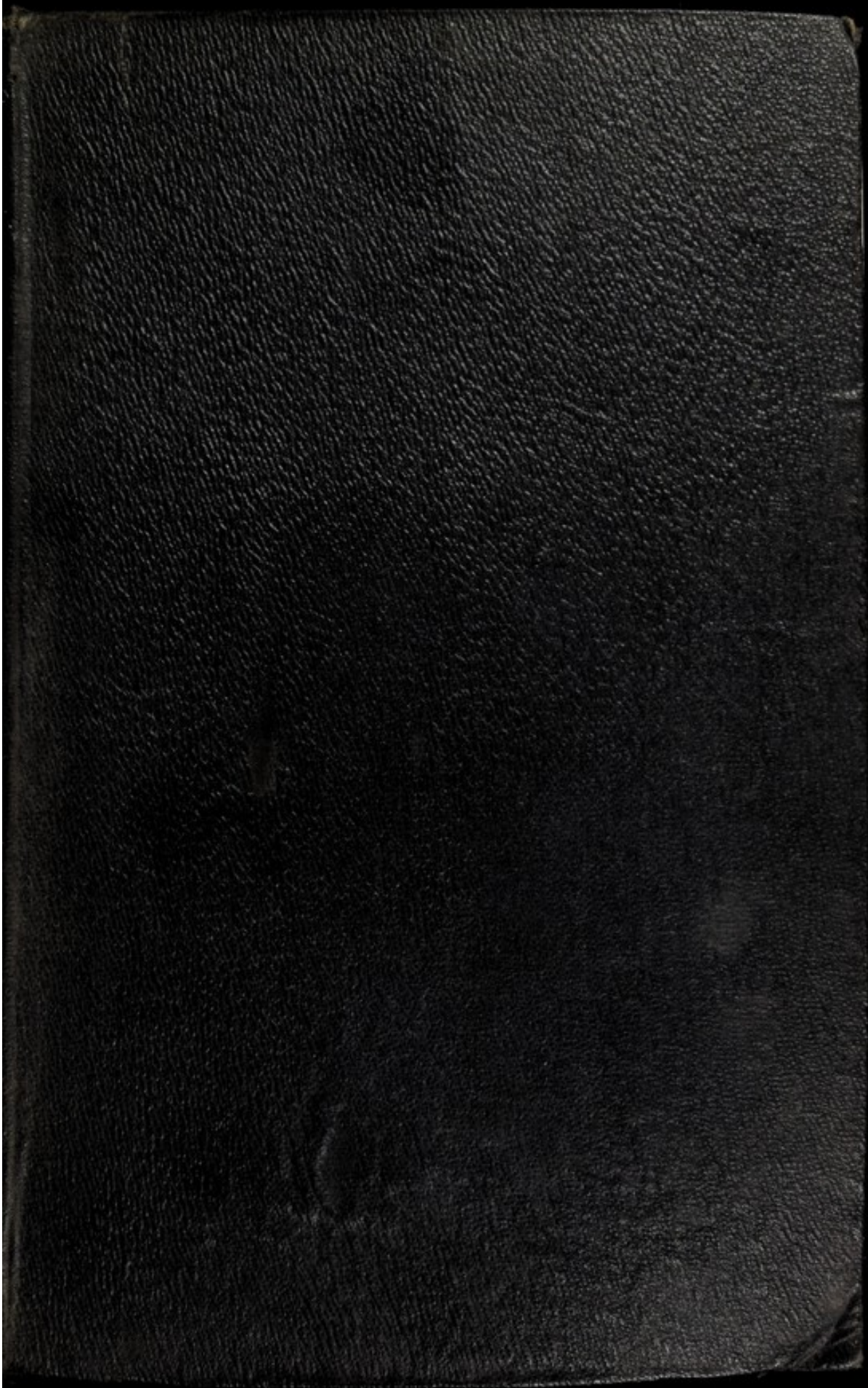
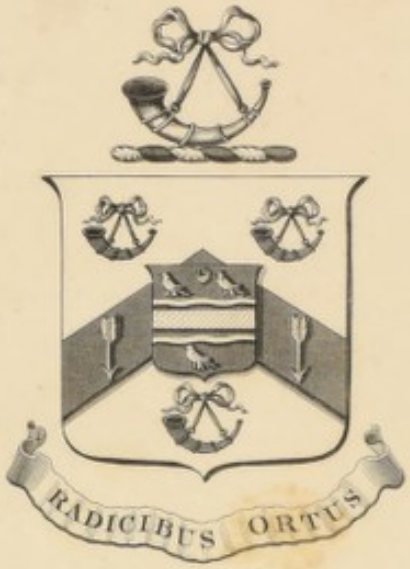
Report of the Surveyor-General of Prisons on the construction, ventilation, and details of Pentonville Prison, 1844 / [by J. Jebb].





William Roots

ERRATUM.

line 15, *for* "have led to a law being passed during the last
ion of the Chambers," *read* "have led to a law being pro-
d, and passed by the Chamber of Deputies during the last
ion," &c.

Wm Roots!

REPORT

OF THE

SURVEYOR-GENERAL OF PRISONS

ON THE

CONSTRUCTION, VENTILATION, AND DETAILS

OF

PENTONVILLE PRISON,

1844.

Presented to both Houses of Parliament by Command of Her Majesty.

LONDON:
PRINTED BY WILLIAM CLOWES AND SONS STAMFORD STREET,
For Her Majesty's Stationery Office.

1844.

LIST OF PLANS RELATING TO THE CONSTRUCTION AND DETAILS OF PENTONVILLE PRISON.

No.

1. Basement Plan.
2. Ground Plan.
3. First-floor and Chapel, &c.
4. Chapel.
5. Details of Chapel.
6. Section of Corridor and Plans explanatory of the System of Ventilation and Warming.
7. Detail of Regulators, &c.
8. Plan and Section of a Prison Cell, showing the position of the different fittings, &c.
9. Detail of Cell Doors.
10. Detail of Cell Windows.
11. Detail of Soil Pans, &c.
12. Detail of Gas lights, Water Cocks, Copper Basin, and Hammocks, &c.
13. Detail of Labels and Gong or Bell.
14. Detail of Water Troughs and Gallery.
15. Detail of Exercising Yards.
16. Detail of Baths.
17. Detail of Hoisting Machine and Carriage for distribution of Provisions and Materials, &c.
18. Detail of Pipes, &c., for distribution of Water.
19. Front Elevation of the Gateway and adjoining Houses.
20. General Elevation of the Wings and Entrance Building.
21. Perspective View of the Interior of a Corridor.
22. Isometrical View of the Prison.

REPORT.

To the Right Hon. Sir James R. G. Graham, Bart., Secretary of State for the Home Department.

SIR, 45, *Parliament-street, August* 8, 1844.

AGREEABLY to your directions, I beg leave herewith to submit detailed plans of Pentonville Prison, showing various improvements which have been effected during the construction of the building, and the different Fittings which have been adopted.

With reference to the special objects for which this prison was designed, viz., to be a model of Construction, and to be appropriated for carrying into effect the Separate System of discipline, it is satisfactory to me to submit the following extract from the Second Report of the Commissioners for the Government of the Prison, appointed by Her Majesty under the Act of the 5th Vict., cap. 29.

Pentonville Prison, March 10, 1844.

State of the Buildings.

"THE experience of the past year has justified the opinion which we have already expressed, that the construction and general disposition of the buildings are calculated to facilitate the administration of the discipline in all its branches.

"The cells and different fittings in them, the chapel, the exercising-yards, the means of supplying each prisoner with water, and of conveying the provisions for distribution, are all found to answer their desired ends.

"The perfect ventilation of the cells, and the means of maintaining an equable temperature, independent of sudden changes in the external atmosphere, has been most successfully accomplished. The system is found to be altogether so effective in its operation, and is maintained in constant action at so trifling an expense, that we cannot too strongly recommend its general adoption.

"During the past year the prison has been completed in many essentials, which could not be satisfactorily determined until after its occupation. The cells have been fitted up for carrying on various trades, such as carpenters, joiners, implement-makers, turners, weavers, rug and mat-makers, shoemakers, tailors, and basket-makers. The necessary machinery or fittings have been placed in the cells, which have been found to be in all respects conveniently adapted for workshops.

"A range of unoccupied cells in the basement has been fitted up for the employment of tinmen, blacksmiths, and nail-makers. The store-rooms have been extended, and a bakehouse and oven added to the kitchen department. A second pump and crank machinery for 16 prisoners, in separate compartments, have also been fixed, which afford increased means of giving hard labour in those cases in which it is considered desirable, either for health or punishment."

In the preparation of the original plans for the Model Prison, I was officially associated with Mr. Crawford and Mr. Whitworth Russell, whose experience in discipline, and in the arrangements most convenient for its administration, enabled them to afford me much valuable assistance.

The general principles of prison construction had been previously considered by them, and were detailed in their Second Report, published in 1837, which contained a set of plans of prisons of various sizes on the same uniform principle of construction which has since been adhered to, and is the basis on which all subsequent improvements rest. The same subject was entered upon at some length in the joint Reports of those gentlemen and myself, which were presented to Parliament in 1838 and 1839,* but it is to their unwearied zeal, and the ability with which they have exposed the defects of existing systems of discipline and construction that may be traced the present impetus for improving both the one and the other.†

The information on prison construction contained in those Reports has been extensively useful in promoting improvements and uniformity, and in lessening the expense of erecting gaols. As the circulation of the Reports has, however, been much more limited than is desirable, it may be of advantage, previous to entering upon an explanation of the details of Pentonville Prison, again briefly to advert to certain General Principles and other points which have been laid down as being of importance, and which will, in each case, require the consideration of local authorities, and of others concerned in improving or erecting a prison.

The Site.

It is desirable that the Site of a prison should be dry and airy, and removed beyond the influence of noxious exhalations, or prevalent fogs. It should be generally level on the surface, but there should exist the means of a perfect drainage. It

* Reports on Prison Construction appended to the Third and Fourth Reports of the Inspectors of Prisons for the Home District.

† See Second and Third Reports.

should not be surrounded with buildings, nor be overlooked by higher ground in the immediate neighbourhood, and there should be space sufficient for future extension of the accommodation.

If a site can be obtained within a limited distance of the Courts of Justice, it will be convenient; but this advantage must not be overrated, nor deemed of so much importance as the other essentials which have been adverted to.

It frequently happens, especially in large towns, that an adequate site cannot be obtained near at hand; in such case it is preferable that a prison should be one or two miles from the Court, than that it should be open to objections affecting Health or Discipline.

The shape of the site, and the means afforded for laying out the buildings in a convenient form, and so that the cell windows may be exposed to the sun, will also claim attention.

General Arrangements.

In the general arrangement of a prison it is an object to keep all the Departments quite distinct from each other. That portion of the prison occupied by prisoners, or devoted to their use, or to discipline of any kind, should be as little interfered with, and be kept as quiet as possible.

The Offices or other accommodation for the Governor, Chaplain, and Medical officer, and for the Steward and the various stores in his charge, should be so situated as to afford the utmost facility for carrying on the daily routine. In like manner, the ward for the Reception of prisoners,—and the visits of their friends,—the Punishment cells, the Baths, the Kitchen, &c., should be divided from each other; so that the servants or labourers not employed in the discipline of the prison, or persons bringing materials or provisions, may not interfere with the more important duties of the warders, nor be brought into contact with Prisoners when moving from one part of the prison to another.

One of the most important points for consideration, however, is the General Principle of Construction, which should be adopted so as to secure the utmost facility for the administration of discipline, and the means of effectually superintending and controlling it on the part of the Governor.

If the generality of the prisons in this Country were inspected by a person conversant with the objects to be attained, they would be found very defective in these essentials. Some are

built on a radiating principle, and others round four sides of a square, or in detached unconnected blocks. In some the cells are placed back to back, and are open to the external air; in others, the cells are arranged on each side of a narrow passage, or the passage is divided by a wall, there being cells only on one side of it.

In those prisons in which the detached buildings containing the cells are disposed on a radiating principle round the Governor's house, which occupies the central point, there is a great apparent facility for inspection; but when its extent is ascertained, it is found to be confined to the exercising yards lying between the buildings. The greatest possible neglect, disorder, and irregularity, either on the part of the Officers, or Prisoners, may be going on within the narrow passages, day-rooms, and cells, without any one being cognizant of it, unless additional superintendence were maintained in each distinct portion of the prison.

Principle of Construction.

It will be apparent, on referring to the plans and sections, or by the inspection of any building erected on the principle shown in them, that a Central Hall, open from floor to roof, with spacious Corridors of a similar construction radiating out of it, having ranges of cells placed on each side, affords peculiar facilities for obviating these objections.

It will be observed that the Wings or Divisions containing the Cells being connected with the centre, the whole interior of the prison and the door of every cell are seen from one central point. The stairs of communication being also placed in the corridor, and made of light iron-work, do not impede a clear view being obtained from the hall to the extremity of each wing, or from one end of a corridor to the other; and every movement within the prison, whether of an officer or a prisoner, is therefore under constant observation and control.

Although there is an example of this principle of construction at Rome,* the credit of developing it upon a large scale is justly due to Mr. Haviland, the architect, who designed and erected the Eastern Penitentiary at Philadelphia, which is minutely described by Mr. Crawford in his Report

* A description of the House of Correction at Rome is given in the instructions issued by Monsieur Duchatel, Minister of the Interior of France, in 1841, an extract from which appears in Appendix No. 6.

on the Penitentiaries of the United States, presented to Parliament in 1834.

The same principle, with some modifications, is carried out at Pentonville Prison; but the whole of the Details are different from those of any prison previously erected, and have been considered and determined upon, with reference to the special objects to be attained in this country, and in order to simplify, improve, and economise the construction of prisons.

With reference to the general arrangements of the different Departments of the prison, it must be borne in mind that, as Pentonville Prison is appropriated exclusively for the reception of Male adult convicts, it is not arranged with that distinction of Classes which it is necessary to observe in county or borough gaols or houses of correction, designed to accommodate and classify Males, Females, Juveniles, and in some cases Debtors. Still, however, the provision made for the general service of the prison, and for one particular class of prisoners, may, without difficulty, be extended, and the same principle of construction rendered available, when it becomes necessary to make a subdivision for different classes.

It will be observed that the Wings of the prison on and above the ground floor are almost exclusively appropriated for prisoners, and that the Basement under those wings, so far as they extend, are appropriated to the General service of the prison:—that the Entrance building contains, in the basement, a Ward for the Reception of prisoners—on the ground floor, apartments for the Deputy-governor, Offices for the Commissioners, the Governor, Chaplain, and Medical officer; waiting and visiting rooms, &c.; and that the upper part of the building is appropriated as a Chapel, and the remainder as Convalescent rooms.

Boundary-Wall.

With a view to security, the Boundary-wall of a prison should be from 18 to 20 feet high above the ground line; but, provided this point is attained, and that it is not necessary on other accounts to raise it, so as to prevent the interior being overlooked, or to protect the prison from violent winds, it cannot be too low with reference to the buildings or yards.

The coping at the top should be smooth, and of a semi-circular form; or it may be finished in open brickwork. This latter mode will be found useful in all cases where it may be necessary to raise the wall above the height required for security,

as it will prevent the interior being overlooked without materially interfering with the circulation of the air.

If buttresses are required, they should be placed on the outside, and should be made not less than three feet wide, in order that they may not afford facilities for escape. With the same view, there should be no projections of the coping, and the face of the wall should be perfectly smooth on both sides.

In soft or light ground, the foundations should be of such a depth as to prevent their being undermined in a single night; and in order that the wall may not be broken through, either from within or without, it is a proper precaution to lay one or two layers of hoop-iron in every other course of bricks, or every six inches in soft stone, to the height of six or seven feet above the ground.

Excepting in cases of necessity, the Boundary-wall should not be erected on the extreme limits of the site, but there should be preserved a space, varying with circumstances, for a private foot-path or road all round the contour; as one object of preserving a vacant space is with a view to prevent the erection of buildings so near as to be detrimental to the security and discipline of the prison, it would be desirable, if possible, that it should be from 20 to 30 feet.

As a measure of security, there should only be one Gateway or opening through the boundary-wall. The Door, or Gate, should be strong and well secured on the inside, and loop-holes should be placed at the sides so as to afford the means of resistance in case an attempt should ever be made to force it. With a view to security, arrangements should also be made for a second and even a third Barrier of doors or gates before access is gained to the interior of the prison.

In all prisons the Governor must reside on the premises; and it will be found a great convenience if suitable residences or apartments are provided for all the Officers whose duties require their constant attendance at the prison; those designed for families should, for obvious reasons, have their entrance doors on the outside of the boundary. The houses for the Governor and Chaplain may conveniently be placed on each side the gateway, and others for the subordinate officers in the contour of the boundary-wall, as shown on the Plans, or in any convenient place in the immediate neighbourhood.

Having thus given an outline of the General Principles of Construction, I will briefly notice the steps which were taken preparatory to the erection of a Model Prison, and then proceed to describe the different Details.

Model Prison.

The necessity of erecting a Model Prison at the public expense, as a preliminary step to any general improvement in construction, and for the purpose of practically working out the separate system of discipline, was first urged by Mr. Crawford and Mr. Whitworth Russell upon Lord John Russell, then Secretary of State for the Home Department; and the measure, on subsequent discussion, having met with his approbation, I received his Lordship's authority to select a Site, and at his request undertook to direct and superintend the Works. The sanction of Parliament having been obtained, a contract was entered into by the Commissioners of Her Majesty's Woods and Forests for the erection of the buildings, on a schedule of prices the chief items of which will be found in Appendix No. 2.

The first stone was laid by the Marquis of Normanby, then Secretary of State for the Home Department, on the 10th April, 1840, and the works were completed in the autumn of 1842. An Act to constitute the building a Prison under the name of "The Pentonville Prison" was passed in June 1842;* and you, Sir, were pleased to communicate to the Commissioners appointed under the Act, your decision that it should be appropriated for the reception of Male Convicts between the ages of 18 and 35. The prison was first occupied on the 21st December following.†

In the preparation of the plans it became necessary attentively to consider the particular objects for which the prison was designed, and to make suitable provision for them. It has already been stated that one object was to carry into effect the Separate System of discipline. This System of discipline originated in England, and was the subject of Legislative enactment so long ago as the year 1778. The circumstances which led to it, and other interesting particulars concerning the improvement of Prisons and Discipline, are detailed in the Third Report of the Inspectors for the Home District, an extract from which appears in Appendix No. 5.

By the Act adverted to (19 Geo. III. c. 74) the size of Cells proper for the enforcement of *Separate Confinement* was

* 5 Vict. cap. 29.

† The system of government established for the prison, and the objects contemplated in appropriating it for the reception of convicts under sentence of transportation, are fully detailed in the First Report of the Commissioners, an extract from which appears in the Appendix.

determined; it was enjoined "that offenders should be lodged in separate rooms or cells not exceeding 12 feet in length, 8 feet in breadth, and 11 feet in height, nor less than 10 feet in length, 7 feet in breadth, and 9 feet in height."

The advantages of this System having again been brought under the notice of the Government by the Inspectors of Prisons for the Home District, a permissive clause to render it legal was inserted in the 2nd and 3rd Vict., c. 56; and with reference to Construction it was provided as follows—"that no Cell shall be used for the separate confinement of prisoners which is not of such a size, and lighted, warmed, and ventilated in such a manner, as may be required by a due regard to health, and furnished with the means of enabling a prisoner to communicate at any time with an officer of the prison."

It was likewise provided that no cell should be used for such confinement until its fitness should have been certified to the Secretary of State by an Inspector of Prisons; that a prisoner should have the means of taking Air and Exercise when required; that he should be furnished with the means of Moral and Religious instruction, with books, and also with Labour or Employment.

It was also enacted, that in case any prison "shall be inadequate for the individual separation of all the prisoners who may be confined therein at one time, the Rules of the Prison shall specify the class or description of prisoners who shall be confined in the separate cells, having regard either to the nature of the crime with which the prisoner may be charged, or of which he or she may have been convicted, or to the sex or age of the prisoner, or to the term of imprisonment, or to such other circumstances as the persons authorized to make such rules shall think fit, and as the Secretary of State shall approve."

After much consideration, it was determined to adopt the standard of 13 feet in length by 7 feet in breadth, and 9 feet in height, which dimensions, as before stated, have been found convenient for all purposes.

It also appeared essential that the construction of the cells should prevent all communication between one prisoner and another, or at least render it so difficult that there should exist no temptation to make the trial: further, that they should be fitted up with the means for Washing, and with other Conveniences, so as to render it unnecessary for a prisoner to quit his cell, excepting for attending Chapel and for Exercise; and that,

in compliance with the provisions of the Act, they should be Ventilated, Warmed, and Lighted with gas. In order that the Separate System should be fully carried out in all its details, it was also necessary that suitable provision should be made for the separation of prisoners at Chapel, and Exercise, and for their working separately when engaged in pumping water, &c.

Description of the Plans, and Details.

Plan No. 1.—*Basement.*

The Basement, in some parts of the prison, is on a level with the ground-line; in others, it is sunk about 3 feet, and surrounded with an area of the same width. Over the whole surface of the walls there is laid a course of slate in cement 6 inches above the ground-line, so that no moisture can arise into them by capillary attraction; and as the entire building stands on solid concrete 3 feet deep and 3 feet wide, it is extremely dry. The advantage of keeping the different Departments of a prison separate from each other has already been adverted to, and is exemplified in the appropriation of the Basement. Under the Entrance Building is placed a Ward for the reception of prisoners, where they are required to remain until they have been examined by the medical officer, and reported fit to be received into the prison. The access to this Ward is from the ground floor, close to the entrance-door, and the accommodation consists of a Receiving-room, a proportion of Cells, in which prisoners can be locked up, for 24 hours if necessary, an Examining-room, Clothing stores, bath, and a closet for Fumigating and purifying clothes. This ward has no connexion with the remainder of the basement; but prisoners, after being examined, cleansed, and dressed, are taken into the prison through the entrance-passage on the ground-floor.

As Reception-Cells are only designed for the temporary detention of a prisoner until he can be conveniently examined by the medical officer, it is not necessary that they should be larger than about 9 feet long by 6 feet wide, and 8 feet high; but it is desirable that they should be well ventilated, and that there should be the means of warming them when necessary.*

The Basement under the Central Hall forms a convenient

* The Apparatus for warming the chapel is placed in a portion of the reception-ward, but there was no other object in the arrangement than that of there being a convenient space for it.

area for the distribution of materials and other temporary purposes, and affords the means of access to any part of the prison. It is surrounded by a covered passage, which opens into the Yards, Kitchen, Stores, &c. The Steward's office is situated close to the entrance door, where all Provisions, Stores, and Materials are delivered for the use of the prison, and from whence articles manufactured in the prison are taken away. The principal store-rooms are contiguous to the office, and it is proper that all servants or other persons not having business connected with the discipline should enter and leave the prison by this door.

The cooking department consists of a Kitchen fitted with a steam apparatus, and the requisite stores for Meat, Bread, Flour, Potatoes, &c., are contiguous.

Adjoining the Kitchen is a room in which the provisions are weighed out, and arranged in Trays, in readiness to be placed in the Hoisting apparatus, and sent up to the ground-floor and the different Wards for distribution.

The remaining part of the basement, adjoining the central space, is appropriated as a mess-room for the subordinate officers of the establishment and other purposes, and a portion beyond the kitchen is divided into Workshops; the situation of the Punishment Cells will also be observed.

Plate II.—*Ground Plan.*

An inspection of this Plate, with the foregoing explanation, will be sufficient to show the Principle of Construction, the appropriation of the different parts of the buildings, the situation and arrangements of the Exercising Yards, the Entrance-gate or Front Barrier; the Second Barrier within the entrance-court, consisting of the two side-gates and the front door of the prison; and the Third Barrier, which consists of the door opening into the central hall on the ground-floor, and the two doors which appear on the basement plan, leading to the kitchen and stores.

The Well for supplying the prison with water is situated between two of the wings, and is worked by Crank machinery running through a series of small compartments, each for occupation by a single prisoner.

The houses designed for the Governor and Chaplain, the Gate-porters, and other subordinate officers, are conveniently situated for their respective objects, and the boundary-wall

encloses a sufficient space to render the whole interior dry and airy.*

The aspect of a prison being held by medical authorities to be a matter of considerable importance to the health of the inmates, the wings containing the cells have been so disposed as to avoid a direct northern exposure, and to secure as much sun as possible on every face of the building.

Plates III., IV., *and* V.

The Chapel, as before explained, occupies a portion of the upper part of the entrance building, and the means of access to it are provided from the level of the first and second galleries in the central hall. This arrangement will be observed in Plate IV. In order that the integrity of the system of separate confinement might not be compromised by the stated assembly of prisoners for divine worship or secular instruction, it became necessary to devise the means by which every prisoner should be effectually separated from his fellow, whilst, at the same time, he should see and be seen by the chaplain, and also be exposed to the inspection and control of the prison officers. These conditions have been accomplished by disposing the rows of seats as they appear on the plan and section, Plate IV., using the situation of the pulpit as a centre for striking the curves, and making the sides and fronts of the separate Stalls to radiate to the same point. The construction of the Gallery and Stalls is explained in Plate V., figs. 1 and 2.

Each prisoner, as he enters, closes the door after him, and when the row is filled the officer fastens the whole of the doors in the row by a Handle and Crank, which will be easily understood by referring to the detail given in the same Plate.

It is of course a great object to facilitate as much as possible the entry of prisoners to the chapel and their departure from it, otherwise much time would be taken up in filling the seats and sending the prisoners back to their cells.

With this view, there are four points of entry, formed by two doors on each gallery in the Central Hall. A moveable partition or sliding door is drawn across the gallery between the doors, and prisoners approach in opposite directions from the various parts of the prison, and, turning into the Chapel, gain a convenient level by ascending a few steps, and are

* The area included within the boundary wall is 6 acres and 10 perches, and there is a terrace and road 75 feet broad, in front of the prison, and spaces respectively of 30 and 20 feet on the two sides, with a garden of two acres in the rear.

directed by an officer into their places. By this arrangement there is no difficulty in filling the chapel in about seven minutes.

In order to preserve regularity in the retirement of the prisoners from their Stalls, each row of seats is marked by a letter, which is printed on the front board, where the prisoner places his books, and each seat is numbered. A signal indicating a Letter is made by an officer placed in front; the prisoners in the corresponding rows prepare to move off, and they do so, on the Number corresponding with the seat they occupy being exhibited.

It was anticipated there might be a difficulty in removing a prisoner from the extremity of any row in case of illness, but this is found not to be the case. Whenever it is necessary to do so, the prisoners in the adjacent Stalls are placed in others reserved for the purpose, and he who requires it is removed to his cell.

There are practical limits to the number of rows of seats placed in a Chapel, arising from the necessity of each row being placed on a higher level than the one in front of it, and the difference in the levels increasing in a certain ratio as they rise upwards.

The floor of the upper row should be below the eye of the chaplain, which is another limit on the number of rows. It is also desirable, in order to preserve facilities for the removal of a prisoner in case of illness, that there should not be more than 12 Stalls in each line.

In chapels designed for limited numbers, and where economy of space is not an object, it might be a more convenient arrangement to have the sides of the stalls fixed, and to enter them by a door from the rear; but this would involve an increase of expense, and a separate passage would be required for each row. Such a construction is not, therefore, applicable for large prisons.

Ventilation of the Chapel.

It is of great importance, with a view to the ventilation, that the fresh air should be introduced at a low level into each Stall; for which purpose the space under the gallery should be converted into an airchamber, and perforations should be made in the risers under the seats.

The extraction of foul air from the Chapel, on which the amount of Ventilation will depend, should be effected from the

ceiling, or over the cornice, and the apertures should be connected with a clock-tower or vertical shaft; or provision may be made for bringing them within the influence of the ventilating arrangements of the remainder of the prison.

At Pentonville Prison the foul air passes into the roof of the chapel, and thence through the clock-tower: the ventilation is found effective, owing to the difference of temperature and altitude, without any further means being used for forcing it.

Convalescent Rooms.

The Cells occupied by prisoners being spacious and thoroughly ventilated, all ordinary cases of sickness are conveniently treated without the removal of a prisoner from his cell. This course has been pursued by the medical officer at Pentonville for upwards of 18 months, and in only three or four cases has it been found preferable to occupy the Convalescent or Infirmary rooms, which have been provided under the same roof as the chapel. In all prisons a limited extent of infirmary accommodation is desirable, in order to provide for cases requiring the constant attendance of a nurse, or where infectious or malignant fever appears; but, generally speaking, the cell will be found convenient and proper on all ordinary occasions.

Plate VI.—*Ventilation of the Cells.*

The Ventilation of a cell cannot fail to have a direct influence on the health of a prisoner, and it is therefore one of the most important objects connected with the construction of prisons. As there is no difficulty, and but little expense, in effecting it, on a principle which ensures a uniform action, the necessary arrangements are adopted in all new prisons, and the same principle has been successfully applied in many of those which are already built. The means of Warming the cells when necessary is another point which claims attention, and is inseparably connected with Ventilation.

The necessity of resorting to an artificial system for a regular supply of fresh air at all times and seasons will be apparent when it is considered that, in order to prevent communication between prisoners in adjoining cells, it is necessary that the windows should be fixtures, and the doors generally closed.

The main objects to be attained may be thus stated:—

1st. The withdrawal of a stated quantity of Foul air from each cell.

2nd. The supply of an equal quantity of Fresh air into each cell without subjecting the occupier to the prejudicial effect of a draught.

3rd. The means of warming the fresh air when necessary, without injuring its qualities or affecting its hygrometrical condition.

4th. That no additional facilities for the transmission of sound should be afforded by the air-channels or flues.

When the subject of prison construction was under consideration, in the year 1837, it became necessary to determine the details by which these conditions could be accomplished, and Messrs. Haden, engineers, of Trowbridge, Wilts, who were about that time engaged in warming and ventilating a wing of the county gaol at Shrewsbury, were consulted on the subject.

The principle to be applied and the foregoing conditions being prescribed, their practical acquaintance with the subject enabled them to render valuable assistance in the arrangement of the necessary flues and other details described in the notice on prison construction in the Third Report, and in the original plans of the Model Prison, appended to the Fourth Report of the Inspectors for the Home District.

The principle therein laid down has been generally adhered to, and carried out, in the completion of Pentonville Prison. Some important improvements, however, suggested themselves during the execution of the works; among which that of placing the Main Foul-air flues in the Roof instead of in the Basement has had a very beneficial effect in the working of the system.*

The general disposition of the Flues and Apparatus for effecting the several objects proposed will be best understood by referring to Plates I. and VI.

It will be observed that an Apparatus for warming the air, when required, is placed in the centre of the basement story of each wing. This apparatus consists of a case or boiler, to which a proportion of pipes, adapted for the circulation of hot water, are attached. In connexion with it there is a large flue open to the external atmosphere—Plate VI., fig. 1.

The Fresh air introduced through this opening, after passing

* The fire for forcing the Ventilation during the Summer may be placed at the bottom of the Shaft, or in the upper range of Cells, or, if more convenient, in the Basement. The fire in the Shaft will consume the least Fuel, but will entail more trouble than if it were in the Basement.

over the surface of the boiler, turns right and left along a main flue, C D, which runs horizontally under the floor of the corridor, and from thence passes upwards through small flues, A, B, C, preserved in the corridor wall, which terminate respectively in a grating placed close under the arched ceiling of each cell on the three stories (see figs. 2, 3, and 7, Plate VI.)

A current of air may thus be introduced from the exterior into each cell; and it is obvious that it may be warmed or left at its natural temperature, as circumstances require.

This channel for the introduction of Fresh air would, however, be of little avail in furnishing the supply required, unless corresponding arrangements were made for extracting the Foul air from the cells, which, under ordinary circumstances, is the first movement that will take place. The disposition of the flues and shaft for this purpose will be noticed in the same plates.

A grating is placed close to the floor of each cell, on the side next the outer wall, and diagonally opposite to the point where the fresh air is introduced (see D, E, F, figs. 1 and 6). This grating covers a flue in the outer wall, opening at its upper extremity into a horizontal foul air flue in the roof, which communicates with a vertical shaft raised 20 or 25 feet above the ridge.

It will thus be seen that a communication is established first from the outer air through the Warming apparatus to the top of each cell, and thence from the floor of each cell upwards through the Extracting flues and Ventilating shaft into the outer air again. By this arrangement the total lengths of each pair of flues respectively made use of for extracting foul air from the cells, and introducing fresh air into them, are rendered nearly equal on all the stories,—thus promoting uniformity of action.

Objections may be urged against the principle of making the point of entry of the fresh air at the top of the cells, and extracting the foul air from a lower level, and, as an abstract matter of science, it may possibly be a question whether this order should not have been reversed.

When, however, it is considered that the cells contain 800 cubic feet of space, and are occupied by only one individual—that a ventilation of upwards of 30 cubic feet per minute has been secured, at a cost during the winter months of less than a farthing per cell, and during the summer at half that expense—and that a perfect diffusion of air takes place within the cell—it will be apparent that there is no object in sacrificing other

important and practical considerations to any refined reasoning on that point.

It will be seen also that, the *ascending* principle of ventilation of the entire system is preserved, and that the extraction of foul air from the cells is partly to be referred to the superior altitude of the Extracting flues and Shaft, which are in and above the roof. If the foul air were required to pass *downwards below the floor* of the cells, into flues situated in the basement, a power must be maintained in constant operation to overcome the tendency of air at a higher temperature to remain at a higher level. The ventilation in such a case would be entirely *forced*; whereas by the arrangements which have been described it only requires to be *assisted*. From the diffusion which takes place, the difference of temperature at the ceiling or floor of a cell can scarcely be detected, and will seldom exceed one degree; and it may be inferred that the difference of power required for extracting the air at one or other of those levels would be inappreciable. But even if it led to an increased expense in the consumption of fuel, it would be an object to secure the advantage of introducing the air at a point not easily accessible to the prisoner, and from which he would not be likely to experience any inconvenience.

Among other reasons, it may be stated that the effect of introducing the air at a low level would be, that when the fires were not lighted, the prisoner would be sensible of the draught of cold air, and would devise some means of stopping up the grating; and during the cold weather, when the air would be warmed, he would probably sit or lie down close to it, and be enervated by its effects.

Having thus given a brief and familiar explanation of the principle applied, and the disposition of the flues for ventilation, the application of the motive power—by which the regular abstraction of the foul air from the cells and a supply of fresh air in its place is ensured—will be easily understood.

The Main flues in the roof intended for the extraction of foul air from the cells, are connected with the Vertical shaft which appears in the section fig. 1. During the summer months a small fire is maintained at the bottom of this shaft, which raises the temperature of the column of air within it above that of the external atmosphere, or the general temperature of the cells, and thereby causes it to be specifically lighter.

In this state it naturally rises, and the partial vacuum thus formed is filled from the adjoining foul air flues. These main

flues derive their supply directly from the cells, and the cells receive through the proper channels a corresponding supply of fresh air to replace the foul air which has been abstracted by the vertical shaft.

The quantity of foul air withdrawn from the cells will mainly depend upon the degree of temperature maintained in the Ventilating shaft. Under ordinary circumstances, however, if an average difference of from 5° to 10° above the external temperature be maintained, it will be found sufficient to produce the desired effect. The consumption of fuel for this purpose at Pentonville Prison has been about one hundred weight per diem for one wing, containing 130 cells, it having been the practice to light the fire, of which there is one on each side of the corridor, on alternate days. The cost of effecting the summer ventilation of one wing, at the present price of fuel, has been about fifteen pence per diem, or about one-eighth of a penny for each cell.

During the winter months, when the fires are lighted in the Apparatus below, the smoke and disposable heat being thrown into the ventilating shaft above the upper cells, is found sufficient to secure an effective ventilation, and no further trouble or expense is necessary.

The principle on which the ventilation is effected is similar to that in operation in Mines, the ventilating chimney being substituted for the upcast shaft. There are, however, greater facilities for maintaining a current of air through any given channels above ground than can possibly exist in the extended and complicated galleries of a coal-field, situated many hundred feet below the surface.

In the foregoing explanation it has been assumed that the atmosphere, both within and without the Prison, is stagnant, and no allowance has been made for the advantage derived from the pressure of the air at the point where it enters the flues, which even in a moderate breeze has a very favourable influence in producing a more active circulation. These combined causes, though they cannot, of course, always be depended on for producing Ventilation, will greatly assist it, and the action of a very moderate fire will, under any circumstances, ensure it.

Warming.

In all cases in which it may be necessary to warm the fresh air required to be supplied to an inhabited room or cell, it is

essential to health that the increased temperature should be derived from a moderately heated surface ; hence the advantage of using water as a medium of heating. In a hot water apparatus of ordinary construction, the temperature of the surfaces, when exposed to a current of air, will never reach the boiling point ; and it is obvious that they may be regulated in any lower degree that is likely to be practically useful.

An Apparatus of this kind is, therefore, to be preferred to any description of Stove in general use in this country, though for certain purposes the latter may be made available, and the difference of expense occasionally makes it an object to use them. They cannot, however, be recommended for cells designed for separate confinement for long periods.

The conditions prescribed for a warming apparatus for Pentonville Prison were as follows :—

1st. That the entire Radiating surface should derive its temperature from the Circulation of hot water, and that it should be of such an area as would maintain a temperature of 60° in the cells when the external atmosphere was at 32° ; further that under ordinary circumstances the temperature of the Heating surface should not range above 100° to 120° of Fahrenheit.

2nd. That there should be provision made for increasing the area of the Radiating surface in the Main flues in proportion as its temperature might be lowered by an increased distance from the boiler, in order to preserve an equality of temperature in those cells farthest from the central point.

3rd. The means of reducing the quantity of radiating surfaces in the main flues to meet the effects of any rise in the temperature of the external atmosphere.

4th. That it should be simple in its construction and in all the arrangements connected with it, and the ventilation, so that no difficulty would be experienced in its management, if a Labourer or any ordinary Servant of the prison were appointed to take charge of it.

An Apparatus was designed by Messrs. Haden to meet these requirements, and having been found on trial to answer the purpose, the remainder of the prison was provided with others of similar construction.

The general form and disposition of the Apparatus may be seen in the Plan and Section Plate VI. It may be briefly described as a double iron case, of a size suited to circumstances. The space between the two cases is filled with water

and becomes the boiler; the fire is lighted in the interior, but is not brought in contact with the sides or top.

From the top of this boiler a rising main communicates in the usual way with any number of pipes that may be required, and the return pipes are introduced at the bottom.

The external case of the boiler is of cast iron, and is covered with vertical plates, about seven inches deep and three-eighths of an inch thick, placed about five inches apart, and disposed in zig-zag lines over the whole surface. This arrangement will be better understood by referring to the Plan and Section, Plate VI.

When the apparatus is set in brickwork, these plates occupy the interior of the air flue which surrounds the boiler, and they serve several useful purposes; they become part of the radiating surface—the air which circulates through them is kept longer in contact with the boiler—and deriving their own temperature from being cast on the outer case of the boiler, the general temperature of the whole radiating surface is lowered in consequence.

When it is found necessary to reduce the temperature within the prison, the circulation of water within the pipes which are disposed in the main flues, may be cut off by a slide valve placed in the main, leading to the flow pipe. The only radiating surface then available would be that which has been described in the fresh air flue in connection with the boiler; and from the fire being placed in the interior of a large open case, and not being in contact with the sides, there is no difficulty in maintaining the water, and consequently the surface at a very moderate degree of heat.

Means of Regulating Temperature, &c.

The arrangements which have been in operation for venti lating and warming the cells, and maintaining an equable general temperature within the prison, have been attended with complete success, and it only remains to explain the mode in which a prisoner may have it in his own power in special cases to regulate the temperature of his cell, when artificially heated, without affecting the amount of ventilation.

The experience hitherto gained would lead to the conclusion, that if a temperature varying between 52° and 60° be maintained during the winter months, there will be about one or two per cent. of the prisoners, who from constitutional habit, or

other physical causes, would be benefited by a temperature a few degrees above or below the average. And again, there are certain trades or employments carried on in the cells inducing more physical exertion than others, which may also require to be specially provided for, the proportion varying with circumstances.

To meet such cases, a Regulator has been fixed in the fresh air flues, of a small proportion of the cells, which enables each prisoner to admit warm air from the main flue, or cool air from the corridor at pleasure, or to mix the two in any proportion that may be found suited to his case.

The detail of a regulator for the above purpose will be seen in Plate VII., fig. 4. It has not hitherto been found necessary to provide them, excepting in a small number of cells; as, however, it will cause but a trifling addition to the expense in any new prison, and will render the whole of the cells equally available for any prisoner or kind of employment, it is recommended that they should be adopted.

By maintaining a degree of heat in the main flues, calculated to produce the *maximum* effect required, a prisoner would then have the power of keeping his cell at any temperature between that limit and the temperature of the corridor, which can be so regulated as to produce a *minimum* effect. About 5° or 6° will be found a sufficient range to embrace all the special cases which have been referred to; and it is only in such cases that any alteration in the original adjustment will be found necessary.

A few cells, immediately over the steam boilers in the kitchen, and those adjoining the flues of the apparatus, also required a special provision for keeping them at the same general temperature as others: and it has been effected by placing a Ventilator in one or more squares of the window. It was a great object to prevent the transmission of sound, and to leave the regulation of the opening at the command of the prisoner. The contrivance adopted was found to answer the purpose, and is detailed in Plate VII.

The experiments made on the hygrometric state of the cells have indicated that in consequence of the radiating surfaces being worked at so low a temperature,* there was no change of any consequence in the condition of the air introduced

* The general temperature of the radiating surfaces in the main flues has varied from 75 to 90 and 100 degrees.

into them, and the means that were prepared for restoring artificially any moisture which might have been abstracted from the atmosphere has not, therefore, been applied. As it is obviously of importance to preserve the utmost simplicity in the arrangements for ventilating and warming the cells, and if possible to confine the management to the act of attending the fires, all contrivances for meeting possible events and contingencies have purposely been omitted, and as far as present experience extends, every object which is really essential has been attained.

A series of experiments have been carried on at the request of the Commissioners for the government of the Prison, by Dr. Owen Rees, the principal medical officer of the Establishment, by which the subjoined facts are established.

1st. That from 30 to 45 cubic feet of pure fresh air is made to pass into every cell in a minute; and that the ventilation is maintained with great regularity.

2nd. That this amount of ventilation, and a temperature ranging from 52° to 60° can be uniformly maintained in the cells during the coldest weather, at an expense of less than a farthing a cell for 24 hours.*

3rd. That the same degree of ventilation is effected during the summer months at less than half that expense.

The following Tables, extracted from his report to the Commissioners, show the equality of the temperature, and the adjusting power of the apparatus and flues in retaining that equality independent of sudden changes in the external atmosphere.—*See* page 26 and 27.

A reference to these tables will show the remarkable equality of the temperature within the cells, and the adjusting power of the apparatus in guarding against the sudden fluctuation in the conditions of the external atmosphere, which are of so frequent occurrence in this climate.

---

* In the coldest weather of the winter 1842-3, the quantity of fuel consumed at Pentonville Prison was from 2 cwt. to 2½ cwt. for each apparatus in 24 hours, by which 66 cells and the adjacent corridors were warmed and ventilated; but in 1843-4, in consequence of the flues being quite dry, the consumption of fuel was only one-half the above quantity, and the cost of warming and ventilating each cell amounted to less than one farthing for 24 hours; the price of Merthyr coal in each case being 25*s.* 6*d.* per ton.

Previous to the opening of the Prison 5 cwt. of coal was required to maintain the same conditions. The greater part of this quantity was expended in the vaporisation of water, and consequently had no effect on the cells. Hence the necessity of not trusting to any results concerning temperature in connexion with the consumption of fuel, or the power of an apparatus, until all the flues and buildings are perfectly dry.

In the Record for January it will be observed that on the 3rd and 4th of the month the minimum temperature of the external atmosphere was 22° and 23°, and the minimum temperature of the cells 57°. On the 5th and 6th the external thermometer rose to 42° and 46°, and the cells were at 57° and 58°, showing a rise in the external temperature of 24°, which only affected the cells 1°.

No. I.

TABLE of recorded TEMPERATURES for the Month of FEBRUARY, 1844.

Date.	External Temperature.		Internal Temperature.	
	Maximum.	Minimum.	Maximum.	Minimum.
1 February, 1844	39°	28°	59°	56°
2 ,, ,,	36	28	59	54
3 ,, ,,	34	28	56	51
4 ,, ,,	36	27	55	51
5 ,, ,,	36	28	55	51
6 ,, ,,	35	25	55	50
7 ,, ,,	40	29	54	50
8 ,, ,,	42	32	54	51
9 ,, ,,	41	31	55	51
10 ,, ,,	40	32	55	51
11 ,, ,,	39	31	55	51
12 ,, ,,	36	30	55	50
13 ,, ,,	35	24	54	50
14 ,, ,,	31	24	53	49
15 ,, ,,	39	28	53	49
16 ,, ,,	45	32	53	50
17 ,, ,,	46	34	54	50
18 ,, ,,	47	37	55	50
19 ,, ,,	46	40	56	51
20 ,, ,,	47	30	57	52
21 ,, ,,	38	28	55	52
22 ,, ,,	37	31	55	51
23 ,, ,,	35	25	55	50
24 ,, ,,	49	28	54	50
25 ,, ,,	43	34	54	51
26 ,, ,,	49	39	55	51
27 ,, ,,	44	27	56	51
28 ,, ,,	38	29	54	51
29 ,, ,,	46	33	55	51

G. OWEN REES,

Principal Medical Officer.

No. II.

Date.	Minimum Temperature of external Air.	Minimum Temperature of the Cells.
1 January, 1844	33°	60°
2 ,, ,,	31	60
3 ,, ,,	22	57
4 ,, ,,	23	57
5 ,, ,,	42	57
6 ,, ,,	46	58
7 ,, ,,	39	60

G. Owen Rees,
Principal Medical Officer.

The power of self-adjustment is chiefly due to the non-conducting nature of the materials of which the Main flues are constructed. In consequence of the Pipes for radiating heat being advantageously disposed in these flues the mass of brickwork becomes gradually heated to a moderate degree, and imparts a genial warmth to the current of air passing over the additional extent of radiating surface which it presents.

It will be apparent, from a consideration of these circumstances, that independent of the protection against the vicissitudes of the climate derived by a prisoner, there is another important object secured by the uniformity of temperature maintained by these means. It protects him against the effects of the neglect of the person to whose charge the warming and ventilation of a prison may be entrusted, for the quantity of fuel for producing the required temperature being determined, the management of the apparatus may be safely entrusted to a subordinate officer, who, if required to exercise in the least degree his own discretion, would be almost certain to make mistakes that would lead to inconvenience.

In the course of the experiments made on the first occupation of the Prison, in order to ascertain the power of the Apparatus, it required ten days or a fortnight to produce any material influence on the general temperature; but when the proper degree of warmth had been once acquired, and the time and quantity of coal to produce the effect, had been ascertained, no further difficulty was experienced, nor can any be now anticipated.*

The fires are visited at stated hours, a certain quantity of

* These points are explained more in detail in an extract from a report by the Principal Medical Officer of the prison, inserted in Appendix No. 7.

fuel, depending on the season, is supplied on each occasion, and there is nothing more connected with the ventilation and warming to be attended to by the person in charge.

Plate VIII.—*Prison Cells.*

The Cells at Pentonville Prison, as already stated, are 13 feet long by 7 feet broad, and 9 feet high to the under side of the arched ceiling, and they contain about 820 cubic feet of space. The division walls between the cells, and the corridor walls are two bricks, or 18 inches, in thickness; and the external walls are two bricks and a half thick.

The ceilings of the cells are formed by a half brick arch grouted in cement, over which is laid Concrete, and in some cases Earth, about 6 inches in depth, which is levelled so as to receive the surface of Asphalte which forms the floor of the cell above. The thickness from the ceiling of one cell to the floor of that above it, is 1 foot. In the upper cells, as a measure of security, the arch is 9 inches thick, in two courses, turned separately in cement, with a layer of hoop iron at 4 inch intervals laid diagonally between them; with the same view, as the outer walls are rendered hollow by the ventilating flues worked in them, it has been deemed to be a necessary precaution to lay in near the outer surface a single course of hoop iron every six inches.

In prisons where the Doors open into a spacious Corridor under constant inspection, one door is sufficient for all purposes of security, and it affords greater facility for detecting irregularity than if there were a double door. As it is an object to save the time of officers in visiting the cells of a large prison, a Spring Lock, which does not require a second insertion of the key, is of advantage; but, for smaller prisons, such a lock might afford a prisoner the opportunity of making his escape by closing the door on an officer, and they cannot, therefore, in such cases be safely adopted.

A small trap is contrived in the door, by which the distribution of provisions and materials is facilitated; and there is an opening for inspection, covered by a moveable flap.

The Window-frame is of strong cast iron, and is glazed with fluted glass; and, in order to prevent communication between prisoners in adjoining cells, it is a fixture. Additional security is obtained by the insertion, on the outside, of two wrought iron bars, so placed as not to intercept the light.

The details of the Doors and Windows are shown in Plates IX. and X., and their cost in Appendix No. 1. In special cases, where it may be desirable to admit the air to a cell directly from the outside, a square of the window might be glazed as shown in Plate VII., which will not materially facilitate communication between adjoining cells.

Each cell is fitted-up with a Soil-pan and Trap, and a Copper Basin for washing, with waste-pipe, &c. The double Supply-cock, which communicates with the washing-basin and soil-pan, is enclosed in an iron frame, which protects it from being wilfully damaged. The soil-pan and the parts connected with it are of strong glazed earthenware, which is much cleaner and cheaper, and greatly to be preferred to iron. The cells are lighted with gas, and, in compliance with the provisions of the Act, means are provided by which a prisoner can apprize an officer of his wish to see him in case of emergency. The details of these fittings are fully explained in Plates XI., XII., and XIII.

The details of the Water-trough and Service-pipe are shown in Plate XIV. The troughs are of iron, 6 inches deep by 4½ inches wide, inside, cast in lengths of 8 feet 6 inches, to correspond with the transverse dimensions of the cells. These lengths are supported by brackets, and form a continuous trough extending the whole length of the corridor, but in order to prevent any one prisoner wasting the water, the troughs are divided in such a way as to limit the supply to which he has access to 1 cubic foot, or about 6 gallons.

The Troughs may be supplied from Cisterns placed on the level of each range, or by a Main from a cistern in the roof. The details of an arrangement for this purpose will be further explained. Precautions should be adopted to ensure the supply being independent of frost, which can be accomplished by placing the cisterns and laying the pipes in connexion with the main foul air flues in the roof, or otherwise under the influence of the temperature within the prison.

Central Hall and Corridors, &c.

It has been stated that the Central Hall and the Corridors which radiate out of it and pass through the prison wings, are open from the floor to the roof; and by referring to the general plan, Plate II., and the sections Plates VI. and XXI., this arrangement, and the advantage it offers in affording a

perfect inspection of the interior, and facilities for administering the daily routine, will be understood.

The Central Hall is available as a station for the principal officers engaged under the Governor in superintending the discipline of the prison. Galleries, on a level with those which afford access to the cells in the different Divisions of the prison, surround the hall: a circular stair gives access to these galleries and to the basement, and a Hoisting machine, Plate XVII., communicating with the kitchen and store departments, affords the means of raising provisions and materials from below to any of the wards.

The Cells are ranged on three stories and open into the corridor, which runs longitudinally through the centre of each wing. The lower range of cells is on a level with the floor of the corridor, and the upper ranges open upon galleries attached to the walls. The details will be noticed in Plates III. and VI.

In subdividing the prison for the purposes of discipline, each of the wings is called a Division, and they are distinguished by the letters A, B, C, D. The cells on the ground-floor and on the level of the galleries in each Division are respectively Wards in the Division to which they belong—No. 1 Ward being the ground-floor; No. 2 Ward the first gallery, and No. 3 Ward the upper gallery. The cells in each ward are numbered consecutively, the odd numbers being on the left hand side when looking from the central hall, and the even numbers on the right. The prisoners are provided with a small brass plate, which is suspended to a button, and on which is engraved the designation of the cell they occupy. Thus a plate engraved as in the margin designates that the cell is in A Division, in the 2nd Ward, No. 25; and as the prisoner occupying it is better known to the subordinate officers by such designation, than by his Register number, there is no difficulty in immediately finding him.

Plate XIII.—*Labels, and Gong.*

It is required by Act of Parliament that a prisoner in separate confinement should be furnished with the means of communicating at any time with an officer of the prison. The details of the contrivance by which this object has been effected appear in this plate. A large Bell, or Gong, is placed

in the centre of each line of cells. A handle attached to a Label and Crank is placed in every cell, and a single wire, with a proper crank, communicates with the bell. When the handle is turned in the cell, the label flies open; a single stroke is sounded on the bell, and a Pendulum in connection with it vibrates.

The pendulum informs the officer on duty on which side of the centre the prisoner who requires attention is lodged, and the label, which remains open, indicates the cell.

Plate XV.—*Exercising Yards.*

The plan and section which appear in the plate are explanatory of the means adopted for affording the prisoners Exercise in the open air, without compromising individual separation, or entailing a disproportionate number of officers to maintain superintendence.

The Yards radiate from a central point, round which there is a passage of communication; an inspection into each yard is obtained through a large orifice in the door, covered by open wire-work. The space within the passage has been converted into a room, having a further means of inspection into each yard, either from openings in the internal walls or through the windows above the passage.

After the prisoners are locked up in their respective yards, one officer remains in charge of them, and has the means of instantly detecting any irregularity.

The Yards have an open railing on the outside in order to allow of a free circulation of air. A small roof is attached to the division walls to afford shelter in case of rain. A water closet is provided in the central space, and the position of the yards with reference to the prison wings, gives a ready access from the cells.

There are altogether 114 Yards, which is a proportion of more than one-fourth the number of prisoners, so that, taking into account those prisoners who obtain their exercise by pumping water, the remainder get an hour's exercise each in about four hours in the course of the day; which is found a convenient arrangement for carrying on the daily routine. Where the interior space within the Boundary of a prison is restricted, a smaller proportion of yards may be sufficient; but the duty of superintending the prisoners would occupy the time of the officers for a longer period, though a less number would be employed.

Plate XVI.—*Baths.*

It is provided by the 4th Geo. IV., cap. 64, sec. 9, that warm and cold Baths shall be introduced into all prisons. Those provided at Pentonville Prison, are found convenient, and the details are shown in Plate XVI. There are altogether eight baths,—there is no difficulty in bathing 32 prisoners in an hour, and each prisoner is bathed once a fortnight.

Plate XVII.—*Hoisting Machine.*

In large prisons it is essential, in order to economise the labour and duties of the officers, that there should be the utmost facility for distributing the Meals, and this is especially the case with reference to prisoners in separate cells. A simple machine, by which the Trays containing Provisions or Materials are raised from the basement to the level of the ground-floor, and galleries above, is fixed in the basement on each side of the central hall, and affords a direct communication between the kitchen and those wards. The trays are conveyed along the ground-floor in a small Waggon or Barrow, and along the galleries or upper wards on a light trussed iron Carriage, which runs on the top of the gallery railing.

Plate XVIII.—*Detail of the Regulating Cisterns, Pipes, and Cocks for the distribution of Water.*

Figure 1 shows a Cistern in the roof, with Rising main, together with a Service-pipe, and two rows of Troughs, divided into compartments, each to contain six gallons, or one day's supply, for a cell; likewise the Regulating Cisterns* and ball-cocks for *turning on* and *shutting off* the water to the Troughs, which, as shown in the figure, are supposed to be for the supply of the two upper stories of a prison.

It will be observed that the supply-pipe, A, for the upper troughs, is connected with the main service-pipe, and runs to the extreme end, where it fills the trough B; this trough, when filled, overflows the partition and fills the adjoining trough C, and so on in succession until the last trough, D (which may be at the other extremity, or in the centre, of a wing), is filled.

* The regulating cistern, governing the supply for the troughs in the roof, would be conveniently placed (in any position) so as to be accessible from the upper gallery.

This last trough is furnished with a waste-pipe, E F, conveying the surplus water into the *Regulating Cistern*, G, which, raising the ball, H, as it fills the cistern, acts upon the stop-cock to which it is attached, and so *shuts off* all further supply to the troughs in the roof.

The Troughs under the upper gallery floor, for the use of the cells beneath (see Fig. 2), are supplied by the pipe I, which is fixed in any convenient position at the side or under the troughs, and discharges itself as before explained into that which is furthest removed (see K), which, overflowing, fills others in succession until it reaches the trough L. This trough is connected by the pipe M with the regulating cistern N, which receives the surplus water by which the ball H is raised and the further supply *shut off*.

In order to *turn on* the supply for filling the troughs, all that is required is to empty the regulating cisterns; and this is done by turning the cocks, P, P, attached to the waste-pipes, which allows the balls fixed to the Stop-cocks to fall and reopen the communication with the main Service-pipe.

With the exception of turning these cocks, the whole apparatus is self-acting.

The Troughs at Pentonville Prison are supplied on this principle; but in the arrangements which have been described there are several improvements in the detail which have been recently introduced by Messrs. Pontifex and Mallory, who have manufactured them for the new county prison at Reading.

Application of the same Principle of Construction to other Prisons.

It has been before observed that Pentonville Prison is exclusively appropriated for Male adult convicts, and that it will therefore be requisite in applying the same principle of construction in a County or Borough prison, that means be provided for securing an effectual separation of certain Classes of prisoners.

An effort has been made, both by law and in the regulation and discipline of many prisons, to obviate the evils arising from the Association of Prisoners by a system of Classification; and vast expense has been incurred in existing prisons in making separate provision for a variety of Classes, by setting apart a certain number of cells with day-rooms and a yard specially for each Class. To whatever extent, however, such a system may be carried, experience has sufficiently proved that there does not

exist any moral standard by which it can be regulated so as to avoid the mischievous effects of bringing together prisoners of different degrees of criminality and of every shade of character; and were it not that several important prisons have been erected within the last 40 years, with a view to accomplish the subdivision adverted to, there appears little reason to doubt that the *Classification of prisoners* as a system of discipline would sooner have been exploded.

In a valuable Report on the Prison Discipline of the United States by MM. De Beaumont and De Tocqueville, the system of Classification is noticed as follows:—"L'impossibilité d'opérer une Classification positive des criminels a été prouvée avec une certitude si mathématique que l'on doit la prendre pour point de départ dans toute la réforme des prisons."

The report made by the Committee of the House of Lords in 1836, in which the abolition of day rooms is recommended, has led, in many instances, to their being discontinued, and to other important improvements in the administration of discipline; still, however, much requires to be done.

The advantage of Separate Confinement, in connexion with Construction, will be apparent when it is considered that, in order to effect Classification, a distinct portion of a prison must be assigned to each class; and there is no mode of relieving an over-crowded ward but by infringing the Law or the Discipline, in sending a portion of the prisoners to some other class.

For instance, in cases where a Gaol for untried prisoners and a House of Correction for convicted prisoners exist under the same roof, the one is periodically full and the other empty. And as it is necessary to provide accommodation for the greatest number of any class, the effect of this distinction is to increase the number of cells required, and consequently the expense of erecting a prison and maintaining discipline.

In applying the principle of construction shown in the accompanying plans to a County or Borough Prison, some modifications are required in order to make an entire separation between Males and Females, as well as with reference to providing suitable accommodation for first class Misdemeanants, Debtors and Juveniles.

No difficulty has been experienced in making convenient arrangements for these purposes, without sacrificing the advantage of affording the governor and officers the means of controlling and superintending the discipline; but as far as Construction is concerned, no further provision has been made for

any distinction of classes: Taking adult Males as an example, each prisoner has a cell for his use both by day and by night, and the exercising yards are generally available for all the prisoners taking exercise under the superintendence of an officer at stated hours.

This arrangement would apparently require the adoption of a uniform system of Separate confinement, but should circumstances render it desirable or proper that prisoners in general, or any particular description of them, should be associated in classes, there is every facility for making arrangements for the purpose by subdividing the floor of the corridor by moveable partitions into any required number of compartments, the whole of which would be effectually superintended from the galleries above.

I consider it right to advert to this point, not with an expectation that such subdivision will be resorted to, when the comparative simplicity of administering the discipline of separate confinement shall be tested by experience, but to show that though prisons built on such a principle are appropriate for individual separation, they can, if necessary, be made available should association to any extent be determined on.

Under any circumstances it is clearly of advantage to render every cell in a prison as much as possible available for the accommodation of prisoners without reference to an artificial distinction of classes, and to make any required difference in their treatment a matter of Regulation.

In the consideration of the plans for County and Borough prisons, the only question of any importance that has arisen, has been respecting the size of the cells.

With reference to this point, the dimensions of 13 feet long by 7 feet broad are obviously larger than is necessary for an ordinary cell, in which a prisoner would not be subjected to Separate confinement but would only sleep and take his meals, for which purposes a cell 9 or 10 feet long by 7 feet broad may be deemed sufficient. The difference of expense, however, of building them of one size or the other forms so small a proportion, probably not exceeding $3\frac{1}{2}$ or 4 per cent. on the total expense of erecting a prison, that it is scarcely worth a consideration, when the advantages derived from having cells adapted for Separate or Solitary confinement, and equally available for any system of discipline, is taken into account.

It has not, Sir, been without much consideration that I have taken upon myself the responsibility of submitting to you the advantages and expediency of uniformity in the Principle of Construction, and in the size of cells, for all classes of prisoners; and of recommending the adoption of such a principle under your authority, to the magistracy of the Kingdom.

One argument that weighs strongly in favour of spacious cells in all new prisons is the apparent advantage, if not necessity, of providing the means of enforcing, within the cells, sentences of *Hard labour* as distinguished from simple *Employment*. Various and increasing objections are urged against the use of the Treadwheel, and, though it may require further experience to ascertain their validity, it is a proper precaution on the part of the Authorities having the control of funds applicable for the erection or improvement of prisons to expend them in such a manner as will place themselves and their successors in a safe position. This can only be attained by being enabled to establish and carry into effect any system of discipline which may hereafter be determined on.

It has been necessary, with a view to the due discharge of my duties, that I should practically acquaint myself with the details of discipline generally, and the further experience I have gained as a Commissioner of Pentonville Prison has led me to the conclusion that the separation of one prisoner from another is indispensable as the basis of any sound system. It would appear, however, that, even should the construction of a prison admit of such separation, the means will still be required for varying the administration of the discipline to suit the varying circumstances under which it must of necessity be applied. That whilst it is desirable a penal and reformatory discipline should be steadily adhered to for all *convicted* prisoners, and that the *unconvicted* should be protected by separation from the loss of character and other evils arising from association, the means should exist of rendering the discipline for the former class more stringent in certain cases, by placing crank machinery in the cells, or making some such provision for giving effect to a sentence of "*Imprisonment with Hard labour.*" This discipline would be applicable in those cases where, from the shortness of the period of confinement, or other causes, there was no reason to expect a deterring effect from discipline of a milder and more reformatory character. For such purpose,

as well as for carrying into effect sentences of Solitary confinement,* large cells are indispensable.

The progress of public opinion in other parts of Europe, and the measures which have been adopted by the Governments of France, Prussia, and other States, are sufficient to prove that England does not stand alone in her enlightened efforts to establish a uniform system of penal and reformatory discipline, and make corresponding improvements in the construction of prisons. The valuable report of MM. De Beaumont and De Tocqueville, who visited the prisons of the United States in 1831, and that of M. De Metz and of M. Blouet, commissioned by the French Government for a similar object in 1836, followed by an important official document† issued in 1842 by M. Duchatel, the Minister of the Interior, have led to a law being passed during the last Session of the Chambers, for the introduction of the Separate System into France.‡

The able and unceasing labours of Dr. Julius, of Berlin, who was commissioned in 1834 by the Prussian Government to visit the American Penitentiaries, and that personal interest on the part of the King which identifies his Majesty with all improvements, have led to the erection of new prisons in Prussia on precisely the same plan as that at Pentonville.

The Pentonville Prison having been the first of equal extent and similar construction erected in Europe, has attracted a great share of public attention. It was visited in 1842 by the King of Prussia, and more recently by the King of Saxony; also, at different times, by His Royal Highness Prince Albert, the Grand Duke Michael of Russia, Prince William of Prussia, and Prince Alexander of the Netherlands. It has also been inspected in detail, under your authority, by Commissioners from the respective Governments of France, Prussia, Austria, Holland, Denmark, Sweden, and other States, appointed to examine and report upon it, and has likewise been visited by many other distinguished Individuals of this and other countries interested in the question of Separate Confinement, with which it is connected.

---

* Solitary Confinement may be designated imprisonment without Labour or Employment, and it cannot legally be enforced for more than one calendar month at a time, nor for more than three months in a year.

† "Instruction et Programme pour la Construction des Maisons d'Arrêt et de Justice; avec Projets des Prisons Départmentales, par MM. Blouet, Harou Romain, et Horeau, Architectes."

‡ An extract from the "Exposé des Motifs," submitted by the Minister of the Interior to the Chamber of Peers, in presenting the "Projet de Loi," adopted by the Chamber of Deputies on the 18th May, 1844, appears in Appendix 8.

Under all these circumstances, whilst endeavouring to anticipate every contingency of Discipline likely to affect the question of Construction, I have considered it my duty to guard against any expenditure which did not secure means for the immediate or prospective adoption of a system involving the individual separation of prisoners.

The progress hitherto made in erecting prisons to combine these advantages has been most satisfactory. I propose, Sir, to bring under your notice, in a subsequent Report, Plans of the principal Prisons adverted to, and to notice any improvements which further experience may have suggested. In the mean time it may be sufficient to mention, that whatever has been the size of the prison, or the immediate object of its erection, all have been executed on one uniform principle of Construction which will sooner or later lead to greater uniformity in Discipline.

I cannot conclude without availing myself of the opportunity of representing to you, and of acknowledging, the invariable cordiality and attention I have experienced from the Magistrates when engaged under your directions in advising with them on subjects connected with the construction of prisons, and affording such assistance as lay in my power.

I have the honour to be,
Sir,
Your most obedient
Humble servant,

J. JEBB, *Major Rl. Engineers,* } *Surveyor-General of Prisons.*

APPENDIX.

Appendix No. 1.

Analysis of the Expences incurred in the erection of Pentonville Prison, to serve as data in the formation of Estimates for other Prisons of similar Construction.

Detail of the Expense of Erecting one Wing of Pentonville Prison, containing 130 Cells, on and above the Ground Floor; a basement for the Stores, &c., equal to eight Cells, and a basement for the Warming Apparatus equal to five Cells. The whole expense averaged on the number of Cells provided for occupation.

Excavator and Bricklayer, exclusive of ventilating Shaft and Main Flues.

	£.	*s.*	*d.*
2256¼ yards cube of excavation to foundation basement, &c.	68	6	5
853½ ditto concrete to foundations and floors	270	14	4¾
53 rods 119 feet reduced brickwork, in footings and basement.	571	7	5
89 rods 129 feet ditto, ground floor story	1055	16	1
86 rods 141 feet ditto, first floor story	1019	15	0
79 rods 37 feet ditto, upper story	889	15	0
14 rods 32 feet ditto, in roof ceiling to corridor, &c.	183	12	0
6 rods 191 feet ditto, in drains (378 feet, at 4*s.* 8*d.*)	88	8	0
2464 feet 10 inches sup. Bangor slate, in cement or footings	26	19	2
732 feet 4 inches run cut splay	5	6	9½
530 feet 10 inches circular ditto	5	16	1½
766 feet 3 inches sup. rough cutting to brickwork	8	7	7
113 feet 9 inches cube Stourbridge fire brickwork	26	10	10
Lime-white and sundries.	132	0	1
	4352	14	10¾
Corridor window, including stone-work and sash, glazed	96	4	10
130 cells, at 34*l.* 4*s.* 5½*d.*	£4448	19	8

	£.	*s.*	*d.*
Add for builder's work on ventilating shaft and flues, per Cell.	4	0	3½

Builder's Work and Fittings for one Cell.

Window, with stone sill, and including iron sash, &c. as detailed Plate X	3	11	0½
Door 2½ inches thick, sheeted with iron, as detailed	2	5	0
Paint	0	2	3
Door frame, as detailed Plate IX	1	2	11
Spring lock	0	10	6
Ditto latch	0	1	9
Centers, hinges, and inspection slide complete, &c.	0	12	2½
Hooks for hammocks	0	2	0
Asphalte floor, 10 yards, at 5*s.*	2	10	0
Gas fittings, including the burner and shade in each cell, with equal proportion of all the lights in the corridors and main pipes, &c. Plate XII	1	8	1¾
Bell complete, as detailed Plate XIII	0	11	1¼
	£12	16	10

Water Closets.

	£.	*s.*	*d.*
Earthenware pan, trap, &c., 9*s.* 3*d.*, fixing, 2*s.* Plate XI	0	11	3
Deal cover, with iron hinge	0	5	7
Cast-iron water trough	1	6	0
Covers to trough and boring for pipe	0	6	0
Lead pipe, and making good to brickwork	0	17	11
Cocks, washhand-basin, &c., complete, as detailed Plate XII	1	10	0
Cast-iron branch pipe (half)	0	11	8
Soil pipe, 10 feet, at 2*s.* (half)	0	10	0
10-feet 9-inch barrel drain	0	15	0
Per cell	£6	13	5

Gallery corresponding to the breadth of one Cell.

	£.	*s.*	*d.*
Bracket, including stone and fixing	0	16	1
Slate floor and cast-iron bearers, 8 feet 6 inches long at 9*s.* 3½*d.* per foot run	3	19	0
Gallery railing, complete, per foot run, 5*s.*	2	2	6
Stairs to gallery and bridges (38*l.* for wing)	0	5	1
	7	2	8
Note.—The expense of the two galleries averaged, on the three stories, gives, per cell.	£4	15	1¼

Roof.

	£.	*s.*	*d.*
Including iron-work, slating, stone-work, and plumber's work, 94 squares, at 7*l.* 12*s.* 4*d.*	715	19	4
Cast-iron moulded eaves, gutters, and cistern heads for rain-water pipes	119	18	5
Rain-water pipes, 110 feet, at 2*s.*; the remainder taken with water-closets	11	0	0
Carpenter's work to roof	36	1	11
Per cell, 6*l.* 15*s.* 10*d.*	£882	19	8

Corridor Floor.

	£.	*s.*	*d.*
4 rods 11 feet brick arch, in cement	53	18	3
58 yards cube concrete on ditto	18	13	0
344⅔ yards super, Asphalte floor, 5*s.*	86	3	4
Per cell, 1*l.* 4*s.* 5*d.*	£158	14	7

Abstract, per Cell.	£.	s.	d.
Excavation, concrete, and brick-work, including ventilating shaft and flues	38	4	9
Fittings, including door, window, lighting with gas, &c.	12	16	10
Water-closets complete	6	13	5
Galleries, including iron brackets, slate floor, iron bearers, and railing	4	15	1¼
Roof, as detailed	6	15	10
Corridor floor	1	4	5
Warming apparatus and fixing	4	10	0

	£.	s.	d.
Sky-lights in corridor	81	18	9
Stone pediments	34	9	10
Plasterer's work	113	14	6¾
Windows and doors to basement	31	12	8
Sundries	181	2	11¼
130 Cells	£442	18	9

	3	8	1¾
Total per cell	78	8	6
Deduct if the division walls are 14 inches instead of 18 inches	2	0	0
Add if the corridor be plastered and jointed to imitate stone	2	10	9

Cost of Erecting the Entrance Building at Pentonville Prison, containing Chapel, Offices, &c.

Entrance Building, containing—

In Basement.—Ten reception cells, bath, examining room, clothing store, steward's office, and principal officers' mess room.

Ground Floor.—Board room and secretary's office, governor's office and clerk's room, deputy governor two rooms, visiting room and waiting room, chaplain's office and physician's office.

First Floor.—Chapel, containing accommodation in separate stalls for 260 prisoners, and two rooms for schoolmasters and libraries, vestry, gallery for officers, organ loft, pews, &c.

Infirmary, containing resident medical officer's room and 10 infirmary cells, &c.

	£.	s.	d.
Excavator and bricklayer	2,640	10	2½
Carpenter and joiner	2,180	6	3¾
Mason	346	8	8
Smith and founder	221	16	0½
Plasterer*	1,185	1	6½
Painter and glazier	343	19	10¾
Plumber	256	18	9½
Slater	134	4	8¾
Asphalte floors	125	0	0
Ventilating and warming	89	17	0
Sundries	150	0	0
	7,674	3	1½

* The outside of the building is covered with stucco, and jointed in imitation of stone.

Exercising Yards.

Cost of completing 114 separate Exercising Yards, each yard being 43 feet long by an average breadth of about 10 feet.

	£.	*s.*	*d.*
Excavator and bricklayer	2,600	1	1
Carpenter and joiner	449	11	$6\frac{3}{4}$
Mason	68	6	$2\frac{1}{2}$
Smith and founder	989	7	$6\frac{3}{4}$
Plasterer	169	19	$10\frac{3}{4}$
Slater	312	17	0
Painter and glazier	123	0	$6\frac{1}{2}$
Plumber	33	16	$3\frac{1}{2}$
Asphalte floors	72	18	8
	4,819	18	$9\frac{3}{4}$

	£.	*s.*	*d.*
Cost of each exercising yard	42	5	7
Cost of each set of circular yards	829	8	$3\frac{1}{2}$
Railings to yards, at per foot.	0	8	$8\frac{1}{2}$

Boundary Wall.

Excavator and Bricklayer	2,793	13	$11\frac{1}{4}$
Mason	340	18	$9\frac{1}{2}$
1,600 feet	3,134	12	$8\frac{3}{4}$

Artesian Well, Machinery, and Building.	£.	*s.*	*d.*
1. Sinking a well 370 feet deep, providing 30 feet cast iron cylinders, 5 feet diameter, pipes for bore, &c.	1,060	0	0
2. Building for the cranks, stages, and ladders, &c.	299	6	$10\frac{1}{4}$
3. A three throw pump and rising main (to the top of well only)	165	2	2
4. Machinery	76	6	2
	1,600	15	$2\frac{1}{4}$

ANALYSIS of the Expenses incurred in the Erection and Completion of the Prison from the Commencement to the Period of the Occupation, on the 21st December, 1843.

	£.	*s.*	*d.*	£.	*s.*	*d.*
1. Messrs. Grissell and Peto, for the building	70,115	14	5			
2. Asphalte for cells, roads, and paths, &c.	2,503	8	9			
3. Water-closets, fittings, basins, cocks, &c.	1,154	10	9			
4. Locks and fastenings, bells, &c.	941	5	9			
Superintendence	689	4	11			
Sundries	361	10	9			
				75,765	15	4*

* The original estimate for the erection of a Model Prison to contain 500 cells was 75,000*l.*, 20 additional cells and 22 exercising-yards were afterwards added, and the expense is included in this amount.

ADDITIONAL EXPENSES for Fittings, Furniture, and Works, not included in the original Estimate.

	£.	s.	d.	£.	s.	d.
1. Messrs. Haden and Son, heating and cooking apparatus, &c.	2,884	4	6	75,765	15	4
2. Messrs. Bramah, and Wool, heating apparatus	454	9	11			
3. Mr. Faraday, gas fittings	1,400	15	3			
4. Well and machinery	1,603	5	11			
5. Fittings and furniture, furnished by contractors	1,192	5	0			
6. Paper hanging and copper casements	104	9	6			
7. Stoves, clock, and bell	402	19	8			
8. Furniture for offices, carpets, &c.	360	7	1			
				8,402	16	10
Cost of the Prison to the period of its occupation				£84,168	12	2*
Divided by 520, gives per Cell				161	17	$2\frac{3}{4}$

ADDITIONAL WORKS, exclusive of Site, not requiring to be taken into Account in the Erection of other Prisons under ordinary circumstances.

	£.	s.	d.
1. Detached residences for seven families, complete	1,892	7	1
2. Archway and terrace wall, &c.	2,856	5	2
3. Wall enclosing garden	739	10	7
4. Stables and road	415	0	0
	£5,903	2	10

PRICES paid for various Works executed in the erection of Pentonville Prison during the Years from 1839 to 1842.

	£.	s.	d.
Concrete for foundations, per cube yard	0	6	4
Brickwork in mortar, per rod of 306 cubic feet	11	7	6
Ditto in foundations or in walls, to be plastered, as ditto	10	10	0
DAYWORK:			
Bricklayer, Winter, per day	0	4	3
Ditto, Summer, ditto	0	4	$7\frac{1}{2}$
Labourer, Winter, ditto	0	2	$5\frac{3}{4}$
Ditto, Summer, ditto	0	2	$9\frac{1}{4}$
Stock bricks, per 1000	1	17	$7\frac{1}{2}$
Stone lime, per yard cube	0	12	$8\frac{1}{4}$
Clean river sand, ditto	0	5	3

* This amount includes the furniture and fittings of the whole Prison, and Quarters for 20 prison officers; and in consequence of the inequality of the levels on the surface of the site and other causes, it will be above the cost of a Prison under ordinary circumstances, at similar prices.

	£.	*s.*	*d.*
Baltic fir timber, in plates and lintles, fixed, per foot cube .	0	3	2½
Ditto, framed and fixed, as ditto	0	3	7¾
Flooring, 1 in. white deal, on joists 8 × 2½, and wall plates 4 × 3, per square	4	12	0
Ditto, 1¼ in. yellow batten, on joists 4 × 2¼, and sleepers 4 × 3, per square	4	1	4
Doors to cells, of 2½ in. deal, plated with iron, and rivetted, painted three times in oil, size of opening 6 ft. by 2 ft. 2 in. in the clear, each	2	7	3
1 pair 4½ in. strong cast butts . . . 1 6			
1 inspection plate 0 8½			
1 lock 10 6			
1 spring latch 1 9			
1 pair wrought iron centres, cast iron rim and casing to inspection-hole, cast-iron rim to flap, including fixing; also fixing lock and latch complete 10 0			
	1	3	11½
Door frame of fir, 4½ × 4½ double rebated, with oak sill, inside of frame covered with sheet iron and screwed to the rebate; the frame secured to the wall with iron stays, each.	1	2	11
2 in. deal bead and flush external doors, with frame, lock, &c., each	3	6	0
Span roofing, including rafters 4 × 2¼, purlines 4 × 4, ¾ in. battens for slates, covered with duchess slates, with 5 lb. leaden hips and ridges, eaves board, &c. complete, per square	3	14	0
Carpenter, per day	0	4	7½
Cast-iron roof complete, per square	4	12	0
Slating to ditto, with 3 ft. Queen slates, secured with copper bands, per square	2	7	6
Carpenter's work to roof, near skylights, in each division .	36	0	0
Cast-iron sashes to cells, fixed, per cwt. weight of each sash 2 qrs. 27 lbs.	0	14	1
Cast-iron girders, fixed, per cwt.	0	10	10
Ditto brackets for gallery, ditto	0	12	7
Ditto stairs, circular, with wrought iron core, fixed, per cwt. .	0	19	7½
Ditto, roofing, fixed, per cwt.	0	17	8
Palisade railing to exercising yards, wrought iron rails and cast-iron bars, 8 ft. 6 in. high, fixed, at per foot run . .	0	8	8½
Wrought iron railing to stairs and galleries, per lb. . .	0	0	5
Smith, per day	0	4	4
Portland stone, set, per foot cube	0	2	7¾
Plain work on ditto, per foot superficial . . .	0	0	9¼
Sunk work on ditto, ditto	0	0	11
Moulded work on ditto, ditto	0	1	3½
Bramley Fall stone, set, per foot cube	0	2	1
Plain work, per foot superficial	0	0	11
Sunk work, ditto	0	0	11
Moulded work, ditto	0	1	5¾

	£.	s.	d.
Yorkshire square steps, set, per foot cube	0	4	7½
3 in. York paving, tooled and set, per foot superficial	0	0	8½
3 in. York landing, ditto, ditto	0	1	7¼
1 in. Valentia slate paving, ditto, ditto	0	0	8
Mason, per day	0	4	4½
Apparatus for warming and ventilating, per cell, fixed	4	10	0

GENERAL Abstract of Amounts paid to Messrs. Grissell and Peto, Contractors for the erection of Pentonville Prison, showing the Proportion of the different Trades.

	£.	s.	d.
Excavator and bricklayer	36,140	0	4½*
Carpenter and joiner	10,670	12	2
Mason	5,793	18	3¾
Plasterer	6,252	5	3¼
Painter	1,306	3	11
Glazier	1,347	12	11
Plumber	2,466	13	5
Slater	1,733	5	7
Smith and Founder	9,958	4	8¾
†Sundries	754	6	0¾
Total	76,423	2	9
Deduct sundries	144	14	11¼
	76,278	7	9¾

APPENDIX No. 2.

ACCOMMODATION.

The following is a summary of the accommodation provided in Pentonville Prison, under distinct heads:—

For general Use of Prisoners.

520 separate cells, each 13 feet long by 7 broad, and 9 feet high; ventilated and warmed, lighted with gas, and fitted with a soil-pan, with water laid on.

20 cells in basement available as workshops for smiths, tinmen, and other trades.

* It will be observed that the cost of brickwork is nearly one-half the total amount. The local prices of brickwork or masonry will therefore materially influence the amount of the estimates.

† This item includes setting the Warming Apparatus, and the total amount includes Builder's work in detached residences and other works not shown on the plans.

Chapel 72 feet long by 41 feet broad, fitted up with separate stalls for 256 prisoners, pews for officers, &c.

Reception cells	10
Infirmary Convalescent Rooms . . .	10
Punishment Cells	12
Exercising Yards	114
Baths	8

General Service of the Prison, Offices, Stores, &c.

Board-room for the Commissioners for the government of the prison.
Offices for the Secretary, Governor, Chaplain, Physician, Governor's Clerk and Clerk of Works, &c.
Waiting-room.
Visiting-room for prisoners' friends.
Schoolmaster's room, and room for prison library.
Surgery.

Steward.

Offices for the Steward and his Clerk.
Kitchen and scullery.
Stores for provisions, bread, grocery, potatoes, clothing, small stores, coals, &c.

Manufacturer.

Extensive Stores for raw materials and manufactured articles.
Office for Clerk, and rooms for Trades Instructors.

Quarters.

Quarters are provided for the following officers and their families on the outside of the boundary wall.

Governor.	4 principal Warders.
Chaplain.	12 Warders.
Assistant Chaplain.	2 Gate-keepers.
Steward and Manufacturer.	1 Messenger.
Principal Schoolmaster.	1 Engineer.
Clerk of Works.	

Apartments are also provided within the prison for the Deputy Governor, Resident Medical Officer, and Infirmary Warder.

Area.

The area included in the boundary wall is 6 acres and 10 perches: and there is a garden containing about two acres in the rear, and a terrace and road 75 feet broad in front.

Appendix No. 3.

Statement of the principal Fittings in the Prison, with the Names of the Parties who manufactured them.*

Warming apparatus, &c.	Messrs. Haden, Engineers, Trowbridge, Wilts.
Steam-cooking apparatus	Ditto.
Pump and machinery	Ditto.
Gas fittings	Mr. Faraday, 114, Wardour-street, London.
Principal locks and locks on cell doors .	Mr. Thomas, Lock-maker, Birmingham.
Common locks, label and gong; fastenings for chapel doors, &c.	Messrs. Smith, Lockmakers, Birmingham.
Cocks in cells and for distributing water .	Messrs. Pontifex and Mallory, 15, Upper St. Martin's-lane, London.
Earthenware for water-closets in cells .	Messrs. Oldfield, Brampton Moor, Chesterfield.

Appendix No. 4.

Extract from the First Report of the Commissioners for the Government of Pentonville Prison.

"An Act of Parliament (5th Vic., cap. 29) for establishing the building as a prison, under the name of 'The Pentonville Prison,' was passed on the 18th June, 1842. By this Act the powers possessed by the visiting justices of county prisons, and the authority for making rules for the government and management of the prison, and of appointing officers, subject to the approval of the Secretary of State, are vested in Commissioners, not less in number than seven nor more than eleven, to be appointed by the Queen in Council. In the exercise of the power Her Majesty was pleased to appoint the following noblemen and gentlemen to be the Commissioners:—

Lord Wharncliffe, President of the Council.
Duke of Richmond.
Earl of Devon.
Earl of Chichester.
Lord John Russell.
The Speaker of the House of Commons.

* The prices of the different articles are detailed in Appendix No. 1.

Sir Benjamin Brodie, Bart.
Dr. Ferguson.
Major Jebb, Royal Engineers.
William Crawford, Esq.
Rev. Whitworth Russell.

"The Secretary of State has communicated to the Commissioners his intention to appropriate the prison to the reception of convicts between the ages of 18 and 35, under sentence of transportation for periods not exceeding 15 years, the selection to be confined, as far as may be, to first convictions. Sir James Graham further stated it to be his intention that the convicts so selected shall undergo a term of probationary discipline in this prison for about 18 months, when they will be removed to Van Diemen's Land, under their original sentences; their position, however, in the penal colony to be dependant on their conduct in this prison.

"The particulars of this arrangement, and the use to which this prison is to be applied in carrying out the plans which are contemplated by Her Majesty's Government for the improvement of convicts' discipline generally, will be found fully detailed in the following letter, addressed by the Secretary of State for the Home Department to the Commissioners:—

"*Whitehall,* 16*th December,* 1842.

"My Lords and Gentlemen,

"I have the honour of transmitting to you copies of two Despatches, addressed by Lord Stanley to the Governor of Van Diemen's Land, which will contain instructions for carrying into effect the classification of convicts, according to a plan to be adopted in the penal colony.

"This plan has been carefully considered by Her Majesty's servants; it has received their deliberate sanction; and if the consent of Parliament be obtained, it will be carried into immediate execution.

"In framing this measure of regulated punishment, we have not overlooked its connexion with the prison which is placed under your superintendence; and I avail myself of this opportunity for laying before you the view which I take of the use to be made of Pentonville Prison, and of the mode in which it may be rendered the most effective auxiliary to an improved scheme of convict discipline.

"It is useless to discuss the abstract question, whether under any regulation a prison can supply the means of reforming the character of hardened offenders. It is enough to observe that the limited number which the model prison can contain will, in the hope of reformation, be generally confined to those who are convicted of their first offence, and whose age is between 18 and 35.

"Considering the excessive supply of labour in this country, its consequent depreciation, and the fastidious rejection of all those whose character is tainted, I wish to admit no prisoner into Pentonville who is not sentenced to transportation, and who is not doomed to be transported.

"The convict, on whom the discipline might have produced the most salutary effect, when liberated and thrown back on society here, would

still be branded as a criminal, and would have an indifferent chance of a livelihood from the profitable exercise of honest industry. His degradation and his wants would soon obliterate the good impressions he might have received, and by the force of circumstances which he could not control, he would be drawn again into his former habits; he would rejoin his old companions, and renew the career of crime.

"Not so the convict transported from Pentonville. The chain of former habits would be broken; his early associations would be altered; a new scene would open to his view, where skilled labour is in great demand, where the earnings of industry rapidly accumulate, where independence may be gained, and where the stain of tarnished character is not quite indelible.

"This is the favourable position for ripening the fruit of improved prison discipline; this is the best chance for turning to account the instruction given in useful manual labour; this is the prospect which will revive hope in the bosom of the prisoner, which will confirm his good resolutions, and which will stimulate him to energy and to virtue.

"I propose, therefore, that no prisoner shall be admitted into Pentonville without the knowledge that it is the portal to the penal colony, and without the certainty that he bids adieu to his connexions in England, and that he must look forward to a life of labour in another hemisphere.

"But from the day of his entrance into the prison, while I extinguish the hope of return to his family and friends, I would open to him fully and distinctly the fate which awaits him, and the degree of influence which his own conduct will infallibly have over his future fortunes.

"He should be made to feel that from that day he enters on a new career. The classification of the convicts in the colony, as set forth in Lord Stanley's despatches, should be made intelligible to him. He should be told that his imprisonment is a period of probation; that it will not be prolonged above eighteen months; that an opportunity of learning those arts which will enable him to earn his bread will be afforded, under the best instructors; that moral and religious knowledge will be imparted to him as a guide for his future life; that at the end of eighteen months, when a just estimate can be formed of the effect produced by the discipline on his character, he will be sent to Van Diemen's Land, there, if he behave well, at once to receive a ticket of leave, which is equivalent to freedom, with the certainty of abundant maintenance, the fruit of industry; if he behave indifferently, he will be transported to Van Diemen's Land, there to receive a probationary pass, which will secure to him only a limited portion of his own earnings, and which will impose certain galling restraints on his personal liberty; if he behave ill, and if the discipline of the prison be ineffectual, he will be transported to Tasman's Peninsula, there to work in a probationary gang, without wages, deprived of liberty—an abject convict.

"This is the view which should be presented to the prisoner on the day when he enters Pentonville; this is the view which should never be lost sight of, either by him or by those in authority over him, until the day when he leaves the prison for embarkation; and when, according to the register to be kept of his conduct, the governors will determine in which of the three classes he shall be placed.

"It will be open to the Commissioners, at any period of the imprisonment, to report to the Secretary of State cases which appear to them hopeless from the incorrigible character of the offenders, or where failing health or any other circumstances may render immediate removal from the prison desirable; and the Secretary of State will exercise his discretion in each case, with respect to the future destiny of the prisoner.

"My wish is, that Pentonville shall be for adults what Parkhurst now is for juvenile offenders—a prison of instruction and probation, rather than a gaol of oppressive punishment; excepting that the more severe discipline of the separate system is in Pentonville applied to those of riper years, while the tender youth of Parkhurst is not exposed to the full rigour of this salutary discipline.

"But the same classification in the penal colony is held out as the object of hope and fear to the inmates of both prisons—the same moral agents will be employed, the same stimulants, the same correctives.

"Eighteen months of this discipline appear to me ample for its full application. In that time the real character will be developed, instruction will be imparted, new habits will be formed, a better frame of mind will have been moulded, or the heart will have been hardened, and the case will have become desperate.

"The period of imprisonment, therefore, will be strictly limited to eighteen months. At the expiration of this term your recommendation will be transmitted to the Secretary of State, which will affix the class to which the convict will belong on his arrival in Van Diemen's Land. You will be mindful of the extent of discretionary power thus entrusted to you, which will have the effect either of aggravating or of diminishing for years the punishment of a large body of criminals. You will use every precaution to prevent the operation of favour or caprice in the reports, which will decide or influence your judgment on the character and merits of each prisoner; recollecting always that on your decision his fate in the penal colony will almost entirely depend.

"I might enlarge on other points and descend to minute details of management, but I rely implicitly on your prudence and good judgment; and I trust that the great experiment committed to your care will be conducted with firmness, tempered by mercy; and that, combined with the new arrangements of graduated punishment in the colony, it may be blessed with success, and not only by example prevent the commission of crime, but reclaim from the error of their ways thousands of unhappy criminals who, without your benevolent exertions, would have fallen the hopeless victims of depravity.

"I have the honour to be, with great respect,

"My Lords and Gentlemen,

(Signed) "J. R. G. GRAHAM.

"*The Commissioners for the Government of Pentonville Prison.*"

Appendix No. 5.

Extract from the Third Report of Inspectors of Prisons of Great Britain for the Home District.

"We proceed now to a review of the circumstances which first led to the improvements in prison discipline, and more especially to the introduction of the system of separate confinement in this country.

"The earliest steps which were taken in this matter undoubtedly originated in the public exposure made by Mr. Howard, of the deplorable condition of our gaols.

"He has himself ascribed the commencement of that interest which he so long and ardently felt in the mitigation of the sufferings of prisoners to an incident which occurred in the early part of his life. On his voyage to Lisbon in 1755, which city he designed to visit immediately after the earthquake by which it had been destroyed, the packet in which he sailed was taken by a French privateer. The barbarous treatment which he with the rest of the passengers experienced in the Castle of Brest, in a dungeon in which they were all confined for several days, led him, in the first instance, to seek the mitigation of the sufferings of such of his countrymen as were imprisoned in the places where he had himself been confined in France. This humane feeling gained further strength and development from what he observed in the prisons of his own country, and particularly from what came under his immediate notice, when, some years after, 1773, he was high sheriff of the county of Bedford. He refers, in his account of the prisons of England and Wales, to the circumstances with which his discharge of the duties of that office made him acquainted, as those which excited him to undertake his humane journeys of inspection, in the course of which he visited most of the prisons in England. In 1774 he was examined on this subject by the House of Commons, and had the honour of receiving the thanks of that body.

"Together with the remonstrances of this distinguished benefactor of mankind, another circumstance powerfully co-operated to produce a general desire for the improvement of our prisons. At the termination of the American war, the loss of our Transatlantic dependencies had deprived us of those remote colonies to which we had been accustomed for a long time to transport many of our convicted felons, and imposed on us the necessity of immediately devising a substitute for the system of transportation which had been hitherto pursued.

"The result of this combination of humane remonstrance and political necessity appears to have been a general desire that something should be speedily done to improve our prison discipline. The first impulse to public feeling was given by the labours of Howard; and great is the obligation which the cause of humanity owes to the

unwearied industry and ardent benevolence of this distinguished philanthropist. His labours were rewarded by that deep and national feeling of commiseration for the sufferings of prisoners which followed that faithful exposure of them, which his earnest wishes for their mitigation, and his truly Christian courage prompted him to make. But the attention of this excellent man seems to have been almost absorbed by the physical sufferings which it was his lot to witness. The very magnitude and intensity of those sufferings seem to have prevented him from looking beyond them to a consideration of the moral evils of imprisonment, which are even still more deplorable than the prisoner's privations and discomforts, and without the proper remedy for which, even an improvement of his physical condition is but too often a greater incentive to his further advancement in crime and vice. The impulse, however, was thus given to the desire and demand for prison improvement; it was prompt and decisive, and to Howard the praise is most justly due.

"The first movement was made by individual magistrates, whose humanity and public spirit suggested the duty and necessity of endeavouring to improve the state and condition of the prisons under their own immediate jurisdiction and control. Of these magistrates we are bound to mention, as among the foremost and most distinguished, the then Duke of Richmond, lord-lieutenant of the county of Sussex.

"It appears from extracts from the records of that county, obligingly furnished us by W. V. Sandgridge, Esq., the present clerk of the peace, and which we have given in Appendix (A), that on the 2nd October, 1775, at the quarter sessions, at Petworth, it was ordered, in consequence of the insecurity and insalubrity of the old gaol at Horsham, that a new prison should be erected in conformity with a plan produced by the Duke of Richmond. It appears that his Grace not only furnished the plan of the prison itself, but also of the gaoler's house, chapel, and infirmary. His suggestions respecting a better site, the grounds attached thereto, and the boundary-wall, were all adopted; and we find that his attendance and exertions during the whole progress of the works, until their completion in 1779, were assiduous and unremitted.

"To the judgment, perseverance, and public spirit of the Duke of Richmond, and to the effectual co-operation of the magistrates of the county of Sussex, associated with his Grace, the public is indebted for the earliest establishment of a system which is destined, we believe, at no distant period, to shed an honourable distinction upon those who were instrumental to its first introduction, and which is calculated to confer lasting benefits on our criminal population and upon society at large.

"But the strength and prevalence of the desire for the improvement of our gaols can best be estimated from the legislative measures which immediately followed the labours of Mr. Howard, and the political necessity which had been induced by the loss of our American colonies. The first of these was the 19th Geo. III. cap. 74, an enactment of great importance, which was the result of the joint labours of Sir William Blackstone, Mr. Howard, and Mr. Eden (afterwards Lord Auckland).

These distinguished men brought to the preparation of this Act profound legal knowledge, diffusive philanthropy, and an extensive practical acquaintance with the subject. Their measure became law in 1778.

"In this enactment, the basis of all succeeding legislative proceedings upon this subject, and the theme of admiration and approval on various occasions in Parliament, the principle of separate confinement of prisoner from prisoner, accompanied with labour and occupation, and religious and moral instruction, is clearly laid down and enforced. In the 5th section we find it affirmed, 'That if many offenders, convicted of crimes for which transportation has been usually inflicted, were ordered to solitary imprisonment, accompanied by well-regulated labour and religious instruction, it might be the means, under Providence, not only of deterring others, but also of reforming the individuals, and inuring them to habits of industry.'

"Here we have solitary confinement modified by labour, and accompanied with religious instruction, enjoined as a proper mode of punishing offenders, and enacted with a view to the effects which may be justly expected—namely, the deterring of others, the reformation of the individual, and the acquisition of habits of industry. And in order to guard against any ill effects which might attend an injudicious application of the system, with reference to the health of the prisoners, the Act not only expressly ordains, in the 30th section, that the offenders shall 'be kept entirely separate and apart from each other,' but it also determines the proper dimensions of the apartments; enjoining that offenders shall be lodged 'in separate rooms or cells not exceeding 12 feet in length, 8 feet in breadth, and 11 feet in height; nor less than 10 feet in length, 7 feet in breadth, and 9 feet in height.'

"Thus we are enabled to show that the principle of modified solitary confinement was recognized and enforced by a positive legislative enactment not less than 60 years ago, and that it was successfully carried out in the county gaol at Horsham. This distinctly proves that the system is no novel and untried invention, unsuited to the character and unfit for the treatment of English criminals. It also incontrovertibly establishes the fact that the separate system is British—British in its origin, British in its actual application, British in its legislative sanction.

"But the improvements in prison discipline were not limited to the efforts of individual magistrates, or to the 19th Geo. III., cap. 74, for building penitentiary houses. In the year 1781 an Act (the 22nd Geo. III., cap. 54) was passed for amending and rendering more effectual the laws then in being relative to houses of correction. The provisions of this Act are so important, as indicating the opinion of the legislature with regard to the necessity and advantage of separate confinement, that we venture to insert in this place a few of the clauses which bear upon the subject. The preamble recites that 'for many counties the houses of correction are insufficient in number, or deficient in building, and the apartments in them are very ill accommodated to the purposes for which they were intended; by means whereof, and from a want of due order, employment, and discipline in such houses of correction, the persons sent thither for correction and reformation frequently grow more dissolute and abandoned during their continuance

in such houses.' Again, 'Justices in settling and adjusting plans of new buildings, are hereby required to provide separate apartments for all persons committed upon charges of felony, and convicted of any theft or larceny, and committed to the house of correction for punishment by hard labour, under or by virtue of the laws in being, in order to prevent any communication between them and the other prisoners.'

"The immediate consequence of this Act was the construction of the house of correction at Petworth.

"We now proceed to give a short account of the Penitentiary House at Gloucester. On the basis of the 19th Geo. III., cap. 74, was founded that part of the Act (the 25th Geo. III., cap. 10) which concerns the Penitentiary House at Gloucester; and in making rules for the regulation of all matters connected with the treatment of the prisoners, the justices of the peace for the county (in whom the control over the management of the penitentiary was vested) were directed to have regard to the discipline, provisions, and directions of the 19th Geo. III., concerning the two penitentiary houses therein mentioned, as nearly as should appear consistent with the more limited design of the Penitentiary House for the county of Gloucester. The 14th clause of the 31st Geo. III., cap. 46, containing a provision of a similar nature to that introduced into the 19th Geo. III., for shortening the confinement of offenders on the discovery of any merit or extraordinary diligence, extends to this prison.

"This penitentiary, as we collect from the evidence given before a Committee of the House of Commons in 1811, by Sir George Onesiphorus Paul, through whose active exertions the consent of the legislature to its establishment was mainly obtained, was opened on the 25th July, 1791. The number of lodging-cells originally provided for male prisoners was 32, and for females 12; these numbers afterwards increased to 54 cells for males and 18 for females. These cells were 8 feet 9 inches by 8 feet 2 inches, and 9 and 10 feet from the floor to the crown of the arch.* They were floored with paving-stones; the walls, which were about 18 inches thick, were of brick, and the cells were arched with the same material. The ventilation was effected by underground flues. The chaplain's duty was to read prayers every Sunday, Wednesday, and Friday morning, and to preach a sermon every Sunday, Christmas-day, and Good Friday.

"On a review of the foregoing accounts of the prisons at Horsham, Petworth, and Gloucester, we are naturally led to reflect upon the early period at which the system of separation was first introduced, and the zeal and judgment displayed by those excellent persons who projected and brought about its establishment. It is also impossible not to be struck with the beneficial effects which have uniformly attended the system when fairly acted upon, and which ceased only when the overcrowding of the prisons rendered the execution of the plan impossible. We find that under the operation of the separate system in these prisons, committals to them became unprecedentedly few, and that

* These were the dimensions of the sleeping cells; the working cells were 11 feet 2 inches in height.

recommittals almost disappeared; we find the health of the convicts excellent, their mental faculties unimpaired, their labours cheerful and constant, their behaviour orderly and submissive, and their religious instruction carefully attended to, and with the happiest results. When the system was broken in upon and suspended by the influx of numbers, for whom it was impossible to provide separate apartments, nearly the reverse of all this took place. Order was succeeded by insubordination; labour, instead of being voluntary, became distasteful and constrained; and religious instruction, with all its desirable consequences, was either neglected or became inefficacious.

"About three years after the completion of the Gloucester Penitentiary, the consideration of a national penitentiary in the vicinity of the metropolis was resumed, agreeably to the proposal of the late Jeremy Bentham, Esq., for the erection of a structure on a large scale for the confinement and employment of offenders, and called by him a 'Panopticon.' The plan of this building was laid before the Lords Commissioners of the Treasury by that gentleman, in a paper entitled 'A Proposal for a new and less expensive Mode of employing and reforming Convicts.'

"The prosecution of Mr. Bentham's project was impeded by various obstacles, which it is needless to enumerate; and it was not until a Committee of the House of Commons, which (in consequence of a motion of Sir Samuel Romilly upon the subject of penitentiaries, in the month of June, 1810) was appointed to consider of the expediency of erecting a penitentiary house under the forementioned Acts, had fully examined Mr. Bentham's plan, that, in accordance with the recommendation of that Committee, the measure was regarded as inexpedient, and finally abandoned. It must, moreover, be borne in mind that the institution contemplated by Mr. Bentham was merely a great manufactory, without regard being had either to the penal or moral objects of a prison."

Appendix No. 6.

Description of the House of Correction at Rome; extracted from a valuable Work issued by Monsieur Duchatel, Minister of the Interior of France in 1842, entitled, "Instruction et Programme pour la Construction des Maisons d'Arret et de Justice."

"Cette prison fut élevée par les ordres du Pape Clément XI., de 1703 à 1735. Si l'on entre dans l'examen detaillé du system et même de la disposition architecturale de cette prison, on reconnaîtra que les Américains ne sont que les imitateurs des Italiens non seulement sous le point de vue du régime disciplinaire, mais aussi sous celui de la construction. Par l'examen des dessins ci-joints, il sera facile de reconnaître que tout etait prévu dans chaque cellule pour l'habitation constante des détenus soumis au régime de la séparation."

Appendix No. 7.

Extract from a Report made by Dr. Owen Rees, Principal Medical Officer of Pentonville Prison.

"*Pentonville Prison, July* 15, 1844.

"In conformity with directions that I should state to the Board, from the experience gained since the opening of the prison, whether any additions or alterations are necessary in order to perfect the system of ventilation and warming, I beg to report that, having superintended the experiments made with a view to the ventilation of the cells during summer, and the ventilation and warming during the winter, I am of opinion that both these objects have been fully attained by the means which are now in operation. When the Board imposed upon me the responsibility of adjusting the apparatus and superintending the arrangements necessary for securing a perfect ventilation with such a degree of temperature as might be most conducive to the health of the prisoners, I paid great attention to the working of the system; and having fully ascertained, by an extended series of experiments, the power of the apparatus and flues in radiating heat, and the quantity of fuel required for producing it, it is now only necessary that the Labourer in charge should conform to the instructions he has received, and an equable and regular temperature with an active ventilation cannot fail to be produced.

"In a former report I adverted to an unexpected difficulty which had occurred in the course of my experiments, owing to a period of from 10 to 14 days being required to produce any great effect on the general temperature. This arose partly from the flues not being dry, by which the heating was retarded; and when it became necessary to lower the temperature there was a much greater amount of heat radiated from the materials of which the flues were composed than was anticipated. It is of the greatest importance to the health of the prisoners that the cells should not be subject to sudden fluctuations of temperature; and the self-adjusting power of the system arising from the disposition of the pipes in the main flues has so much exceeded expectation that it effectually secures this advantage, which it is difficult to believe could be obtained by any other arrangement. It might at first appear desirable to have the power of *immediately* raising or lowering the general temperature of the cells; but on further consideration of the subject, it will be seen that such a power is incompatible with the more valuable property of self-adjustment and the maintenance of any given temperature when once acquired. But what is of more importance to the solution of the question is, that, excepting in special cases, experience has proved that such power is not necessary. When from local or other causes any special means for regulating the temperature of cells has been required, it has been effectually accomplished by introducing a Regu-

lator to enable a prisoner to stop the current from the main flue, and admit air into his cell directly from the corridor.

"I am inclined to attribute the general good health which pervades the whole body of prisoners in a great measure to the abundant ventilation introduced into the cells and the equable temperature which reigns throughout the prison,* of which the accompanying daily record furnishes sufficient evidence.

(Signed) "G. OWEN REES,
Principal Medical Officer."

Appendix No. 8.

Ordonnance of the King, and Extract from the "Exposé des Motifs," recently submitted to the Chamber of Peers by M. Duchatel, the Minister of the Interior, in presenting the "Projet de Loi" for the introduction of the Separate System into France.

"Chambre des Pairs.

"*Séance du* 10 *Juin* 1844.

"Louis Philippe, Roi des Français, à tous présents et à venir, salut.

"Nous avons ordonné et ordonnons que le projet de loi dont la teneur suit, adopté par la Chambre des Députés dans sa séance du 18 Mai 1841, soit présenté, en notre nom, à la Chambre des Pairs par notre Ministre Secrétaire d'Etat de l'Intérieur, et par M. A. Passy, Sous-Secrétaire d'Etat, que nous chargeons d'en exposer les motifs et d'en soutenir la discussion."

"Exposé des Motifs. Par le Ministre de l'Intérieur.

"Messieurs les Pairs,

"Nous venons soumettre à vos délibérations le projet de loi sur le régime des prisons, déjà adopté par la Chambre des Députés.

"Cette question, depuis un demi-siècle, occupe les Gouvernements les plus éclairés de l'Europe et de l'Amérique. De nombreuses expériences ont été accomplies aux Etats-Unis, en Suisse, en Angleterre, et en Allemagne.

"La réforme de nos prisons est un des objets qui se recommandent le plus à la sollicitude du Gouvernement; les avertissements de l'opinion nous faisaient un devoir de porter sur ce problème social notre attention la plus sérieuse. Il importe, en effet, de remédier aux vices du régime actuel par un régime nouveau, qui réponde mieux à l'esprit de la loi, à l'état des mœurs et aux besoins de la sécurité publique. Il importe aux premiers intérêts de la société que le principe d'intimidation qui est la base de toute pénalité ne soit pas affaibli. Rendre à ce principe sa force, tout en préservant les détenus d'une corruption funeste, telle est la pensée du projet de loi.

---

* The average temperature considered to be most conducive to health when the cells are artificially warmed is from 54 to 58 degrees of Fahrenheit.

" Il est aujourd'hui reconnu que l'emprisonnement, dans l'état actuel de nos prisons, ne présente plus, à un degré suffisant, le caractère de sévérité et d'intimidation qui assure à la peine son efficacité.

" Les mesures adoptées depuis quelques années pour affaiblir ce mal n'ont pas suffi à le combattre. Il ne pouvait en être autrement : c'est le principe même de la vie en commun qui, combiné avec les adoucissements introduits dans la condition matérielle des détenus, a le double effet et d'énerver la peine et d'accroître la perversité des condamnés. Une réforme qui atteigne le mode même d'emprisonnement est donc devenue nécessaire.

" Il est d'autant plus urgent de prendre un parti que les prisons actuelles exigent des travaux considérables. La plupart des maisons départementales ont besoin de réparations, et dans un grand nombre de départements ces réparations sont suspendues. Les maisons centrales, trop peu nombreuses, sont arrivées à un état d'encombrement qui n'est pas moins nuisible à la santé qu'à la moralité des détenus. Il faut, ou agrandir les prisons existantes, ou, ce qui vaut mieux, créer des prisons nouvelles. Il convient donc, avant que l'Etat s'engage dans ces dépenses, de savoir à quel régime d'emprisonnement on veut les appliquer. La construction et le plan d'une prison sont nécessairement subordonnés aux conditions du régime qui doit y être mis en vigueur. Faut-il maintenir, changer ou seulement modifier le système actuel? La solution de cette question ne saurait, sans dommage pour la société, être retardée plus longtemps.

" Le régime que nous proposons d'établir dans toutes les prisons, comme règle générale, sauf quelques exceptions, que nous indiquerons plus tard, est celui de l'emprisonnement individuel.

" On sait que tous les plans de réforme des prisons se rapportent à deux systèmes principaux : l'un, connu sous le nom de système d'Auburn, n'admet l'isolement que pendant la nuit, avec la vie commune et le travail en silence pendant le jour ; l'autre, appelé système de Philadelphie, en vigueur depuis quatorze ans dans la prison de cette ville, est celui de la séparation complète des détenus entre eux, soit pendant la nuit, soit pendant le jour. Nous exposerons brièvement les motifs qui ont déterminé notre choix, en faisant observer tout d'abord que, dans le projet de loi que nous avons l'honneur de vous présenter, nous avons notablement modifié, pour l'adapter à la pratique, d'après l'état de nos mœurs et le caractère national, celui des deux systèmes auquel s'est arrêté notre préférence.

" Le système qui n'admet l'isolement que pendant la nuit, avec le travail en commun pendant le jour, n'opère pas une véritable réforme : il prévient peut-être les désordres les plus grossiers ; mais là s'arrête son efficacité. La règle du silence, sur laquelle il repose, est d'une observation impossible, et les dépenses considérables que son application entraînerait ne seraient pas compensées par des avantages suffisants.

" Les rapports officiels, en Angleterre et aux Etats-Unis, font connaître que, dans les prisons où ce système est en vigueur, la surveillance est d'une difficulté à peu près insurmountable ; le silence y est maintenu très-imparfaitement, malgré le fréquent emploi des punitions disciplinaires qui comprennent la peine du fouet, châtiment que repoussent

nos mœurs. Le grand nombre et le zèle des employés, la volonté énergique des directeurs, ne peuvent empêcher, en effet, des communications coupables entre les détenus, soit pendant les promenades, soit à table, soit enfin au milieu de ces travaux qui facilitent si fréquemment eux-mêmes l'infraction de la règle, et qui fournissent mille occasions d'échapper, à la vigilance des gardiens.

" Et d'ailleurs, quand on parviendrait à assurer l'observation du silence, on serait encore loin du but qu'il faut atteindre. C'est ce que prouve l'exemple de nos maisons centrales, même après les réformes qui y ont été introduites. Il ne suffit pas en effet que les détenus ne communiquent pas entre aux par la parole ; dans le régime de la vie en commun, il se voient, ils se connaissent, ils se retrouveront plus tard, au sortir de la prison, avec les souvenirs de leur captivité commune et de leurs tristes antécédents. Voilà cependant ce qu'il faut éviter.

" L'objet principal du projet de loi, c'est de rompre, de disperser ces associations malfaiteurs dont les faits ne révèlent que trop l'existence et qui menacent la sécurité publique, la vie, la fortune des citoyens. Le système de la séparation des détenus pendant la nuit seulement ne remédie en aucune sorte à ce danger social ; il le laisse subsister dans toute sa force ; on peut même dire qu'il ajoute des éléments nouveaux à la dépravation des condamnés. Tout mode d'emprisonnement qui ne dissout pas la société des criminels et qui ne compense pas, par l'intimidation et l'effet moral, ce qui manque aujourd'hui à la rigueur matérielle de la peine, ne satisfait pas aux conditions du problème.

" Le régime de la séparation des détenus pendant la nuit et pendant le jour est le seul dont les avantages soient réels et suffisants.

" Dans ce système, la discipline et le bon ordre sont maintenus sans effort. On comprend qu'une administration vigilante doit agir avec plus de facilité et de succès sur des individus, quelque pervertis qu'on les suppose, qui demeurent toujours séparés les uns des autres. On peut, dans ces conditions, être à peu près certain, sinon d'améliorer l'état moral des détenus, du moins de les empêcher de se corrompre davantage et de devenir plus dangereux pour la société. La peine de l'emprisonnement, ainsi appliquée, reprend le caractère de sévérité et d'énergie répressive qu'elle doit avoir : elle inspire un effroi salutaire ; elle frappe vivement, soit l'esprit des coupables eux-mêmes, soit la conscience publique. Il est donc permis d'affirmer que le résultat d'un semblable régime doit être nécessairement de diminuer à la fois le nombre des premiers crimes et celui des récidives.

" On ne peut lui contester l'avantage de dissoudre cette société de malfaiteurs qui vit aujourd'hui, comme une autre nation, au milieu de la société régulière. Les condamnés ne se connaissant pas, ne s'étant jamais vus dans la prison, ignorant qu'ils ont habité sous le même toit, ne peuvent plus entretenir ou renouer les mauvaises relations qui s'opposent, dans le régime de la vie commune, à ce que les moins pervertis reviennent au bien, et à ce que les autres ne fassent pas de nouveaux progrès dans le mal. On brise ainsi les liens qui les mettent dans la dépendance les uns des autres ; on les arrache à la contagion des exemples corrupteurs et des mauvais conseils. Plus de moyens d'intelligence et de communication entre eux ; chaque condamné, séparé des

autres, est rendu au sentiment de ses fautes, de son crime, du châtiment qui le frappe et de la réprobation qu'il a méritée. En rentrant dans la vie libre, après avoir subi leur peine, ces hommes que la vindicte publique a atteints cessent d'être un objet d'effroi pour la société, et si la dépravation n'est pas chez eux trop enracinée, ils peuvent encore prendre quelques bonnes résolutions que ne viendront plus traverser et détruire de fatales rencontres et des liaisons pernicieuses.

" On a élevé contre le régime de l'emprisonnement individuel des objections de diverse nature. Nous nous arrêterons à deux principales : 1° on lui reproche d'entraîner des dépenses trop considérables ; 2° on l'accuse de porter le trouble dans les facultés mentales, de détruire la santé, de causer même la mort. Ces objections sont graves, mais il est facile d'y répondre.

" Il est très-vrai qu'une prison construite pour le système cellulaire de nuit et de jour coûte plus cher à bâtir qu'une prison appropriée à la vie commune ; mais là se borne, en réalité, l'accroissement de la dépense, car il n'est pas exact de dire que le nombre des employés doive y être plus considérable, ni que le travail y soit nécessairement moins productif. En Angleterre, on a été obligé de multiplier de plus en plus les surveillants dans les maisons où le système d'Auburn est en vigueur, et, quant au travail, l'exemple de la maison de la Roquette, à Paris, prouve qu'il peut être facilement organisé dans les prisons soumises au régime de la séparation complète des détenus. Au reste, il ne faut pas perdre de vue que le système du projet de loi doit avoir infailliblement pour résultat de diminuer le nombre des délits et des crimes, et, par suite, celui des détenus : et comme nous nous proposons, en outre, de tenir compte, dans le calcul de la durée des peines, de ce qui est ajouté en sévérité, il est évident qu'on arrive ainsi, par un double effet, à réduire la population de détenus qu'il s'agit de surveiller et d'entretenir. La diminution des dépenses annuelles et ordinaires vient donc, sans parler des avantages moraux, en atténuation des charges qu'entraîne le premier établissement.

" Quant à l'objection relative à la santé et à la vie des détenus, elle est combattue par les faits nombreux qu'une expérience de vingt années a permis de recueillir. Il est aujourd'hui démontré que les craintes qu'on avait pu concevoir à cet egard étaient très-exagérées et ne reposaient pas sur des bases solides. L'état d'emprisonnement est sans doute, dans une certaine mesure, toujours nuisible à la santé, à la longévité, comme à la tranquillité d'esprit ; mais cela est vrai dans tous les systèmes : c'est un effet et une suite inévitables de la peine, c'est une de ses conditions ; et il suffit, pour rassurer le législateur, que l'emprisonnement individuel n'ait pas, sous ce rapport, des conséquences plus fâcheuses qu'un autre régime. On ne saurait rien conclure de quelques cas tout à fait exceptionnels.

" C'est ici le lieu d'insister sur une observation que j'ai déjà indiquée en commençant. Notre pensée n'est pas de soumettre les détenus à une séquestration absolue ; tel n'est pas le système du projet de loi, et c'est là ce qui le distingue du système Américain. Chaque condamné sera visité, au moins une fois la semaine, par le médecin, l'aumônier et l'instituteur. Les ministres des différents cultes et les membres des commissions de surveillance auront accès auprès des détenus, aux heures

déterminées par le règlement de la maison. Ils pourront, en outre, être visités par leurs parents, par les membres des associations de charité et de patronage, par les agents des travaux, et enfin par toute autre personne ayant une permission du préfet. Deux heures au moins par jour seront réservées aux condamnés pour ces visites, pour l'école et pou-la lecture. Le travail, qui est aussi une diversion puissante à l'isoler ment, ne pourra être refusé qu'à titre de punition temporaire. Vous le voyez, Messieurs les Pairs, il n'y a dans ces combinaisons rien d'absolu; ce n'est plus l'excessive rigueur du système Américain dans sa conception primitive. Nous voulons séparer les détenus entre eux; nous voulons qu'ils ne puissent ni se parler ni se connaître les uns les autres, ni même se voir; mais nous nous appliquons en même temps à les rapprocher de la société honnête; nous les préservons des mauvais exemples, des mauvais conseils, d'un contact dépravant; mais ils peuvent profiter des leçons utiles, des exhortations consolantes. Nous ne brisons pas pour eux les liens de la famille: ils conservent avec la société régulière des rapports aussi fréquents que le permet leur situation; nous nous bornons à rompre les relations funestes qui les enchaîneraient pour toujours à la société des malfaiteurs.

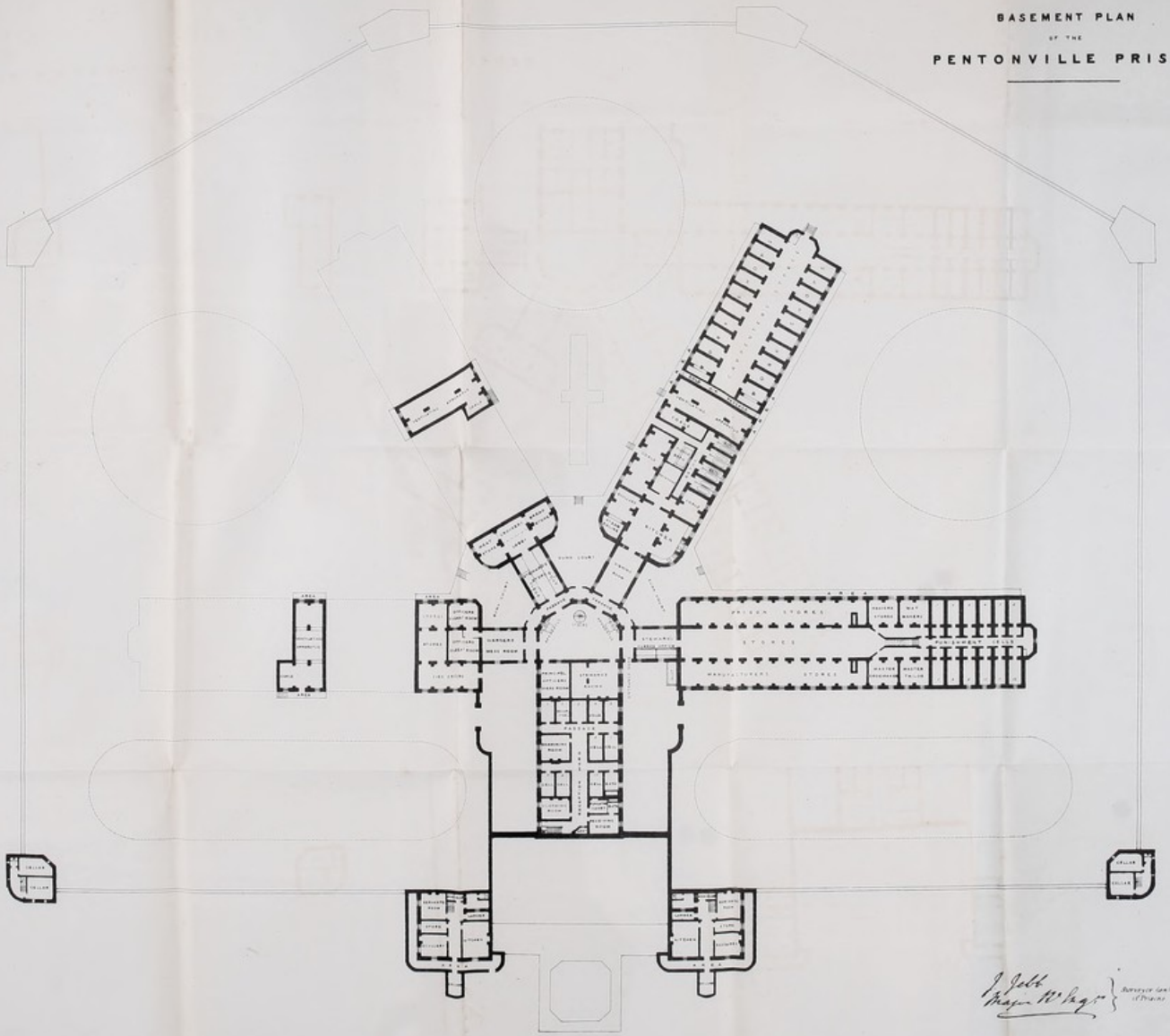
"Le système, ainsi combiné, nous paraît concilier les soins que l'humanité commande avec les devoirs de juste sévérité dont la société ne doit jamais se départir dans l'exécution de la loi.

"Je passe maintenant à l'examen des principales dispositions que le projet de loi renferme."

LONDON:
Printed by William Clowes and Sons, Stamford Street,
For Her Majesty's Stationery Office.

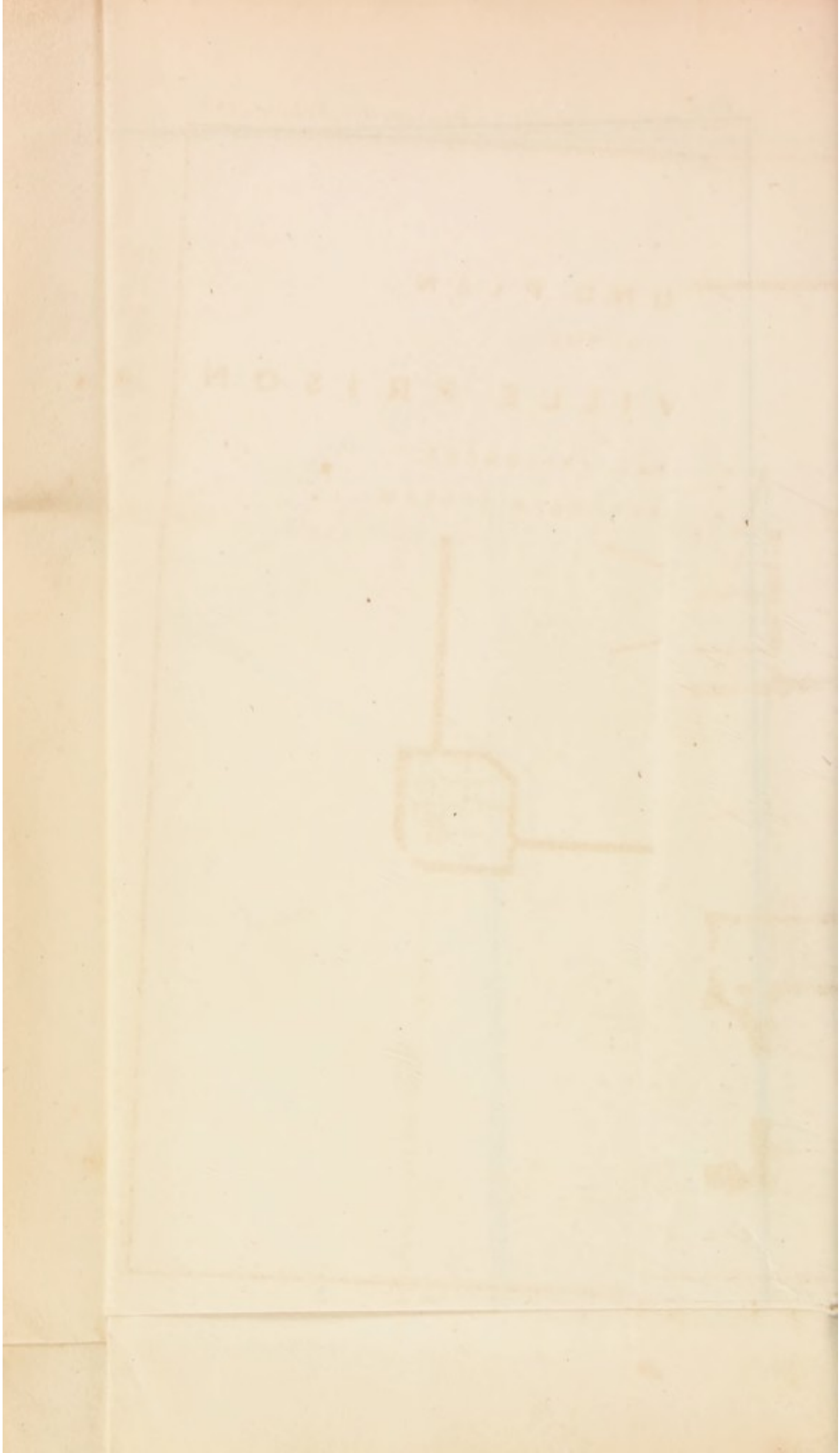
8ft

BASEMENT PLAN
OF THE
PENTONVILLE PRISON.



J. Jebb
Major W. Hay
Surveyors General of Prisons

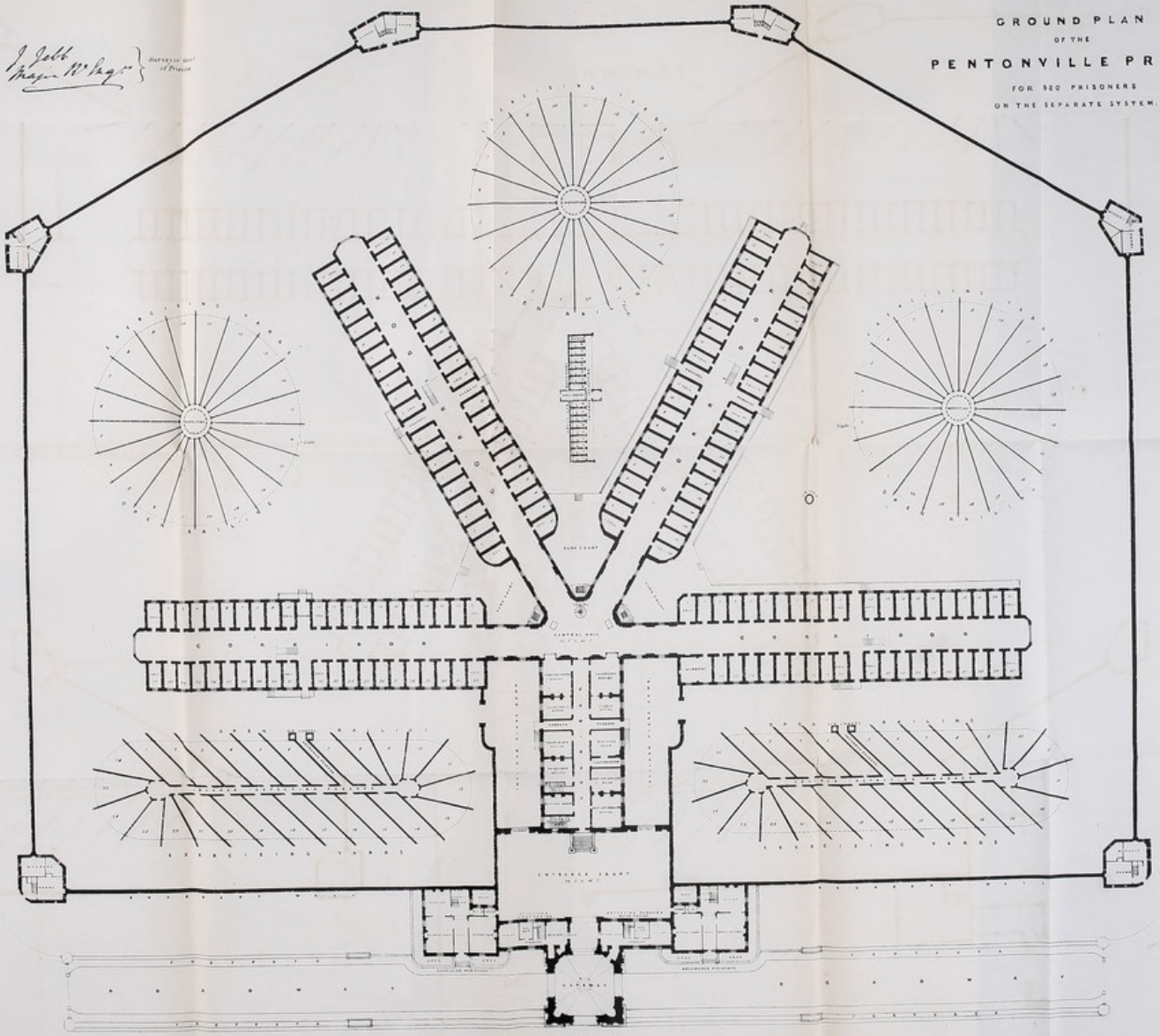
SCALE



Pl. 2
8 vo

J. Jebb
Major W.m Hay
Surveyors Genl of Prisons

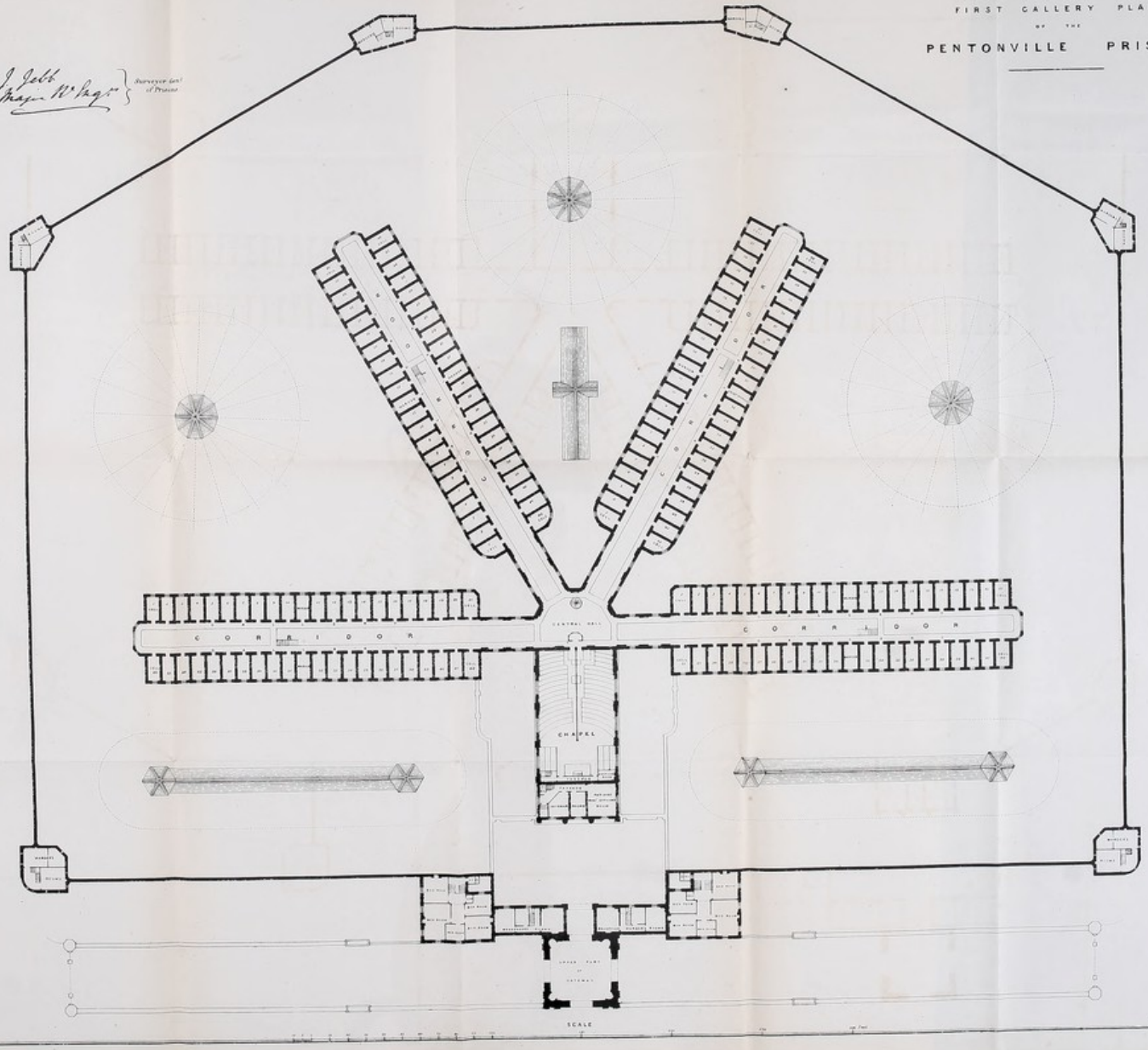
GROUND PLAN
OF THE
PENTONVILLE PRISON
FOR 520 PRISONERS
ON THE SEPARATE SYSTEM.



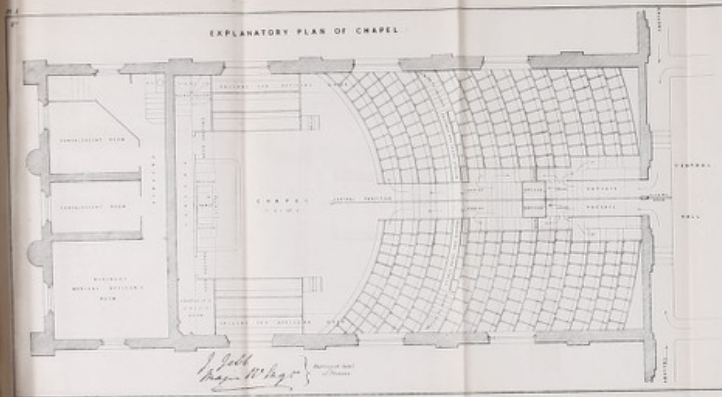
Pl. 3

FIRST GALLERY PLAN
OF THE
PENTONVILLE PRISON.

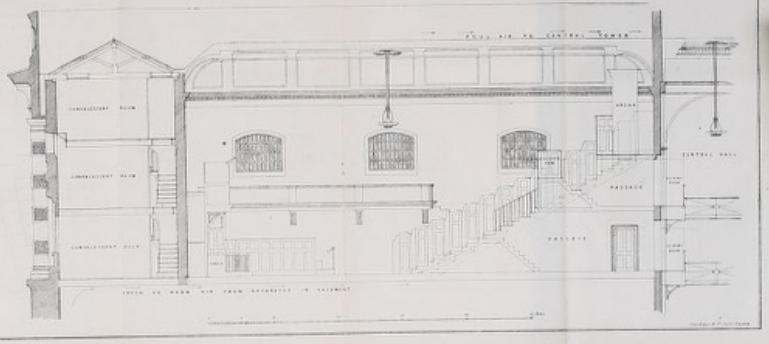
J. Gibb
Major W.ᵐ Jagoᵉ
Surveyors Genˡ of Prisons

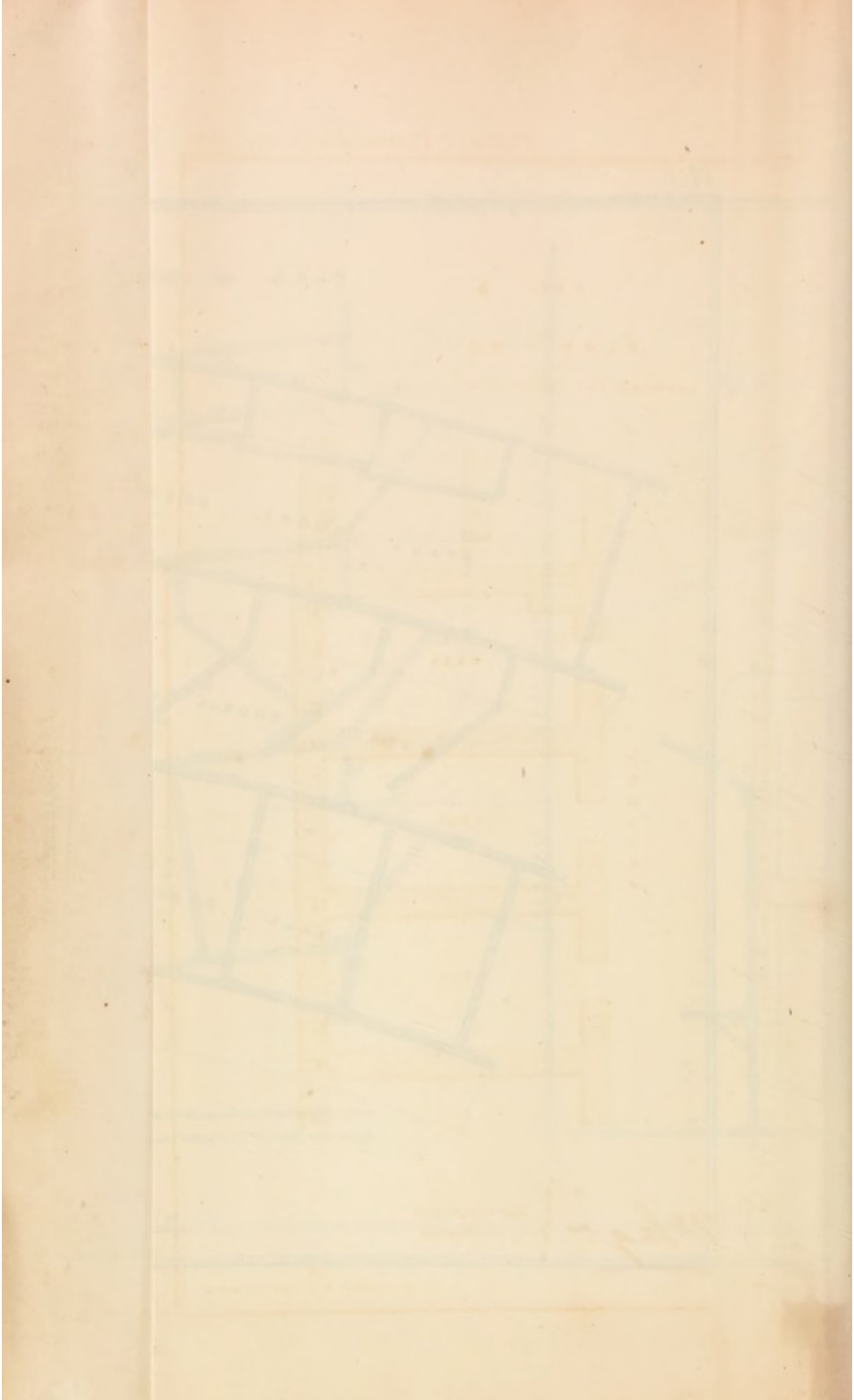


EXPLANATORY PLAN OF CHAPEL.

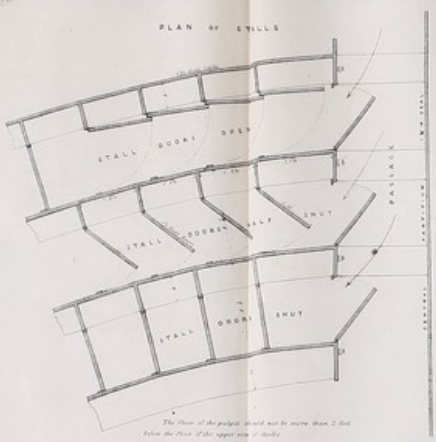


LONGITUDINAL SECTION OF CHAPEL.





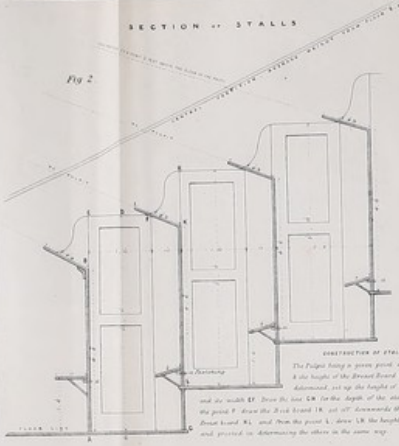
PLAN OF STALLS



The floor of the pulpit should not be more than 2 feet below the floor of the upper row of stalls.

SECTION OF STALLS

Fig 2

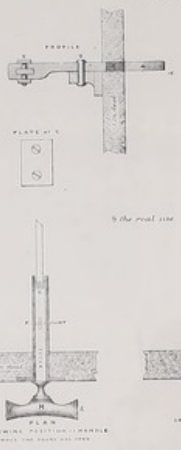


CONSTRUCTION OF STALLS

The Pulpit being a given point, we replacement & the height of the Breast Board AB being also determined, set up the height of Door CD ..... and the width EF. Draw the line CH for the depth of the stall & through the point F draw the Back board IK set off downwards the height of the Breast board KL and from the point L draw LN the height of the door, and proceed in determining the others in the same way.

SCALE

FASTENINGS FOR A ROW OF CHAPEL STALL DOORS



½ the real size

DETAILS OF CHAPEL FITTINGS

J. Jebb
Major W. Hogg
Surveyor Genl of Prisons

Standidge & Co. Lith. London

4to

TRANSVERSE SECTION EXPLANATORY OF THE VENTILATION

FIG 1

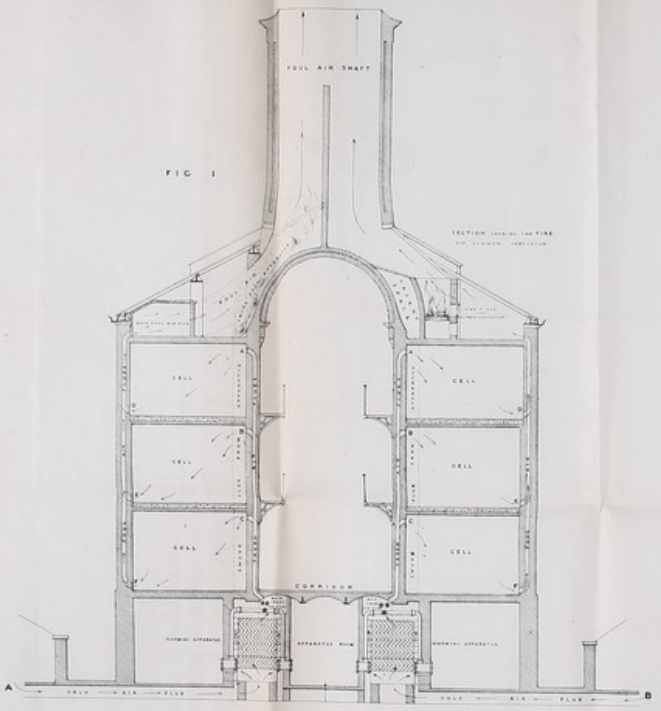


FIG 7

LONGITUDINAL SECTION OF PART OF CORRIDOR

SHEWING MAIN FRESH AIR FLUES

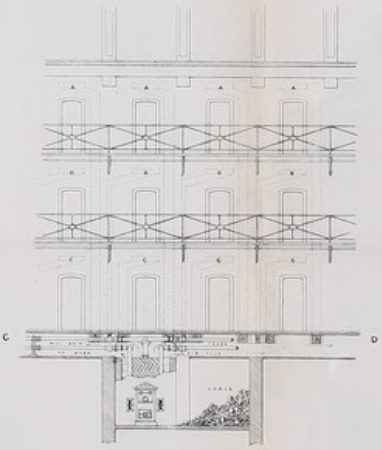


FIG 6

PLAN OF ROOF

SHEWING THE VENTILATING FLUES

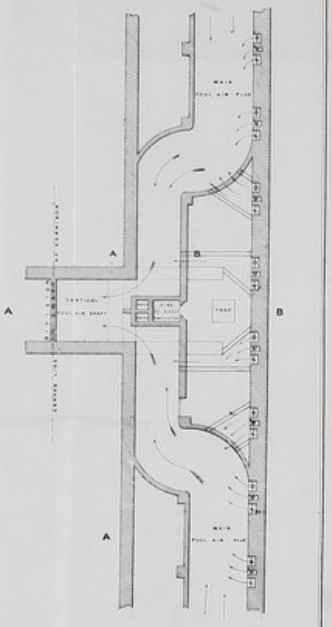


FIG 2

PLAN OF BASEMENT

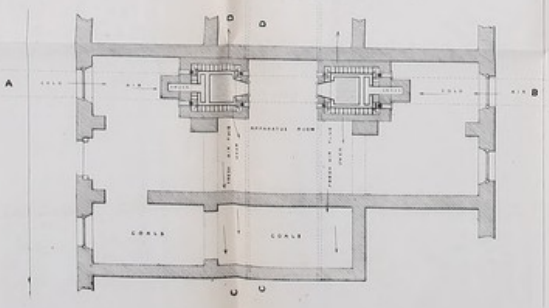


FIG 3

GROUND PLAN

SHEWING THE VENTILATING FLUES

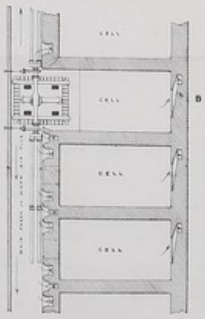


FIG 4

FIRST GALLERY PLAN

SHEWING THE VENTILATING FLUES

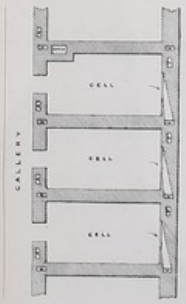
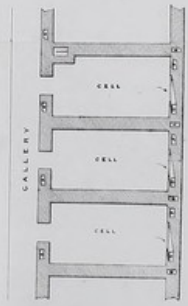


FIG 5

SECOND GALLERY PLAN

SHEWING THE VENTILATING FLUES



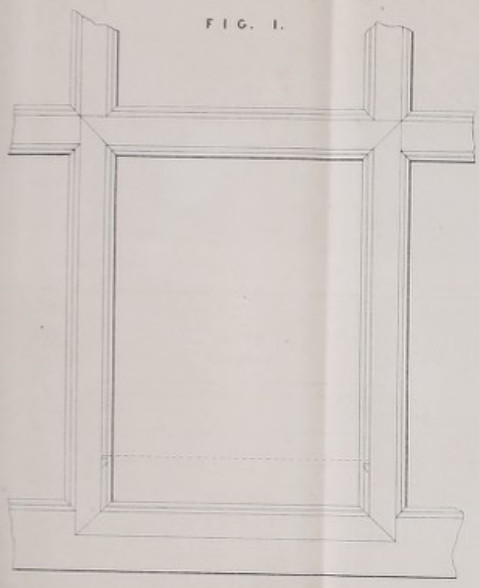
SCALE

J. Jebb
Major W. Hay
Surveyors Gen.l of Prisons

Standidge & Co. Lith. London

DETAIL OF A VENTILATOR FOR CELL WINDOWS.

FIG. 1.

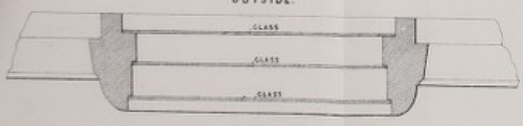


INTERNAL ELEVATION.

FIG. 2.

SECTION.

FIG. 3.



PLAN.

The Arrows denote the direction of the current of air.

PLANS SHEWING THE MEANS OF REGULATING THE TEMPERATURE WITHIN THE CELLS.

REGULATOR FIXED IN WARM AIR FLUE.

FIG. 4.

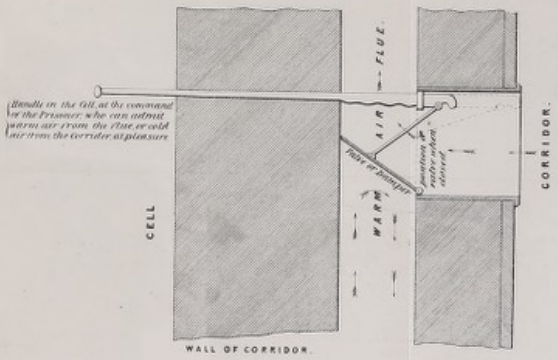
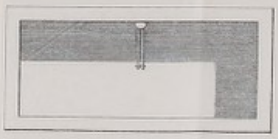


FIG. 5.

ELEVATION IN THE CORRIDOR.

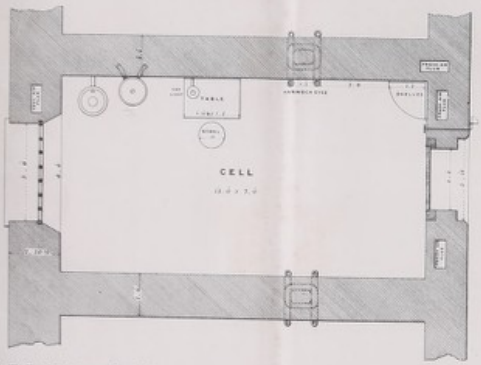


J. Jebb Major R.E. } Surveyor Genl of Prisons

Plans of Pentonville Prison — 1844

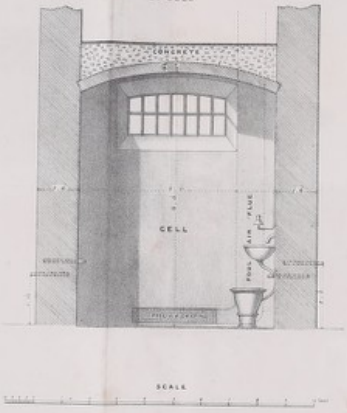
PRISON CELL

PLAN OF CELL

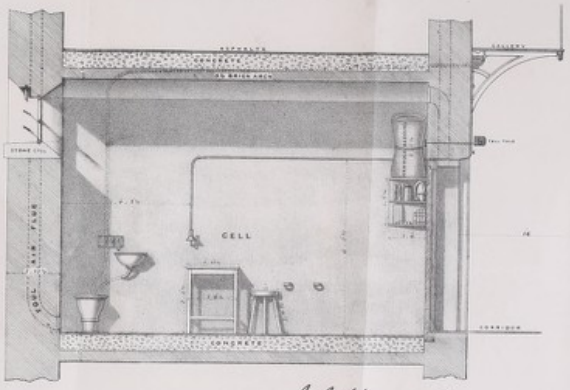


Note The Ventilating flues are those which appear in the walls on the ground floor

TRANSVERSE SECTION OF CELL

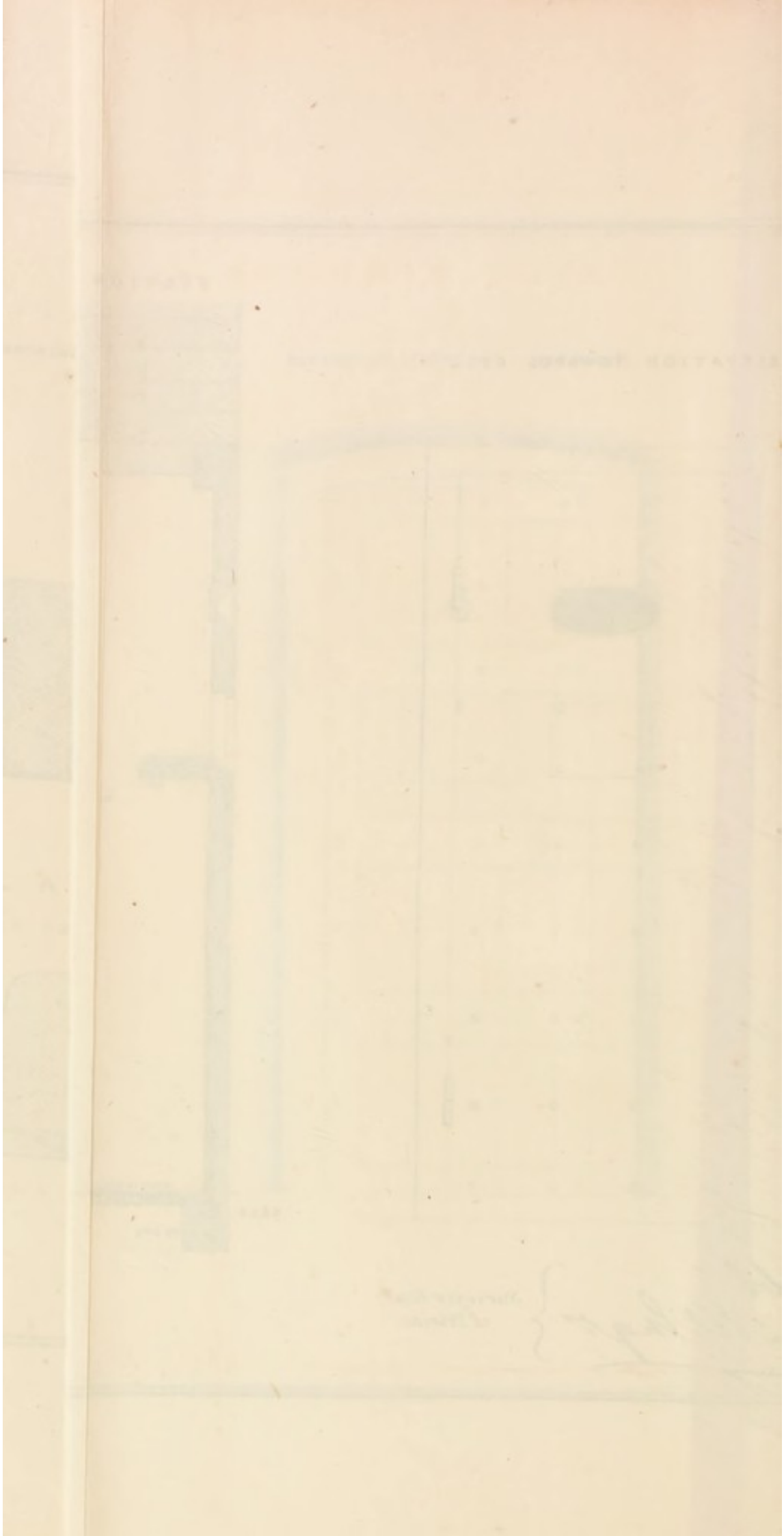


LONGITUDINAL SECTION OF CELL



J. Jebb
Major R.E.
Surveyors Genl of Prisons

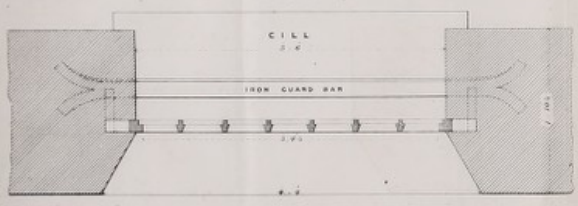
Day & Son Lith. to the Queen



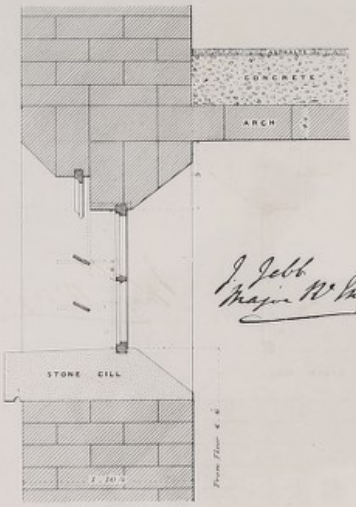
DETAIL OF IRON WORK OVER WINDOW

ELEVATION OF IRON SASH FRAME

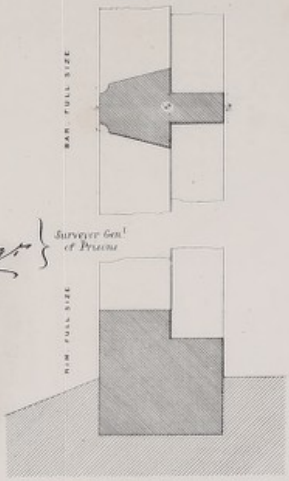
PLAN



SECTION



CELL WINDOWS

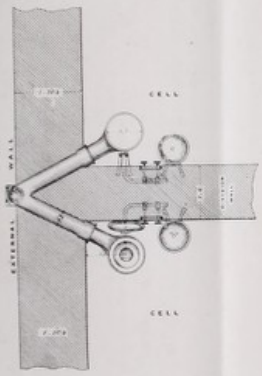


J. Jebb
Major W. Hagger
} Surveyor Gen.l of Prisons

SCALE

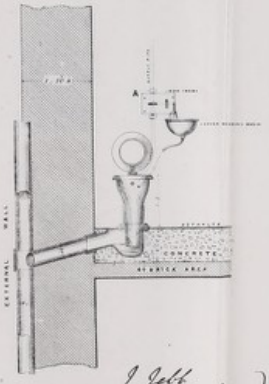
Standidge & Co.ll Ltho. London

PLAN

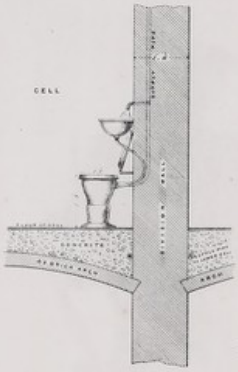


SECTION

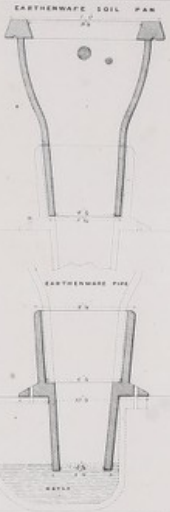
SHEWING THE POSITION OF WASHING BASIN, SOIL PAN, TRAP, &c



ELEVATION

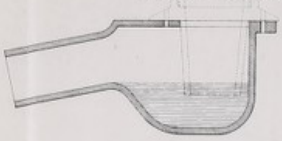


EARTHENWARE SOIL PAN

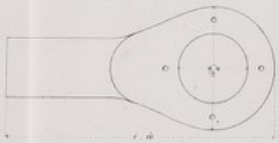


DETAILS of SOIL PAN, TRAP, BASIN &c.

SECTION of EARTHENWARE TRAP



PLAN of TRAP

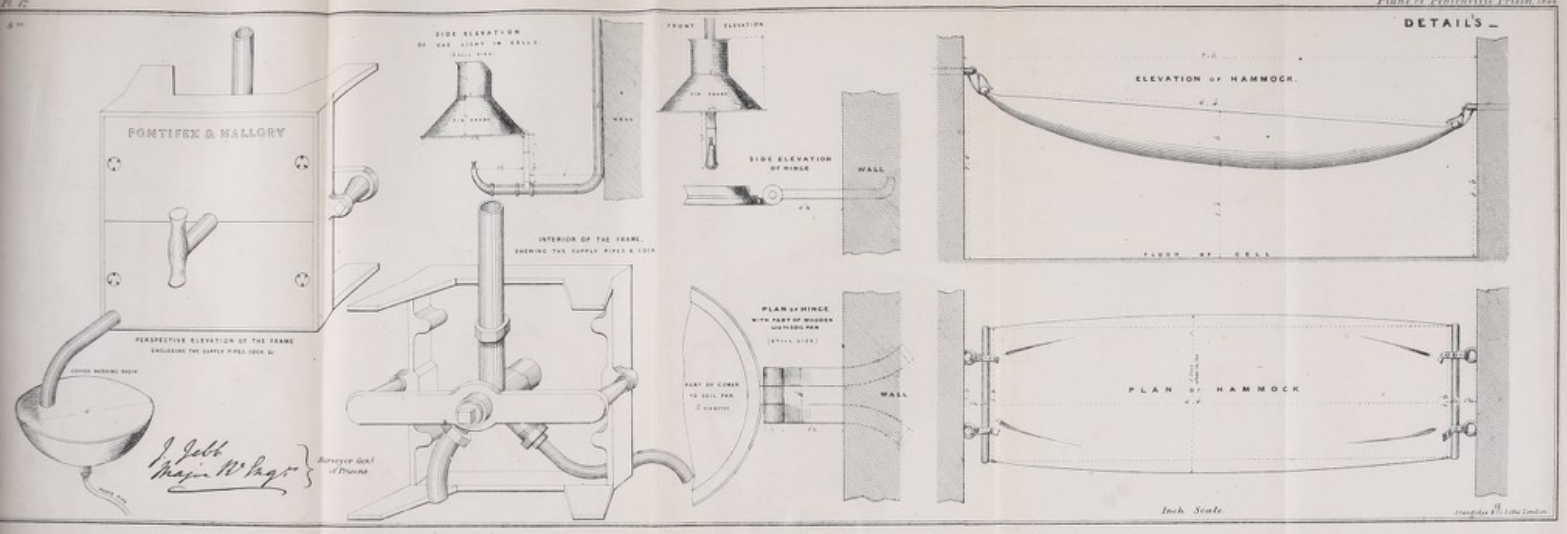


½ Inch Scale

J. Jebb
Major Wright
Surveyor Genl of Prisons

2 Inch Scale

42 Standidge & Co. Lithrs. London.


DETAIL'S –
PONTIFEX & MALLORY
PERSPECTIVE ELEVATION OF THE FRAME
SIDE ELEVATION
FRONT ELEVATION
SIDE ELEVATION OF HINGE
WALL
INTERIOR OF THE FRAME
PLAN of HINGE
ELEVATION of HAMMOCK.
FLOOR OF CELL
PLAN of HAMMOCK
Inch Scale
Surveyor Genl of Prisons

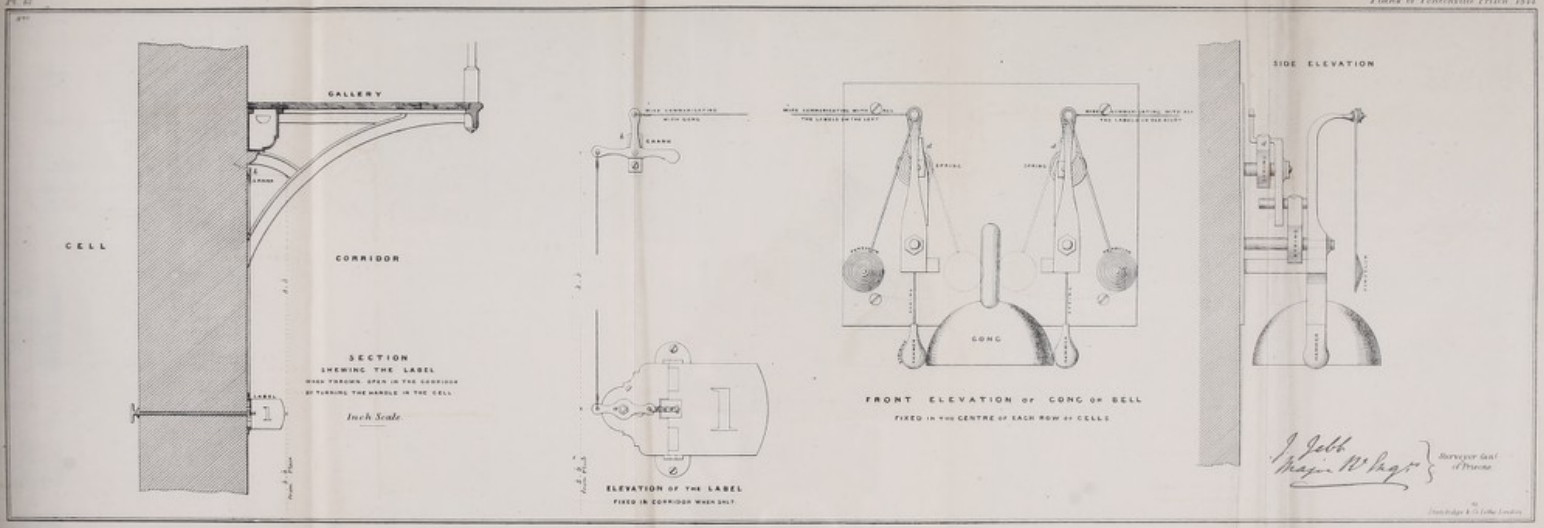
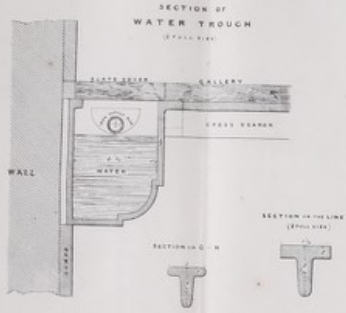
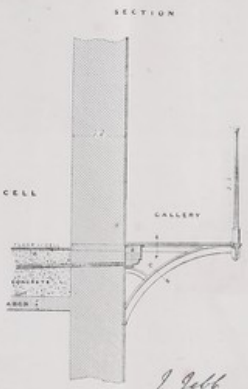
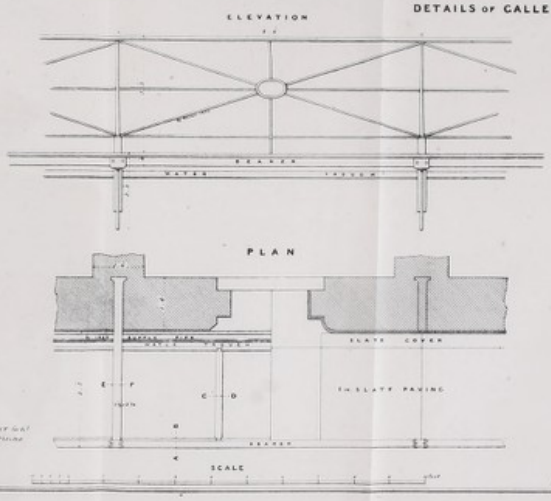

GALLERY
CELL
CORRIDOR
SECTION
SHEWING THE LABEL
WHEN THROWN OPEN IN THE CORRIDOR
BY TURNING THE HANDLE IN THE CELL
Inch Scale
ELEVATION OF THE LABEL
FIXED IN CORRIDOR WHEN SHUT
FRONT ELEVATION OF CONC OR BELL
FIXED IN THE CENTRE OF EACH ROW OF CELLS
SIDE ELEVATION
J. Jebb
Majr. W. Hage
Surveyor Genl of Prisons

Plate of Pentonville Prison 1844

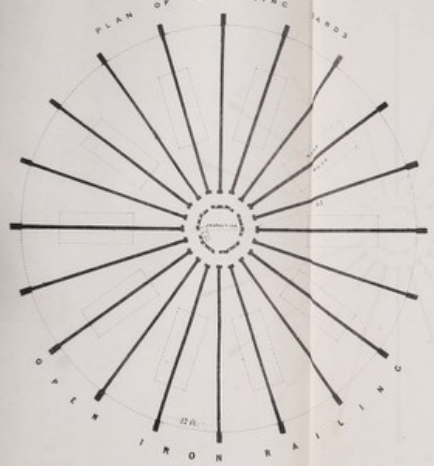
DETAILS OF GALLERY RAILING

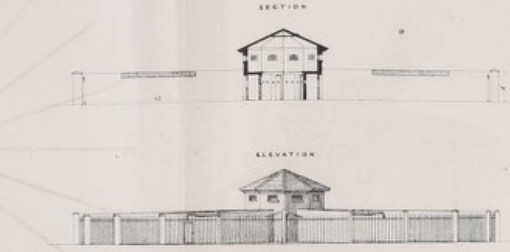






Plans of Pentonville Prison. 1844

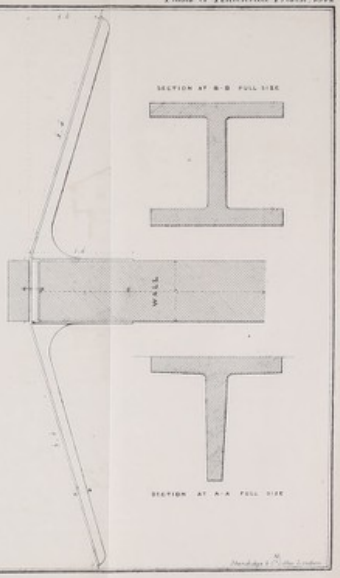




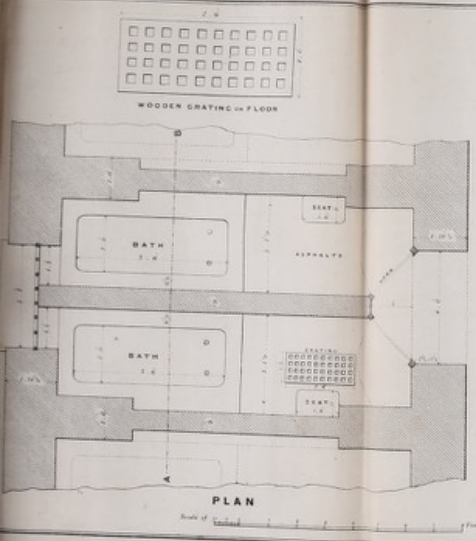
J. Jebb
Major W. Hughes
Surveyor Gen.l of Prisons

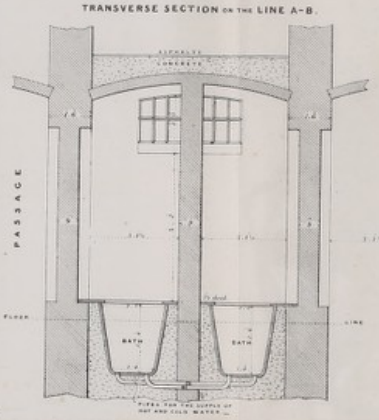
SCALE

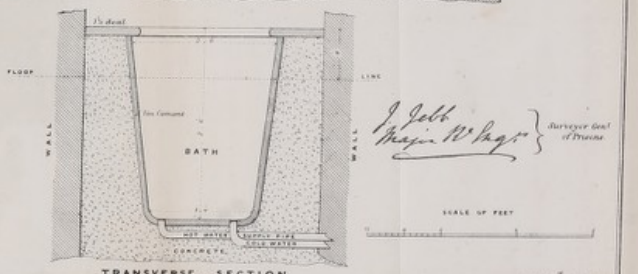
ELEVATION OF BRACKET, AND SECTION OF WALL



DETAILS of BATHS
ARRANGED in CELLS in the BASEMENT

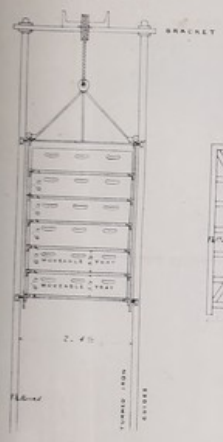




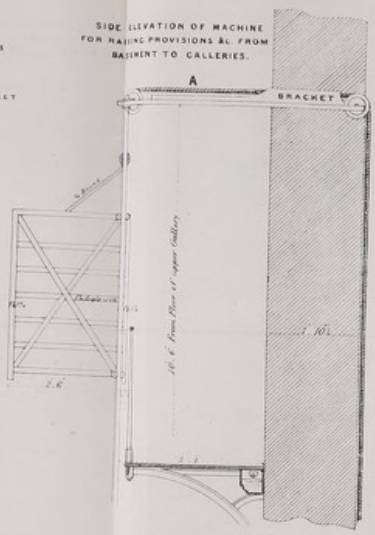


DETAILS OF MACHINE &c.

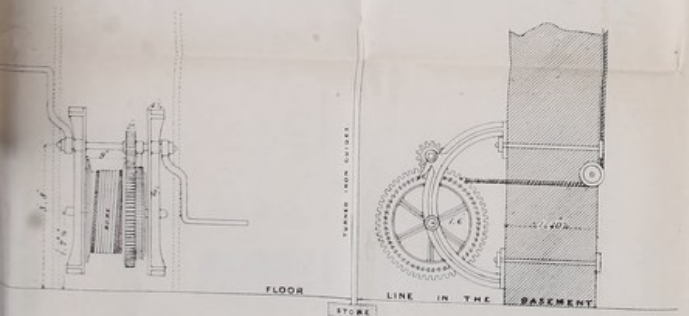
FRONT ELEVATION OF MACHINE FOR RAISING PROVISIONS & MATERIALS FROM BASEMENT



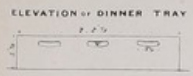
SIDE ELEVATION OF MACHINE FOR RAISING PROVISIONS &c. FROM BASEMENT TO GALLERIES.



½ Inch Scale.

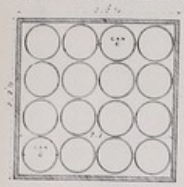


ELEVATION OF DINNER TRAY

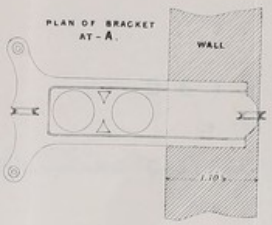


PLAN OF DINNER TRAY

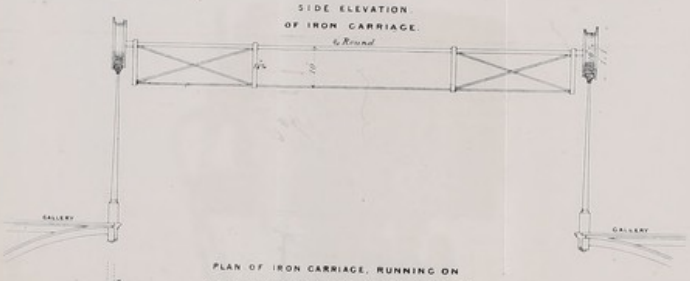
CONTAINING 16 CANS.



PLAN OF BRACKET AT - A.

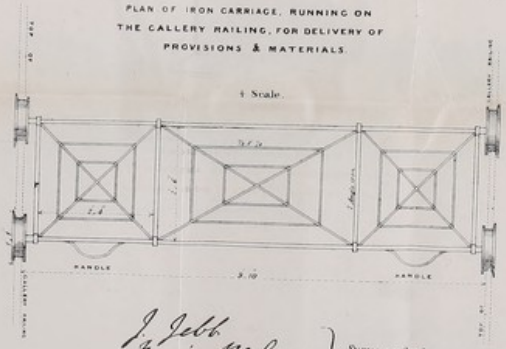


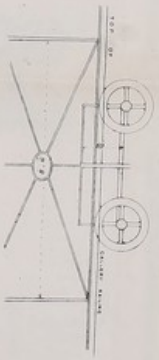
SIDE ELEVATION OF IRON CARRIAGE.



PLAN OF IRON CARRIAGE, RUNNING ON THE GALLERY RAILING, FOR DELIVERY OF PROVISIONS & MATERIALS.

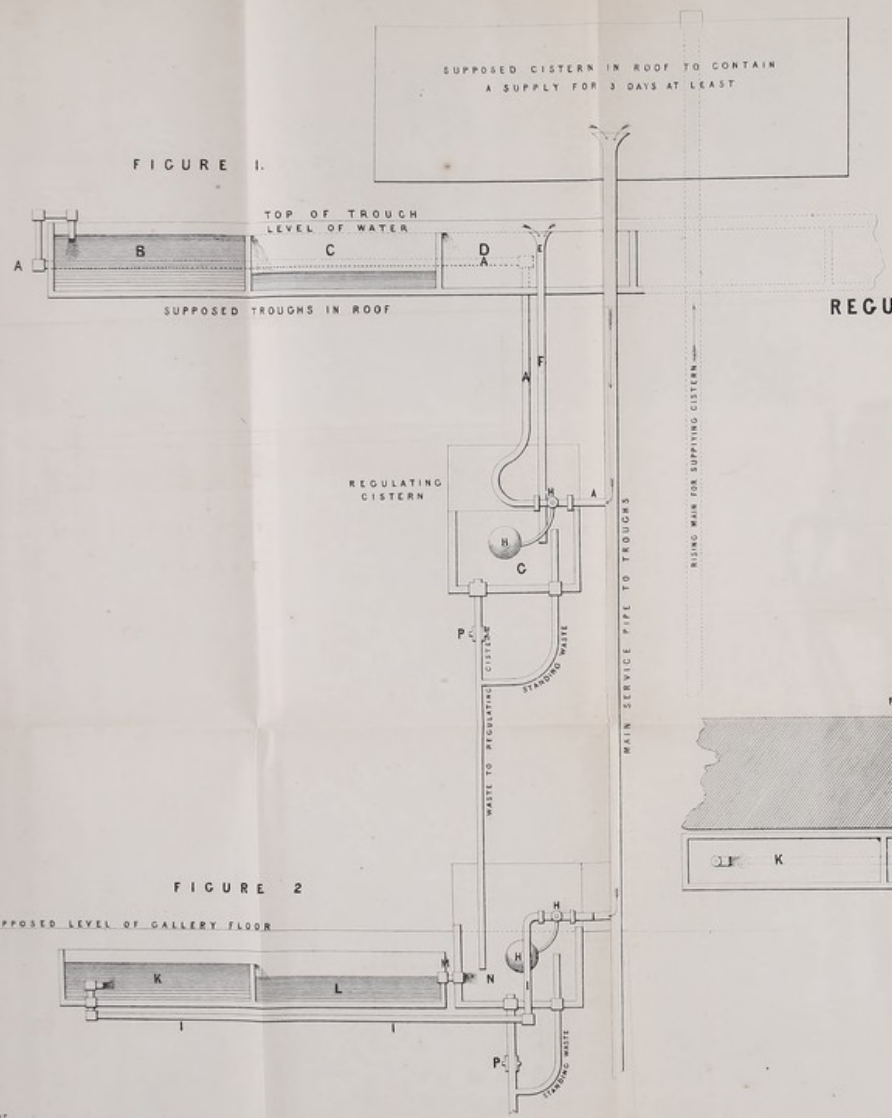
¼ Scale.

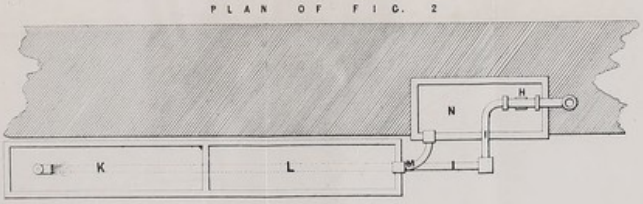




J. Jebb Major R.E. } Surveyor Genl of Prisons

DETAIL
OF THE
REGULATING CISTERNS, PIPES & COCKS,
FOR THE
DISTRIBUTION OF WATER.





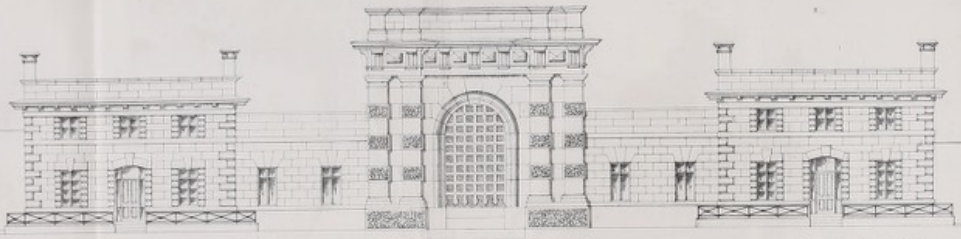
J. Jebb
Major R.E.
} Surveyer Gen.l of Prisons

J. OTTEY, DELT

Standidge & Co. Litho. London.

No 19

ELEVATION OF THE GATEWAY AND HOUSES FOR THE GOVERNOR AND CHAPLAIN
AT
PENTONVILLE PRISON.



J. Jebb
Major W. Paget
} Surveyors Genl of Prisons

ELEVATION - ENTRANCE BUILDING - PRISON WINGS

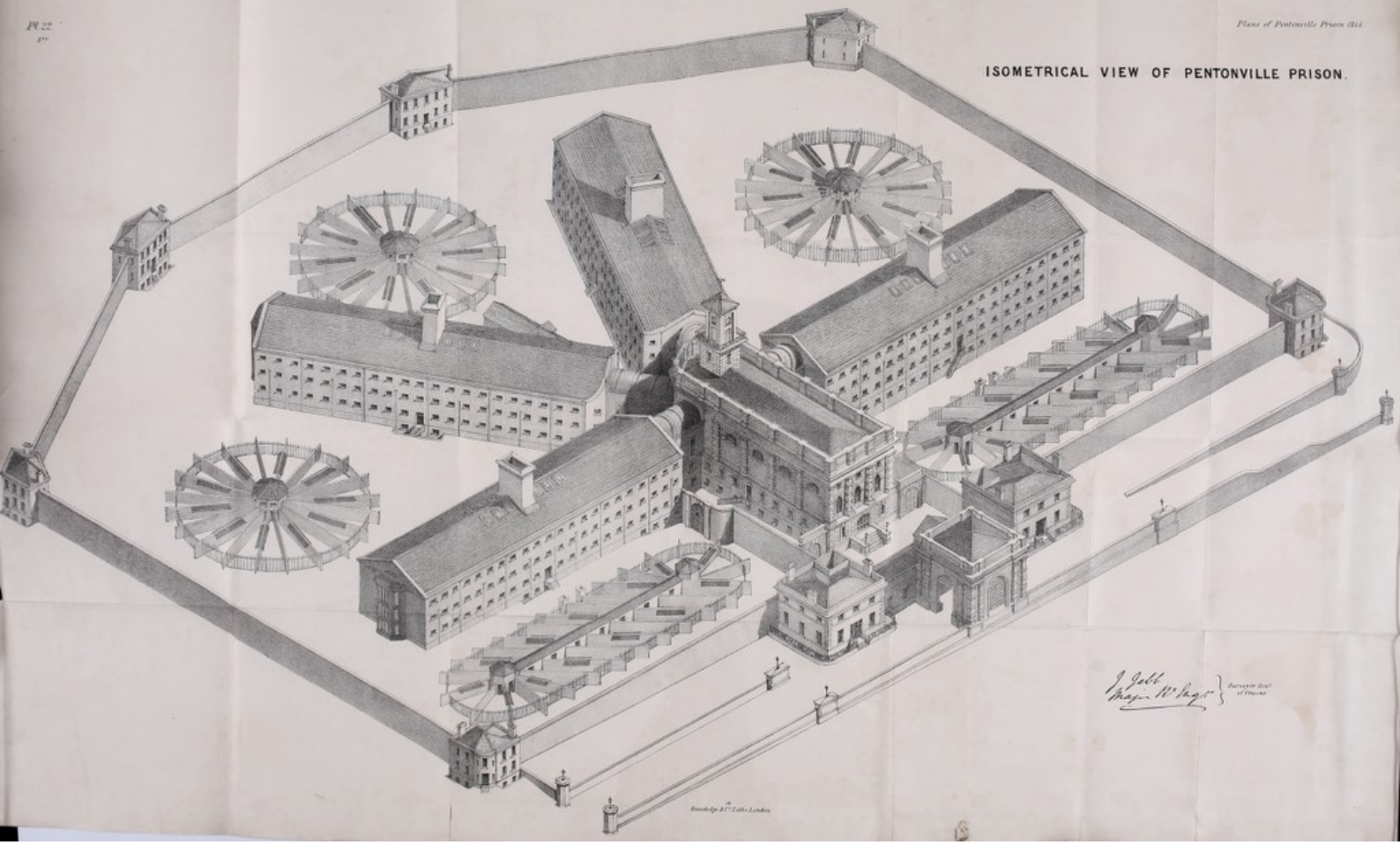
PERSPECTIVE VIEW OF THE INTERIOR OF ONE CORRIDOR,
FROM THE CENTRAL HALL.

J. Jebb
Majr. W. Hughes
} Surveyor Genl of Prisons

Pl. 22.

Plans of Pentonville Prison 1844

ISOMETRICAL VIEW OF PENTONVILLE PRISON.



J. Jebb
Majr. R.E. Surveyor Genl. of Prisons

Standidge & Co. Lith. London.