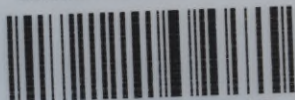


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THE
BRITISH FIRE PREVENTION COMMITTEE

FIRES & FIRE TESTS

A SELECTION
of
PAPERS AND REPORTS

- Vol. A. Fires and Fire Prevention.
Vol. B. Floors and Partitions.
Vol. C. Doors, Shutters and Glazing.

F. No. 29041.



LONDON, 1910.

ISSUED AT THE OFFICES OF
THE BRITISH FIRE PREVENTION COMMITTEE
8, WATERLOO PLACE, PALL MALL.

Fifty Shillings per set.

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The Committee's Reports on Tests with Materials, Methods of Construction, or Appliances are intended solely to state bare facts and occurrences, with tables, diagrams, or illustrations, and they are on no account to be read as expressions of opinion, criticisms, or comparisons.

The Committee is not responsible for the views of individual authors as expressed in Papers or Notes, but only for such observations as are formally issued on behalf of the Executive.

Akc. Nr.

245/52

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NOTE

THESE volumes, which comprise a selection of papers and reports issued by the British Fire Prevention Committee, are intended to indicate the character of the work done.

The inclusion of any one paper or report in these volumes does not signify any preference on the part of the Executive. The selection comprises as a matter of fact solely "Red Books" of which the Committee happen to have a good supply of copies.

Regarding the papers published by the Committee, they are written by special request or are brought to the notice of the Executive as containing information that might be useful to the Committee's membership.

As to the reports of tests, they are limited to the investigations undertaken by the Committee.

The purpose of the tests undertaken by the British Fire Prevention Committee is to obtain reliable data as to the exact fire resistance of the various materials and systems of construction used in building practice, and also to obtain precise particulars regarding fire-alarm or fire-extinguishing appliances, safety devices and the like.

The tests are of an entirely independent character, arranged on scientific lines, but with full consideration for the practical purpose in view.

All reports on tests solely state the bare facts and occurrences, with tables, diagrams and illustrations, but on no account are reports to be taken as including expressions of opinion, nor should any expression be read as a comparison or criticism.

The general arrangement and direction of the tests are in the hands of the Executive, who act in accordance with certain principles laid down after careful study and experiment. The tests are generally attended by the members of the Council and the members of the Committee in rotation.

FOR THE EXECUTIVE,

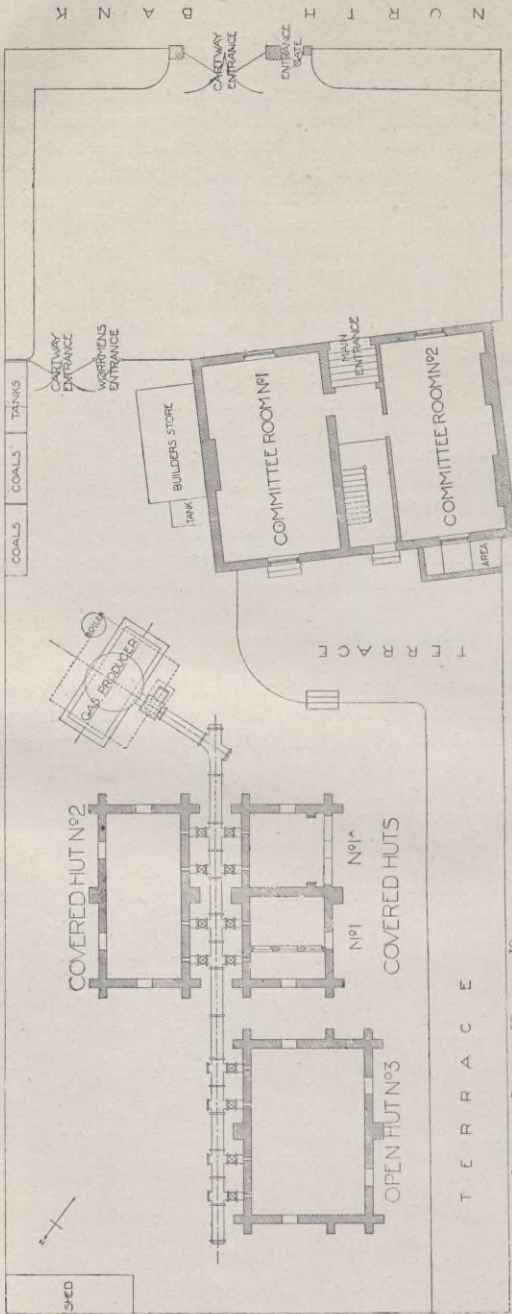
EDWIN O. SACHS.

Chairman.

ELLIS MARSLAND,

General Hon. Secretary.

8 Waterloo Place,
London, S. W.



SKETCH PLAN OF THE COMMITTEE'S THIRD TESTING STATION

FIRE TESTS WITH DOORS.

A 2-in. SOLID-FRAMED TEAK DOOR.

A 1 $\frac{3}{8}$ -in. FOUR-PANEL PINE DOOR.

A 1 $\frac{7}{8}$ -in. FOUR-PANEL PINE DOOR.

Particulars

OF

EXPERIMENTAL FIRE TESTS.

LONDON, 1899.

ISSUED AT THE OFFICES OF
THE BRITISH FIRE PREVENTION COMMITTEE

(Founded, 1877—Incorporated, 1899)

1, WATERLOO PLACE, PALL MALL.

Two Shillings and Sixpence.

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OF THE
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- No. 2.—AMERICAN OPINIONS ON FIRE PREVENTION.
- No. 3.—THE PARIS BAZAAR FIRE.
- No. 4.—THEATRE EXITS.
- No. 5.—THE NEW YORK FIRE DEPARTMENT.
- No. 6.—COTTON FIRES AND COTTON BALES.
- No. 7.—“FIRE-RESISTING” FLOORS USED IN LONDON.
- No. 8.—FIRE SERVICE IN FACTORIES, WORKS, &c.
- No. 9.—LESSONS FROM FIRE AND PANIC.
- No. 10.—HOW TO BUILD “FIRE-PROOF.”
- No. 11.—TESTS WITH UNPROTECTED COLUMNS.
- No. 12.—THE EFFECT OF FIRE.
- No. 13.—THE TESTING STATION OF THE B.F.P.C.
- No. 14.—OFFICIAL FIRE TESTS WITH FLOORS (No. 1).
- No. 15.—CONFLAGRATIONS DURING THE LAST TEN YEARS.
- No. 16.—EXPERIMENTAL FIRE TESTS WITH FLOORS (A).
- No. 17.—THE TALL BUILDING UNDER TEST OF FIRE.
- No. 18.—EXPERIMENTAL FIRE TESTS WITH FLOORS (B).
- No. 19.—OFFICIAL FIRE TESTS WITH CEILINGS (No. 2).
- No. 20.—OFFICIAL FIRE TESTS WITH GLAZING (No. 3).
- No. 21.—EXPERIMENTAL FIRE TESTS WITH FLOORS (C).
- No. 22.—EXPERIMENTAL FIRE TESTS WITH PARTITIONS
(D AND E).
- No. 23.—OFFICIAL FIRE TESTS WITH FLOORS (No. 4).
- No. 24.—EXPERIMENTAL FIRE TESTS WITH DOORS
(G, H AND I).
- No. 25.—EXPERIMENTAL FIRE TESTS WITH DOORS (K AND L).
- No. 26.—EXPERIMENTAL FIRE TESTS WITH DOORS (M AND N)
- No. 27.—OFFICIAL FIRE TESTS WITH PARTITIONS (No. 7).

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OBJECTS OF THE COMMITTEE :

The main objects of the Committee are :—

To direct attention to the urgent need for increased protection of life and property from fire by the adoption of preventive measures.

To use its influence in every direction towards minimising the possibilities and dangers of fire.

To bring together those scientifically interested in the subject of Fire Prevention.

To arrange periodical meetings for the discussion of practical questions bearing on the same.

To establish a reading-room, library and collections for purposes of research, and for supplying recent and authentic information on the subject of Fire Prevention.

To publish from time to time papers specially prepared for the Committee, together with records, extracts and translations.

To undertake such independent investigations and tests of materials, methods and appliances as may be considered advisable.

The Committee's Reports on Tests with Materials, Methods of Construction, or Appliances are intended solely to state bare facts and occurrences, with tables, diagrams, or illustrations, and they are on no account intended to read as expressions of opinion, criticisms, or comparisons.

NOTE.

The present publication contains the results of some minor investigations with doors, conducted simultaneously with other tests.

These investigations come under the head of tests with ordinary building materials, and simple as the examination made may seem, the importance of the facts obtained must not be underrated.

The rapid destruction of ordinary four-panelled pine doors will be all too obvious from the reports H. and I. Twenty minutes may apparently be taken as the life of such doors in a fire equal to the fire created by the burning, say, of a bedroom when the windows have been broken and a draught created. The difference of half-an-inch in the thickness of the material does not seem to be very great.

On the other hand, the life of a small, close-fitting, 2-in. solid teak door, described in report G, may apparently be taken at an hour, under much severer conditions.

Further investigations will yet be made with various forms of doors, so that in due course a true comparative picture may be obtained as to what the various materials will do; and here I would like to call special attention to the series of instantaneous views reproduced in connection with the small teak door test. This method of illustration will be henceforth frequently applied in connection with the Committee's reports.

Perhaps I should note that all three doors were hung in rebated frames and opened *outwards*, *i.e.*, away from the fire; and that when speaking of "life" in this place I do not merely calculate it up to the moment when the first spurt or sheet of flame may pass through the opening between door and frame, which must necessarily somewhat vary, according to the exact fitting of the door.

EDWIN O. SACHS.

LONDON,

September 22nd, 1899.

THE GENERAL ARRANGEMENTS FOR TESTS.

(MEMORANDUM.)

The purpose of the tests undertaken by the British Fire Prevention Committee is to obtain reliable data as to the exact fire-resistance of the various materials, systems of construction, or appliances used in building practice.

The tests are of an entirely independent character, arranged on scientific lines, but with full consideration for the practical purpose in view. Absolute reliability is assured, records being mostly taken automatically, or by photography, and the temperatures being easily regulated by the application of gas.

All reports on tests solely state the bare facts and occurrences, with tables, diagrams and illustrations, and on no account are reports to include expressions of opinion, nor should any expression be read as a comparison or criticism.

The general arrangement and direction of the tests are in the hands of the Executive, who act in accordance with certain principles laid down after careful study and experiment. The official tests are attended by the members of the Council and the members of the Committee in rotation.

As to the Testing Station, it comprises two houses standing in their own grounds near Regent's Park, and backing on to the Regent's Canal. The principal building is used for Committee Rooms and laboratory purposes, whilst the gardens are utilised for so-called "full-size" tests.

As to the financial aspect of the station, the establishment expenses are being met by a special subscription. As far as the funds of the Committee permit, investigations and experimental tests with ordinary (*i.e.*, not patented) forms of construction are undertaken from time to time and duly reported on. Official tests with patented materials, makers' systems, etc., etc., are subject to a scale of charges, but these charges are so figured as to only just cover the actual cost. Any surplus is refunded. The Testing Station is also open to members for such private research work or tests they may desire to undertake.

The services of the members participating in the management of the station, conducting or attending tests, are given entirely gratuitously

For the Executive,

EDWIN O. SACHS, *Chairman.*

EXPERIMENTAL FIRE TESTS
CONDUCTED BY THE EXECUTIVE
OF THE
British Fire Prevention Committee.

[FOUNDED 1897,—INCORPORATED, 1899.]

FIRE TEST G.—MAY 25TH, 1899.

A SOLID-FRAMED DOOR
OF
TWO INCH TEAK.

OBJECT OF TEST.

To record the effect of a fierce fire of one hour, gradually increasing to a temperature of $2,000^{\circ}$ Fahr.

Note: The size of the door under investigation was to be 6 ft. by 2 ft. 5 in.

The door was to be hung in a 4 in. by 3 in. rebated teak frame, to open outwards.

The door was to be constructed of teak bought in the open market.

Note: The test was carried out simultaneously with a floor test (see Publication No. 21, Test C.)

SUMMARY OF EFFECT.

After 24 minutes flame showed between bottom edge of door and sill.

After 49 minutes flame showed between edge of frame and style of door above and below the lower bolt.

After 54 minutes smoke issued through joints of panels and centre rail.

After 60 minutes flame burst through all joints, and the door collapsed five minutes afterwards.

DESCRIPTION OF TESTING PLANT.

(See Figs. 13 to 16.)

The Testing Chamber used was located at the Committee's Testing Station, and was known as "No. 3 Hut."

The chamber was constructed, as shown, of stock bricks, with lime mortar, and measured 10 ft. by 10 ft. internally. A floor of steel joists with concrete filling served as ceiling.

The hut was roofed in with galvanized iron.

The door-opening for the door under investigation was on the south side.

The fuel used was gas produced at the station, and the supply was regulated by valves and dampers.

The gas was admitted through two mixing chambers of fire-brick, each 10 ft. by 3 ft. super, as shown.

A Roberts-Austen pyrometer was used for recording temperatures, and four observation records were taken from points Nos. 1, 2, 3, 5.

There was an observation hole in the east wall, closed by a moveable iron-sheathed wooden shutter.

The draught holes were in the east and west walls.

The photographs were taken by daylight.

CONSTRUCTION OF DOOR.

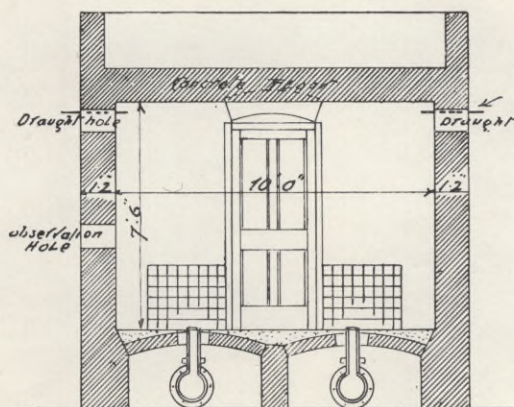
(See Fig. 17.)

A plan and elevation of the door are shown on the following page. The door was constructed as follows:—

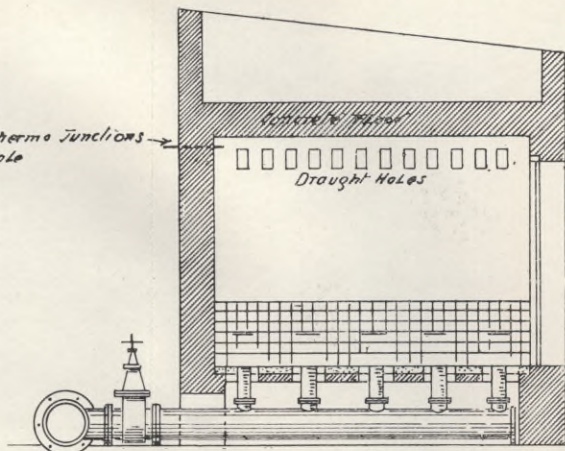
The material of the door was cut out of 2 in. teak, and when planed up measured $1\frac{7}{8}$ in.

The styles and head were $4\frac{1}{4}$ in. wide. The middle and bottom rails were $7\frac{1}{2}$ in. wide.

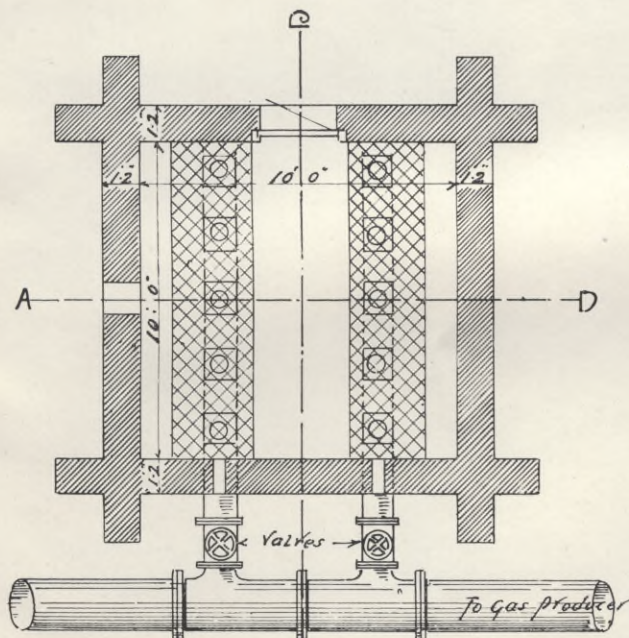
The panels were bead butt and the full thickness of the door, and were framed with a teak tongue $\frac{5}{8}$ in. by 1 in., let into grooves in the styles, rails, and head.



SECTION A-B

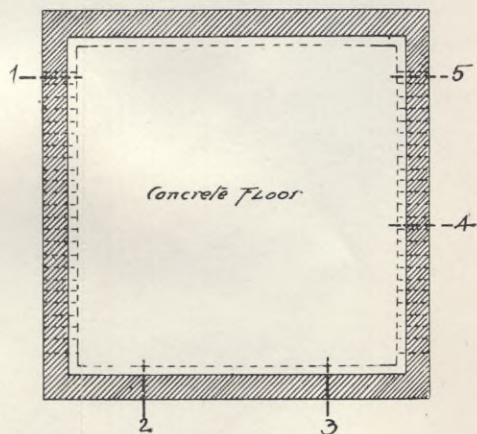


SECTION C-D



PLAN OF MUT

points marked 1 2 3 4 5 are
Thermo Junctions attached to
Wires leading to Pyrometers
that marked + is self recording



PLAN OF FLOOR

S
E — W
N

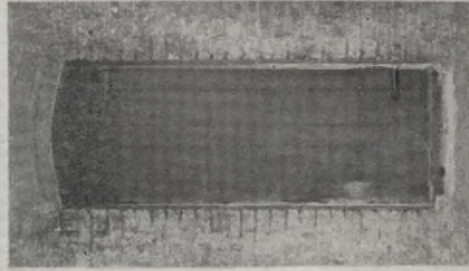


FIG. 1. TIME 4:34 PM
TEMP 420° FAR

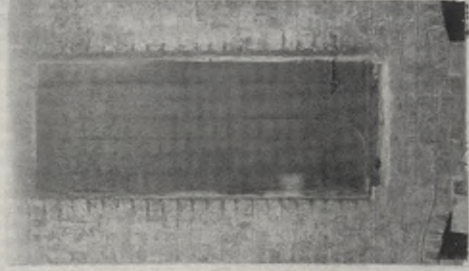


FIG. 2. TIME 4:39 PM
TEMP 940° FAR

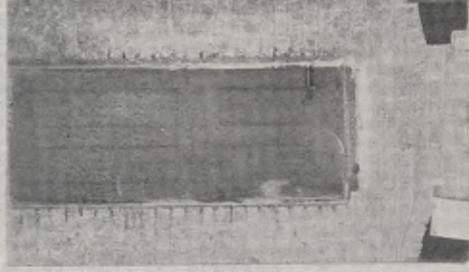


FIG. 3. TIME 4:49 PM
TEMP 1240° FAR

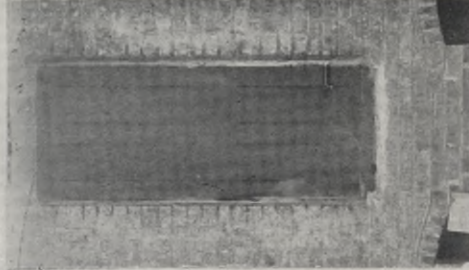


FIG. 4. TIME 4:49 PM
TEMP 1425° FAR

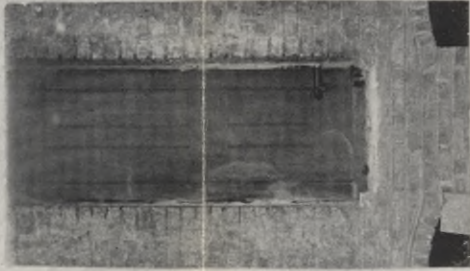


FIG. 5. TIME 4:59 PM
TEMP 1565° FAR



FIG. 6. TIME 4:59 PM
TEMP 1625° FAR

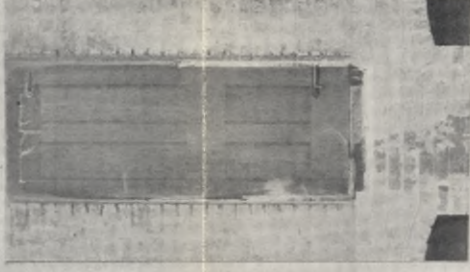


FIG. 7. TIME 5:09 PM
TEMP 1720° FAR

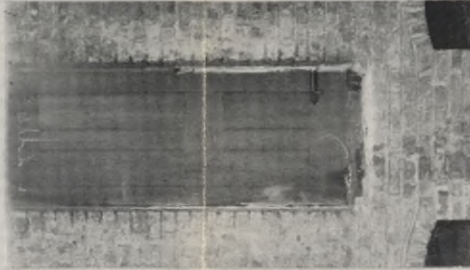


FIG. 8. TIME 5:09 PM
TEMP 1690° FAR

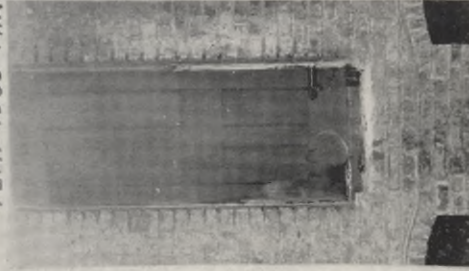


FIG. 9. TIME 5:14 PM
TEMP 1780° FAR



FIG. 10. TIME 5:19 PM
TEMP 1750° FAR

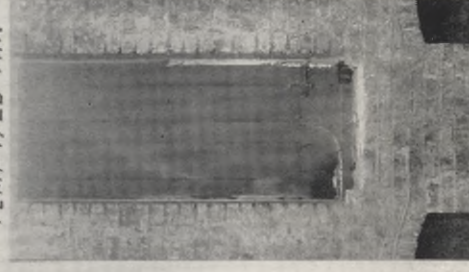


FIG. 11. TIME 5:29 PM
TEMP 1775° FAR

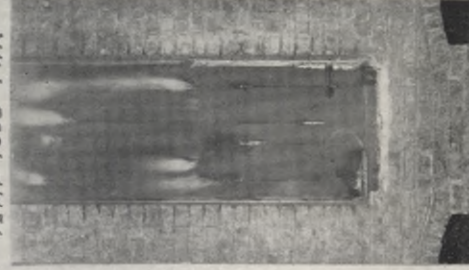


FIG. 12. TIME 5:30 PM
TEMP 1850° FAR

The door frame was 4 in. by 3 in. teak, rebated for the door, which was hung to open outwards with one pair of 4 in. wrought iron butts and fastened with two 8 in. iron barrel bolts.

The door was placed in position two days before it was tested.

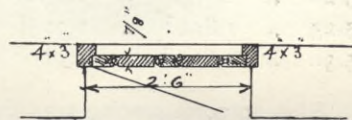
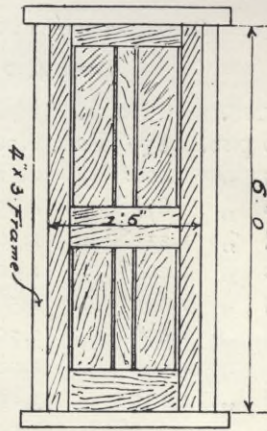
PREPARATIONS FOR TEST.

On May 25th, at 4 p.m., the gas was lighted and kept low until the test commenced at 4.30 p.m.

The door was left wide open.

At 4.30 p.m. the temperature, as seen from an automatic record, varied between 170° Fahr. and 200° Fahr.

DETAIL OF
TEAK DOOR
AND FRAME



THE DOOR. Fig. 17. PLAN AND ELEVATION.

THE TEST.

(Figs. 1 to 12).

The following is the log of the test:—

At 3 p.m. the meteorological observations, taken at the Botanic Gardens, Regent's Park, read as follows:— State of weather, fine; Rain, none; Wind, N.N.W.; Barometer, 29.96 ins.; Attached Thermometer, 56° Fahr.; Dry bulb, 52° Fahr.; Wet bulb, 45.2° Fahr.

At 4.30 p.m. the door was intact.

At 4.30 p.m. the door was closed, and the test commenced.

At 4.30 p.m. the gas was gradually turned on, and the temperature raised, as shown on the table below, the observations being taken from the four pyrometer points, Nos. 1, 2, 3, 5.

OBSERVATIONS TAKEN AT POINTS 1, 2, 3, 5.

From 4.30 p.m. to 5.30 p.m.

TIME.	No. 1.	No. 2.	No. 3.	No. 5.
4.30 p.m.	170° Fah.	200° Fah.	180° Fah.	170° Fah.
4.35 "	400° "	420° "	410° "	420° "
4.40 "	875° "	850° "	790° "	940° "
4.45 "	1,215° "	1,300° "	1,150° "	1,240° "
4.50 "	1,400° "	1,500° "	1,375° "	1,425° "
4.55 "	1,525° "	1,565° "	1,515° "	1,565° "
5.0 "	1,600° "	1,700° "	1,610° "	1,625° "
5.5 "	1,660° "	1,780° "	1,710° "	1,720° "
5.10 "	1,725° "	1,800° "	1,720° "	1,690° "
5.15 "	1,775° "	1,900° "	1,810° "	1,780° "
5.20 "	1,835° "	1,950° "	1,875° "	1,750° "
5.25 "	1,820° "	1,975° "	1,920° "	1,775° "
5.30 "	1,825° "	1,920° "	1,960° "	1,850° "

At 4.39 p.m. smoke was coming through between the brickwork and top edge of frame.

At 4.44 p.m. smoke was coming from between top of door and frame.

At 4.57 p.m. the sill of frame along top edge was burnt through, also the lower edge of door for about 8 in. from west side (see *Fig. 6*).

At 5.20 p.m. panels of door bulging outwards considerably. The joint between door and frame burnt through $\frac{3}{4}$ in. wide, extending some 6 in. above and below the lower bolt (see *Fig. 10*).

At 5.25 p.m. fire showed through upper west panel of door, also through the joints where the mortices occur in the middle rail (see *Fig. 11*).

At 5.27 p.m. flame came through the joints of lower panel on west side adjoining the centre style (see *Fig. 12*).

- At 5.30 p.m. flame coming through nearly all the joints.
 At 5.34 p.m. flame all over the upper panels of door.
 At 5.35 p.m. door fiercely alight on outside.
 At. 5.39 p.m. the door fell inwards and was consumed.

OBSERVATIONS AFTER TEST.

The door, upon collapsing, having fallen inwards into the testing chamber, was entirely destroyed.

The two bolts and two butts were found in the ashes.

The frame was also quite destroyed.

GENERAL ARRANGEMENTS.

The test was carried out in accordance with the procedure laid down by the Executive for investigations of this description, and conducted by a Sub-Committee, comprising :—

Mr. Ellis Marsland, District Surveyor, Camberwell
 (Directing Member).

Mr. Max Clarke, A.R.I.B.A.

Mr. F. Hammond, F.R.I.B.A., District Surveyor,
 East Hampstead.

Mr. Thomas Kissack, Resident Engineer at the Testing Station, assisted the Sub Committee.

Mr. T. E. Leslie Alldridge (Royal Mint) superintended the instrument room.

The attendance at the actual test was limited, according to procedure, as follows : -

The Council was represented by :

Mr. Arthur Cates, F.R.I.B.A., F.S.I., late Surveyor to the Crown, and Past Vice-President Royal Institute of British Architects.

Sir Martin Conway, M.A., F.S.A.

The Executive was represented by :

Mr. Edwin O. Sachs (Chairman).

The following members of the Executive were present to receive the visitors :

Mr. Charles E. Goad, M.Am.Soc.C.E.

Mr. Robert Mond, M.A., F.R.S.E.

The Commercial Section was represented by :

Mr. Fred R. Farrow, F.R.I.B.A.

The body of members was represented by :

Mr. William Grellier, F.R.I.B.A., District Surveyor,
Clapham.

Mr. George H. Harrison, J.P., C.E.

The following visitors attended by special invitation of the Executive :

Mr. J. B. Westcott (H.M. Office of Works).

Mr. F. Sizer Capon, for the Architect, London
County Council.

Mr. Joseph Randall (President of the Institute of
Builders).

Mr. W. Vogel Goad.

Representatives of the following Insurance Companies attended by special invitation of the Committee :—

The British Law Fire Insurance Company.

The Commercial Union Assurance Company.

The County Fire Office.

The Fine Art and General Insurance Company.

The Guardian Fire and Life Assurance Company.

The Hand-in-Hand Fire and Life Office.

The Law Fire Insurance Society.

The Liverpool and London and Globe Insurance
Company.

The National Assurance Company of Ireland.

The North British and Mercantile Insurance Com-
pany.

The Northern Assurance Company.
 The Phœnix Fire Office.
 The Royal Exchange Assurance Corporation.
 The Royal Insurance Company.
 The Sun Insurance Office (Fire).
 The Yorkshire Insurance Company.

Signed,

For the Sub-Committee conducting the Test :

ELLIS MARSLAND (*Directing Member*).

For the Commercial Section :

FREDERIC R. FARROW.

For the Executive :

EDWIN O. SACHS (*Chairman*).

Published by the Committee
 as directed by the Execu-
 tive.

GEORGE E. MONCKTON
 (*Secretary*).

Date—Sept. 22nd, 1899.

EXPERIMENTAL FIRE TESTS
CONDUCTED BY THE EXECUTIVE
OF THE
British Fire Prevention Committee.
[FOUNDED, 1897.—INCORPORATED, 1899.]

FIRE TESTS H. & I.—MAY 25TH, 1899.

(H.) A $1\frac{3}{8}$ -IN. FOUR-PANNELLED
PINE DOOR.

(I.) A $1\frac{7}{8}$ -IN. FOUR-PANNELLED
PINE DOOR.

OBJECT OF TEST.

To record the effect of a fierce fire of half-an-hour's duration, gradually increasing to $1,500^{\circ}$ Fahr.

Note.—Both doors were ordinary old doors obtainable in the open market.

The doors were to be hung in 4 in. by 3 in. rebated frames to open outwards.

The size of the $1\frac{3}{8}$ -in. door was 6 feet 6 in. by 2 feet 7 in. The size of the $1\frac{7}{8}$ -in. door was 6 feet 6 in. by 2 feet 4 in.

Note.—This test was carried out simultaneously with Tests C.D. (Publication 22), *i.e.*, two partition tests.

SUMMARY OF EFFECT.

The fire broke through the $1\frac{3}{8}$ -in. door in 19 minutes at a temperature of about $1,400^{\circ}$ Fahr., and the door was destroyed in 22 minutes.

The fire broke through the $1\frac{7}{8}$ -in. door in 20 minutes at a temperature of about $1,600^{\circ}$ Fahr., and the door collapsed in 26 minutes.

DESCRIPTION OF TESTING PLANT.

(See Figs. 1 to 4.)

The Testing Chamber used was located at the Committee's Testing Station, and was known as "No. 2 Hut."

The Chamber was constructed as shewn, of stock bricks, with lime mortar, and measured 10 ft. by 10 ft. internally.

The ceiling of the chamber was constructed of solid 9 in. by 12 in. used fir beams, laid close together and grouted with fire-clay. The ceiling was 7 ft. 6 in. above the pavement of the chamber.

The hut was covered in with a tarpaulin.

The door-opening on the south side measured 2 ft. by 6 ft. 6 in., and was left open during the test.

The fuel used was gas produced at the station, and the supply was regulated by valves and dampers.

The chamber was divided into two minor chambers by the partitions on which the doors under investigation were placed, and there was an intervening central passage, 2 ft. 4 in. wide.

The two minor chambers were known as the east and west chambers respectively and measured 10 ft. by 3 ft. 10 in., and the doors were known as the east and west doors.

The gas was admitted through two mixing chambers of fire-brick, each 10 ft. by 3 ft. as shown, one in each of the minor chambers just mentioned.

A Roberts-Austen pyrometer was used for recording temperatures, and observation records were taken at points Nos. 1, 2, 3. Point No. 1 was situated in the east chamber, point No. 3 in the west chamber, and point No. 2 in the passage.

There were two small observation holes in the south wall.

There were draught holes in the east, west, and south walls.

CONSTRUCTION OF THE DOORS.

(See *Figs. 5 and 6.*)

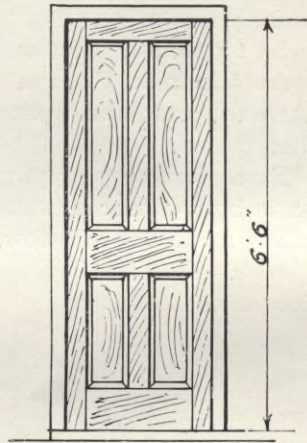
Plans and elevations of the doors are shown.

The $1\frac{3}{8}$ -in. door was a 6 ft. 6 in. by 2 ft. 7 in. square-framed, old, deal, painted, four-panel door, with rails and stiles $1\frac{3}{8}$ in. in thickness.

The $1\frac{7}{8}$ -in. door was a 6 ft. 6 in. by 2 ft. 4 in. square-framed, old, deal, painted door, with raised panels on one side, the rails and stiles being $1\frac{7}{8}$ in. in thickness.



THE $1\frac{3}{8}$ -IN. DOOR. *Fig. 5.*
PLAN AND ELEVATION.



THE $1\frac{7}{8}$ -IN. DOOR. *Fig. 6.*
PLAN AND ELEVATION.

The doors were hung a few days before the test.

PREPARATIONS FOR TEST.

On May 17th three salamanders were lighted and kept burning till the morning.

On May 25th the tarpaulin was removed in the morning and not replaced.

THE TEST.

On May 25th the Test was undertaken. The following is a log of the Test:—

At 3 p.m. the Meteorological observations, taken at the Botanical Gardens, Regent's Park, had read as follows:—State of weather, fine day; wind, N.N.W.; barometer, 29.96; attached thermometer, 56° Fahr.; wet bulb, 45.20° Fahr.; dry bulb, 52° Fahr.

At 6 p.m. the doors were intact.

At 6.12 p.m. the gas was lighted simultaneously in both the east and west chambers, and the doors were then closed.

From 6.12 to 7.12 p.m. the gas was gradually turned on in both chambers simultaneously and the temperature raised as described below.

Note.—Observations were taken through the open outer door of the chamber.

THE $1\frac{3}{8}$ IN. DOOR.
(*West Chamber.*)

In the west chamber the temperature rose as read on the observation record from pyrometer point No. 3, given in the form of a table below:—

TIME.				POINT No. 3.
6.17 p.m.	...	...	...	600° Fahr.
6.23 "	...	...	...	875° "
6.29 "	...	...	...	1,235° "
6.35 "	...	...	...	1,474° "

At 6.15 p.m. the paint on passage side of door blistered.

At 6.30 p.m. a considerable amount of smoke was issuing through lower panel of door.

At 6.31 p.m. fire broke out through lower panel of door.

At 6.34 p.m. fire broke out through upper part of door. Door collapsed soon after.

THE $1\frac{7}{8}$ IN. DOOR.

(*East Chamber.*)

In the east chamber the temperature rose as read from the observation record from point No. 1, given in the form of a table below:—

TIME.		POINT No. 1.
6.17 p.m.	...	625° Fahr.
6.23 „	...	1,080° „
6.29 „	...	1,400° „
6.35 „	...	1,660° „
6.41 „	...	1,725° „

At 6.23 p.m. a considerable amount of smoke was issuing through the rebate of door.

At 6.26 p.m. the first blaze came through rebate of this door on south side.

At 6.32 p.m. blaze of fire broke through rebate of door.

At 6.38 p.m. panels of door gone. Door gave soon after.

Note: During the tests the temperature rose in the passage as recorded on pyrometer point No. 2. At 6.35 p.m. 810° Fahr. were read.

OBSERVATIONS AFTER TEST.

No observations were made as the test conducted simultaneously continued till 7.12 p.m., when the doors having fallen inwards, nothing but wood ash and the door furniture was to be found.

GENERAL ARRANGEMENTS.

The test was carried out in accordance with the procedure laid down by the Executive for investigations of this description, and conducted by a Sub-Committee, comprising:—

Fred. R. Farrow, F.R.I.B.A. (Directing Member).
Mr. F. Hammond, F.R.I.B.A., District Surveyor,
East Hampstead.

Mr. Ellis Marsland, District Surveyor, Camberwell.

Mr. Thomas Kissack, the Resident Engineer at the Testing Station, assisted the Sub-Committee.

Mr. T. E. Leslie Alldridge (Royal Mint) superintended in the instrument room.

The attendance at the actual test was limited, according to procedure, as follows :—

The Council was represented by :

Mr. Arthur Cates, F.R.I.B.A., F.S.I., late Surveyor to the Crown, and Past Vice-President Royal Institute of British Architects.

Sir Martin Conway, M.A., F.S.A.

The Executive was represented by :

Mr. Edwin O. Sachs (Chairman).

The following members of the Executive were present to receive the visitors :

Mr. Charles E. Goad, M.Am.Soc.C.E.

Mr. Robert Mond, M.A., F.R.S.E.

The Commercial Section was represented by :

Mr. Fred R. Farrow, F.R.I.B.A.

The body of members was represented by :

Mr. William Grellier, F.R.I.B.A., District Surveyor, Clapham.

Mr. George H. Harrison, J.P., C.E.

The following visitors attended by special invitation of the Executive :

Mr. J. B. Westcott (H.M. Office of Works).

Mr. F. Sizer Capon, for the Architect, London County Council.

Mr. Joseph Randall (President of the Institute of Builders).

Mr. W. Vogel Goad.

Representatives of the following Insurance Companies attended by special invitation of the Committee :—

- The British Law Fire Insurance Company.
- The Commercial Union Assurance Company.
- The County Fire Office.
- The Fine Art and General Insurance Company.
- The Guardian Fire and Life Assurance Company.
- The Hand-in-Hand Fire and Life Office.
- The Law Fire Insurance Society.
- The Liverpool and London and Globe Insurance Company.
- The National Assurance Company of Ireland.
- The North British and Mercantile Insurance Company.
- The Northern Assurance Company.
- The Phoenix Fire Office.
- The Royal Exchange Assurance Corporation.
- The Royal Insurance Company.
- The Sun Insurance Office (Fire).
- The Yorkshire Insurance Company.

Signed,

For the Sub-Committee conducting the Test:

FREDERICK R. FARROW (*Directing Member*).

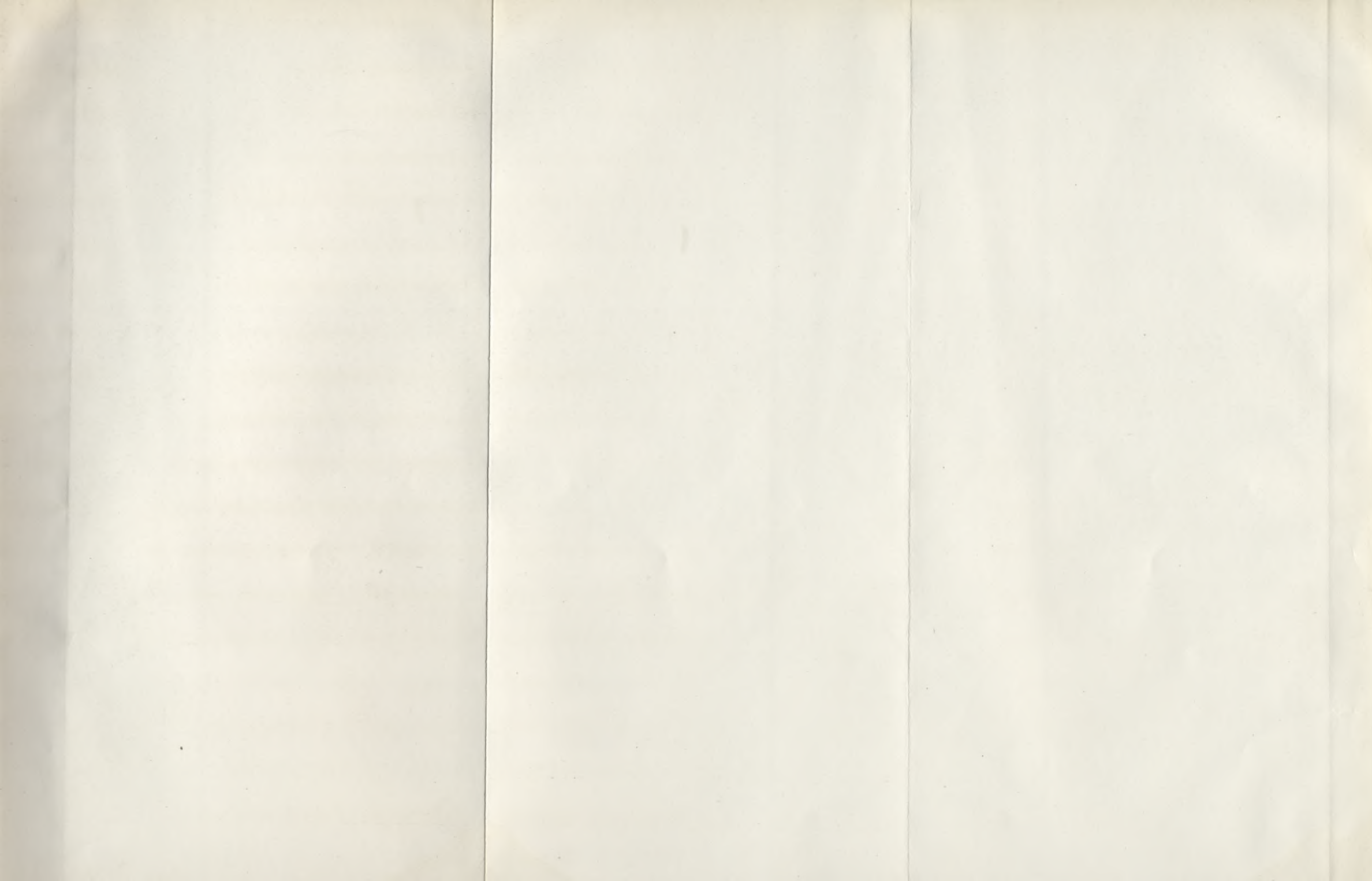
For the Executive:

EDWIN O. SACHS (*Chairman*).

Published by the Committee
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GEORGE E. MONCKTON
(*Secretary*).

Date—Sept. 22nd, 1899.



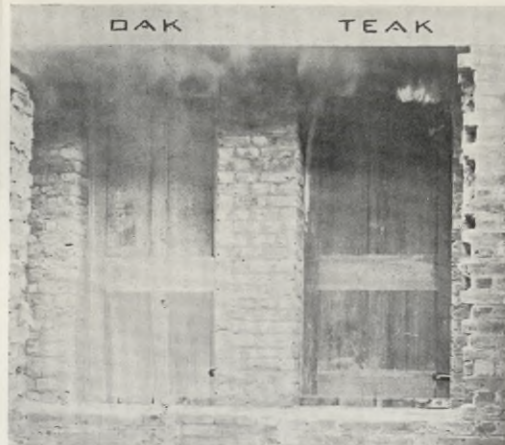


FIG. 1. TEMP 750° TIME 5.35 pm.

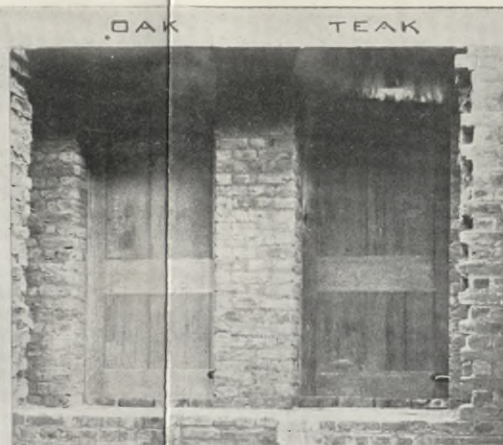


FIG. 2. TEMP 1250° TIME 5.40 pm.

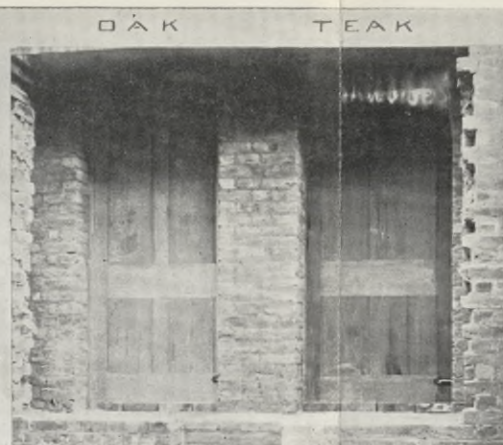


FIG. 3. TEMP 1490° TIME 5.45 pm

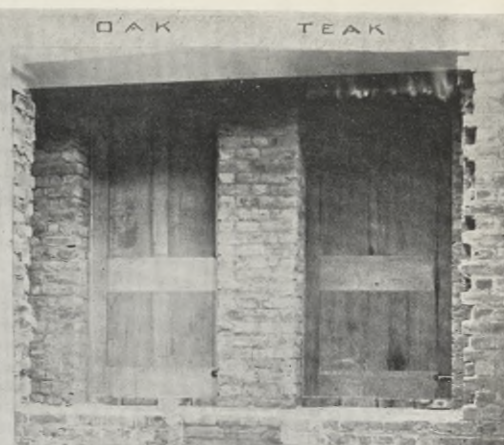


FIG. 4. TEMP 1500° TIME 5.50 pm.



FIG. 5. TEMP 1550° TIME 5.55 pm.



FIG. 6. TEMP 1625° TIME 6.0 pm.



FIG. 7. TEMP 1810° TIME 6.5 pm



FIG. 8. TEMP 1870° TIME 6.10 pm



FIG. 9. TEMP 1750° TIME 6.15 pm.



FIG. 10. TEMP 1780° TIME 6.20 pm.

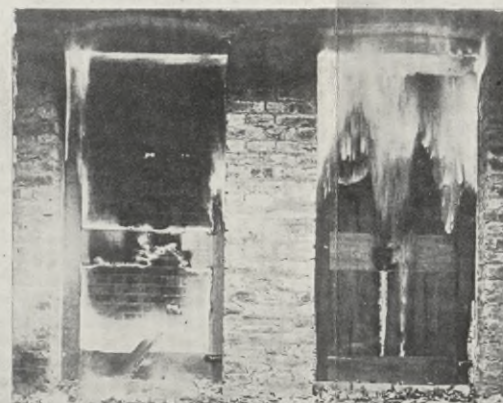


FIG. 11. TEMP 1700° TIME 6.25 pm



FIG. 12. TEMP 1415° TIME 6.28 pm

Figs. 1 to 12. VIEW OF DOORS DURING THE TEST (TAKEN FROM THE OUTSIDE).