

R. GUASTAVINO, DEC'D.  
R. GUASTAVINO, JR., W. E. BLODGETT & A. E. ROBST, EXECUTORS.  
STRUCTURE OF MASONRY AND STEEL.  
APPLICATION FILED JAN. 23, 1905.

915,026.

Patented Mar. 9, 1909.

4 SHEETS, SHEET 1.

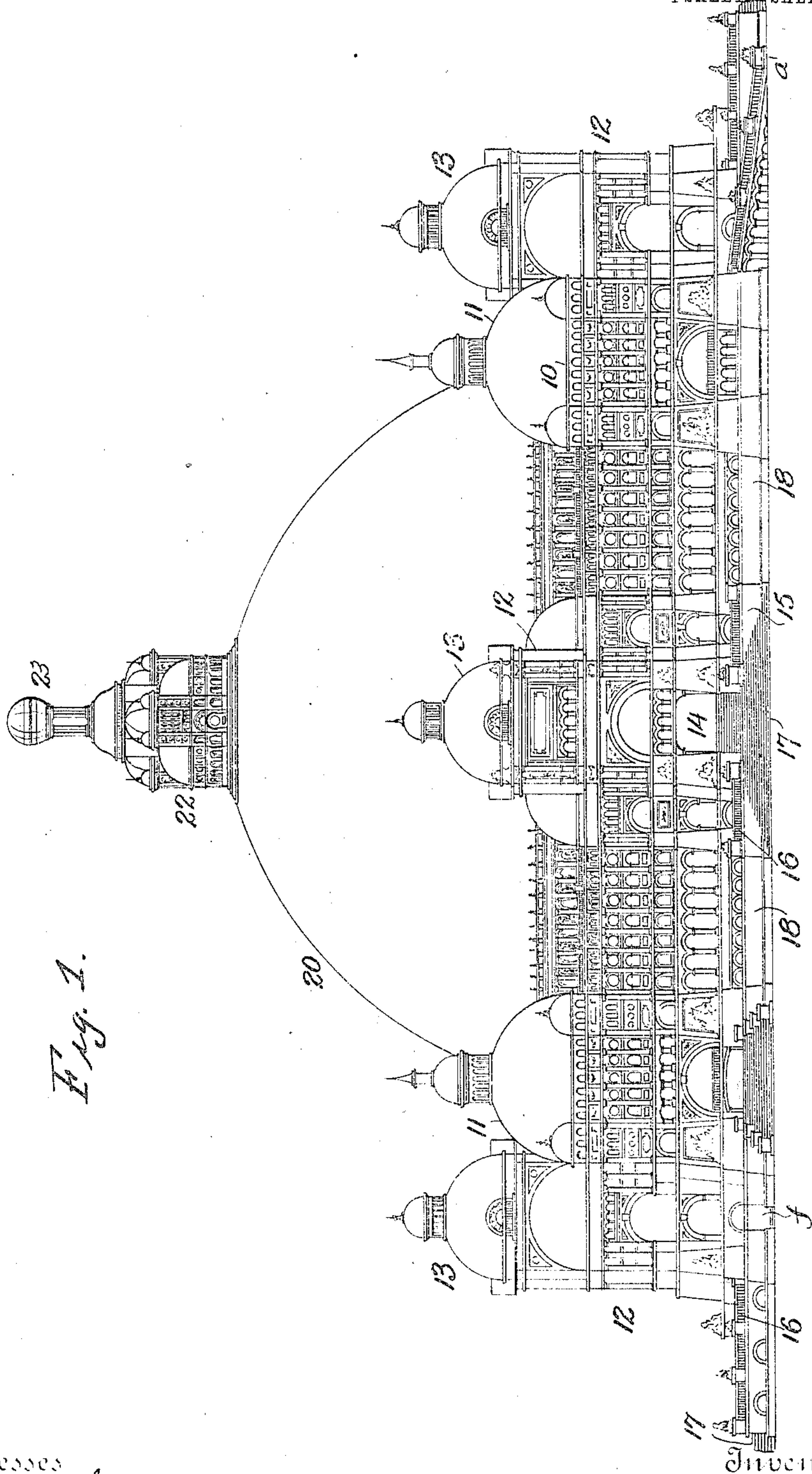


Fig. 1.

Witnesses  
James F. Duhamel  
Arthur L. M. Neil

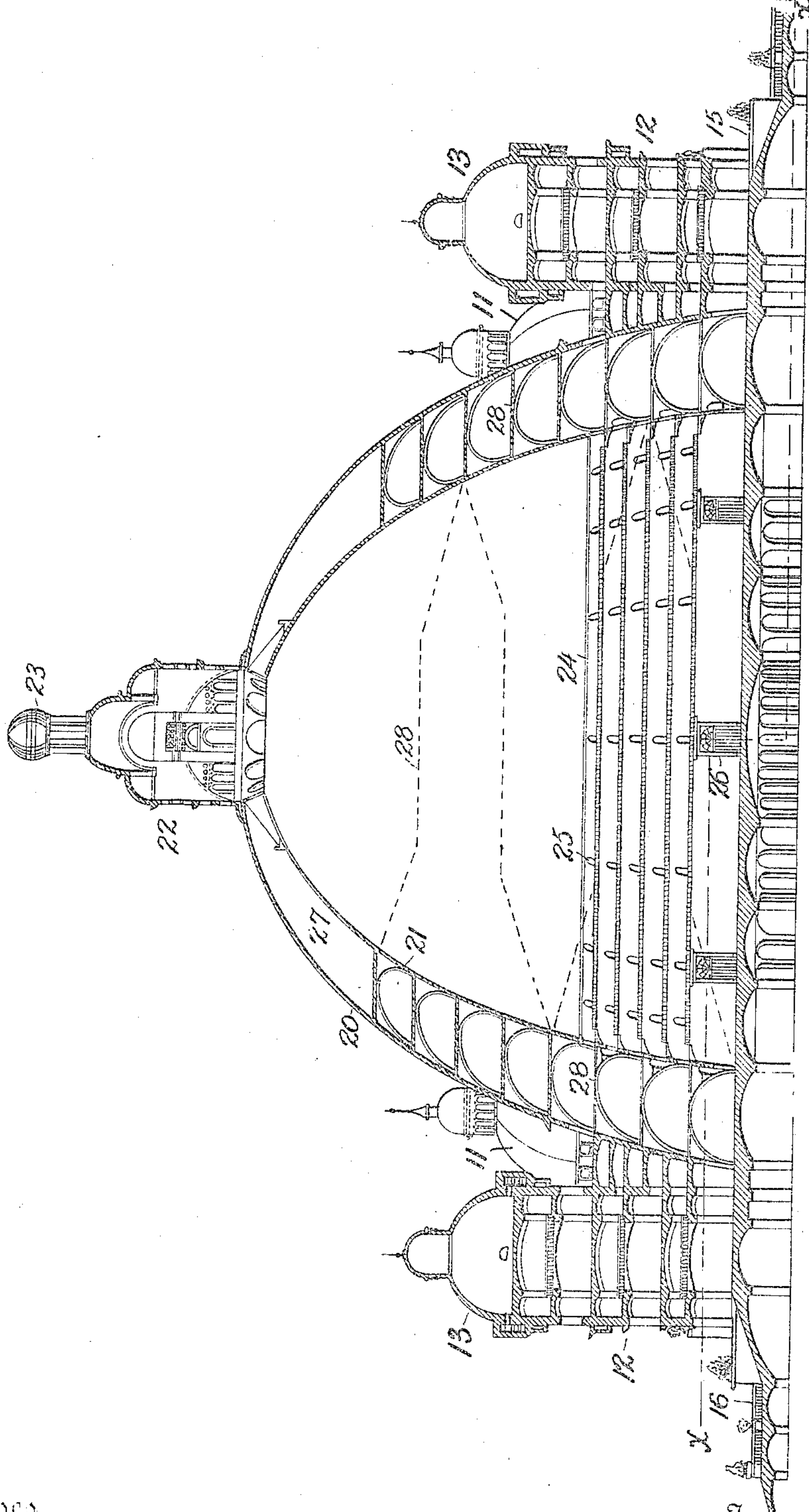
Inventor,  
By his Attorney, Rafael Guastavino,  
Edmond Conger Brown

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4 SHEETS SHEET 2.

Fig. 2.



Witnesses

James F. Duhamel  
Arthur L. McNeil

Inventor  
Rafael Guastavino  
By his Attorney  
Edmond Conger Brown

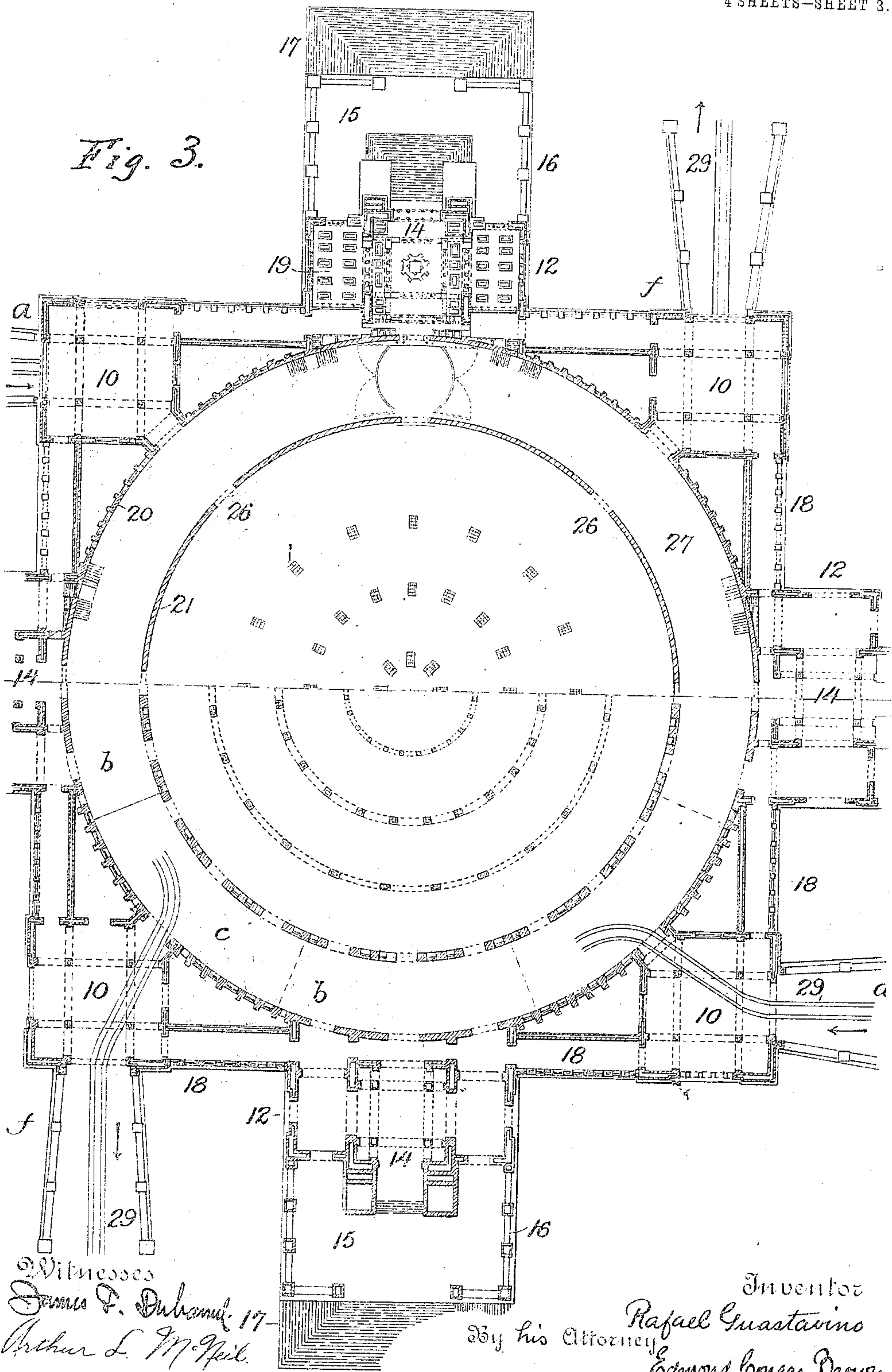


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4 SHEETS—SHEET 4.

Fig. 4.

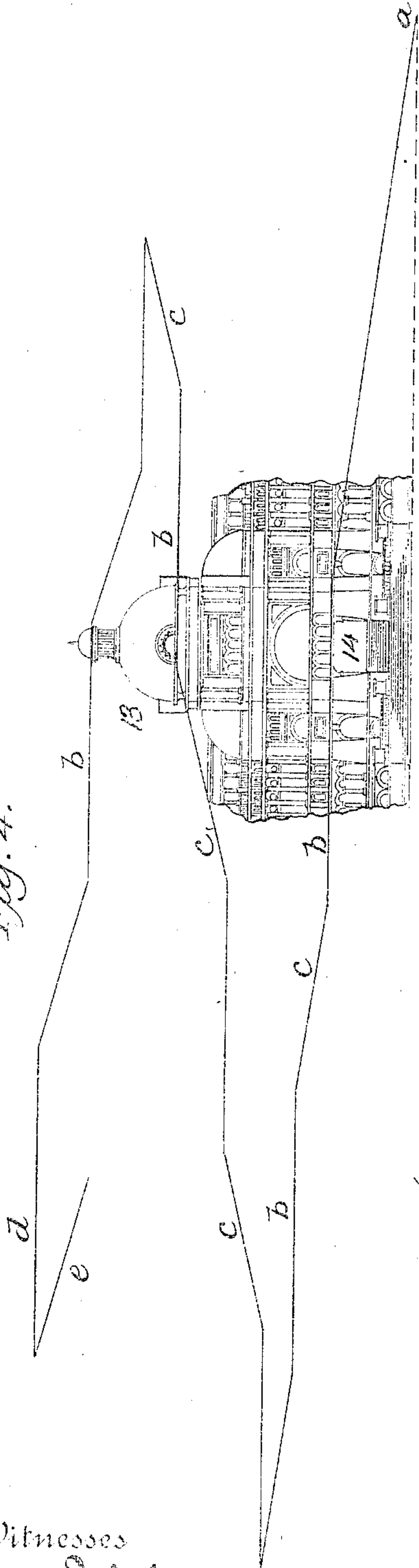


Fig. 6.

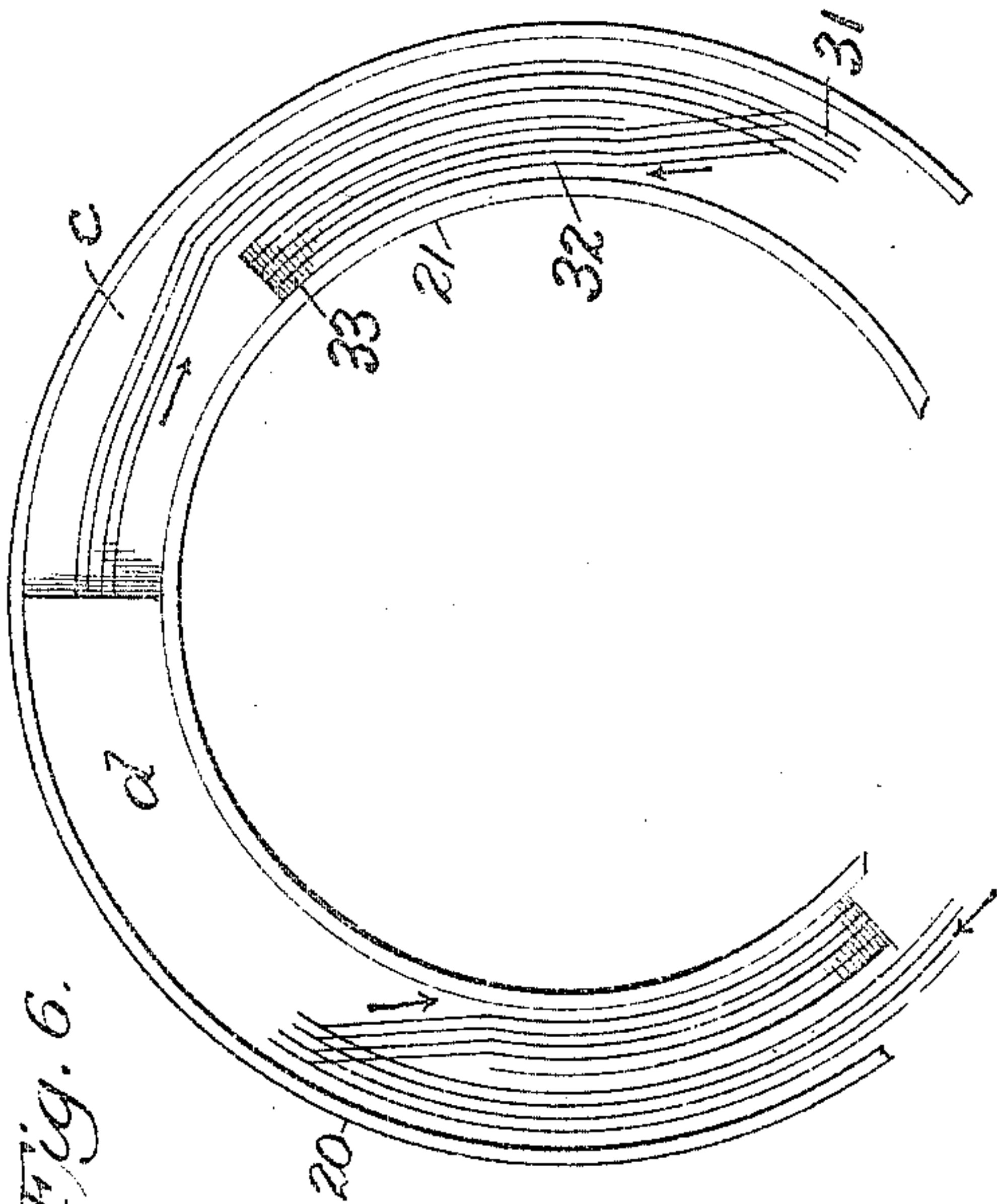
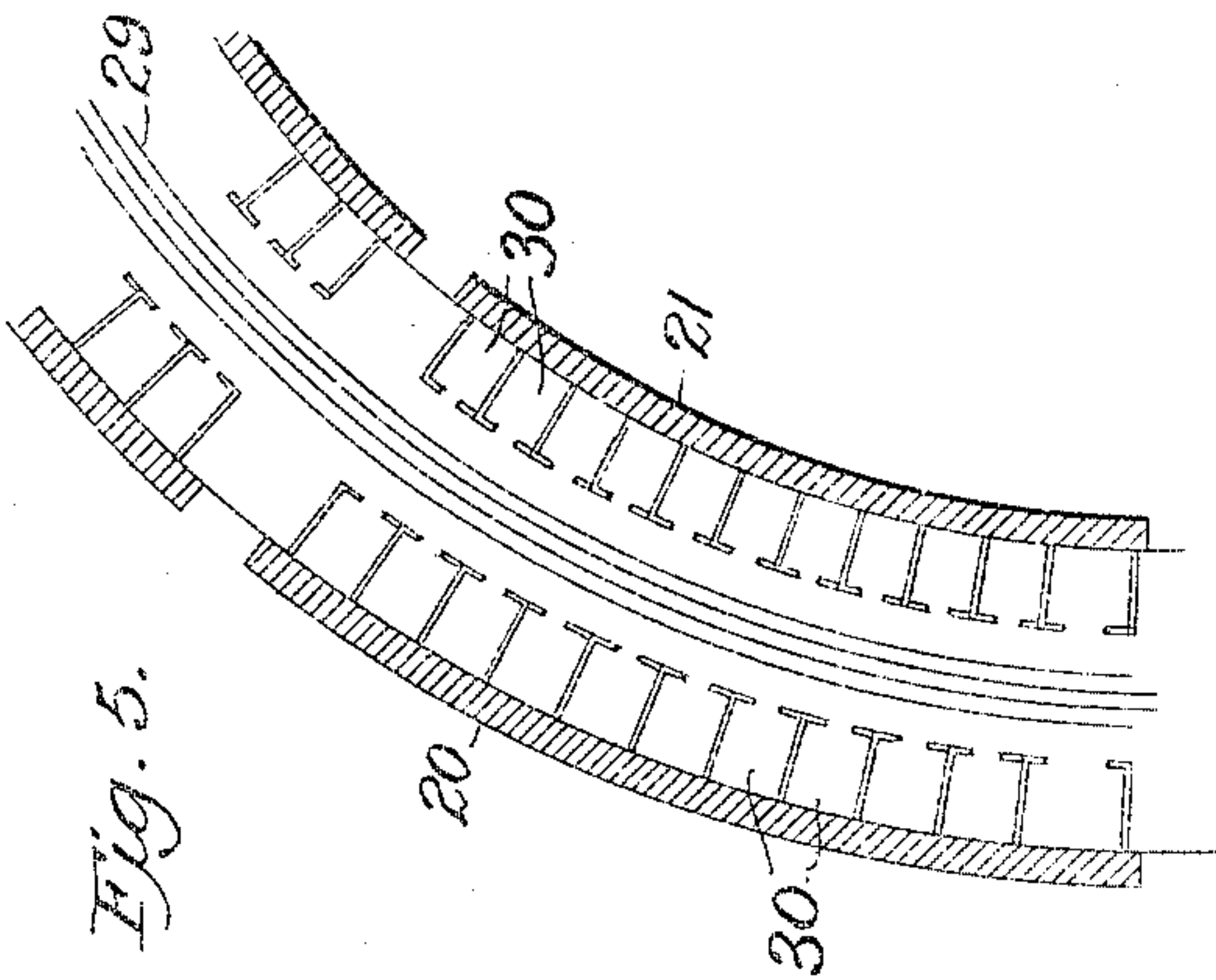


Fig. 5.



Witnesses  
James F. Duhamel  
Arthur L. McNeil.

Inventor  
Rafael Guastavino,  
By his Attorney  
Edmon & Conger Brown



# UNITED STATES PATENT OFFICE.

RAFAEL GUASTAVINO, OF RHODODENDRON, NORTH CAROLINA; RAFAEL GUASTAVINO, JR.,  
W. E. BLODGETT, AND A. E. ROBST EXECUTORS OF ESTATE OF SAID RAFAEL GUASTAVINO DECEASED.

## STRUCTURE OF MASONRY AND STEEL.

No. 915,026.

Specification of Letters Patent.

Patented March 9, 1909.

Application filed January 23, 1905. Serial No. 242,453.

*To all whom it may concern:*

Be it known that I, RAFAEL GUASTAVINO, of Rhododendron, Black Mountain P. O., in the county of Buncombe and State of North Carolina, have made certain new and useful Improvements in Structures of Masonry and Steel, of which the following is a specification.

My invention relates to structures of masonry and steel and is particularly adapted to act as a receptacle for century records, or other records, museums, libraries, offices, storage, safe deposit, etc. and for similar purposes and permits of the arrangement of these libraries, exhibits, records etc., along one or more continuous floorings or halls arranged spirally within the structure and extending a considerable distance while the said structure itself may cover a limited ground space. These and other objects and details of the construction of my invention are more fully described in the following specification and set forth in the appended claims.

In the drawings accompanying this specification and forming a part thereof, like reference characters refer to the same parts in the various figures and: Figure 1 is an elevation of my improved structure, Fig. 2 is a vertical section of the same, Fig. 3 is a horizontal section on the line  $x-x$  of Fig. 2, Fig. 4 is a diagrammatic development of the spiral flooring, Fig. 5 is a fragmentary detail of the flooring, Fig. 6 illustrates the arrangement of the flooring and railway at the upper end of the spiral flooring.

The drawings illustrate a building structure of considerable dimensions and adapted to cover a square or more of ground space and is composed of a series of buildings or walls of any desired height and containing halls, rooms or compartments. I have shown a rectangular or square arrangement of these buildings or walls, the corner structures 10 being square, of several stories and surmounted by a dome 11 but it is obvious that they may terminate in any other desired manner of construction. At central points in the rectangular sides are provided similar structures 12 with domes 13 and doorways 14, and before them project porticos 15 surrounded by balustrades 16 and reached by the steps 17. These central and corner structures are connected by the sections 18 containing hall and passageways

which afford communication between the above described sections. The base of these structures contains vaults or crypts and these vaults and the various floors of the several structures are on corresponding levels. The vaults, being without windows and sunlight, may be used for mortuary purposes and provisions made for the reception of coffins or urns, but various other uses may be resorted to. In one of the central structures a library 19 may be arranged on one or more of the floors while the various rooms and halls may be used as art galleries and lecture halls or contain cases for the display of various objects. Within the inner walls of these buildings as above described is a dome rising above them and composed of two shells 20 and 21, the distance between their facing sides being of any desired or suitable distance and the whole surmounted by a lantern 22 which is a circular room with windows to give light to the interior of the dome, having a vaulted ceiling, and the whole being topped by a globe 23 or structure of ornamental design which may be used as an observatory. The interior of this dome is provided with galleries 24 and access is afforded them by means of doors 25 and the ground floor within this rotunda forms a large hall for meetings, gatherings or other purposes and doors 26 form entrances to same.

The space 27 between the two shells 20 and 21 of the dome is provided with one or more continuous substantially spiral divisions or floors 28, one of which practically has its beginning at the ground line  $a$  of one of the corner buildings and enters the structure on an incline as shown in the development, Fig. 4. Where this floor 28 passes one of the corners of the central building its course is horizontal, as at  $b$ , but on that section adjacent to the halls or corridors 18 its inclination is upward as at  $c$ , and by this means the flooring in its winding way proceeds toward the apex of the dome. At a certain point near the apex the flooring is a horizontal section  $d$  with two inclined approaches, the upward  $c$  and the downward  $e$  the latter about half way, around the dome and running in the same direction as the upwardly inclined flooring. In consequence of the length of this spiral flooring it will be found advisable to provide the same with a railway track and trains to traverse same



and haul freight or passengers. For this purpose the inclines *a* start from the outside of the building and afford entrances for the trains which pass up the successive inclines 5 and levels until the top horizontal platform *d* is reached and by reference to Fig. 6, where two sets of tracks are shown, it will be seen that the trains on arriving at the end 31 of the upward track are reversed and 10 switched on to the down track 32 which passes through the opening 33 in the platform on to the spiral flooring immediately beneath the up track. While two terminals and two sets of tracks are shown on each 15 floor I do not limit myself to this special arrangement of the tracks but may adopt such numbers and methods of arranging these tracks on the spiral floors as may be found advisable. It is evident that I may use but 20 one floor for cars; passing them up one track and down the companion track on the same floor and leaving the intervening floor for pedestrians. When the two sets of tracks are used they each enter the building on the 25 inclines at *a* and leave at the exits *f*. In Fig. 5 a fragmentary plan of this flooring 28 shows it as being provided on each side of the railway 29 or walk with booths, alcoves or compartments 30 which may be provided 30 with shelves or counters to contain books, records, curios etc. or to display wares which may be for sale.

It is obvious that instead of a track with cars for this spiral flooring I may use elevators 35 to use the highest part of the dome. Elevators and stairways will also be used in the smaller structures surrounding the dome and it will be seen by reference to Fig. 2 that means of communication are afforded be- 40 tween the dome and the adjacent buildings. The outside of the surrounding buildings is adapted to be constructed in a substantial

and handsome manner and decorations such as statues and groups of statuary and plants will be placed at appropriate points. 45

While the drawings show but two shells as composing the dome, it is obvious that any number may be used to increase the capacity of the structure and various modifications may suggest themselves as to the construc- 50 tion and arrangement of these additional shells without departing from the spirit of the invention. The interior of this dome and its compartments may be lighted artificially or windows may be introduced into 55 the outer shell if found advisable.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a structure of masonry and steel, the 60 combination with a series of inclosing buildings, of a vaulted base supporting a dome made up of several shells, means of communication between the buildings, and dome at different levels, and flooring in the space 65 between the shells of the dome and composed of uniform horizontal and inclined sections.

2. In a structure of masonry and steel, the combination with inclosing buildings of two or more stories, of a dome rising above same 70 and composed of several shells, continuous flooring in the space between the shells and made up of inclined and horizontal sections, and means of communication between the floors of the inclosing buildings and the hori- 75 zontal sections of the flooring within the dome.

In witness whereof I have hereunto signed my name this 21st day of January 1905, in the presence of two subscribing witnesses. 80  
RAFAEL GUASTAVINO.

Witnesses:

WILLIAM J. LIPPMANN,  
JAMES F. DUHAMEL.