft. 6 in. wide.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3 ft. 0 in.</td>
<td>3 ft. 3 in.</td>
<td>4 ft. 0 in.</td>
</tr>
<tr>
<td>2</td>
<td>3 ft. 0 in.</td>
<td>3 ft. 3 in.</td>
<td>4 ft. 0 in.</td>
</tr>
</tbody>
</table>

The treads and landings, of perforated iron, are of a special non-slip pattern, giving secure foothold; and they allow light to pass through them.

**Hayward’s Iron Staircases**

as supplied to:

- L.C.C. Premises...
- L.C.C. Asylum...
- L.C.C. Asylum...
- Army and Navy Stores...
- New Civil Service Stores...
- G. W. Ry. Stores...
- National Liberal Club...
- Constitutional Club...
- Ladies' Army and Navy Club...
- "Daily Telegraph"...
- "Daily Mail"...
- Hotel Cecil...
- Trocadero Restaurant...
- Westminster Palace Hotel...
- Hyde Park Hotel...
- Lord Warden Hotel...
- Empire Hotel...
- Empire Hotel...
- West Cliff Hotel...
- L. & S. W. Ry. Hotel...
- St. Bartholomew's Hospital...
- Middlesex Hospital...
- Guy's Hospital...
- Evelina Hospital...
- Temperance Hospital...
- South Eastern Hospital...
- Chelsea Women's Hospital...
- North Eastern Hospital...
- General Hospital...
- Royal Albert Orphan Asylum...
- Otto House Private Asylum...
- Infant Orphan Asylum...
- Lewisham Union...
- Rochford Union...
- Steyning Union...
- Chesterfield Infirmary...
- Dr. Barnardo's Homes...
- Cottage Homes...
- St. James's Hall...
- Notre Dame Convent...
- University College of Wales...
- Central Technical College...
- King Edward's Schools...
- Warehousemen's Schools...

**Specifications**

- Hayward's Standard Fire-Escape Iron Staircase, 3 ft. wide, with open risers, and supported on cast-iron cantilevers.

- Hayward's Standard Fire-Escape Iron Staircase, 3 ft. 6 in. wide, close risers, wrought balusters and steel stancheons.

**Manufacturers of:**

- Collapsible Gates.
- Puttyless Roof Glazings.
- Skylights and Lanterns.
- Lead Lights and "Copperlites."
Hayward’s Improved Straight Iron Staircases.

TYPE No. 141, OVER-STRINGS. Scroll Pattern.

Tread, Riser, and Spandril in one.

GIVING GREATEST STRENGTH AND STIFFNESS.

These are very convenient Staircases for a variety of purposes and have a very good appearance.

They are suitable for Houses, Gardens, Shops, etc., and used in conjunction with Circular Stairs, etc. The Scroll Pattern Treads have a very good "non-slip" surface, giving excellent foothold and great durability.

Panel and other balusters, etc., can be fitted at small extra cost.

Landings can be made with Hayward’s Reflecting Lights to give lights to windows, etc., below.

STOCK SIZES AND PRICES FOR No. 141, PER FOOT RISE.

<table>
<thead>
<tr>
<th>Over-all Dimensions</th>
<th>One Side</th>
<th>Both Sides</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 ft. 0 in. wide</td>
<td>21/-</td>
<td>26/-</td>
</tr>
<tr>
<td>2 ft. 2 in.</td>
<td>21/6</td>
<td>26/6</td>
</tr>
<tr>
<td>2 ft. 4 in.</td>
<td>22/-</td>
<td>27/6</td>
</tr>
<tr>
<td>2 ft. 6 in.</td>
<td>23/-</td>
<td>28/-</td>
</tr>
<tr>
<td>2 ft. 8 in.</td>
<td>24/-</td>
<td>29/-</td>
</tr>
<tr>
<td>3 ft. 0 in.</td>
<td>26/6</td>
<td>31/6</td>
</tr>
</tbody>
</table>

Landings, etc., extra. Estimates for fixing on application. Also for all kinds of Iron Staircases, Balconies, etc., on receipt of particulars.

SPECIFICATION.

Hayward’s Iron Staircase, No. 141 Type, 2 ft. 4 in. wide over-all, with arched risers, and hand-rail and No. 10 Balusters on left-hand side. Square landing at top.

See also previous pages 17 to 20 for other Straight Staircases.

Hayward’s No. 141 Staircase, 2 ft. 4 in. wide over-all, with hand-rail and No. 10 Balusters on left-hand side.

Prices shown are pre-war, and are subject to current advances.

Hayward Brothers, London.
Hayward's Improved Circular Iron Staircases

Tread, Riser, and Spandril in One.
GIVING GREATEST STRENGTH AND STIFFNESS.

Open Scroll Pattern.
Left-hand and Right-hand Steps are always in stock.

STOCK SIZES AND PRICES.
Including top landing and three balusters (Nos. 7, 10, or 15) on landing, one ditto on each step, with half-round hand-rail and newel top and bottom, fitted and marked ready for fixing.

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Rise, as Above</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 ft.</td>
<td>4 ft.</td>
<td>3 0</td>
</tr>
<tr>
<td>4 ft. 3 in.</td>
<td>4 ft. 3 in.</td>
<td>6 0</td>
</tr>
<tr>
<td>4 ft. 6 in.</td>
<td>4 ft. 6 in.</td>
<td>12 6</td>
</tr>
<tr>
<td>5 ft. 3 in.</td>
<td>5 ft. 3 in.</td>
<td>19 6</td>
</tr>
<tr>
<td>5 ft. 6 in.</td>
<td>5 ft. 6 in.</td>
<td>29 6</td>
</tr>
<tr>
<td>6 ft. 3 in.</td>
<td>6 ft. 3 in.</td>
<td>32 6</td>
</tr>
</tbody>
</table>

(Over-all dimensions. Panel balusters Nos. 20, 25, etc., extra per ft. rise, 12.)

Guard-rails round well-holes can be supplied, with balusters to match staircase, at from 3s. per ft. run.

Estimates for fixing on application.

ARCHITECTS SHOULD SPECIFY:

"Hayward's Improved Circular Iron Staircase."

Prices shown are pre-war, and are subject to current advances.

Prices shown are pre-war, and are subject to current advances.

Stock Scroll Pattern.

<table>
<thead>
<tr>
<th>No. 7</th>
<th>No. 10</th>
<th>No. 15</th>
</tr>
</thead>
</table>
| Solid Fluted Cast Iron Neval. Wred. Open for Wood. Open Square Chequer. (To Order, extra.) (To Order, extra.)

Manufacturer of:

HAYWARDS LTD. Engineers & Ironfounders
UNION ST., BOROUGH, LONDON, S.E. 1.

Telephones: Hop 8948 (3 lines).
Telegrams: "Hayward Brothers, London."
Hayward's Improved Circular Iron Staircases,
FOR FIRE-ESCAPE, OFFICES, SHOPS, WAREHOUSES, SERVICE, ETC.

Hayward's Fire-Escape Circular Iron Staircases, open square chequer pattern, lefthand, 6 ft. diam., 60 ft. high, with two No. 15 balusters on each step, square landings, and extra outside column.

Caldonian Road School, N.

**Specification.**—Hayward's Fire-Escape Circular Iron Staircase, open square pattern, lefthand, 6 ft. diam., 60 ft. high, with two No. 15 balusters on each step, square landings, and extra outside column.

Tread, Riser, and Spandril in one.
Giving much greater strength and stiffness than when the step is built up of three pieces.

Made to suit any heights.

Stock sizes, right or lefthand.
3½, 4, 4½, 5, 5½, and 6 ft. diam.

Hayward's Circular and Straight Staircase for Flats.

**Specification.**—Hayward's Circular and Straight Iron Staircase for Flats, 4 ft. 6 in. width of treads, scroll pattern, and one No. 25 baluster per step and landings to match, on tubular column and brackets.

Circular and Straight Staircase for Flats.

Hayward's Circular Staircases have been supplied to:
- Royal Mint, London.
- H.M. Prison, Pentonville, N.
- Central Meat Markets, Smithfield, E.C.
- Wesleyan Central Hall, Westminster.
- New Casino, Blackpool.
- Union Cold Storage, Greenbank.
- National Mutual Life Building, Colombo (60 ft. height).
- Water Tower, Saffron Walden (64 ft. height).
- Gas Works, Birmingham (57 ft. height).
- Gas Works, Spalding (57 ft. height).
- Water Works (Well), Broadstairs (100 ft. height).

Seven flights were erected over each other on the same column at the De Keyser's Royal Hotel, Blackfriars, London.

Hayward's Circular Staircase for Flats.

**Specification.**—Hayward's Improved Circular Iron Staircase, open square pattern, lefthand, 5 ft. diam., 15 ft. high, one No. 25 baluster per step for upper flight, and one No. 15 baluster per step of lower flight.

Warehouse Staircase.

**Specification.**—Hayward's Improved Circular Iron Staircase, open square pattern, lefthand, 5 ft. diam., 15 ft. high, one No. 25 baluster per step for upper flight, and one No. 15 baluster per step of lower flight.

Advice will always be freely given to Architects, Contractors, etc., as to the best arrangements of Circular and Straight Staircases for Fire-Escape and Service, etc., and estimates and specifications for quantities supplied on receipt of particulars, etc.

**Manufacturers of:**
- Collapsible Gates.
- Puttyless Roof Glazings.
- Skylights and Lanterns.
- Lead Lights and "Copperites."

**Haywards Ltd.**

UNION ST., BOROUGH, LONDON, S.E. 1.

Engineers & Ironfounders

Telephone: Hop 3642 (3 lines).

Telegrams: "Hayward Brothers, London."
HAYWARD'S NON-SLIP STAIR TREADS.

Section with Under-Lip for Nosings.

NON-SLIP STEEL NOSINGS.
For Stone and Wood Staircases and Worn Steps, etc.

STEEL AND "GRIT" TYPE. STEEL AND LEAD TYPE.

Plain Nosing Sections as Illustration.

<table>
<thead>
<tr>
<th>Size</th>
<th>3% in.</th>
<th>5 in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run</td>
<td>1%1 ft.</td>
<td>2/8 ft.</td>
</tr>
<tr>
<td></td>
<td>2/8 ft.</td>
<td>5/8 ft.</td>
</tr>
<tr>
<td></td>
<td>2/8 ft.</td>
<td>5/8 ft.</td>
</tr>
</tbody>
</table>

Plain Flat Sections.

<table>
<thead>
<tr>
<th>Size</th>
<th>3% in.</th>
<th>5 in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run</td>
<td>1%1 ft.</td>
<td>2/8 ft.</td>
</tr>
<tr>
<td></td>
<td>2/8 ft.</td>
<td>5/8 ft.</td>
</tr>
<tr>
<td></td>
<td>2/8 ft.</td>
<td>5/8 ft.</td>
</tr>
</tbody>
</table>

The above are drilled for screws; if with lugs for concrete, 4d. per ft. run extra.

Can be fitted specially to Iron Stairs, to order.

HAYWARD'S NON-SLIP NOSINGS, FITTED TO CAST-IRON TREADS.

(TO ORDER ONLY.)

Add to prices (page 19) for No. 151 Type (first column)—
20 per cent. for Steel and Lead Type.
25 " " " " Grit " "

HAYWARD'S NON-SLIP NOSINGS, FITTED TO CIRCULAR STAIRCASES. (TO ORDER ONLY.)

3\% in. Steel Nosings let into the Cast-iron Circular Treads, as illustration. Add to prices of Circular Staircases (see page 22)—
33\% per cent. for Steel and Lead Type
40 " " " " Grit " "

HAYWARD'S "WOOD-CUBE" TREADS.

Made with iron frames with small hardwood cubes, set endways of the grain, giving the best wear and foothold.

The flat type is for laying on concrete, wood, or other step foundations.

Short treads can be made with end brackets to bolt to strings with risers open, to carry without other support.

For wider Staircases it is advisable to use risers which are made of iron plate.

Prices on application.

HAYWARD'S "WOOD-CUBE" CIRCULAR STAIR TREADS.

These are made with removable centres, and are supplied specially to order. They cost about 40 per cent. increase on the prices of the Circular Staircases as shown on page 22.

"Wood-Cube" Stair Treads are specially suitable for Electric Supply Stations, Sub-Stations, Railway Stations, etc.

Prices shown are pre-war, and are subject to current advances.

HAYWARDS LTD
Union St., Borough, London, S.E. 1.

Manufacturers of:
Pavement Lights.
Iron Staircases.
Heating and Ventilating.
Steel Casements and Sashes.

Other Products:
Collapsible Gates.
Puttyless Roof Glazings.
Skylights and Lanterns.
Lead Lights and "Copperites"
HAYWARD'S IMPROVED VENTILATORS.

HAYWARD'S IMPROVED SELF-ACTING VENTILATORS

THE "ALLIANCE" POWERFUL EXHAUST

<table>
<thead>
<tr>
<th>Dia. of Head</th>
<th>Dia. of Pipe</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 in.</td>
<td>6 in.</td>
</tr>
<tr>
<td>14 in.</td>
<td>7 in.</td>
</tr>
<tr>
<td>16 in.</td>
<td>8 in.</td>
</tr>
<tr>
<td>18 in.</td>
<td>9 in.</td>
</tr>
<tr>
<td>20 in.</td>
<td>10 in.</td>
</tr>
<tr>
<td>24 in.</td>
<td>12 in.</td>
</tr>
<tr>
<td>27 in.</td>
<td>13 in.</td>
</tr>
<tr>
<td>30 in.</td>
<td>15 in.</td>
</tr>
<tr>
<td>36 in.</td>
<td>18 in.</td>
</tr>
<tr>
<td>42 in.</td>
<td>21 in.</td>
</tr>
<tr>
<td>48 in.</td>
<td>24 in.</td>
</tr>
<tr>
<td>54 in.</td>
<td>27 in.</td>
</tr>
</tbody>
</table>

No. 70 and 71: £5 15 s. 6 d. 10 s. 3 d. 17 s. 0 d. 20 s. 8 d. 30 s. 10 d. 45 s. 6 d. 57 s. 0 d.
No. 74 and 77: £3 17 s. 6 d. 10 s. 3 d. 17 s. 0 d. 20 s. 8 d. 30 s. 10 d. 45 s. 6 d. 57 s. 0 d.
No. 80: £1 17 s. 6 d. 10 s. 3 d. 17 s. 0 d. 20 s. 8 d. 30 s. 10 d. 45 s. 6 d. 57 s. 0 d.

Made of Strong Best Steel, galvanized, and painted with Enamel Paint. Roof Seatings not included.

All the above Ventilators made of strong Best Steel, galvanized. Roof Flanges not included in prices.

All Prices shown are on pine-wal- basis, and subject to current advances.

HAYWARDS LTD. Engineers & Ironfounders
UNION ST., BOROUGH, LONDON, S.E. 1.
Telephones: Hop 3642 (3 lines).
Telegram: "Hayward Brothers, London."
**Hayward’s Improved Ridge Ventilators.**

These Ventilators are made to fit the pitch of roof, with flanges to lap the slates or tiles. When fixing it is unnecessary to cut away or trim, neither is lead flashing or plumber's work required. They are guaranteed to be waterproof, and are entirely free from down-draught. Made of strong Best Steel, Galvanized, and painted with Enamel Paint.

**Prices.**

<table>
<thead>
<tr>
<th>Length</th>
<th>No. 120</th>
<th>No. 121</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 ft. 0 in.</td>
<td>£2 14 9</td>
<td>—</td>
</tr>
<tr>
<td>2 ft. 6 in.</td>
<td>3 2 6</td>
<td>£6 10 0</td>
</tr>
<tr>
<td>3 ft. 0 in.</td>
<td>3 15 0</td>
<td>7 5 0</td>
</tr>
<tr>
<td>3 ft. 6 in.</td>
<td>4 7 6</td>
<td>8 10 0</td>
</tr>
<tr>
<td>4 ft. 0 in.</td>
<td>4 17 6</td>
<td>10 0 0</td>
</tr>
<tr>
<td>4 ft. 6 in.</td>
<td>6 10 0</td>
<td>11 5 0</td>
</tr>
<tr>
<td>5 ft. 0 in.</td>
<td>7 10 0</td>
<td>12 10 0</td>
</tr>
</tbody>
</table>

**Hayward’s Improved Invisible Roof Ventilators.**

For Pitch not less than 45 deg. For Ceiled Roof, exclusive of Made of best Galvanized Steel, and painted with Enamel Paint.

**Prices.**

<table>
<thead>
<tr>
<th>Length</th>
<th>No. 125</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ft. 6 in.</td>
<td>£2 12 6</td>
</tr>
<tr>
<td>2 ft. 0 in.</td>
<td>2 15 0</td>
</tr>
<tr>
<td>2 ft. 6 in.</td>
<td>3 17 6</td>
</tr>
<tr>
<td>3 ft. 0 in.</td>
<td>4 0 0</td>
</tr>
<tr>
<td>3 ft. 6 in.</td>
<td>5 2 0</td>
</tr>
<tr>
<td>4 ft. 0 in.</td>
<td>5 5 0</td>
</tr>
<tr>
<td>4 ft. 6 in.</td>
<td>6 15 0</td>
</tr>
</tbody>
</table>

**Hayward’s Improved Invisible Roof Ventilators.**


**Prices.**

<table>
<thead>
<tr>
<th>Length</th>
<th>No. 126</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ft. 6 in.</td>
<td>£2 12 6</td>
</tr>
<tr>
<td>2 ft. 0 in.</td>
<td>2 15 0</td>
</tr>
<tr>
<td>2 ft. 6 in.</td>
<td>3 17 6</td>
</tr>
<tr>
<td>3 ft. 0 in.</td>
<td>4 0 0</td>
</tr>
<tr>
<td>3 ft. 6 in.</td>
<td>5 2 0</td>
</tr>
<tr>
<td>4 ft. 0 in.</td>
<td>5 5 0</td>
</tr>
<tr>
<td>4 ft. 6 in.</td>
<td>6 15 0</td>
</tr>
</tbody>
</table>

**Silk Flap Valves, Ceiling Cones & Plates, Piping & Connections.**

<table>
<thead>
<tr>
<th>Dia. of Pipe</th>
<th>Silk Flap Valves</th>
<th>Circular Ceiling Cones</th>
<th>Perforated Zinc Ceiling Plates</th>
<th>Piping per foot run</th>
<th>Knees</th>
<th>Single Branch Pieces</th>
<th>Double Branch Pieces</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 in.</td>
<td>£0 18 6</td>
<td>£0 4 0</td>
<td>£0 8 0</td>
<td>£0 11 6</td>
<td>£0 7 0</td>
<td>£0 7 0</td>
<td>£0 7 0</td>
</tr>
<tr>
<td>1.5 in.</td>
<td>£0 19 6</td>
<td>£0 4 3</td>
<td>£0 9 6</td>
<td>£0 11 6</td>
<td>£0 7 3</td>
<td>£0 7 3</td>
<td>£0 7 3</td>
</tr>
<tr>
<td>2 in.</td>
<td>£0 19 6</td>
<td>£0 4 3</td>
<td>£0 9 6</td>
<td>£0 11 6</td>
<td>£0 7 3</td>
<td>£0 7 3</td>
<td>£0 7 3</td>
</tr>
<tr>
<td>2.5 in.</td>
<td>£0 19 6</td>
<td>£0 4 3</td>
<td>£0 9 6</td>
<td>£0 11 6</td>
<td>£0 7 3</td>
<td>£0 7 3</td>
<td>£0 7 3</td>
</tr>
<tr>
<td>3 in.</td>
<td>£0 19 6</td>
<td>£0 4 3</td>
<td>£0 9 6</td>
<td>£0 11 6</td>
<td>£0 7 3</td>
<td>£0 7 3</td>
<td>£0 7 3</td>
</tr>
<tr>
<td>3.5 in.</td>
<td>£0 19 6</td>
<td>£0 4 3</td>
<td>£0 9 6</td>
<td>£0 11 6</td>
<td>£0 7 3</td>
<td>£0 7 3</td>
<td>£0 7 3</td>
</tr>
<tr>
<td>4 in.</td>
<td>£0 19 6</td>
<td>£0 4 3</td>
<td>£0 9 6</td>
<td>£0 11 6</td>
<td>£0 7 3</td>
<td>£0 7 3</td>
<td>£0 7 3</td>
</tr>
</tbody>
</table>

All prices shown are on pre-war basis and subject to current advances.

**Haywards Ltd. Engineers & Ironfounders**

Union St., Borough, London, S.E. 1.

Telephone: Hop 9042 (3 lines). Telegrams: "Hayward Brothers, London."
HAYWARD'S IMPROVED VENTILATORS.

The atmosphere is never absolutely still; the air is always in motion. By taking advantage of these currents it is possible to change the air in a building and secure good natural ventilation.

Sir DOUGLAS GALTON, K.C.B., says:—

"The simple forms of ventilation rest on the principle of an outlet for the vitiated air and an inlet for the fresh air."

"The 'SHERINGHAM' or 'KHOLA' VENTILATOR is admirable in this respect, in that it is placed near the ceiling, and the incoming air thrown upwards."

"If, in addition to the 'SHERINGHAM' or 'KHOLA' VENTILATOR, an outlet is made into the flue near the ceiling, the heated or vitiated air of the room will pass up the flue, and its place be supplied with fresh air through the 'SHERINGHAM' or 'KHOLA' VENTILATOR—one will act as an outlet and the other as an inlet."

IMPROVED "SHERINGHAM" VENTILATOR

(HECKSTEIN'S PATENT),

For the introduction of Fresh Air through an External Wall without a Draught.

The front of the "Sheringham" Ventilator is allowed to open as far as required, and its peculiar construction directs the incoming fresh air along the ceiling, where it will spread on all sides, and imperceptibly force the air to the fire-place and to the chimney outlet ventilator, thus thoroughly ventilating the apartment.

The tendency of the door is to remain open, but it is adjusted to any angle, or closed entirely, by a single flexible cord with cleat.

THE "SHERINGHAM" INLET VENTILATOR.

Section. A B C D

<table>
<thead>
<tr>
<th>Size of Box</th>
<th>$9 \times 3$</th>
<th>$9 \times 6$</th>
<th>$13\frac{1}{2} \times 6\frac{1}{4}$</th>
<th>$9 \times 9$</th>
<th>$15 \times 9$</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot; &quot; Front</td>
<td>$11\frac{1}{2} \times 3\frac{1}{4}$</td>
<td>$11 \times 8\frac{1}{4}$</td>
<td>$16 \times 8\frac{1}{4}$</td>
<td>$12\frac{1}{2} \times 11\frac{1}{4}$</td>
<td>$17\frac{1}{2} \times 11\frac{1}{4}$</td>
</tr>
<tr>
<td>Plain Iron</td>
<td>3/6$</td>
<td>C1 5/-</td>
<td>B1 6/-</td>
<td>E1 6/-</td>
<td>F1 18/-</td>
</tr>
<tr>
<td>Japanned Bronze</td>
<td>A6 4/6</td>
<td>C6 6/-</td>
<td>B6 7/-</td>
<td>E6 7/-</td>
<td>F6 21/-</td>
</tr>
<tr>
<td>Galvanized</td>
<td>A5 1 5/-</td>
<td>C5 8/6</td>
<td>B5 8/6</td>
<td>E5 8/9</td>
<td>F5 24/-</td>
</tr>
</tbody>
</table>

THE "KHOLA" NEW PATENT INLET VENTILATOR

For the introduction of Fresh Air through an External Wall without a Draught.

The "Khola" Ventilator has a fixed front, and the hanging door or valve is allowed to open as far as required, and its peculiar construction directs the incoming current of fresh air upwards along the ceiling, where it will spread on all sides, and imperceptibly force the air to the fire-place and to the chimney outlet ventilator, thus thoroughly ventilating the apartment.

The tendency is to remain open, but it is adjusted to any angle, or closed entirely, by a single flexible cord secured to a small brass rocking cleat.

This Inlet Ventilator to be "complete" requires cord and rocking cleat.

An Air Brick at least as large as the Ventilator should be fixed in outside face of wall. For suitable Air Bricks, see page 30.

THE "KHOLA".

Size of Box | $8\frac{1}{2} \times 4\frac{1}{2}$ | $8\frac{1}{2} \times 6\frac{1}{2}$ | $13\frac{1}{2} \times 6\frac{1}{2}$ |
| " " Front  | $11 \times 7$ | $11 \times 9$ | $16 \times 9$ |
| Iron       | F1 4/-      | G1 5/6      | H1 7/-       |
| Japanned Bronze | F6 5/- | G6 6/9      | H6 8/9      |
| Galvanized | F5 5/-      | G5 7/6      | H5 9/-      |

The "Sheringham" and "Khola" Inlet Ventilators to be "complete" require cord and rocking cleat, and prices include same.

An Air Brick at least as large as the Ventilator should be fixed in outside face of wall. Prices shown are pre-war and subject to current advances.
Hayward's Improved Mica Outlet Ventilators.

For the discharge of Heated and Vitiated Air from Rooms into the Smoke Flue. OVER 1,000,000 IN USE.

The valves are made of mica, which is light, rigid, and incorrodible, and are so sensitive that they open with the slightest appreciable up-current in the flue, immediately close against down-draughts, and effectually prevent any smoke entering the room.

### SECTION. No. 1.—OUTLET VENTILATORS—Iron Fronts.

**Mica Outlet.**

<table>
<thead>
<tr>
<th>Size of Box</th>
<th>Size of Front</th>
<th>No. Plain Iron</th>
<th>Iron Fronts</th>
<th>No. Japanned Bronze</th>
<th>No. White and Gold or Galvanized</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 x 3 11 x 5</td>
<td>6/-</td>
<td>2/-</td>
<td>3/-</td>
<td>4/-</td>
<td>5/-</td>
</tr>
<tr>
<td>9 x 4 11 x 7</td>
<td>5/-</td>
<td>2/-</td>
<td>3/-</td>
<td>4/-</td>
<td>5/-</td>
</tr>
<tr>
<td>9 x 6 11 x 9</td>
<td>6/-</td>
<td>2/-</td>
<td>3/-</td>
<td>4/-</td>
<td>5/-</td>
</tr>
<tr>
<td>13 1/2 x 9 1/2 in.</td>
<td>8/-</td>
<td>2/-</td>
<td>3/-</td>
<td>4/-</td>
<td>5/-</td>
</tr>
</tbody>
</table>

### SECTION. No. 2.—OUTLET VENTILATORS—Iron Fronts.

**Mica Outlet.**

<table>
<thead>
<tr>
<th>Size of Box</th>
<th>Size of Front</th>
<th>No. Plain Iron</th>
<th>Iron Fronts</th>
<th>No. Japanned Bronze</th>
<th>No. White and Gold or Galvanized</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 x 3 11 x 5</td>
<td>6/-</td>
<td>2/-</td>
<td>3/-</td>
<td>4/-</td>
<td>5/-</td>
</tr>
<tr>
<td>9 x 4 11 x 7</td>
<td>5/-</td>
<td>2/-</td>
<td>3/-</td>
<td>4/-</td>
<td>5/-</td>
</tr>
<tr>
<td>9 x 6 11 x 9</td>
<td>6/-</td>
<td>2/-</td>
<td>3/-</td>
<td>4/-</td>
<td>5/-</td>
</tr>
<tr>
<td>13 1/2 x 9 1/2 in.</td>
<td>8/-</td>
<td>2/-</td>
<td>3/-</td>
<td>4/-</td>
<td>5/-</td>
</tr>
</tbody>
</table>

### SECTION. No. 5.—"HIT-AND-MISS" FRONTS.

**Mica Outlet.**

<table>
<thead>
<tr>
<th>Size of Box</th>
<th>Size of Front</th>
<th>No. Plain Iron</th>
<th>Iron Fronts</th>
<th>No. Galvanized</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 x 3 11 x 5</td>
<td>6/-</td>
<td>5/-</td>
<td>6/-</td>
<td>7/-</td>
</tr>
<tr>
<td>9 x 4 11 x 7</td>
<td>5/-</td>
<td>5/-</td>
<td>6/-</td>
<td>7/-</td>
</tr>
<tr>
<td>9 x 6 11 x 9</td>
<td>6/-</td>
<td>5/-</td>
<td>6/-</td>
<td>7/-</td>
</tr>
<tr>
<td>13 1/2 x 9 1/2 in.</td>
<td>8/-</td>
<td>5/-</td>
<td>6/-</td>
<td>7/-</td>
</tr>
</tbody>
</table>

### SECTION. No. 8.—LONDON SCHOOL BOARD PATTERN.

**Mica Outlet.**

<table>
<thead>
<tr>
<th>Size of Box</th>
<th>Size of Front</th>
<th>No. Plain Iron</th>
<th>Iron Fronts</th>
<th>No. Galvanized</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 x 3 11 x 5</td>
<td>6/-</td>
<td>5/-</td>
<td>6/-</td>
<td>7/-</td>
</tr>
<tr>
<td>9 x 4 11 x 7</td>
<td>5/-</td>
<td>5/-</td>
<td>6/-</td>
<td>7/-</td>
</tr>
<tr>
<td>9 x 6 11 x 9</td>
<td>6/-</td>
<td>5/-</td>
<td>6/-</td>
<td>7/-</td>
</tr>
<tr>
<td>13 1/2 x 9 1/2 in.</td>
<td>8/-</td>
<td>5/-</td>
<td>6/-</td>
<td>7/-</td>
</tr>
</tbody>
</table>

Also larger sizes in same pattern...

**Prices shown are pre-war and subject to current advances.**

**Haywards Ltd.**

Engineers & Ironfounders

Union St., Borough, London, S.E. 1.

Telephones: Hop 3642 (3 lines).

Telegrams: "Hayward Brothers, London."

Manufacturers of:

- Pavement Lights
- Iron Staircases
- Heating and Ventilating
- Steel Casements and Sashes
- Collapsible Gates
- Puttyless Roof Glazing
- Skylights and Lanterns
- Lead Lights and "Copperlite"
HAYWARD'S IMPROVED VENTILATORS.

The "Southwark" Universal Venetian Ventilator.

For the Introduction of fresh air through an external wall, or the egress of vitiated air by flues or Special Outlet.

"Southwark" Ventilators are highly finished in enamel black or gold. They act as "outlet" or "inlet," by simply reversing them when fixing. The Venetians can be set at any angle, and will remain in that position without the aid of a cleat hook.

Pattern A
(Self-indicating).

The Revolving Centre shows at a glance the position of the valves whether open or closed.

Inlet Section.  A—Shut.

Outlet Section.  A—Open.

Patterns C and G are fitted with the "Glide" movement, which enables the front and louvres to be taken out and cleaned, if necessary, without disturbing the box.

<table>
<thead>
<tr>
<th>Size of Box</th>
<th>Size of Front</th>
<th>Black</th>
<th>Gold</th>
<th>Black</th>
<th>Gold</th>
<th>Black</th>
<th>Gold</th>
<th>Black</th>
<th>Gold</th>
<th>Black</th>
<th>Gold</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 x 6</td>
<td>10 x 8</td>
<td>6/9</td>
<td>5/3</td>
<td>6/-</td>
<td>7/-</td>
<td>12/-</td>
<td>11/6</td>
<td>15/6</td>
<td>13/-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 x 8</td>
<td>12 x 10</td>
<td>6/-</td>
<td>7/-</td>
<td>6/-</td>
<td>10/9</td>
<td>10/6</td>
<td>16/3</td>
<td>12/-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 x 10</td>
<td>14 x 12</td>
<td>6/-</td>
<td>7/-</td>
<td>6/-</td>
<td>10/9</td>
<td>10/6</td>
<td>16/3</td>
<td>12/-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 x 12</td>
<td>16 x 14</td>
<td>6/-</td>
<td>7/-</td>
<td>6/-</td>
<td>10/9</td>
<td>10/6</td>
<td>16/3</td>
<td>12/-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 x 10 in.</td>
<td>18 x 12 in.</td>
<td>6/-</td>
<td>7/-</td>
<td>6/-</td>
<td>10/9</td>
<td>10/6</td>
<td>16/3</td>
<td>12/-</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

These Ventilators can be fitted with brass pulleys to work with cords, if desired, at a small extra cost. Many other sizes to order. Orders should state Pattern and Size, also whether black or gold.

Architects should specify the "Southwark" Universal Venetian Ventilator.

Prices shown are pre-war, and subject to current advances.

HAYWARDS LTD. Engineers & Ironfounders
UNION ST., BOROUGH, LONDON, S.E. 1.

Telephone: Hop 9642 (3 lines).
Telegram: "Hayward Brothers, London."

Manufacturers of:

Pavement Lights.
Iron Staircases.
Heating and Ventilating.
Steel Casements and Sashess.

Collapsible Gates.
Puttyless Roof Glazings.
Skylights and Lanterns.
Lead Lights and "Copperlites."
Hayward's "Louvre" Ventilators.

No. 33.—Inlets. No. 34.—Outlets.

<table>
<thead>
<tr>
<th>No. 33</th>
<th>No. 34</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plain Iron</td>
<td>Plain Iron</td>
</tr>
<tr>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>3</td>
<td>14</td>
</tr>
</tbody>
</table>

Rocking Chain for securing Cord, 1/- each.

Fresh Air Mica Inlet Valves.

For Ventilating Drains by the admission of a current of Fresh Air. In Galvanized Iron, with Brass Fronts.

Prices shown are pre-war and subject to current advances.

Haywards Ltd., Engineers & Ironfounders
Union St., Borough, London, S.E. 1.

Manufacturers of:
- Pavement Lights
- Collapsible Gates
- Iron Staircases
- Pussiness Roof Glazings
- Heating and Ventilating
- Skylights and Lanterns
- Steel Casements and Sashes
- Lead Lights and "Copperlites"
"HAYWARD'S HEATING AND VENTILATION."

All kinds of Central Heating Work carried out. Heating and Ventilating for Offices, Churches, Public Institutions, Shops, and Factories. Hot-water Heating, Steam Heating, Cooking Apparatus, etc.

Amongst Contracts carried out the following may be mentioned:

- War Office ... Central Heating ... Wellesley House, Aldershot.
- War Office ... Central Heating ... Mobilisation Stores, Aldershot.
- War Office ... Heating Apparatus ... barracks, Jersey.
- H.M. Office of Works ... H. W. Apparatus ... Labour Exchange, Great Marlborough Street, W.
- L.&N.W. Railway Co. ... Ventilation Scheme ... Euston Station, New Offices.
- L.C.C. ... Central Heating ... Schools, Bermondsey, S.E.
- L.C.C. ... Central Heating ... Schools, Belvedere Place, S.E.
- L.C.C. ... Central Heating ... Schools, Wandering, S.W.
- Winchester, Borough ... Heating and H.W. ... Schools, Winchester, Hants.
- Kent Ed. Committee ... Grammar School for Girls. ... Honorable Artillery Coy. ... Royal Engineers.
- St. Matthew's Church ... Heating & Ventilating ... Royal Albert Hall.
- Langrish Church ... H. W. Apparatus ... Royal Hotel.
- St. Mark's Church ... Heating Apparatus ... Rolls, Royce.
- St. Peter & St. Paul ... Heating Apparatus ... Royal Hotel.
- Convent of Notre Dame...
- Mission Committee... 
- Honourable Artillery Coy...
- Royal Engineers...
- Air Ministry Offices...
- Royal Albert Hall... 
- Royal Hotel...
- Rolls, Royce...
- Uxbridge Guardians...
- Urban Dist. Council...
- Girdlers' Company...
- Office Buildings...
- Office Buildings...
- Central Heating... 
- Heating Apparatus... 
- H. W. Service... 
- Central Heating... 
- City Road, Finsbury.
- Steam Spray Baths... 
- Central Heating... 
- Stores Depot, Ruislip.
- Heating and Vent... 
- Garage, Cricklewood, N.
- Heating and H. W... 
- Workhouse, Uxbridge.
- Steam Heating... 
- Public Offices, Leigh-on-Sea.
- Heating and H. W... 
- Girdler's Hall, E.C.
- Cooking Apparatus... 
- Central Heating... 
- Broad Street, E.C.
- Central Heating... 
- H. W. Service... 
- H. W. Supply... 
- Winchester, Hants.
- Heating and Vent... 
- Garage, Cleeve, N.
- Heating and H. W... 
- Workhouse, Uxbridge.
- Central Heating... 
- H. W. Service...
- Victoria, S.E.
- Heating and H. W... 
- H. W. Apparatus...
- Lighting... 
- Building... 
- Heating and Vent... 
-蒜瓣、仔KEY... 
- Heating and H. W... 
- Central Heating... 
- H. W. Service...
- Victoria, S.E.
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- Heating and Vent... 
-蒜瓣、仔KEY... 
- Heating and H. W... 
- Central Heating... 
- H. W. Service...
- Victoria, S.E.
CENTRAL HEATING.—ONE BOILER, COMBINING HEATING AND DOMESTIC HOT-WATER SERVICE.

For Hayward's Heating various classes of boilers are utilised, from Lancashire or other large steam boilers for extensive heating systems, down to small boilers of the "Daisy" or other various sectional types, for domestic Hot Water and Central Heating Plants.

All Radiators tested to 120 lbs. pressure.
Right and Left Screwed Nipple Connections.
No Bolts, no Packing, no Leakage.

"Daisy" Boiler.

For Hayward's Heating, representatives sent to advise, Estimates and Drawings free.
HAYWARD’S IMPROVED STABLE FITTINGS.

With which are incorporated the well-known “COTTAM’S.”

CONTRACTORS TO ADMIRALTY, WAR OFFICE AND INDIA OFFICE.

GENERAL CONDITIONS.

Dimensions necessarily have to vary much, especially in town stables. Cubic space should be about 1,500 cubic feet per horse, and the height, if possible, not less than 12 ft. Stalls 6 ft. wide and 9 ft. from wall to outside of post for carriage horses; and may be increased to 6 ft. 6 in. and 7 ft. wide and 9 ft. 6 in. to 10 ft. respectively for very big horses. Loose Boxes about 12 ft. by 10 ft. Gangway 6 ft. wide at least. Extreme height of divisions 7 ft. and 7 ft. 6 in.

Windows and Inlet Ventilation.—Ample light and ventilation is desirable. Hayward’s, Ltd., make all types of windows. The most suitable are those provided with opening parts, hung at bottom to fall inwards and with side wings to prevent any direct draught on the horses.

Outlet Ventilation.—The best method is by means of a ventilating shaft in wood or iron from the ceiling to the ridge, and connected to a roof ventilator of the “Alliance” type.

Drainage.—Haywards, Ltd., make a special “Claremont” stable gutter with continuous fall, and all drains beneath the stable floor are dispensed with, a slight fall only being necessary for the flowing to the centres of loose boxes and stalls. The old style of gutters require more slope, which is objectionable and undoubtedly injurious to the horse.

Woodwork and Fixing.—None of the prices given here or in the General Catalogue include woodwork, but Haywards, Ltd., will be pleased to submit estimates for this, if required, and also for fixing all work in position.

Painting.—All fittings have one priming coat before leaving works.

SPECIFICATION.

Haywards, Ltd., will gladly submit full specification, accompanied by lowest estimates of cost for suitable iron fittings, on receipt of plans for stables and a general indication of requirements, and it will suffice to insert in the builder’s quantities, “Provide the sum of £………p.c. for iron fittings, manufactured by Haywards, Ltd., Union Street, Borough, London, S.E.”

HAYWARDS LTD. Engineers & Ironfounders

Union St., Borough, London, S.E. 1.

Telephone: Hop 3642 (3 lines). Telex: 203570 "Hayward Brothrs, London.”

Manufacturers of:

- Pavement Lights.
- Iron Staircases.
- Heating and Ventilating.
- Steel Casements and Sashets.

Collapsible Gates.
Puttyless Roof Glazings.
Skylights and Lanterns.
Lead Lights and “Copperlights.”
**Hayward's Improved Stable Fittings.**

With which are incorporated the well-known "Cottam's."

**Stable Drainage, Flooring and Ventilation.**

**Enamelled Iron and Earthenware Mangers, Gullies and Traps.**

**Cow-House Fittings and Feeding Troughs.**

**Stable and Harness-Room Brackets and Fittings.**

**Coach House Door and Gate Hinges, etc.**

**Write for Section V. Catalogue giving full particulars of all kinds of Stable, Cowhouse and Piggery Fittings.**

---

**STABLE DIVISIONS.**

<table>
<thead>
<tr>
<th>Description</th>
<th>From</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plain with iron pillar, ramp and sill grooved for wood</td>
<td>£2 1 6</td>
<td>£3 13 6</td>
</tr>
<tr>
<td>Ventilating, with iron pillar ventilating ramp rail and sill with shifting piece</td>
<td>3 10 0</td>
<td>8 15 0</td>
</tr>
<tr>
<td>Ditto, ditto, with barrier bar and wall plate...</td>
<td>4 10 0</td>
<td>9 15 0</td>
</tr>
<tr>
<td>Half sets for end walls, half pillar, half ramp and half sill</td>
<td>1 15 0</td>
<td>3 15 0</td>
</tr>
</tbody>
</table>

**STALL AND LOOSE BOX FITTINGS.**

- Mangers for stall, 6 ft., with manger pot, plain wrought iron hayrack... | 1 11 9 | 2 10 0 |
- Ditto, ditto, enamelled | 2 15 0 | 4 15 0 |
- Ditto, ditto, plain manger pot, water trough and hayrack | 2 4 3 | 4 17 6 |
- Ditto, enamelled manger pot, water trough and hayrack | 3 5 0 | 5 12 6 |
- Ditto, for Loose Boxes, plain pot and rack | 1 11 6 |
- Ditto, ditto, enamelled pot and rack | 2 6 0 |
- Ditto, ditto, with water trough, plain... | 2 17 6 |
- Ditto, ditto, with water trough, plain... | 3 17 6 |
- Ditto, ditto, enamelled | 0 10 6 | 1 1 0 |
- Ditto, ditto, plain... | 1 7 0 | 2 10 0 |
- Ditto, hayrack, corner, wrought iron... | 0 9 0 | 2 0 0 |
- Ditto, ditto, for flat wall, ditto... | 0 9 6 | 2 0 7 |
- Noiseless tying apparatus, with iron casing, leather strap and chain | 0 10 6 | 0 15 0 |

**DRAINAGE.**

Stable gulleys, with trap and cleaning door... | 0 17 6 | 2 0 0 |
Ordinary Stable Gutter and movable cover... | 0 1 10 per foot.

---

**No. 74. Gutter "Claremont."**

Continuous fall in itself. All covered up drains beneath stable floor dispensed with.

Price 3/6 per foot run, ready for laying in position.

As Supplied To—

**Windsor Castle.**

**White Lodge, Richmond Park.**

**Claremont House, Esher.**

**W. James, Esq., Bryanston Square, W.**

**Etc., Etc.**

**Prices.—**These are difficult to give separately from the circumstances, but the above will be useful as guide. They are on pre-war basis and are subject to current advances.

---

**Haywards Ltd.**

**Engineers & Ironfounders.**

**Union St., Borough, London, S.E. 1.**

**Telephone:** Hop 9044 (3 lines). **Telegrams:** "Hayward Brothers, London."
HAYWARD'S "JHILMIL" FOR PARTITIONS, CEILINGS, &c.

PATENT FIRE-RESISTING STEEL LATH.

SPECIFICATION.

Provide and fix "JHILMIL" Lath manufactured by Hayward, Ltd., round all exposed faces of steel girders, stanchions, columns, as shown on drawings by blue line. The "JHILMIL" to be cut sufficiently large to tail in and to be securely fixed by 1½ in. clout nails, about 4 in. apart, or wired round columns, etc., and secured to wood lagging, as required.

Provide and fix "JHILMIL" (02 pattern) under wood floor joists with 3 in. clouts, of about 4 in. intervals, for flush cutting.

Measurements. If taken nett, allow 10 per cent. extra for cutting to waste and lapping.

1/- per square yard.

Fixing at 3d- per square yard.

"Pre-War prices, subject to current advances.

Architects should specify clearly and precisely what they require, at the prices that circumstances will warrant; and see that their Clients get it.

Vague or indefinite wording is unsatisfactory to the Client, Contractor and Manufacturer.

"JHILMIL" Lath has been supplied to the following Buildings:

THEATRES.
HIS MAJESTY'S.
HAYMARKET.
SAVOY.
ST. JAMES' COLISEUM.
TYVOLL.
ROYALTY.
THE PALACE.
AVENUE.
BRENTWOOD.
BRITANNIA.
SURREY.
ALEXANDRA.
GAFETY.
OXFORD.

HOTELS, Etc.
GREAT EASTERN, Liverpool Street, E.C.
WINDSOR, Victoria Street.
GRAND, Birmingham.
GATTY'S, 116, Strand.
THREE NUNS, Aldgate.
CROCKETT'S HOTEL, Llandudno.
GREYHOUND, West Ham Lane.
LORD NELSON P.H., Walworth, S.E.
ROYAL OAK P.H., Glenthorne Road, W.
PRINCE OF WALES, Marlborough Lane, W.
Y.M.C.A., Newcastle-on-Tyne.
PALACE GARDENS, Clacton-on-Sea.
ETC., ETC.

HOSPITALS, Etc.
CHELSEA INFIRMARY.
GUY'S HOSPITAL.
NEW GROVE HOSPITAL.
STEYNING INFIRMARY.
GRAVESEND INFIRMARY.
ST. BARTHOLOMEW'S.
DEVON AND EXETER.
WESTMINSTER HOSPITAL.
NORTHWICH INFIRMARY.
EASTERN, Horsham.
CENTRAL LONDON EAR & THROAT.
COTTAGE HOSPITAL, Llandudno.
NEW EYE HOSPITAL, Manchester.
ETC., ETC.

PUBLIC BUILDINGS.
BRITISH MUSEUM.
PARCEL POST SORTING OFFICE.
VICTORIA INSTITUTE, Worcester.
KENSINGTON VESTRY.
STEPHENSON'S LIBRARY, Newcastle.
VESTRY HALL, Rosebery Avenue.
ZOOGICAL GARDENS.
WESTMINSTER SCHOOLS.
MINERS' HALL, Northumberland.
DELL HALL, Whitechaples.
CENTRAL BUILDINGS, Nottingham.
SALE ROOM, Mining Lane, E.C.
WEST HAM INSTITUTE.
OLYMPIA, Kensington.

REMARKS.

"JHILMIL" (02 pattern) lends itself to wrap round girders and columns, and for fixing on the face of rough wood planking, etc.; it allows good air space and key for plaster.

"JHILMIL" (02 pattern) is better for bridging over spaces, as for ceilings. It is more rigid lengthways on account of the longitudinal corrugations running between the turned-up edges of the open slots.

"JHILMIL" is made in sheets, 72 in. by 24 in. and 72 in. by 18 in., is easily cut and fixed in position by any handy man. A few sheets should always be in a builder's yard, as it will frequently save him a lot of time and trouble in completing a job promptly.

"I strongly recommend "JHILMIL" Lath where iron columns and girders have to be protected. It forms a good key for plaster, and I feel confident it would be absolutely fireproof.

"We fixed the "JHILMIL" with 1½ in. clout nails and used cement for gauging. We now enclose a further order for 340 yards for the same job."

HAYWARDS LTD.
Engineers & Ironfounders
UNION ST., BOROUGH, LONDON, S.E. 1.

Manufacturers of:

Pavement Lights.
Iron Staircases.
Heating and Ventilating.
Steel Casements and Sash.

Heating and Ventilating.
Steel Casements and Sash.

Manufacturers of:

Collapsible Gates.
Puttyless Roof Glazings.
Skylights and Lanterns.
Lead Lights and "Copperites."

Telephones : Hop 0642 (3 lines).
Telegrams : "Hayward Brothers, London."
HAYWARD'S PATENT "JHILMIL"

STEEL LATH, FOR

Fireproof Partitions,
Ceilings, etc.

STOCK SIZE SHEETS,
72 in. x 24 in.
72 in. x 18 in.

"JHILMIL" 01 LATH (Part plastered).

6 in. LATHING SHEETS MIXED HORIZONTAL.
(OTHER SIDE VERTICAL.)

4: JHILMIL PARTITION.
SIMPLE & CHEAP CONSTRUCTION.

USE "JHILMIL" TO MAKE FIREPROOF AND ECONOMISE PLASTER.
Saves 25 to 33 per cent.

"JHILMIL" Steel Lath Partition, intact after the Great Fire at Barbican, London, E.C.

USE "JHILMIL" TO MAKE FIREPROOF AND ECONOMISE PLASTER.
Saves 25 to 33 per cent.

HAYWARDS LTD.

Engineers & Ironfounders

UNION ST., BOROUGH, LONDON, S.E. 1.

Manufacturers of:
Pavement Lights.
Iron Staircases.
Heating and Ventilating.
Steel Casements and Sashes.

Eliminated Gates.
Puttyless Roof Glazings.
Skylights and Lanterns.
Lead Lights and "Copperites."
**HAYWARD'S PATENT**

**"PUTTY-GROOVED" STEEL SASH SECTIONS.**

Full Size Sections of Bars showing Standard Sizes with Putty Grooves.

Constituting the—Finest Set of Sash Steel Sections obtainable.

There are other sections to work with these, for weathering, etc., over 30 patterns in all.

**HAYWARDS LTD. Engineers & Ironfounders**

UNION ST., BOROUGH, LONDON, S.E. 1.

Telephones: Hop 3668 (3 lines). Telegrams: "Hayward Brothers, London."
**PARTICULARS FOR SASHES AND CASEMENTS.**

**IMPORTANT.**—For Enquiries and Orders to be properly and promptly carried out, it is of the greatest importance that particular should be given, clearly, correctly and fully. Careful attention is directed to this, and if the suggestions below are followed, its will prevent ambiguity or errors.

Sizes.—Give widths first and heights next, and state whether taken as Y, over sash frame, or of masonry clear opening, as Z. (See section below.)

Heads.—State if Square, Semi-Circular or Segmental. If Segmental, give height to spring of arch, and amount of rise additionally.

Lugs, etc.—State method for fixing frames, whether by lugs (usual for sashes); or by screw holes (usual for casements), and positions of latter if special.

Numbers.—State the numbers required and how many off each size or type. (The greater the number to one size and type, the lower the proportionate cost.)

Glazing.—All Sashes and Casements are arranged for glazing from OUTSIDE unless otherwise stated.

Panes.—State approximate width and height of panes desired, or arrangement if special.

Opening Parts.—Whether arranged:

- To swing ... as F
- Top hung to open out ... as H
- Bottom hung to open in ... as K
- Side hung on Left to open in ... as I
- Side hung on Right to open in ... as T
- Side hung on Left to open out ... as M

Side hung on Right to open out, as L
Hun in 2 leaves (handed) to open in ... as V
Hun in 2 leaves (handed) to open out ... as N

Architects should specify:

HAYWARD'S PATENT PUTTY-GROOVED STEEL SASHES.

...x... high, ...x... panes, ...headed, with...vent......glazed outside.

HAYWARDS LTD. Engineers & Ironfounders

**Union** ST., **Borough**, LONDON, S.E. 1.

Manufacturers of:

- Pavement Lights.
- Iron Staircases.
- Heating and Ventilating.
- Steel Casements and Sashes.

Collapsible Gates.
Putchless Roof Glazings.
Skylights and Lanterns.
Lead Lights and "Copperlites."
It is difficult to give prices, as circumstances vary so greatly; but as an approximate guide, the figures below may be found useful, although for large quantities with similar dimensions and repetitions on simple lines, prices may go from as low as 6d. per ft. with large panes, and opening parts from 7/6 each.

For preliminary estimates for building schemes allow for Sashes of Ordinary Designs:

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>SIZES OF PANES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small size panes approx. 7 in. x 10 in.</td>
<td>Panes over 7 in. x 10 in. up to 9 in. x 12 in.</td>
</tr>
<tr>
<td>Sashes of 10 ft. sup. each, or under</td>
<td>2s. 0d. per ft. sup.</td>
</tr>
<tr>
<td>Sashes over 10 ft. each, but under 30 ft.</td>
<td>1s. 3d. per ft. sup.</td>
</tr>
<tr>
<td>Sashes over 30 ft. each, but under 50 ft.</td>
<td>1s. 2d. per ft. sup.</td>
</tr>
<tr>
<td>For curved heads, add</td>
<td>2s. 6d. each.</td>
</tr>
</tbody>
</table>

For opening portions, add:

| 4-pane side-hung, or vertical pivoted, with iron fittings; or hoppers with side cheeks, and brass pulley catch. 15s. 6d. each. | 4-pane to swing, on horizontal centre pivots, with brass catch, or top-hung to push out, with iron stay and pins. 12s. 0d. each. | 4-pane bottom hung, to fall in on iron quadrant stops, and with brass pulley catch. 13s. 0d. each. |

If more than 4 panes to open, add 1s. 0d. per pane extra.

### BULL'S EYE SASHES

<table>
<thead>
<tr>
<th>No. 90</th>
<th>No. 91</th>
<th>No. 92</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SWING</strong></td>
<td><strong>OPENING PARTS</strong></td>
<td><strong>EXTRA AS</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PRICES FOR FIXED SASHES OF 1½ in. SECTION.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DIAMETER.</strong></td>
<td><strong>No. 90</strong></td>
<td><strong>No. 91</strong></td>
</tr>
<tr>
<td>2 ft. 0 in.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 ft. 0 in.</td>
<td></td>
<td>30/-</td>
</tr>
<tr>
<td>4 ft. 0 in.</td>
<td>28/-</td>
<td>31/-</td>
</tr>
<tr>
<td>5 ft. 0 in.</td>
<td>29/-</td>
<td>32/-</td>
</tr>
<tr>
<td>6 ft. 0 in.</td>
<td>39/-</td>
<td>33/-</td>
</tr>
</tbody>
</table>

**ALL ORDERS CARRIAGE PAID TO NEAREST STATION IN ENGLAND ON VALUE OVER £5**

Note—Cords and Cleats are not included in any of the prices, circumstances varying so greatly, and they should be in builder's contact.

---

**HAYWARD'S**

**Putty-Grooved** Steel Sashes.

GUIDE TO COSTS.

Haywards Ltd.

Engineers & Ironfounders

Union St., Borough, London, S.E. 1.

Manufacturers of:

- Pavement Lights
- Iron Staircases
- Heating and Ventilating
- Steel Casements and Sashes
- Collapsible Gates
- Potable Roof Glazings
- Skylights and Lanterns
- Lead Lights and "Copperettes"

All prices shown are pre-war, and are subject to current advances.
Hayward's Standard Cast-Iron Sashes.

To suit Brickwork Dimensions.

Pattern A.—Panes, \( 13\frac{1}{2} \times 18 \) in. centres.

"Standard Sizes."

<table>
<thead>
<tr>
<th>Number of Panes and Pattern</th>
<th>Over-all Sizes</th>
<th>Total Rise = 1 in. to 1 ft. of Width</th>
<th>Plain</th>
<th>With Casement fitted with Pulleys and Eyes for Cords</th>
</tr>
</thead>
<tbody>
<tr>
<td>A 2 x 2</td>
<td>2 3(\frac{1}{2}) x 3 0(\frac{1}{2})</td>
<td>2(\frac{1}{2})</td>
<td>6/-</td>
<td>—</td>
</tr>
<tr>
<td>A 3 x 3</td>
<td>3 5 x 6 6(\frac{1}{2})</td>
<td>3</td>
<td>14/6</td>
<td>18/9</td>
</tr>
<tr>
<td>A 4 x 4</td>
<td>4 6(\frac{1}{2}) x 6 6(\frac{1}{2})</td>
<td>4</td>
<td>18/6</td>
<td>24/3</td>
</tr>
<tr>
<td>A 5 x 5</td>
<td>5 8 x 6 6(\frac{1}{2})</td>
<td>5</td>
<td>19/-</td>
<td>23/3</td>
</tr>
<tr>
<td>A 6 x 6</td>
<td>6 9(\frac{1}{2}) x 6 6(\frac{1}{2})</td>
<td>6</td>
<td>22/6</td>
<td>28/3</td>
</tr>
<tr>
<td>A 4 x 5</td>
<td>4 6(\frac{1}{2}) x 7 6(\frac{1}{2})</td>
<td>4</td>
<td>28/-</td>
<td>33/9</td>
</tr>
<tr>
<td>A 5 x 5</td>
<td>5 8 x 7 6(\frac{1}{2})</td>
<td>5</td>
<td>28/-</td>
<td>33/9</td>
</tr>
<tr>
<td>A 6 x 6</td>
<td>6 9(\frac{1}{2}) x 7 6(\frac{1}{2})</td>
<td>6</td>
<td>28/-</td>
<td>33/9</td>
</tr>
</tbody>
</table>

All prices shown are pre-war, and are subject to current advances.

Haywards Ltd. — Engineers & Ironfounders
Union St., Borough, London, S.E. 1.

Manufacturers of:
- Pavement Lights
- Collapsible Gates
- Iron Staircases
- Puttyless Roof Glazings
- Heating and Ventilating
- Skylights and Lanterns
- Steel Casements and Sashes
- Lead Lights and "Copperlites"
**HAYWARD'S "STANDARD" CAST-IRON SASHES.**

To suit Brickwork Dimensions. **Pattern B.**—Panes, 9 x 12 in. centres.

**"STANDARD SIZES."**

<table>
<thead>
<tr>
<th>Number of Panes and Pattern</th>
<th>Over-all Sizes</th>
<th>Total Rise (in.) to 1 ft. of Width</th>
<th>Plain.</th>
<th>With Casement fitted with Pulleys and Eyes for Cords.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Width</td>
<td>Height</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B 3 x 3</td>
<td>2 3\text{\scriptsize $\frac{1}{2}$} x 3 0\text{\scriptsize $\frac{1}{2}$}</td>
<td>2\text{\scriptsize $\frac{1}{2}$}</td>
<td>6/-</td>
<td>9/3</td>
</tr>
<tr>
<td>B 4 x 3</td>
<td>3 0\text{\scriptsize $\frac{1}{4}$} x 3 0\text{\scriptsize $\frac{1}{4}$}</td>
<td>3\text{\scriptsize $\frac{1}{4}$}</td>
<td>8/-</td>
<td>12/3</td>
</tr>
<tr>
<td>B 4 x 4</td>
<td>3 0\text{\scriptsize $\frac{1}{4}$} x 4 0\text{\scriptsize $\frac{1}{4}$}</td>
<td>3\text{\scriptsize $\frac{1}{4}$}</td>
<td>8/-</td>
<td>11/3</td>
</tr>
<tr>
<td>B 5 x 4</td>
<td>3 9\text{\scriptsize $\frac{1}{2}$} x 4 0\text{\scriptsize $\frac{1}{2}$}</td>
<td>3\text{\scriptsize $\frac{1}{2}$}</td>
<td>11/-</td>
<td>18/6</td>
</tr>
<tr>
<td>B 4 x 5</td>
<td>3 0\text{\scriptsize $\frac{1}{4}$} x 5 0\text{\scriptsize $\frac{1}{4}$}</td>
<td>3\text{\scriptsize $\frac{1}{4}$}</td>
<td>13/6</td>
<td>17/9</td>
</tr>
<tr>
<td>B 5 x 5</td>
<td>3 9\text{\scriptsize $\frac{1}{2}$} x 5 0\text{\scriptsize $\frac{1}{2}$}</td>
<td>3\text{\scriptsize $\frac{1}{2}$}</td>
<td>16/6</td>
<td>21/6</td>
</tr>
<tr>
<td>B 6 x 5</td>
<td>4 6\text{\scriptsize $\frac{1}{2}$} x 5 0\text{\scriptsize $\frac{1}{2}$}</td>
<td>4\text{\scriptsize $\frac{1}{2}$}</td>
<td>19/6</td>
<td>25/3</td>
</tr>
<tr>
<td>B 5 x 6</td>
<td>3 9\text{\scriptsize $\frac{1}{2}$} x 6 0\text{\scriptsize $\frac{1}{2}$}</td>
<td>3\text{\scriptsize $\frac{1}{2}$}</td>
<td>19/6</td>
<td>24/6</td>
</tr>
<tr>
<td>B 6 x 6</td>
<td>4 6\text{\scriptsize $\frac{1}{2}$} x 6 0\text{\scriptsize $\frac{1}{2}$}</td>
<td>4\text{\scriptsize $\frac{1}{2}$}</td>
<td>23/6</td>
<td>29/3</td>
</tr>
<tr>
<td>B 7 x 6</td>
<td>5 3\text{\scriptsize $\frac{1}{2}$} x 6 0\text{\scriptsize $\frac{1}{2}$}</td>
<td>5\text{\scriptsize $\frac{1}{2}$}</td>
<td>26/-</td>
<td>33/-</td>
</tr>
<tr>
<td>B 6 x 7</td>
<td>6 0\text{\scriptsize $\frac{1}{2}$} x 6 0\text{\scriptsize $\frac{1}{2}$}</td>
<td>6\text{\scriptsize $\frac{1}{2}$}</td>
<td>30/-</td>
<td>39/-</td>
</tr>
<tr>
<td>B 7 x 7</td>
<td>5 3\text{\scriptsize $\frac{1}{2}$} x 7 0\text{\scriptsize $\frac{1}{2}$}</td>
<td>5\text{\scriptsize $\frac{1}{2}$}</td>
<td>26/-</td>
<td>31/9</td>
</tr>
<tr>
<td>B 8 x 7</td>
<td>6 0\text{\scriptsize $\frac{1}{2}$} x 7 0\text{\scriptsize $\frac{1}{2}$}</td>
<td>6\text{\scriptsize $\frac{1}{2}$}</td>
<td>30/-</td>
<td>37/-</td>
</tr>
</tbody>
</table>

All Prices shown are on pre-war basis, and are subject to current advances.

**HAYWARDS LTD.** Engineers & Ironfounders

**UNION ST., BOROUGH, LONDON, S.E. 1.**

Telephones: Hoo 3662 (3 lines).
Telegram: "Hayward Brothers, London."

Manufacturers of:
- Pavement Lights
- Iron Staircases
- Heating and Ventilating
- Steel Casements and Sashes
- Collapsible Gates
- Puttyless Roof Glazings
- Skylights and Lanterns
- Lead Lights and "Copperlites"
Hayward’s Patent “Putty-Grooved” Steel Casements

Side-hung, and Top- and Bottom-hung, of Nos. 32 or 34 Double- rebated Sections.

Good Metal Casements and leaded glass add immensely to the convenience, appearance, and value of buildings, and their use is greatly extending.

Hayward’s Casements, with two-point contact all round, and ample wind and water baffling grooves, are Weather-proof, Draughtless, and Rust-proof—if “Leadised” (new process for protecting Iron-work).

Moderate in Price, of first-class construction with Patent “Putty-Grooved” Sections, all styles of Casements, inward, outward opening, and horizontally and vertically pivoted, can all be made on the same rebate and sight lines.

No. 32—Casements, Side-hung, etc.
For widths up to 2 ft.; Sections as on following page.

<table>
<thead>
<tr>
<th>Heights</th>
<th>Side-hung opening in or out</th>
<th>Top or Bottom-hung</th>
<th>Fixed Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>ft. in.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 0</td>
<td>22/-</td>
<td>20/6</td>
<td>7/-</td>
</tr>
<tr>
<td>2 6</td>
<td>23/-</td>
<td>21/-</td>
<td>7/9</td>
</tr>
<tr>
<td>3 0</td>
<td>24/-</td>
<td>21/6</td>
<td>8/6</td>
</tr>
<tr>
<td>3 6</td>
<td>25/-</td>
<td>21/6</td>
<td>8/6</td>
</tr>
</tbody>
</table>

No. 34—Casements, Side-hung, etc., for larger sizes.
For Widths up to 2 ft. 6 in.; Sections as shown below.

<table>
<thead>
<tr>
<th>Heights</th>
<th>Side-hung opening in or out</th>
<th>Top or bottom hung</th>
<th>Fixed Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>ft. in.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 ft.0</td>
<td>34/-</td>
<td>32/-</td>
<td>12/-</td>
</tr>
<tr>
<td>3 0</td>
<td>39/-</td>
<td>36/-</td>
<td>14/-</td>
</tr>
<tr>
<td>4 0</td>
<td>44/-</td>
<td>42/-</td>
<td>16/-</td>
</tr>
<tr>
<td>5 0</td>
<td>50/-</td>
<td>42/-</td>
<td>18/-</td>
</tr>
<tr>
<td>6 0</td>
<td>57/-</td>
<td>—</td>
<td>21/-</td>
</tr>
</tbody>
</table>

Opening Frames for Wood, made as single frames, Nos. 32B and 34B, with Brass Hinges for screwing in rebates, make excellent cheap casements; prices half above figures.

Fittings included for casements are, iron scroll pattern handle, and channel peg stay for side-hung. Peg stay only, for top-hung casements, and brass pulley catch and iron quadrant arms for bottom-hung fanlights. G.M. handle and peg stay to side-hung casements 7/- extra each.

Double Side-hung Casements, double above prices.

Leaded Glazings should always be made if possible by the casement makers, to ensure correctness and suitability, and can be supplied by Hayward’s in first-class quality and at all prices from 1 1d. per ft. super. “Prior” Glass in very beautiful styles, plain 4/-, and ornamental colour subjects from 6/- per ft. upwards.

(Prices shown are pre-war and are subject to current advances.)
HAYWARD'S PATENT "PUTTY-GROOVED" STEEL CASEMENTS

Pivot-Hung and Fixed Frames of Nos. 32 and 34 DOUBLE REBATED SECTIONS.

Casements pivoted to open, one-third in and two-thirds out, are increasingly used of late on account of allowing easy cleaning; and they are certainly best for this purpose as they admit of it being safely and easily done, whilst they are simple and convenient, and free from the complications of other arrangements on the market that are clumsy and liable to derangement and breakage.

Fixed frames, used in conjunction with opening casements, are made of sections, Nos. 32D and 34D, which are similar to Nos. 32C and 34C but with both outer flanges of equal depth, forming a channel section. They give a slightly larger sight opening, but can be lined up to give the same as the casements, if desired, at 15 per cent extra cost.

No. 32, Pivoted Casements.
For widths up to 2 ft. Sections as shown below:

<table>
<thead>
<tr>
<th>Heights (ft.)</th>
<th>Vertically Pivoted</th>
<th>Horizontally Pivoted</th>
<th>Fixed Frames</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>23/-</td>
<td>20/6</td>
<td>7/-</td>
</tr>
<tr>
<td>2.6</td>
<td>24/-</td>
<td>21/-</td>
<td>8/-</td>
</tr>
<tr>
<td>3</td>
<td>25/-</td>
<td>26/-</td>
<td>9/-</td>
</tr>
<tr>
<td>3.6</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

No. 34, Pivoted Casements, for larger sizes.
For widths up to 2 ft. 6 in. Sections as previous page.

<table>
<thead>
<tr>
<th>Heights (ft.)</th>
<th>Vertically Pivoted</th>
<th>Horizontally Pivoted</th>
<th>Fixed Frames</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.6</td>
<td>59/-</td>
<td>33/-</td>
<td>12/6</td>
</tr>
<tr>
<td>3</td>
<td>45/-</td>
<td>37/6</td>
<td>14/-</td>
</tr>
<tr>
<td>3.6</td>
<td>60/6</td>
<td>42/-</td>
<td>16/-</td>
</tr>
<tr>
<td>5</td>
<td>56/-</td>
<td></td>
<td>18/6</td>
</tr>
<tr>
<td>6</td>
<td>63/-</td>
<td></td>
<td>21/-</td>
</tr>
</tbody>
</table>

Fittings included:—Handle and stay for vertically pivoted casements, as for side-hung on previous page, and pulley spring catch for horizontally pivoted.

Condensation Gutters, No. 32, 2/- extra, and No. 34, 3/- extra each. Rebated crossbars to form panes, 9d. per pane extra. Shaped heads, 6/- extra.

Hayward's Leaded Glazings and "Prior" Glass recommended to be made with case-

Prices shown are pre-war, and are subject to current advances.

Haywards LTD.
Engineers & Ironfounders
Union St., Borough, London, S.E. 1.

Manufacterers of:

- Pavement Lights
- Iron Staircases
- Heating and Ventilating
- Steel Casements and Sashes
- Collapsible Gates
- Puttyless Roof Glazings
- Skylights and Lanterns
- Lead Lights and "Copperlites"
Hayward’s Fittings for Sashes and Casements.

(The Illustrations are approximately 1/2 to 1/3 full size.)

No. 666. Plain Spring Catch.
Brass, 1/9 G.M., 1/11
(Iron keeper plate.)

No. 661. Pulley Spring Catch.
Brass, 2/3 G.M., 2/6
(Iron keeper plate.)

Cord Knot Cup, No. 670.
Brass, 6d. each.
G.M., 8d.

No. 668. Plain Pulley.
Brass, 10d. G.M., 1/6
Iron, 8d.

Raised Pulley, No. 669.
Brass, 1/6 G.M., 1/2

"HAYWARD’S HANDLES" & STAYS.

No. 310A. G.M., Wedge Plate.
8d. each.

No. 460. Iron Stay and Pin Plates.
12 in. 1/9 16 in. 2/3

G.M. Handle.
No. 341. Large, 6/-
No. 340. Small, 5/-

No. 361. Large, 2/3
No. 360. Small, 1/10

Iron. For handle, 1/9 each.

No. 310. G.M. Stay and Pin Plates.
12 in. 5/6 16 in. 6/9

Shown fitted on Casement Section.

No. 410. Iron Stay and Pin Plate.
12 in. 1/6 14 in. 1/9

Shown fitted on Sash Section.

No. 462. Iron Plate for handle.

Hayward’s "Easy Close" Spring Catches are suitable for all Sashes and Casements.

No. 650. Strong plain iron Quadrant Stops for Sashes, 1/- per pair.

Prices shown are pre-war, and are subject to current advances.

Hayward’s Sash and Casement Fittings.

The fittings used on Sashes and Casements merit more consideration than they often get, their points of utility and daily convenience being generally overlooked in favour of appearance only.

Hayward’s Fittings have unique advantages and have been carefully designed to meet all needs.

Attention is directed to the following points:—Hayward’s "Easy Close" Spring Catches, No. 661 & 666, have far easier and swifter action than any of the usual plunger types, and are free from their defects of binding and jarring, and refusing to act, if the opening parts of the sashes or casements become the least out of line in building in or subsequently.

"Hayward’s Handles" are of good appearance, are made in bronze, G.M., or Iron: they are fitted with wedge plates to pull the casements tightly shut, and have self-contained stop-action, avoiding the downward pull on casements caused by ordinary fittings not so arranged.

The Channel Section Peg Stays give maximum strength, with convenience in action.

Hayward’s Fittings are always arranged, where possible, to screw direct on to the casement frames, giving ease of cleaning, and avoiding the cost and complications of special plates brazed or welded on, etc.
Hayward’s Patent Steel Collapsible Gates.

TO SUIT ALL CIRCUMSTANCES.

ENTRANCES TO BUILDINGS AND COURTYARDS.

SHOP FRONTS AND ARCADES.

LIFT OPENINGS.

WINDOW GUARDS.

Quick Delivery can be given, as large stocks of parts are kept.

Stock Lattices are kept ready made up, for standard sizes of gates.

Large Gates made with special Roller-bearing Top Hanging Wheels; and pickets (uprights) of Girder Section (double H) for maximum Strength. These are the finest Gates made, and have been most successful for Courtyards, Markets, Stations, etc. (see page 48).

The attention of Architects, Engineers, Contractors, etc., is called to the improved system of construction of Hayward’s Patent Steel Collapsible Gates.

Under this system the sliding pins of the lattices, which suffer most from wear, are fitted with Hayward’s Patent Guide-shoes, for greatly increasing the area of sliding surfaces, thus ensuring freedom from wear, slackness, and consequently giving long and satisfactory life to the gates. All large gates are made this way, but small ones on the ordinary system.

Architects should specify, “Hayward’s Patent Gates with wear-reducing guide shoes.”

Range of Hayward’s Portable Window Guards and Gate (No. 4 Type).

Hayward’s Patent Lattice-Pin Guides to prevent wear.

Special Double H Section for large and heavy Gates.

Spear-head Gates.

Haywards Ltd. Engineers & Ironfounders
Union St., Borough, London, S.E. 1.

Manufacturers of:

Pavement Lights.
Iron Staircases.
Heating and Ventilating.
Steel Casements and Sashes.

Hayward’s Patent Gate Guides.

Range of Hayward’s Portable Window Guards and Gate (No. 4 Type).
SPEAR-HEADED GATES, TYPE No. 4.

Arranged to swing in one or two leaves, hung to masonry, woodwork, or with special iron pillars fitting into sockets with hinged covers.

Gates made with spear-headed channel pickets; top and bottom folding bar tracks to hinge round at side on pivot hangings, etc.

Complete, with brass lever padlock and two keys.

Orders should state: Height and width of opening to be fitted, and if hangings to be for wood or masonry, etc., also which hand gate collapses, and whether pillars required.

<table>
<thead>
<tr>
<th>Height over Spear Heads</th>
<th>2 ft. 6 in.</th>
<th>3 ft.</th>
<th>3 ft. 6 in.</th>
<th>4 ft.</th>
<th>4 ft. 6 in.</th>
<th>5 ft.</th>
<th>5 ft. 6 in.</th>
<th>Pillars with Sockets, extra if required</th>
</tr>
</thead>
<tbody>
<tr>
<td>ft. in.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. 6</td>
<td>56/-</td>
<td>67/-</td>
<td>78/-</td>
<td>90/-</td>
<td>101/-</td>
<td>112/-</td>
<td>123/-</td>
<td>14/- each</td>
</tr>
<tr>
<td>7. 0</td>
<td>52/-</td>
<td>63/-</td>
<td>73/-</td>
<td>84/-</td>
<td>94/-</td>
<td>105/-</td>
<td>115/-</td>
<td>13/-</td>
</tr>
<tr>
<td>6. 6</td>
<td>48/-</td>
<td>58/-</td>
<td>68/-</td>
<td>78/-</td>
<td>87/-</td>
<td>97/-</td>
<td>107/-</td>
<td>13/-</td>
</tr>
<tr>
<td>6. 0</td>
<td>45/-</td>
<td>54/-</td>
<td>63/-</td>
<td>72/-</td>
<td>81/-</td>
<td>90/-</td>
<td>99/-</td>
<td>12/-</td>
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<tr>
<td>5. 6</td>
<td>41/-</td>
<td>49/-</td>
<td>57/-</td>
<td>66/-</td>
<td>74/-</td>
<td>82/-</td>
<td>90/-</td>
<td>12/-</td>
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<tr>
<td>5. 0</td>
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<td>45/-</td>
<td>53/-</td>
<td>60/-</td>
<td>68/-</td>
<td>75/-</td>
<td>83/-</td>
<td>11/-</td>
</tr>
<tr>
<td>4. 6</td>
<td>34/-</td>
<td>41/-</td>
<td>48/-</td>
<td>55/-</td>
<td>61/-</td>
<td>68/-</td>
<td>75/-</td>
<td>11/-</td>
</tr>
<tr>
<td>4. 0</td>
<td>31/-</td>
<td>38/-</td>
<td>44/-</td>
<td>50/-</td>
<td>56/-</td>
<td>62/-</td>
<td>68/-</td>
<td>10/-</td>
</tr>
<tr>
<td>3. 6</td>
<td>29/-</td>
<td>35/-</td>
<td>40/-</td>
<td>46/-</td>
<td>51/-</td>
<td>56/-</td>
<td>61/-</td>
<td>10/-</td>
</tr>
</tbody>
</table>

Approximate width collapsed: 7½ in. 8¼ in. 9 in. 10¾ in. 11 in. 12¼ in. 13 in. 4 in. sq.

Gates in halves with centre stay, 3s. 6d. extra. Special quotations for ranges, etc., on application, with particulars.

Prices shown are Pre-War, and are subject to current advances.
**Hayward's Patent Collapsible Lift Gates, Etc.**

Lift Gate fixed in Enclosure.
*(As supplied to Gaiety Restaurant, etc.)*

Made with two sets of lattices; top and bottom tee tracks, with screw-holes for permanent fixing.

Complete with hook-bolt, spring latch, key, and striking plate.

**Orders should state:**—Height and width, whether overtracks or "clear opening," also which hand gate collapses.

<table>
<thead>
<tr>
<th>Height over Tracks</th>
<th>Full Width of Gate extended (including recess, if any)</th>
<th>Reduction for Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>ft. in.</td>
<td>2 ft. 6 in.</td>
<td>3 ft.</td>
</tr>
<tr>
<td>8 o</td>
<td>40/6</td>
<td>48/6</td>
</tr>
<tr>
<td>7 6</td>
<td>38/-</td>
<td>45/6</td>
</tr>
<tr>
<td>7 0</td>
<td>35/6</td>
<td>42/6</td>
</tr>
<tr>
<td>6 6</td>
<td>33/3</td>
<td>39/9</td>
</tr>
<tr>
<td>6 0</td>
<td>31/6</td>
<td>37/3</td>
</tr>
<tr>
<td>5 6</td>
<td>29/9</td>
<td>34/3</td>
</tr>
<tr>
<td>Approximate width collapsed,</td>
<td>4½ in.</td>
<td>5½ in.</td>
</tr>
</tbody>
</table>

Quotations will be given on receipt of specification, for larger sizes, special types, fittings, pivoting, etc.

Prices shown are Pre-War, and are subject to current advances.

**Haywards Ltd. Engineers & Ironfounders**

Union St., Borough, London, S.E. 1.

Telephone: Hop 3642 (3 lines).
Telegram: "Hayward Brothers, London."
Hayward's Patent Collapsible Gates

for

Shops, Courtyards, Public Buildings, etc.

Haywards Ltd. have had very extensive experience with large Collapsible Gates, with which they have been the most successful of any makers.

The Illustrations shown here are typical of various styles. The upper view is of a gate with usual double channel uprights, opening in two leaves, with top fixed tracks (and ornamental ironwork above) and the bottom tracks are folding and arranged for each leaf of gate to hinge aside.

Ornamental Grilles, etc., are made in all styles and varieties, of which this shows a good typical example.

The lower Illustration shows a gate of largest size, made with Hayward's double H section uprights for special strength, and fitted with Hayward's Patent Guide Shoes to reduce wear in working pins.

Each half of the gate is made in two portions, collapsing separately, and hung on special roller-bearing top runners, and chain gearing for opening and closing by turning a handle at sides of opening can be fitted, if desired, but is not necessary, as the gates run so lightly.

Haywards Ltd.

32, King Street West,
Manchester

UNION ST., BOROUGH, LONDON, S.E. 1.

Telephones : Hop 3042 (3 lines).
Telex : "Hayward Brothers, London."

Manufacturers of:

Pavement Lights.
Iron Staircases.
Heating and Ventilating.
Steel Casements and Sashen.

Collapsible Gates.
Puttyless Roof Glazings.
Skylights and Lanterns.
Lead Lights and "Copperlites."
HAYWARD'S STEEL DOORS.

TO THE REQUIREMENTS OF LONDON BUILDING ACT.

Supplied to A. & N. STORES, Westminster; GAMAGE's, Holborn, etc., etc. Made in all styles—Sliding, Hinged, etc.

Hayward's Steel Doors are very carefully made and much superior to ordinary makes on the Market. The plates are very carefully flattened; the riveting is all flush and finished off true and flat; the runner wheels have Roller Bearings for easy moving; hinge pivots have tenon lugs fitting in the panelling stiles and rails, all forming points of superior construction.

Types No. 804 and 824 Single Leaf and Two-Leaved Sliding Doors.

Made of ¼ in. steel plates carefully flattened and squared, with 4 in. by ½ in. stiles and rails riveted on to form panels, both sides. Hung on strong straps with heavy rollers, runner bar and track channel; fitted with side rebate angle irons, caulking for building into brickwork, and with handle. Sizes taken over doors, 3 in. lap at both sides, and top, to be allowed for.

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<th>No.</th>
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Types Nos. 844 and 864 Single Leaf and Two-Leaved Pivot-Hung Doors.

Made of ¼ in. steel plates and panelled as with above. Hung on strong pivots, in rebated bar frame, with caulking for building into brickwork; fitted with iron knob handle, and bolts top and bottom, accessible either side. Sizes are over frames, and same as openings, except for bottom frame bar being sunk ¾ in. in floor, to come flush.

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<td>7-0</td>
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</table>

Hayward's Steel Doors are useful for safety for Petrol Stores in Garages. Hayward’s “Copperlite” Fire-resisting Glazed Panels can be fitted in upper parts of doors for seeing through.

SEGMENTAL HEADS, 10/- extra. MOULDINGS TO PANELS, 20 per cent. extra.

NOTE.—If to 1913 requirements of Fire Offices Committee. Special Prices on application.

Hayward's Steel Doors are useful for safety for Petrol Stores in Garages. Hayward's "Copperlite" Fire-resisting Glazed Panels can be fitted in upper parts of doors for seeing through.

HAYWARD'S STEEL OR CAST-IRON FLAPDOORS.

For Cellars, Sub-stations, Reservoirs, Manholes, etc. Single or double-leaved, and in plain or guttered frames, lock fastenings, etc.

Prices from 9/6 per ft. super.

HAYWARDS LTD. Engineers & Ironfounders
UNION ST., BOROUGH, LONDON, S.E. 1.

MANUFACTURERS OF:
Pavement Lights.
Iron Staircases.
Heating and Ventilating.
Steel Casements and Sashes.

Collapsible Gates.
Puttyless Roof Glazings.
Skylights and Lanterns.
Lead Lights and "Copperlite."
Hayward's Leaded Glazing.

Solely manufactured by Hayward's, is amongst the most beautiful of Leaded Glazings, yet moderate in cost.

A revival of one of the oldest arts, it has everything in its favour.

**PRIOR GLASS**

(Registered Trade Mark No. 284,272)

**IS AN EARLY ENGLISH GLASS MANUFACTURED BY A SECRET PROCESS BLOWN IN STEEL MOULDS & ENTIRELY UNTouched BY HAND OR MECHANICAL MEANS IS MADE IN PURE WHITE & COLORED METALS. EACH PIECE IS MADE OF VARYING THICKNESS AND IT IS TO THIS VARIETY WHICH ITS BRILLIANCE IS DUE AS WELL AS THE LENSE-LIKE PROPERTY OF THE GLASS. IT WILL TRANSMIT LIGHT WHEN OTHER GLASS SUCH AS ANTIQUE FAILS. THE DIFFUSION OF LIGHT IS A SPECIAL FEATURE OF THIS GLASS, THEREFORE NO BLINDS ARE REQUIRED. ALSO THE ABSENCE OF COLOR TRANSMISSION TO OBJECTS BEHIND THE GLASS IN FIGURE AND OTHER WORK, THE EFFECTS OF LIGHT & SHADE ARE OBTAINED BY THE NATURAL TONES OF THE GLASS ITSELF WITHOUT PAINTING ON THE SURFACE OR OTHER OUTSIDE MEDIUM, WHICH DESTROYS FROM 25% TO 75% OF ITS LIGHTING VALUE.

PRIOR FILLS A LONG FELT WANT IN HIGH CLASS DECORATION

PRIOR IS THE PUREST AND RICHEST OF ALL GLASS

"PRIOR" GLASS has a special lustre peculiar to itself, and has gradations of colour not possible in any other known make of glass.

Some fine examples of this glass may be seen at All Saints' Church, Ennismore Gardens, London, S.W.; St. John's Church, Richmond, Surrey; Roker Church, Roker, Sunderland; and also in Bedford Court Mansions, Bloomsbury; Frascati's Restaurant; Debenham & Freebody's; etc., etc., etc.

Haywards LTD.

Engineers & Ironfounders

Union St., Borough, London, S.E. 1.

Telephone: Hop 9642 (3 lines).

Telegrams: "Hayward Brothers, London."

Manufacturers of:

- Pavement Lights.
- Iron Staircases.
- Heating and Ventilating.
- Steel Casements and Sashes.

Collapsible Gates.

Puttyless Roof Glazings.

Skylights and Lanterns.

Lead Lights and "Copperlites."
HAYWARD'S LEADED GLAZING & CASEMENTS.

Inside view of HAYWARD'S No. 34 CASEMENTS with plain lead glazing and "Prior" ornaments.

"Prior" Leaded Glass is unique in excellence and must be seen to be appreciated. Used at Westminster Abbey Coronation Annexe and Windsor Castle, yet the littlest touches of colour indicated above show how delightful effects may be obtained at quite low cost. Designs and full information on application.

Hayward’s Patent “Putty Grooved” No. 34 Section Steel Casements, made to work in plain wood rebated frames, or in steel frames, add immensely to the appearance, convenience and value of any building. Moderate in cost, made pivoted or hinged, they suit all circumstances, and are Draughtless and Weatherproof.

PRICES of HAYWARD'S Leaded Glazings:

- Plain Leaded Lights in 15 oz. sheet from 9d. per ft. super
- in 21 oz. ..... 11d. ....
- Diamond Panes ..... 1/- ....
- Geometrical ..... 1/6 ....
- Saddle-bars or steel-cored leads ..... 2d. ....
- Stanchion Bars ..... 1/- ....

Prices shown are greewar and are subject to current advances.

FLORAL TREATMENT ... ... from 2/6 per ft. super
PRIOR EARLY ENGLISH ... ... 3/6 ....
GRISAILLE ... ... 4/- ....
HERALDIC ... ... 5/- ....
MEMORIAL ... ... 10/- ....

It is almost impossible to state general rates for leaded work, and the above are only ideas for a few designs under plain circumstances.

Besides “Prior,” a large and varied stock of Glasses is always on hand, Opalescent, Streaky, Antique, Ambetti, Rolled Cathedral, Crown Sheet, Double Muffled, Martelli, Hammered, and Flemish, etc., and all descriptions of ornamental glass can be embodied in work, to suit requirements.

Architects' own designs estimated for and carried out with care, and special designs are prepared and estimates supplied, on receipt of instructions.

REFERENCES.

- Windsor Castle (repeat orders)
- Earl Brassey, Normanhurst
- St. Mark’s College, London
- Goldsmiths’ Institute, London
- Frascati Restaurant, London
- Whiteway, Laiddaw & Co
- Debenham & Freeboby’s, London
- Alton Abbey, Hants
- All Saints’ Church, Ennismore Gardens, W.
- St. Agatha’s Church, Portsmouth
- Roker Church, Sunderland
- St. John’s Church, Richmond, Surrey
- Wesleyan Church, Sydenham
- Etc., Etc.

Hayward’s Steel Casements and “Prior” Glazing used exclusively throughout Westminster Abbey Coronation Annexe.

Hayward’s Steel Ornamental Lay Lights at Hotel Cecil, W.C.

Restoration of old windows executed carefully, retaining the character of the old work.

Write for Complete Catalogue of Hayward’s “Leadlites” (Section XI).

HAYWARDS LTD. Engineers & Ironfounders
Union St., Borough, London, S.E. 1.

Manufacturers of:

- Pavement Lights
- Iron Staircases
- Heating and Ventilating
- Steel Casements and Sashes
- Collapsible Gates
- Putties, Roof Glazings
- Skylights and Lanterns
- Lead Lights and “Copperlites”
Hayward's "Reform" Patent Roof Glazing

Absolutely the best patent puttyless roof glazing.

Strong, efficient, simple, durable and inexpensive.

Greatest advantages of any system on the market.

Large or small work. Factories, verandahs, etc.

Hayward's "Reform" Puttyless Roof Glazing.

Advantages:

Scientific construction.

Dust proof and clean.

Easy to fix or repair.

Skilled labour unnecessary.

Supports blinds or boards.

Has condensation channels.

Parts free to expand or contract.

Makes good skylights, lanterns, etc.

Readily applied to existing buildings.

Suitable to all circumstances.

Guaranteed weatherproof.

Quotations and full information on receipt of particulars.

Drawings free.

Over 1,000,000 feet super supplied during war to munition works, &c.

Many advantages. Best and simplest.

Guaranteed "Drop-Dry."

North light & factory roofs, &c.

Skylights, garages, lean-to roofs.

Moderate in cost.

Haywards Ltd.

Engineers & Ironfounders

Union St., Borough, London, S.E. 1.

Telephone: Hop 3643 (3 lines).
Telegram: "Hayward Brothers, London."

Manufacturers of:

Pavement lights.
Iron staircases.
Heating and ventilating.
Steel casements and sashes.

Collapsible gates.
Puttyless roof glazings.
Skylights and lanterns.
Lead lights and "Copperite."
HAYWARD'S PATENT "REFORM" PUTTYLESS ROOF GLAZING.

A SPECIAL AND QUITE UNIQUE SYSTEM WITH MANY ADVANTAGES.

Hayward's "Reform" Roof to Arcade at Boscombe, Hants.

"Reform" Glazing, Daimler Motor Works, Coventry (23,000 ft. super supplied.)

Hayward's "Reform" Roof at Corn Exchange, Peterborough.

"Reform" Glazing, Waygood's Lift Works, London, S.E.

Hayward's "Reform" Roof to siding at Messrs. Chivers, Histon, Cambs.

Hayward's Patent "Reform" Roof Glazing supplied to the following:

WAR OFFICE.
FOREIGN OFFICE.
H.M. PRISON COMMISSIONERS.
LONDON COUNTY COUNCIL.
METROPOLITAN ASYLMS BOARD.
CITY OF LONDON ASYLUM.
NAWFEY ASYLUM.
THREлект COUNTIES ASYLUM.
SURREY COUNTY ASYLUM.
CITY SAFE DEPOSIT.
MOTOR TRANSPORT DEPOT, Slough.
NATIONAL AIRCRAFT FACTORY, Manchester.
HANDLEY PAGE, LTD., Cricklewood.
NATIONAL RADIATOR CO., LTD., Hull.
SIR R. A. COOPER, Boxmoor.
BRANKSOME TOWERS HOTEL, Hants.
THE ARCADE, Boscombe, Hants.
HARRISONS STORES, Brompton, W.
GAMAGE'S, Holborn, W.C.
MANN, CROSSMAN & PAULIN, LTD.
WATNEY, COOMBE & RED, LTD.
LONDON HYDRAULIC POWER COMPANY.
BRENTFORD GAS CO.
W. LAWRENCE & SONS WORKS, Sawbridgeworth.
NESTLE'S MILK, Atherstone, Derby.
Pavlova Leather Works, Abingdon.
Wm. Foster & Co., Ltd., Lincoln.

CROSSLEY'S MOTOR WORKS, LTD., Manchester.
MAUDSLEY'S MOTORS, LTD., Coventry.
DAIMLER MOTOR WORKS, Coventry.
WAYGOOD'S LIFT WORKS, London, S.E.
CHIVERS' JAM WORKS, Cambridge.
TECKER'S JAM FACTORY, Southall.
ST. ALBANS RUBBER CO., LTD.
ISLEWORTH RUBBER CO., LTD.
PRICE'S PATENT CANDLE CO., LTD.
BRAZIL RAILWAY CO.
GREAT WESTERN RAILWAY.
GREAT CENTRAL RAILWAY.
GREAT NORTHERN RAILWAY.
Etc., etc., etc.

MANUFACTURERS OF:
Collapsible Gates.
Puttyless Roof Glazings.
Skylights and Lanterns.
Lead Lights and "Copperlites."

HAYWARDS LTD.
Union St., Borough, London, S.E. 1.

Engineers & Ironfounders

Pavement Lights.
Iron Staircases.
Heating and Ventilating.
Steel Casements and Sashes.

Telephones: Hop 2642 (3 lines).
Telegrams: "Hayward Brothers, London."
HAYWARD'S PATENT "REFORM" PUTTYLESS ROOF GLAZING.

ABSOLUTELY THE BEST PATENT PUTTYLESS ROOF GLAZING.

STRONG, EFFICIENT, SIMPLE, DURABLE AND INEXPENSIVE.

Greatest Advantages of any System on the market. Suited to all circumstances.

Over A MILLION FEET Super of Hayward's "Reform" Puttyless Roof Glazing was supplied during the War,

For Munition Works, Factories, etc.

The glass sheets are supported on soft wicks, and securely, but freely, fastened with delta springs and stop clips, on to strong, specially treated steel glazing bars, formed with condensation channels. Each piece of glass securely fastened, but free to expand and contract, etc. Having no capping, there is nothing to harbour dirt and silt, and the condition of the bars can be seen at any time. With the usual type of lead-sheathed glazing bars on the market this is not so, and rusted and perished steel bars may be hidden in sheaths of lead, and remain an unsuspected source of danger, because not seen. Panes usually 24 in. wide, and up to 7 ft. span. Specially heavy bars for up to 10 ft. span.

Lead and other cappings and coverings can be supplied, if desired.

At SLOUGH WORKS, originally built for the GOVERNMENT MOTOR REPAIR DEPOT, over 200,000 ft. super of Hayward's "REFORM" Glazed Roofs was utilized. This was about half the total area of roof glazing, the other half being divided between four other makers.

At Messrs. CROSSLEYS, MANCHESTER (National Aircraft Works).

For comprehensive list of HAYWARD'S "REFORM" STEEL SKYLIGHTS and LANTERN LIGHTS See next page.

At SLOUGH WORKS, originally built for the GOVERNMENT MOTOR REPAIR DEPOT, over 200,000 ft. super of Hayward's "REFORM" Glazed Roofs was utilized. This was about half the total area of roof glazing, the other half being divided between four other makers.

Aeroplane view of SLOUGH WORKS.

HAYWARDS LTD.

Engineers & Ironfounders

UNION ST., BOROUGH, LONDON, S.E. 1.

Manufacturers of:

Pavement Lights.
Iron Staircases.
Exhaust and Ventilating.
Steel Casements and Sashes.

Collapsible Gates.
Puttyless Roof Glazings.
Skylights and Lanterns.
Lead Lights and "Copperlites."
Hayward's "Reform" Skylights.

Steel frames, with patent roof glazing.


SPECIFICATION—Hayward's (No. 421) Patent "Reform" Steel Lantern Light with angle curb, patina grooved steel sash bars, swing vents, with eyes and pulleys; top formed with E.S.J. ridge (lead-flashed), steel hip and rafter bars; "Reform" glazed with 1 in. cast glass throughout.

Prices, with plain sash bases, 2 ft. high. Vents, 9d. extra each.

Specifications—Hayward's (No. 431) Patent "Reform" Steel Skylight, with angle curb, E.S.J. ridge (lead-flashed), steel hip and rafter bars; "Reform" glazed with 1 in. cast glass.

Prices, as illustration. If with gable ends, same prices; vents extra.

Sizes:

<table>
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<tr>
<th>Sizes</th>
<th>Delivered, London</th>
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<th>Fixed in London</th>
<th>Extra if glazed with wired glass</th>
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<td>30 6 0</td>
<td>31 16 6</td>
<td>34 3 0</td>
<td>10 12 0</td>
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Prices include 1 in. cast glass, cut to size and crated.

All kinds of Skylights, Lanterns, Ranges and Special Roofs quoted for, on receipt of sizes and particulars.

Note—All prices shown are on pre-war basis, and subject to current advances.

Hayward's "Reform" Lantern Lights at Gamage's Showroom, Holborn, W.C.

Interior of Hayward's "Reform" Lantern Light Over Dining Room, Welbeck Palace Hotel, W.

Exterior view of "Reform" Lantern Light, Welbeck Palace Hotel. (Also Hayward's Fire Stairs.)
HAYWARD'S PATENT "REFORM" PUTTYLESS ROOF GLAZING FOR MOTOR GARAGES, YARDS, FACTORIES, ETC.

The illustrations show some interesting applications of Hayward's "Reform" Roofs, of which very large numbers of all kinds have been carried out; but, of course, local requirements and circumstances cause many variations, and each case should be dealt with on its merits. On receipt of particulars, Hayward's promptly furnish drawings and full information, which often lead to economies and increased advantages.

In the treatment of Verandahs and Garage Shelters, objections are sometimes raised that iron and glass erections are unsightly, and detract from the architectural value of attached or surrounding buildings, and the illustrations above show how this can be overcome by masking the structure with masonry and reinforced concrete, to make same a part of the general scheme, and not a mere appendage.

SPECIFICATION.—Hayward's No. 437 "Reform" Washing Shelter, framed in steel, and supported on four moulded cast-iron columns or steel H stanchions. Roof glazed on Hayward's Patent Puttyless "Reform" System, with 1 in. cast glass, moulded cast-iron eaves gutter, lead flashing to ridge and hips.

This structure can be independent of adjoining building, and both ends being hipped, it is specially applicable to garages with low pitched roofs, as shown.

SPECIFICATION.—Hayward's No. 438 "Reform" Washing Shelter, framed in steel, and supported on two moulded cast-iron columns or steel H stanchions. Roof and gable ends glazed on Hayward's Patent Puttyless "Reform" System, with 1 in. cast glass, moulded cast-iron eaves gutter, and lead flashing to wall.

This type of roof is advisable for shelters of considerable width, but not much projection. The framework of each shelter is erected complete at Works before despatch, and marked for easy erection at sight.

HAYWARDS LTD. Engineers & Ironfounders
UNION ST., BOROUGH, LONDON, S.E. 1.

Manufacturers of:
- Pavement Lights
- Collapsible Gates
- Iron Staircases
- Puttyless Roof Glazings
- Heating and Ventilating
- Skylights and Lanterns
- Steel Casements and Sashes
- Lead Lights and "Copperpltes."
HAYWARD'S "REFORM" ROOFS, DOMES AND GARAGE WASHING SHELTERS, ETC.

Garage Washing Shelter, "REFORM" Roof, for seat of Lord Calthorpe, Elvetham Hall, Hants.

Hayward's Dome Roof and "Reform" Lantern Light at Y.M.C.A. Building.

Interior view of Hayward's Dome Roof at Y.M.C.A. Bldg., Tottenham Ct. Road, W.C.

No. 435—Garage Washing Shelter, "REFORM" Roof, at Chislehurst, Kent.

No. 437—Carriage Washing Shelter, "REFORM" Roof for Sir Charles Burt, Richmond, Surrey.

No. 438—Carriage Washing Shelter, "REFORM" Roof, for W. Grantham, Esq., Shortlands, Kent.

HAYWARD'S PATENT "REFORM" WASHING SHELTERS.

FOR MOTOR GARAGES AND COACH HOUSES, ETC.

Hayward's have had a large experience in making and erecting Yard Roofs and Washing Shelters for Motor Garages, etc., at Country Houses, and gladly offer the benefit of their experience to intending purchasers. Having the services of a qualified Architectural and Engineering Staff, they are able to make a special feature of constructing shelters consistent with the character and architectural styles of the surroundings.

The illustrations on these pages show types of Shelters applicable to different circumstances, but conditions are frequently met which require special consideration and treatment.

In general, it is desirable to have as few columns as possible in the construction of a Shelter, and where a considerable span of roof is required, special attention is given to the design to meet this. Columns may be of moulded cast iron, or of steel H section; while not so neat, the advantage of the added security of steel supports sometimes encourages their use.

The erection of the Shelters can be done by ordinary mechanics; but, if preferred, we shall be pleased to quote for sending our men to the site—the cost, of course, depending on the distance and local circumstances, etc.

HAYWARDS LTD. Engineers & Ironfounders
UNION ST., BOROUGH, LONDON, S.E. 1.

Manufacturers of:
- pavement lights
- iron staircases
- heating and ventilating
- steel casements and sashes

Note—All prices shown are on pre-war basis and subject to current advances.

Haywards Ltd.
Engineers & Ironfounders
Union St., Borough, London, S.E. 1.

Telephone: Hop 5642 (8 lines).
Telegram: "Hayward Brothers, London."
Hayward's Standard Glazed Dome Skylights.

Hayward's No. 441 Standard Conical Skylights, polygonal on plan, with straight bars and flat glass. Angle steel curb with steel tee bars, and solid centre or ring to take an Exhaust Ventilator.

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<td>8 ft.</td>
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<tr>
<td>12 ft.</td>
<td>£17 10s. 0d.</td>
<td>£16 10s. 0d.</td>
<td>£16 10s. 0d.</td>
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<td>15 ft.</td>
<td>£24 10s. 0d.</td>
<td>£23 10s. 0d.</td>
<td>£23 10s. 0d.</td>
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If Domes are wanted circular on plan, with glass curved two ways (No. 443 Standard) add 25 per cent to above prices. Leaded or stained glass designs, prices according to work involved.

Hayward's No. 442 Standard Dome Lights, spherical in section, polygonal on plan, i.e., glass bent one way only. Angle steel curb, with curved steel tee bars; solid centre or ring to take an Exhaust Ventilator.

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<td>4 ft.</td>
<td>£4 10s. 0d.</td>
<td>£3 10s. 0d.</td>
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<td>6 ft.</td>
<td>£6 10s. 0d.</td>
<td>£5 10s. 0d.</td>
<td>£5 10s. 0d.</td>
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<td>8 ft.</td>
<td>£8 10s. 0d.</td>
<td>£7 10s. 0d.</td>
<td>£7 10s. 0d.</td>
<td>£7 10s. 0d.</td>
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<tr>
<td>10 ft.</td>
<td>£12 10s. 0d.</td>
<td>£11 10s. 0d.</td>
<td>£11 10s. 0d.</td>
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<tr>
<td>12 ft.</td>
<td>£18 10s. 0d.</td>
<td>£17 10s. 0d.</td>
<td>£17 10s. 0d.</td>
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<tr>
<td>15 ft.</td>
<td>£24 10s. 0d.</td>
<td>£23 10s. 0d.</td>
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In all cases crates and packing chargeable unless returned in good order within 30 days.

Note—All prices shown are on a pre-war basis and subject to current advances.
Hayward's Ornamental Ironwork

Grilles
Panels
Screens
Balconies
Laylights
Porches
Garages
Gates &c.

Architects' designs carefully worked to, or special drawings furnished for any schemes or requirements, both in Wrought and Cast Ironwork, etc.

Representatives sent to take particulars and advise.

This illustration shows an interesting example of a Ornamental Iron glazed Lounge and Verandah in Tudor style. The gutters, carried on strong concealed steel angles, have quiet enrichments of Tudor castellations and roses, and the spandrils and columns (carrying off the water internally) are of graceful character to suit. Roofed with Hayward's Patent "Reform" Puttyless Glazing of 10 ft. clear span, and enclosed with steel casements, and fanlights with "Prior" Glass, the structure adds greatly to the convenience and beauty of the house.


Garage Washing Shelter, "Reform" Roof, for Earl of Leicester, at Holkham.

Ornamental Ironwork Glazed Porch, Concert Hall, Blackheath.

Hayward's Ornamental Ironwork Verandah and Lounge.

Haywards L td. Engineers & Ironfounders

Union St., Borough, London, S.E. 1.

Telephone: Hop 3642 (3 lines).
Telexograms: "Hayward Brothers, London."
Collapsible Gates for private cubicles in a Garage.

PUBLIC GARAGE FITTING, ETC.

The Illustration shows a Motor Car Garage in which private enclosed cubicles are fitted up for the safe storing of Cars. These cubicles are formed of light iron grillework, with the fronts guarded by collapsible gates, hinging round to give free passage for the cars in entering and leaving. The gates are secured by padlocks or other special private locking arrangements. Built in several floors, it will be noticed there are Hayward's Lights in the floors for transmitted light below. Such Garages should be fitted with Petrol and Oil Stores, ventilated and built in fireproof manner with "Jhilmil" Steel Lathing, Partitions, etc., and with Steel Doors.

Fireproof Iron Stairs, outside or inside, straight or circular, would connect the different floors; whilst good lighting would be obtained from Patent Puttyless Glazing in the roof, or as Skylights, and from Steel Sashes or Casements in the walls fitted with Prismatic Glazings, etc.; and the whole building would be kept dry and warm with a suitable heating system. Cars are generally washed outside under glazed shelters or roofs spanning the yard or attached to the front of the building and partly carried on columns or steel stanchions. Hayward's have specialised in these "Reform" Washing Shelters and other garage specialities as mentioned here, and useful information will be found on pages 56 and 57.

Hayward's Iron Stairs at Daily Mail Office, Manchester.

Hayward's Circular Stairs.

Hayward's Collapsible Gates.

Stable Fittings.

Hayward's Lights at Bouverie St., E.C.

HAYWARDS LTD. Engineers & Ironfounders
UNION ST., BOROUGH, LONDON, S.E. 1.

Telephones: Hop 3012 (3 lines).
Telegrams: "Hayward Brothers, London."

BUILDING SPECIALITIES.

Pavement Lights, Flaps, Stallboards, Doors, Prismatic Glazings, Etc.
For transmitting good light to all parts, and doing away with artificial light, and for fitting basements for Stores for Petrol, etc.

Iron Stairs,
Straight and Circular, for Fire Escape, Service, etc.

Ventilators
for Rooms and Roofs, and for avoiding dampness, petrol fumes, etc.

Hayward's Heating
for Garages for winter. Simple and efficient schemes to run at low cost.

Hayward's "Jhilmil Steel" Lath
is Fireproof and saves 25% to 33% of plaster.
Used for partitions, ceilings, columns, etc.

Hayward's "Putty-Grooved" Patent Steel Sashes and Casements.
Prismatic, Ornamental and "Copperlite" Fire-Resisting Glazings, etc.

Steel Doors for Party Walls and Petrol Stores, etc.

Collapsible Gates.

Manufacturers of:

Pavement Lights.
Iron Staircases.
Heating and Ventilating.
Steel Casements and Sashes.

Collapsible Gates.
Puttyless Roof Glazings.
Skylights and Lanterns.
Lead Lights and "Copperlite."
HAYWARD'S "COPPERLITE" FIRE-RESISTING PARTITIONS.

ELECTRO-COPPER FIRE-RESISTING GLAZING OF HIGHEST CLASS.
TESTED AND CERTIFIED BY THE BRITISH FIRE PREVENTION COMMITTEE.
Complying with the requirements of the L.C.C. and FIRE INSURANCE COMPANIES, &c.


Hayward's "Copperlit" Fire-Resisting Glazing.


Hayward's "Copperlite" Screens at Gerringe's Stores, Buckingham Palace Road, London.

Hayward's "Copperlite" Windows at Harrod's Stores, London. (10,000 ft. super also supplied to their Buenos Ayres House.)

HAYWARD'S "COPPERLITE" GLAZING is made of glass squares, in strong "Copperlite" frames, subjected to electro-deposition, and combines great strength and fire-resisting qualities with handsome and decorative appearance.

HAYWARD'S "COPPERLITE" FIRE-RESISTING GLAZING is used in partitions, screens, doors, and windows; and in corridors, light wells, and staircase enclosures, etc., and other similar places where it is important to prevent the spread of fire.

HAYWARD'S "COPPERLITE" PRISM PLATES increase the daylight in dark interiors, and are used with good effect for Transome lights in windows, shop fronts, stall-boards, etc.

HAYWARD'S ORNAMENTAL "COPPERLITE" GLAZING for domes, ceiling lights, etc., is made to any design, and is stronger than any other glazing.

Hayward's "Copperlites" have been used at:

- VICTORIA AND ALBERT MUSEUM
- MESSRS. HARROD'S STORES, LONDON
- SELF RIDGE'S STORES, BUENOS AIRES
- GORRINGE'S STORES
- STRAND PALACE HOTEL
- GENERAL BUILDINGS, HOLBORN
- GENERAL STEAM NAVIGATION CO.'S OFFICES
- ST. BARTHOLOMEW'S HOSPITAL
- HOLBORN TOWN HALL
- LONDON AND SOUTH WESTERN BANK
- GENERAL ELECTRIC COMPANY
- ANGLO-AMERICAN OIL CO.'S OFFICES
- NORWICH UNION FIRE OFFICE
- INSTITUTE OF CIVIL ENGINEERS
- MECHANICAL ENGINEERS

And at many other Buildings too numerous to specify.

Hayward's "Copperlite" has been used in doors, partitions, etc.

7,000 ft. super fixed in doors, partitions, etc.

Hayward's "Copperlite" Screens at Gerringe's Stores, Buckingham Palace Road, London.

Hayward's "Copperlite" Windows at Harrod's Stores, London. (10,000 ft. super also supplied to their Buenos Ayres House.)

HAYWARDS LTD. Engineers & Ironfounders
Union St., Borough, London, S.E. 1.

Manufacturers of:
- Pavement Lights
- Iron Staircases
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- Steel Casements and Sashes
- Collapsible Gates
- Puttyless Roof Glazings
- Skylights and Lanterns
- Lead Lights and "Copperlites"