

(No Model.)

5 Sheets—Sheet 1.

W. H. BROWN & B. F. HAUGH.
JAIL OR PRISON.

No. 244,358.

Patented July 12, 1881.

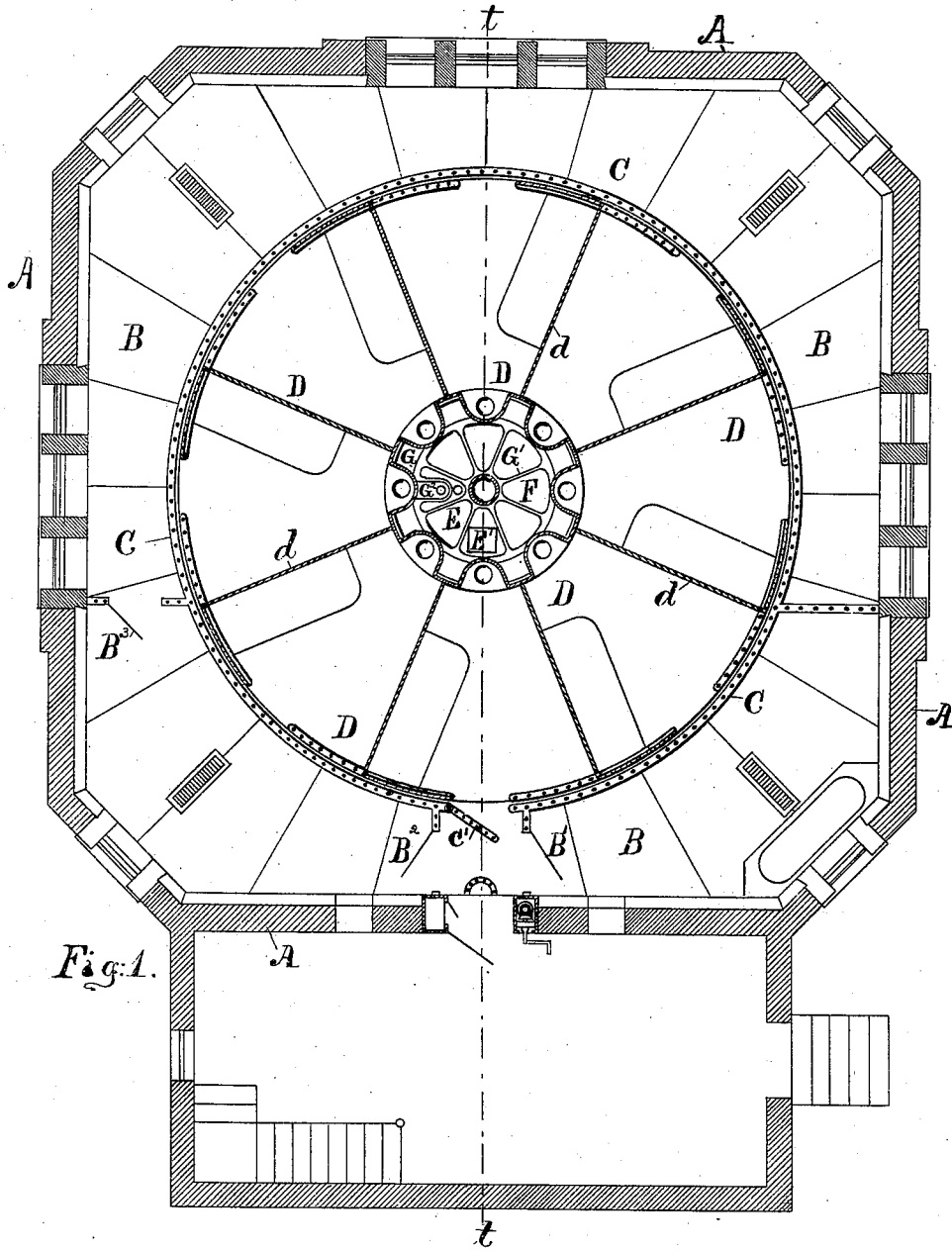


Fig. 1.

WITNESSES.

O. E. Whitney.

Arthur Halladay.

INVENTOR.

*William H. Brown, and
Benjamin F. Haugh,*

PER

C. Bradford,
ATTORNEY.

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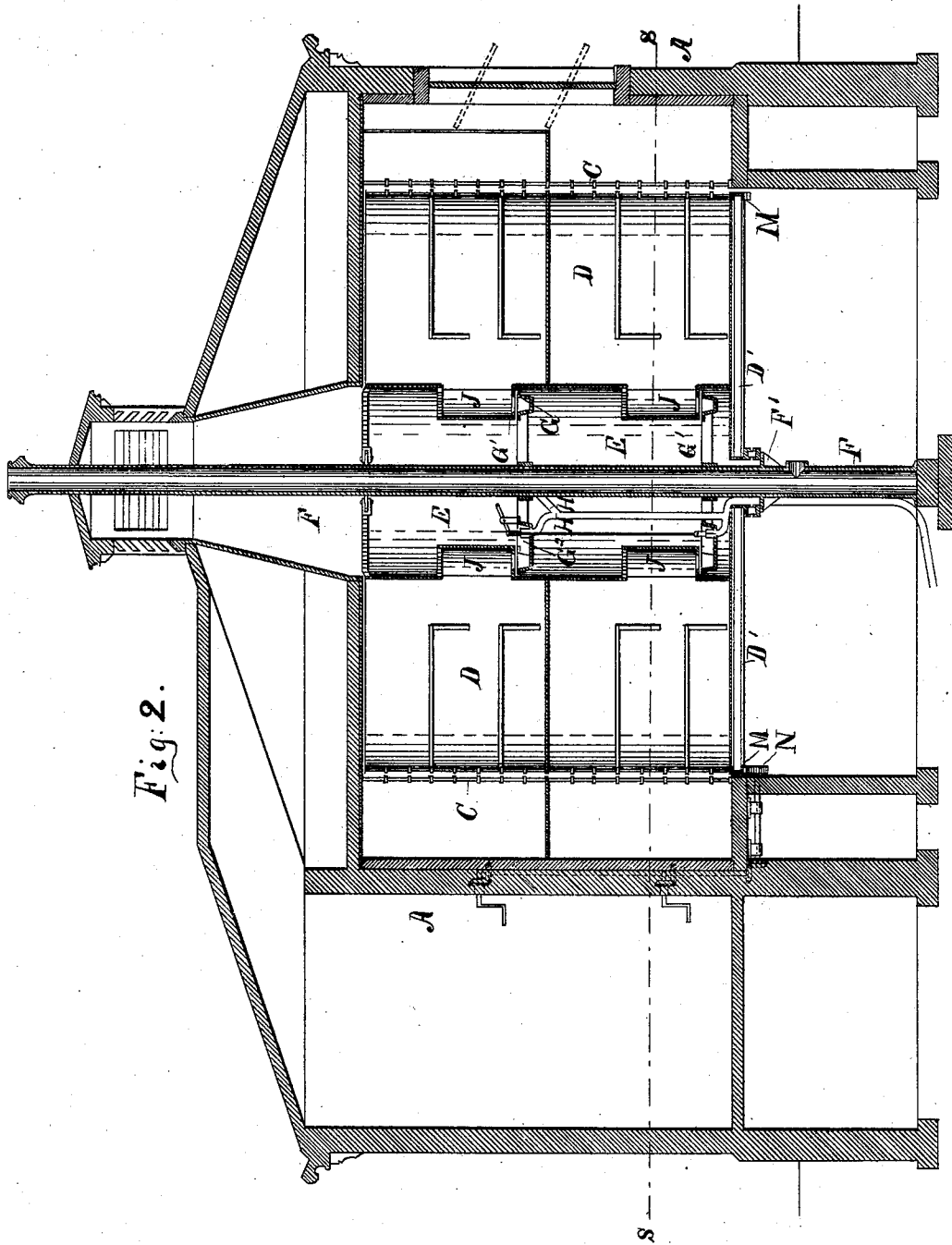


Fig. 2.

WITNESSES.

W. C. Whitney
Arthur Kolladay

INVENTOR.

William H. Brown, and
Benjamin F. Haugh

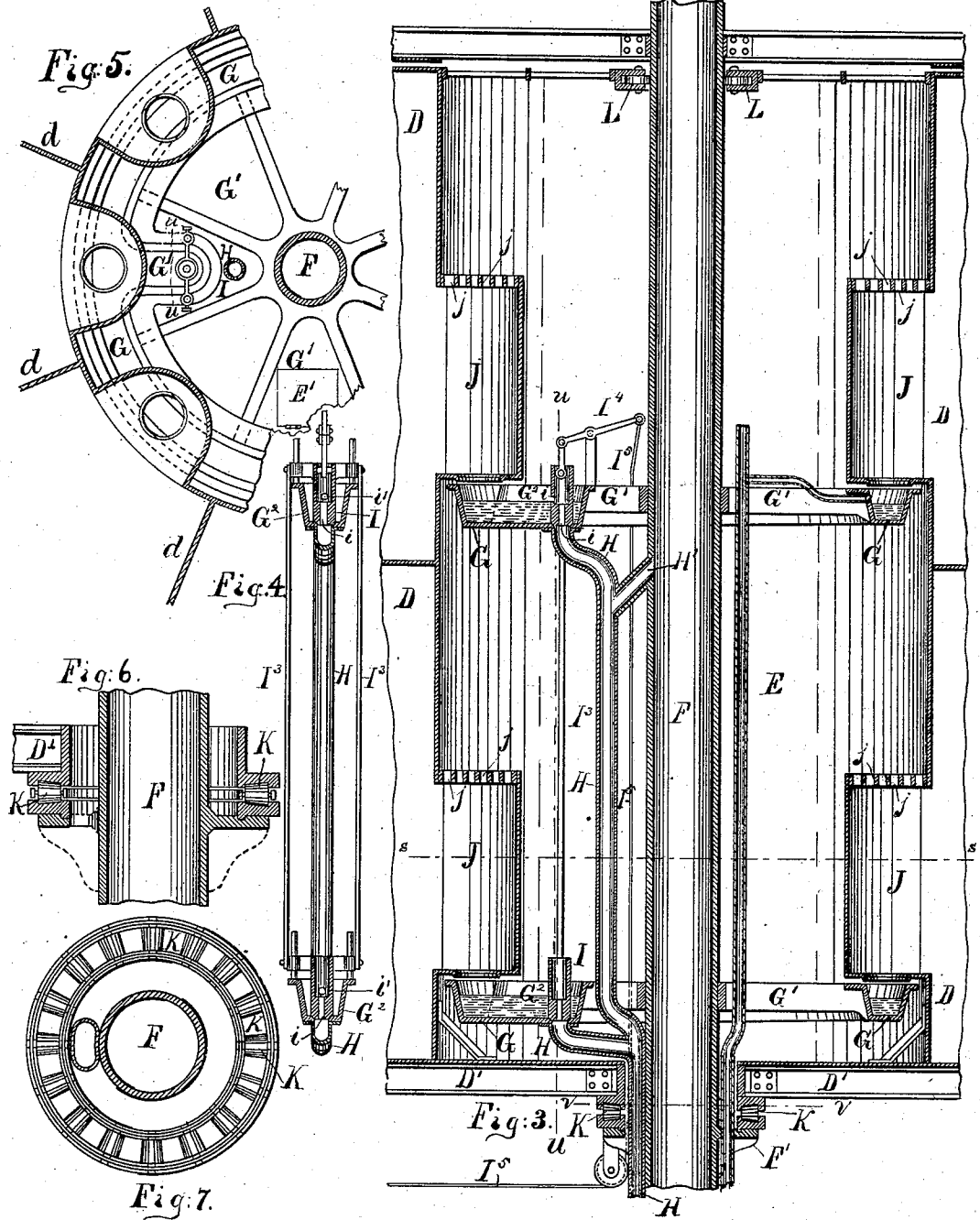
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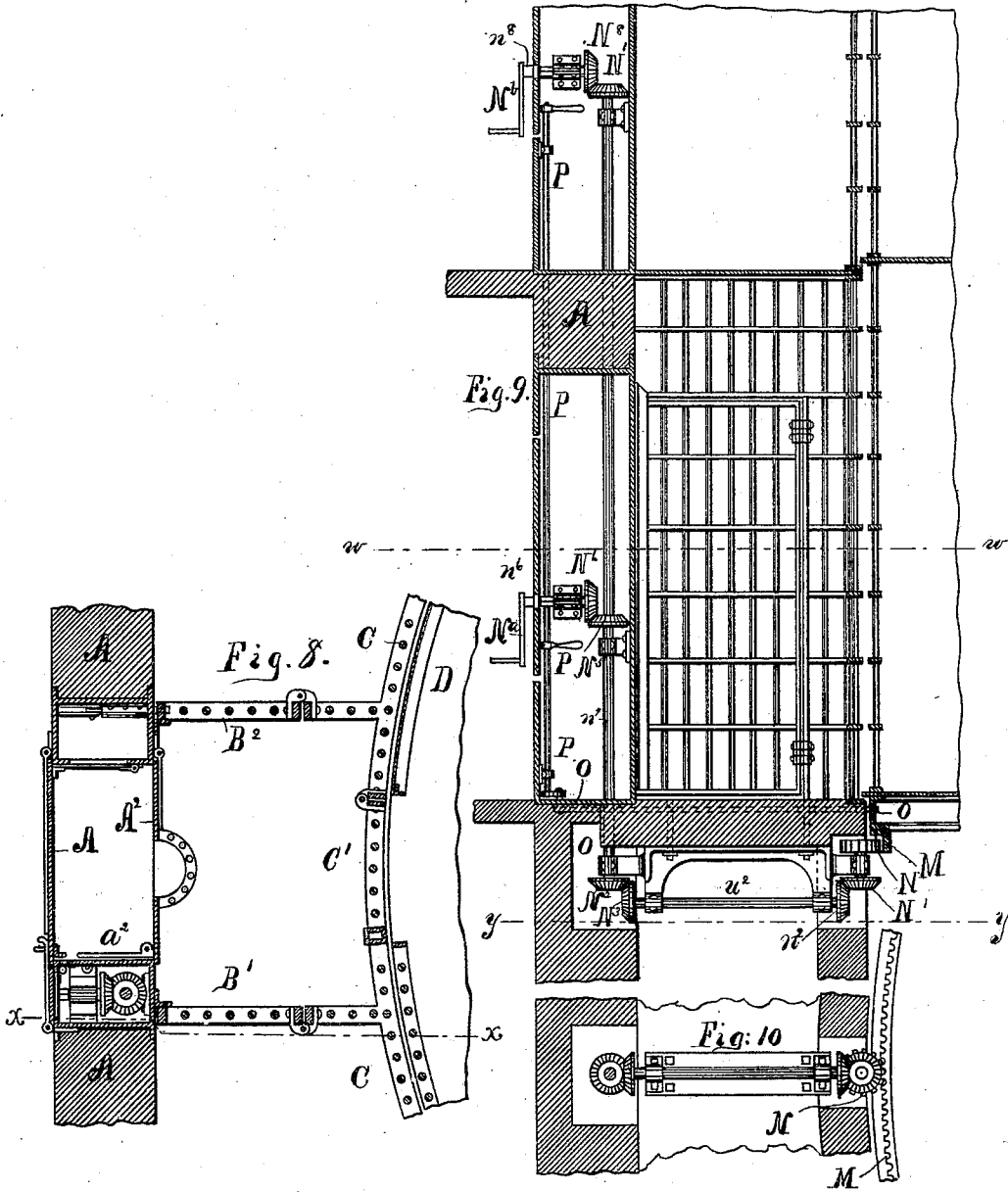
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W. H. BROWN & B. F. HAUGH.
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WITNESSES.

N. E. Whitney
Arthur Holladay

INVENTOR.

William H. Brown,
and Benjamin F. Haugh,

PER
C. Bradford
ATTORNEY.

(No Model.)

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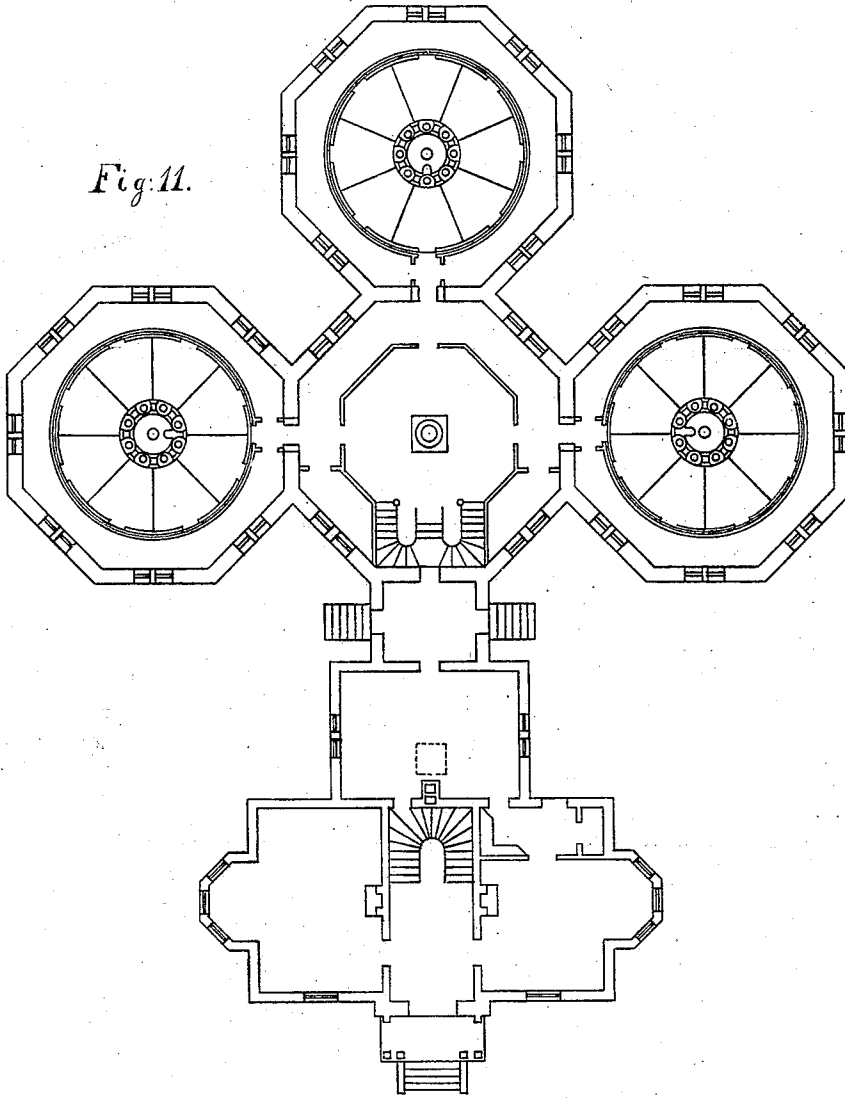
W. H. BROWN & B. F. HAUGH.

JAIL OR PRISON.

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Fig. 11.



WITNESSES.

A. E. Whitney
Arthur Holladay

INVENTOR,
William H. Brown, and
Benjamin F. Haugh,
PER
C. Bradford,
ATTORNEY.

UNITED STATES PATENT OFFICE.

WILLIAM H. BROWN AND BENJAMIN F. HAUGH, OF INDIANAPOLIS, IND.,
ASSIGNORS OF ONE-THIRD TO JOHN L. KETCHAM, OF SAME PLACE.

JAIL OR PRISON.

SPECIFICATION forming part of Letters Patent No. 244,358, dated July 12, 1881.

Application filed April 12, 1881. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM H. BROWN and BENJAMIN F. HAUGH, both of the city of Indianapolis, county of Marion, and State of Indiana, have invented certain new and useful Improvements in Jails or Prisons, of which the following is a specification.

The object of our invention is to produce a jail or prison in which prisoners can be controlled without the necessity of personal contact between them and the jailer or guard, and incidentally to provide it with sundry conveniences and advantages not usually found in prisons; and it consists, first, of a circular cell structure of considerable size (inside the usual prison-building) divided into several cells capable of being rotated, and surrounded by a grating in close proximity thereto, which has only such number of openings (usually one) as is necessary for the convenient handling of the prisoners; second, in the combination, with said cell structure, of a system of shafts and gears, or their equivalents, for the purpose of rotating the same; third, in constructing within said circular cell structure a central space for the purposes of ventilation and the disposition of offal, &c.; fourth, in constructing niches in the side of the cells next said central opening to serve as water-closets, and arranging underneath said niches a continuous trough to contain water, to receive and convey away into a sewer with which it is connected all the offal deposited therein by the prisoners in all the cells; fifth, in the combination, with a cell structure, of a central vertical hollow shaft, which will also serve as a smoke-stack; and, sixth, in various details of construction and arrangement, all as will hereinafter be more specifically set forth.

Referring to the accompanying drawings, which are made a part hereof, Figure 1 is a horizontal section of a jail embodying our invention, looking downwardly from the point indicated by the dotted line *s s* in Fig. 2, thus showing the general plan of such a jail. Fig. 2 is a vertical sectional view thereof, looking to the left from the dotted line *t t* in Fig. 1. Fig. 3 is a detail section on the same line as Fig. 2, showing the central ventilating-space and the water-closet arrangement on an en-

larged scale. Fig. 4 is a sectional view of the valves to the soil-pipe, and the operating mechanism therefor, looking inwardly toward the central shaft from the dotted line *u u* in Figs. 3 and 5. Fig. 5 is a plan view of a portion of the water-closet arrangement, similar to the corresponding portion of Fig. 1, but on a larger scale. Fig. 6 is a sectional view of the mechanism by means of which the cells are enabled to revolve easily, similar to the lower central portion of Fig. 3, but on a larger scale. Fig. 7 is a plan of the rollers and surrounding parts, as would be seen when looking downwardly from the dotted line *v v* were the superstructure resting on said rollers removed. Fig. 8 is a horizontal sectional view, looking downwardly from the dotted line *w w* in Fig. 9, showing the operating and locking devices in plan, and more especially the construction of the doors, which are too small to be plainly shown in Fig. 1. Fig. 9 is a vertical sectional view, looking toward the top of the sheet from the dotted line *x x* in Fig. 8, showing the operating and locking mechanism in elevation. Fig. 10 is an under-side plan of the operating mechanism and surrounding parts, as seen when looking upwardly from the dotted line *y y* in Fig. 9. Fig. 11 is a general plan of a very large prison constructed in accordance with our invention.

In said drawings the portions marked A represent the outer walls of the jail or prison, constructed substantially as in ordinary structures of this character; B, a corridor extending around within said walls, between them and the cell structure; C, a heavy grating extending entirely around all the cells, and from the floor to the roof of the same, and permanently secured in place; D, a circular structure, divided into cells by partitions *d*, and so mounted as to be capable of revolving about a central vertical axis; E, a central space or opening in the structure D for purposes of ventilation, &c., as is elsewhere more fully explained; F, a central pipe or shaft, on which the cell structure is preferably mounted and revolves, and which is also preferably so constructed as to serve as a smoke-stack; G, an annular trough, mounted upon arms G', attached to the central shaft, adapted to contain water,

and provided with an inwardly-extending portion, G², at the lowest point, which connects with the sewer by means of a soil-pipe; H, said soil-pipe; I, a valve therefor, by means of which the trough may be periodically emptied, and which also, by means of the openings *i* *i'*, serves as an overflow-conduit; I', a cross-head moving on guides I², by which said valve is kept in place; I³, connecting-rods, by means of which all the valves are enabled to be simultaneously operated when the structure is two or more stories in height; I⁴, a pivoted lever, and I⁵ a cord, by means of which said valve is operated; J, niches in the inner walls of the cells, which project inwardly over the trough G, and with said trough form the water-closets therefor; *j*, openings in the plate or grating which forms the roof of the water-closet, which communicate with the central ventilating-shaft, and are a part of the system of ventilation employed; K, rollers upon which the cell structure is mounted and revolves; L, anti-friction trucks, by which said structure, as it revolves, is prevented from rubbing against the central pipe or shaft at the top; M, a rack attached to the outer edge of the cell structure; N, a pinion which engages with said rack, and is driven preferably by a crank or hand wheel, N^a or N^b, through a system of gears, N' N² n' n², &c., as shown; O, a lock-bolt, by means of which the cell structure may be immovably locked in one position; and P P' P², &c., a crank-arm mechanism by which said lock-bolt is operated.

We will now explain more particularly the general construction, set forth the mode of operation, and enumerate the advantages of our improved prison.

The cell structure containing all the cells may be one or more stories in height, (two stories are shown in the drawings,) and rotates bodily on a central vertical shaft within a stationary iron cage or grating. Each cell is provided with a door-opening at the center of its front side, but is unprovided with a door, as said opening is closed by the circular stationary cage or grating in front of the same. The cells being entirely closed at all times, except when opposite the general entrance-door, no escape can be effected, except by cutting through the solid grating. As the cells are necessarily frequently moved, and another portion of the grating thereby presented in front of each cell, sufficient time (even if the means were at hand) is never afforded for this purpose, and therefore this jail is much more secure than those of the ordinary construction. Attention is called to the fact, in this connection, that the construction of the cells is such that the prisoners cannot see or communicate with each other in any way, and therefore that any concert of action between them would be extremely difficult.

The prisoners are handled without any possible chance for personal contact with any except the one desired, as the cell structure is rotated until the door-opening of the cell de-

sired is brought opposite the general door-opening in the outside grating, and while one cell occupies this position the rest must of necessity be securely closed. This arrangement makes the whole prison as convenient to the keeper as though it consisted of but a single cell, and as safe as if it contained but a single prisoner. When opening and closing the doors leading to the entrance of the cells A' A² C' the cell structure may be rotated into such a position that not even one door-opening will be open, thus preventing the possibility of an assault upon the keeper at such times. When the door in the outside grating, C', is closed of course all the cells are closed, whether opposite the general entrance or not.

The system of ventilation provided herein prevents any offensive odors from remaining in the cells when they are kept clean, as the hot-air registers in winter or the open windows in the outer walls in summer, with the grated fronts and grated space in the backs of the cells, cause a draft of air through said cells to the central ventilating-shaft at all times, which carries off all such odors.

The prisoners are protected from the draft when in bed, or when they so desire, by a portion of the front of each cell being constructed of sheet metal instead of grating. This, together with the solid sheet-metal partitions between the cells, effectually prevents any communication between the prisoners, and also prevents any prisoner from seeing any other when both are in their cells.

At the rear of each cell is provided a semi-circular niche, forming a part of the rear wall of the cell and projecting into the ventilating-shaft. The lower end of this niche is provided with a seat-opening, which constitutes the water-closet seat, and the upper end is made in the form of an open grating, through which the foul air will escape into the ventilating-shaft, and which thus forms a part of the general system of ventilation. An annular iron trough, arranged beneath the seat-openings and filled with water, completes the water-closet system, said trough being, of course, provided with a soil-pipe leading to the sewer. Said trough is preferably constructed of varying depth, gradually growing deeper as the distance from the shallowest point increases. At the deepest point there is extension toward the center, which connects with the soil-pipe. The object of this extension G² is to place the valves and soil-pipe opening beyond the reach of the prisoners in the cells, so that they cannot clog up or otherwise disarrange the same, which they might and probably would do from mischievous motives, were said valve and opening placed beneath or within arm's reach of the seat-openings, and thus cause the water in the trough to overflow.

The soil-pipe is preferably closed by a vertically-movable valve. Said valve is constructed with a hollow center, *i*, and at the height at which it is desired that the water shall usually remain in the trough, with an opening, *i'*, in its

side connecting with said hollow center, and thus also constitutes an overflow-conduit as well as a valve. As it is intended that a small stream of water shall be constantly flowing into the trough from the water-pipes, there is, of course, a slight current toward the overflow, sufficient to cause the offal deposited in said trough to accumulate near said overflow, and by means of the arrangement described, I' I², &c., said offal will naturally be the first thing to be discharged into the soil-pipe when the valve is raised, leaving the comparatively clean water to follow, and furnishing a desirable means of "flushing" said soil-pipe and the sewer. The soil-pipe, as shown, leads down through the bottom of the ventilating-shaft, beside the smoke-stack, to the cellar, where it connects with the sewer. A ventilating-pipe, H', leads from said soil-pipe into the smoke-stack, thereby preventing the ventilating-shaft from being overloaded with sewer-gas. The water-trough is sustained in stationary position by radial arms G', attached to the central shaft or smoke-stack. All the water-pipes, the soil-pipe, and the water-trough being located near to or in contact with the heated smoke-stack, they are not liable to freeze up and burst during cold weather, as they are ordinarily in danger of doing.

A trap-door, E', may be constructed in the floor of the ventilating-shaft, through which access may be gained thereto for the purposes of repairs to the water-closet system, &c., which may be carried on at any time without at all interfering with the ordinary use of the prison. If by any means a prisoner should break through into the ventilating-shaft, this trap-door would afford a convenient means of recapture, as, said ventilating-shaft being securely closed both at bottom and top, such prisoner could make no further progress toward liberty, but would be securely imprisoned therein.

It may be well to notice in this connection that all the rotating mechanism is beyond the reach of the prisoners, and cannot be disarranged by them, even if they should break through into the ventilating-shaft. We have been thus particular in mentioning these matters, because this shaft or central opening cannot be conveniently at all times under the eye of the guard or keeper, as can the other portions of the prison. It is not expected, of course, that any such breach will be effected; but we have designed to so construct the prison that such breach, if made, shall not be effective to release the prisoners.

The central shaft is intended to be a large hollow iron casting, which will serve as a smoke-stack for the furnace as well as for the purpose of sustaining the cells. By this means (the heat from the stack) the air in the ventilating-shaft is rarefied, and the draft therein thereby increased. This can be continued in summer by attaching a small heater to the bottom of the stack. The heat thereof also prevents the water-pipes, &c., which are ar-

anged near it, from freezing in cold weather. A strong iron flange, F', is securely attached to the central shaft or smoke-stack, which carries the rollers upon which the cell structure rests and moves. The rollers are preferably in the form of a frustum of a cone, and are secured at equidistance by annular rings containing axial bearings therefor, as shown most plainly in Figs. 6 and 7.

The rotation of the cell structure is effected by means of a system of ordinary shafts and gears, n⁶, N⁶, N⁵, n⁴, &c., concluding with a pinion, N, which engages with a rack on said cell structure, and preferably commencing with a crank or hand-wheel, cranks N^a N^b being shown.

As it might occur to some to have the cell structure stationary and the surrounding grating movable, we desire to say that we have considered such a construction, and consider it substantially the equivalent of that shown, except that it is lacking in some of the advantages which ours secures. As will be readily seen, for instance, the advantage of bringing any one of the prisoners at any time up to the main entrance could not be so secured.

We have also conceived the idea of keeping the cell structure in continual rotation during the night, or at any other time when the prisoners cannot be conveniently watched, and thus prevent even an attempt on their part to cut their way out at such times. This could be accomplished by placing upon the shaft n², or some other shaft of the system, a drum, and applying thereto by the usual means a heavy weight or spring, the operation of which could be regulated by a clock-work or other similar mechanism.

The door C' in the grating C, the doors A' and A² at the entrance to the prison, and the doors B' and B², forming part of the walls of the short corridor leading from the door A² to the door C', are all locked by a system of secret locks located in the hollow jambs of the doors A' A², or operated therefrom, as is common in jails and prisons.

A large prison constructed in accordance with our plan would consist of a number of separate pavilions arranged around a central building having communication with each of them, as shown in Fig. 11. Such a construction at the same time provides for a complete classification of the prisoners. In such a prison the central column would not ordinarily be used as a smoke-stack, but would serve the one purpose of an axis for the cell structure. The rarefication of air in the ventilating-shaft would be effected in such case by a steam-radiator supplied from a boiler located under the central building, or such like method, thus avoiding the necessity of operating a separate heating device in each pavilion.

We have considered the question of constructing each story of the cell structure to rotate separately without regard to the other story or stories; but as this would necessitate an increased number of parts, such as bearing-

rollers, locking devices, and rotating mechanism, without any advantage which we think sufficient to offset the expense thereof, we have decided that it is not advisable to so construct them.

Having thus fully described our said invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a jail or prison, the combination, with a cell structure of substantially circular form and capable of a rotary movement on a vertical axis, of a substantially circular grating surrounding said cell structure, and which serves to close the door-openings of the cells, except when said cell structure is rotated and the door-opening of the cell to which it is desired to have access is brought opposite to an opening or door in said surrounding grating, substantially as set forth.

2. In a jail or prison, a series of cells surrounding and mounted upon a central vertical shaft, and adapted to rotate thereon, substantially as and for the purposes set forth.

3. The combination, in a jail or prison, of a rotary cell structure, D, each of the cells of which has a door-opening in its outer side, and the surrounding grating C, having one door-opening, whereby all the cells are kept securely closed, except as the door-openings thereof are caused to come opposite the door-opening in said grating, substantially as and for the purposes herein set forth.

4. In a prison, the combination, with a cell structure mounted upon and adapted to rotate around a central vertical shaft, of a mechanism, substantially as described, whereby the rotation of said cell structure is effected, substantially as set forth.

5. In a jail or prison, the combination of a cell structure and a surrounding grating adapted to close the doors or door-openings thereof, one of which is movable, whereby the doors of the cells are opened or closed, substantially as set forth.

6. The combination, in a jail or prison, of a series of cells arranged to surround a central ventilating-shaft which leads up to a ventilating-turret, said cells being provided with proper openings leading to the outer air, upon one hand, and with said ventilating-shaft upon the other, whereby the natural draft of the shaft will cause all offensive odors to be drawn into and pass up said shaft, instead of remaining in the cells or passing into the corridors surrounding them, substantially as set forth.

7. The combination, in a jail or prison, with the series of cells and the central ventilating-shaft, of the smoke-stack F, which passes up through said ventilating-shaft, the heat wherefrom rarefies the air and causes a stronger draft for ventilating purposes, substantially as set forth.

8. In a jail or prison, the combination, with a cell structure of substantially circular form,

of a central vertical shaft which serves as a smoke-stack, substantially as and for the purposes set forth.

9. In a jail or prison, a cell structure of substantially circular form, having a central ventilating-shaft, and divided by radial partitions into a series of cells having their door-openings in the periphery of the circle, and ventilating-openings into said shaft, substantially as shown and specified.

10. In a jail or prison, niches J, constructed in the walls of the cells, as shown, having seat-openings for water-closet purposes, and ventilating-openings overhead, substantially as shown and described, and for the purposes specified.

11. The combination, with the cells of a prison having niches or projecting compartments arranged for water-closet purposes, of a continuous water-trough, G, having suitable sewer-connections, substantially as shown and specified.

12. The combination, with a cell structure adapted to rotate about a central vertical axis, and having a central ventilating-shaft, with niches projecting from the cells into the same, of an annular water-trough extending around beneath all of said niches and forming with them a water-closet arrangement adapted continuously for use without reference to the position of the cells, or to whether they are at rest or in motion, substantially as set forth.

13. The combination, with the annular water-trough G, having inward extension G², of the plunger-valve I, adapted to close by its own weight, but provided with a lever-and-cord attachment, whereby it can be periodically operated from a point at a considerable distance, substantially as set forth.

14. In an annular water-trough, forming part of the water-closet system of a prison, an inwardly-projecting arm or extension, in which the soil-pipe connection is situated, whereby it is removed beyond the reach of the prisoners in the cells, substantially as set forth.

15. The combination, with a rotating cell structure, of a lock, O, and a crank-lever, P, for operating the same, substantially as set forth.

16. In a jail or prison, a central space inclosed by the series of cells and containing the water-pipes, soil-pipes, and other water-closet arrangements, and also a smoke-stack or other heat-producing device, as specified, whereby all of said water-pipes, soil-pipes, &c., are prevented from freezing in cold weather, substantially as set forth.

In witness whereof we have hereunto set our hands and seals, at Indianapolis, Indiana, this 7th day of April, A. D. 1881.

WILLIAM H. BROWN. [L. S.]
BENJAMIN F. HAUGH. [L. S.]

In presence of—
C. BRADFORD,
N. E. C. WHITNEY.