

(No Model.)

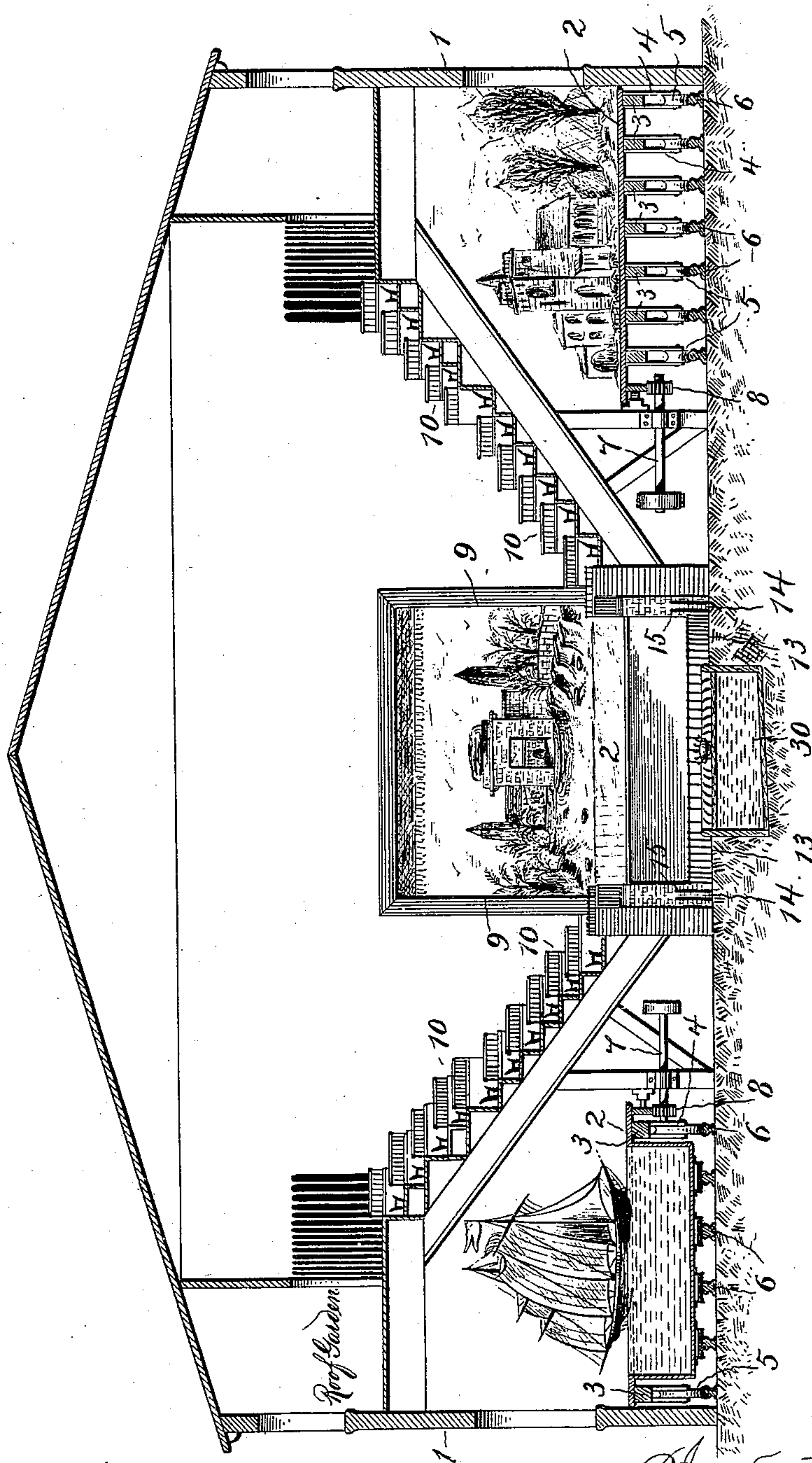
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C. L. HAGEN.
CONSTRUCTION OF THEATERS.

No. 546,528.

Patented Sept. 17, 1895.

Fig. 1.



Witnesses:
Jas. E. Hutchinson.
Dennis Sumbly.

Inventor.
Claude L. Hagen,
by James E. Norris.
att'y

(No Model.)

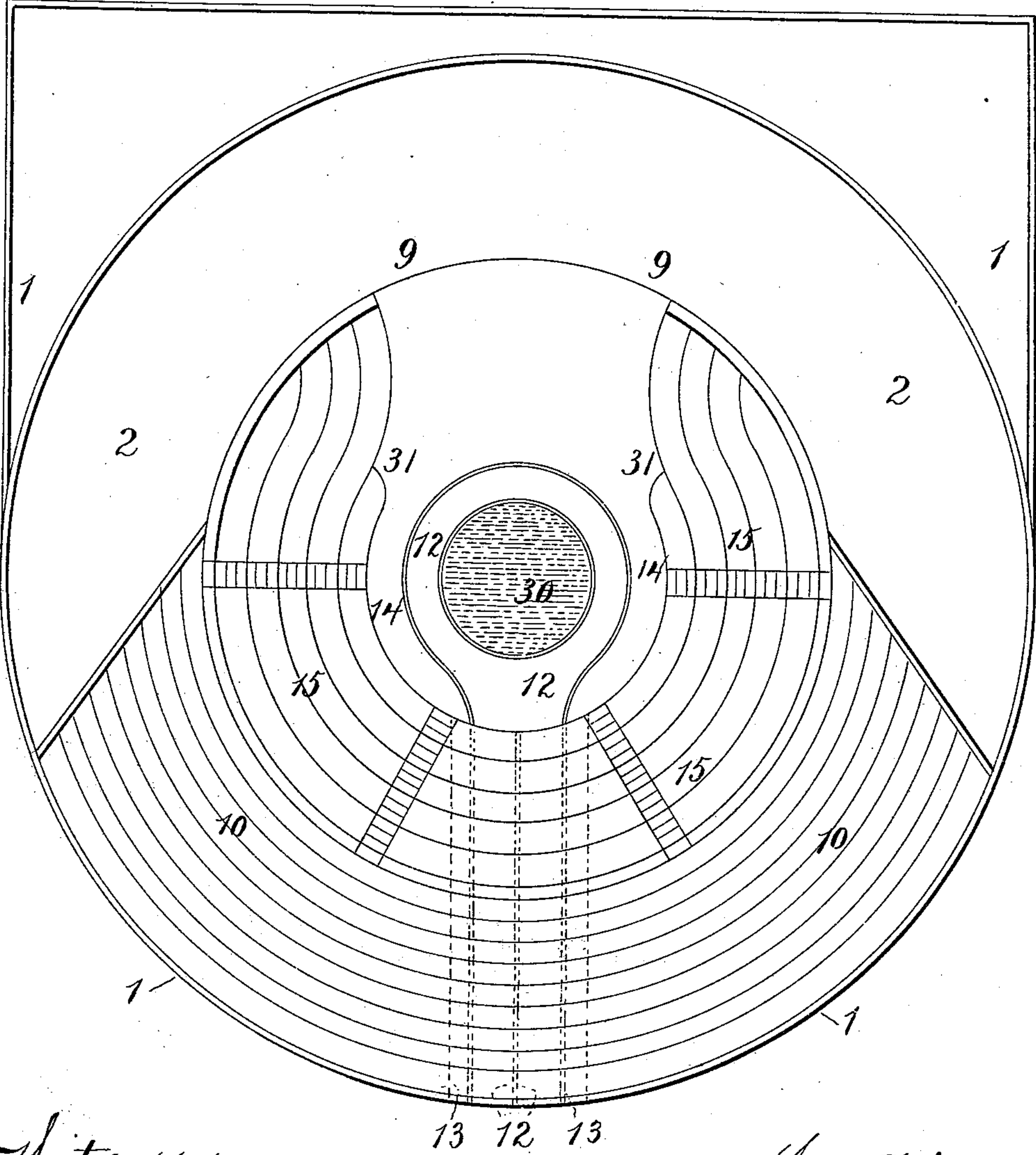
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Fig. 2.



Witnesses:

Jas. E. Hutchinson.
Linnie Lumbly.

Inventor.

Claude L. Wagon,
by James L. Norris,
Atty.

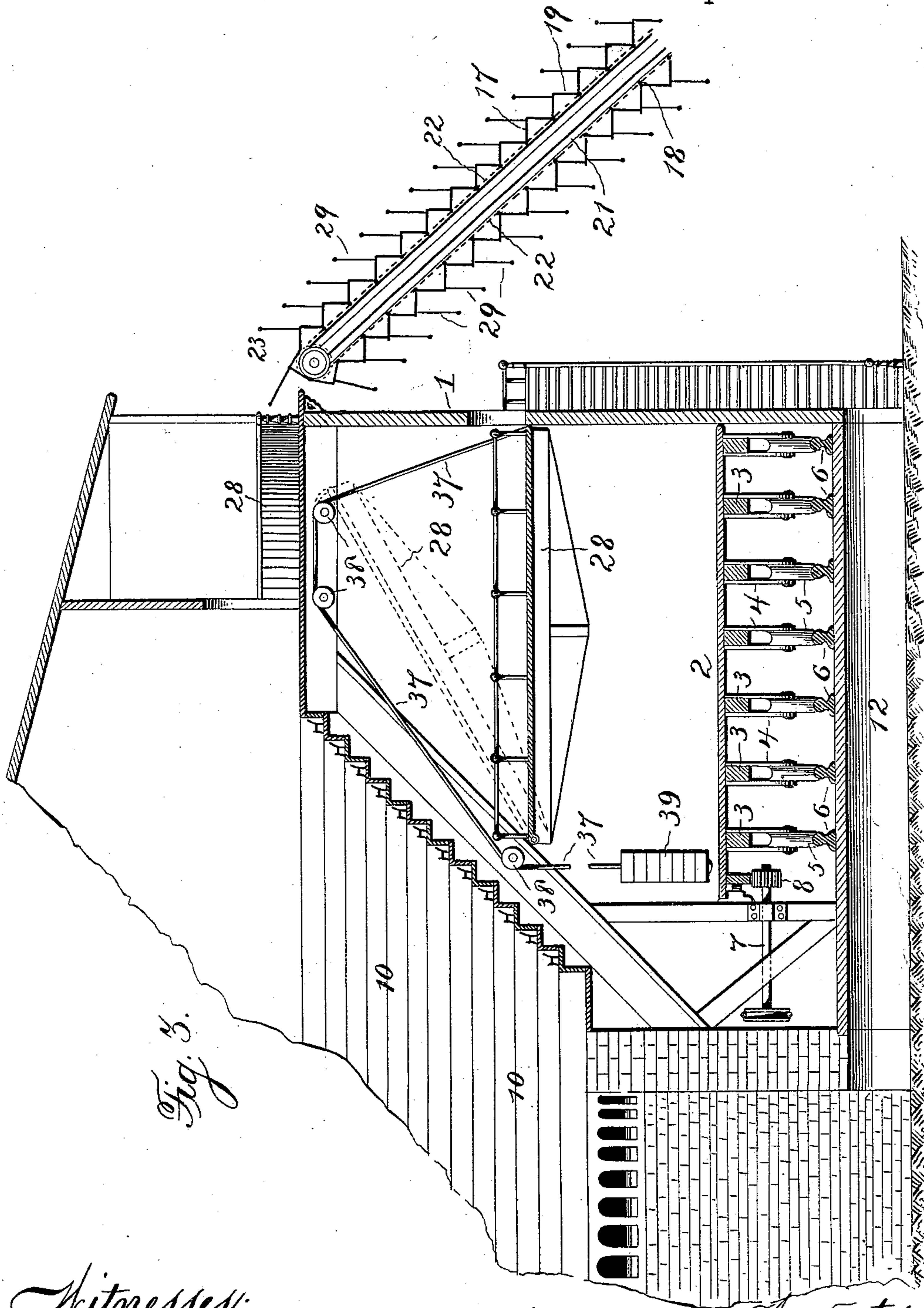
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Witnesses:
Jas. Esfitchinson.
Dennis Sumbly.

Inventor:
Claude L. Hagen
by James L. Norris, atty.

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Fig. 4.

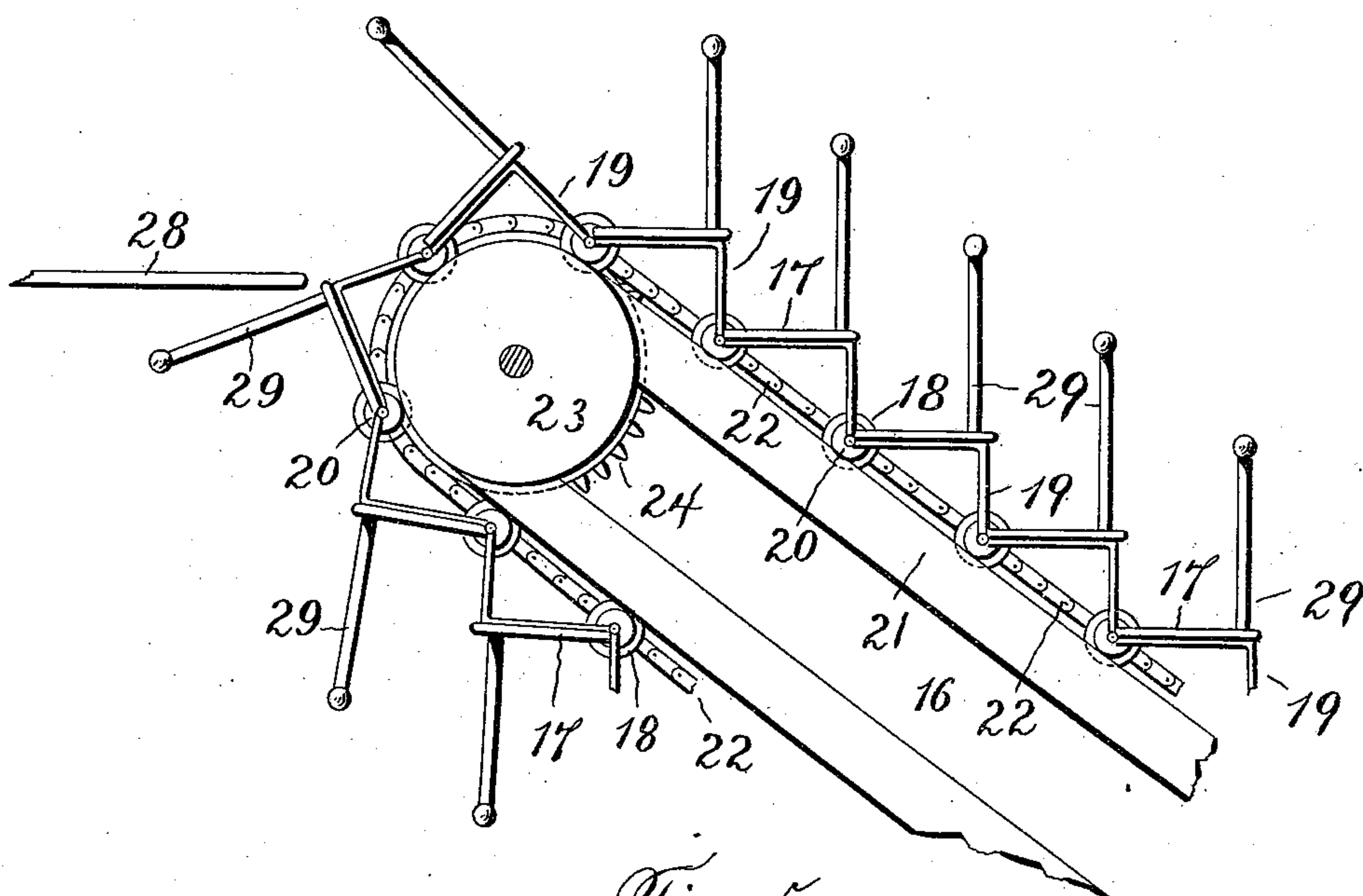
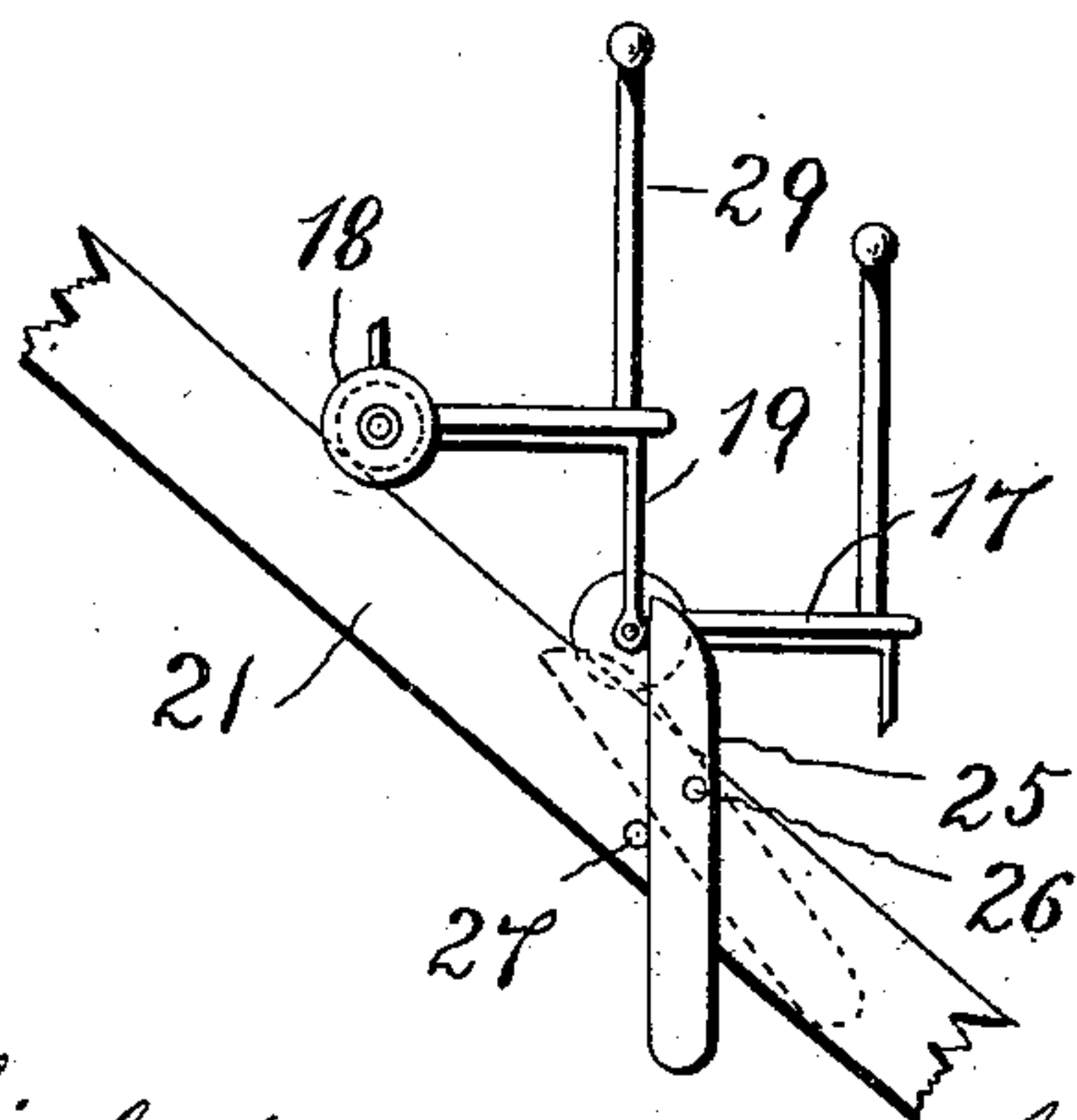


Fig. 5.



Witnesses:
James Hutchinson
Dennis Sully

Inventor.
Claude L. Hagen,
by James L. Norris
Atty.

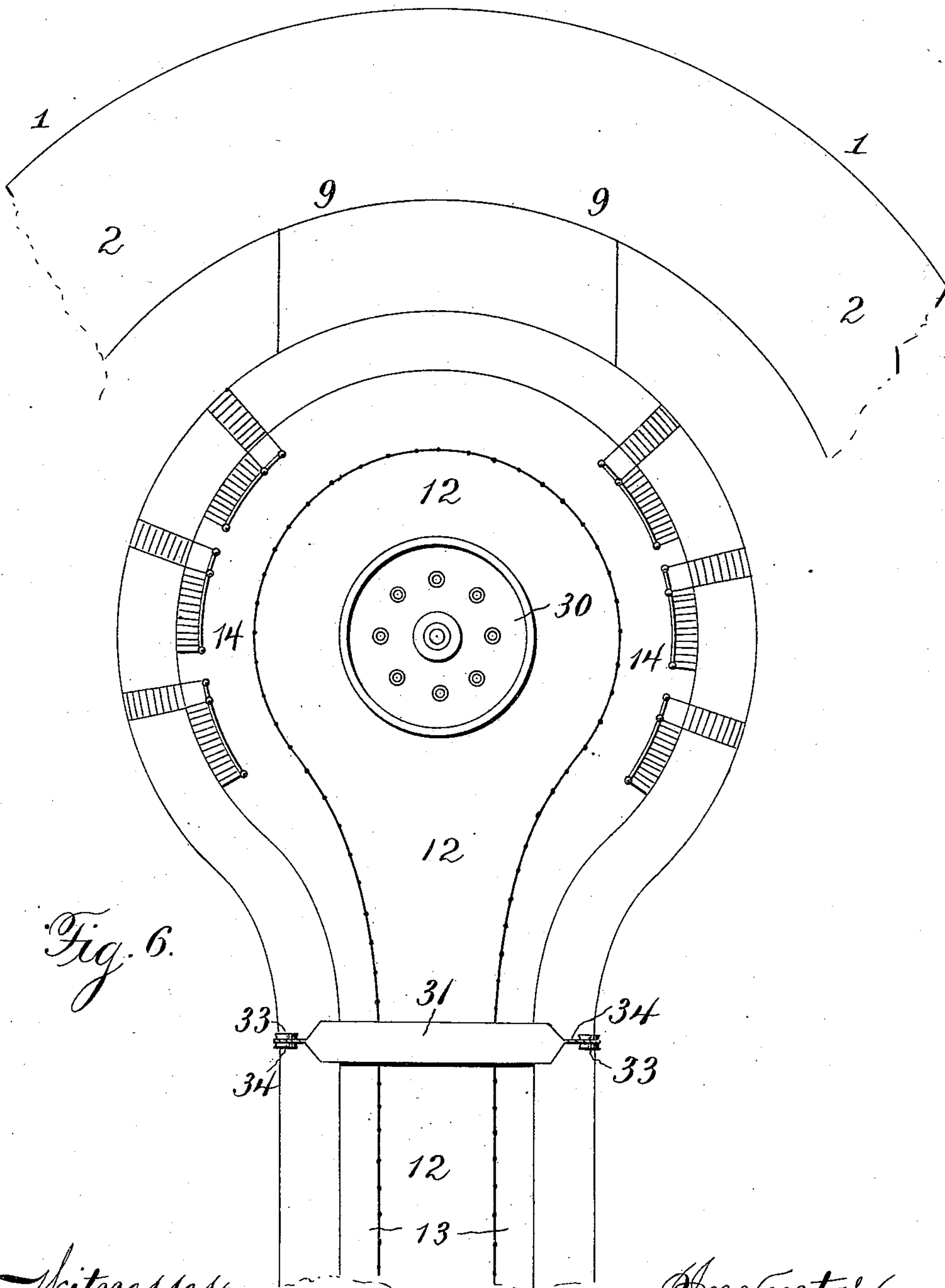
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Witnesses:
Jas. C. Hutchinson.
Dennis Sumbly.

Inventor.
Claude L. Hagen,
by James L. Norris.
Atty.

C. L. HAGEN.
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Fig. 8.

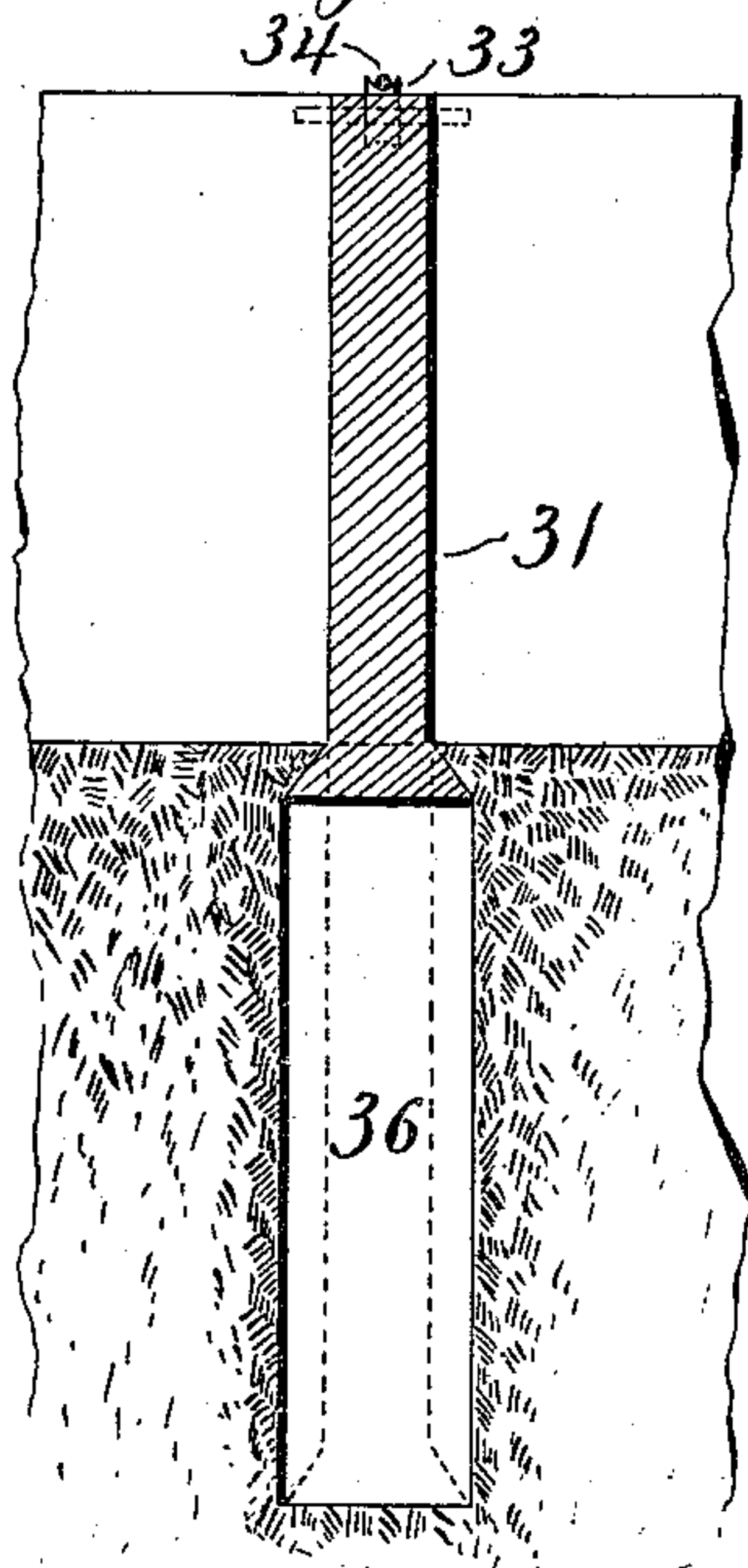


Fig. 7.

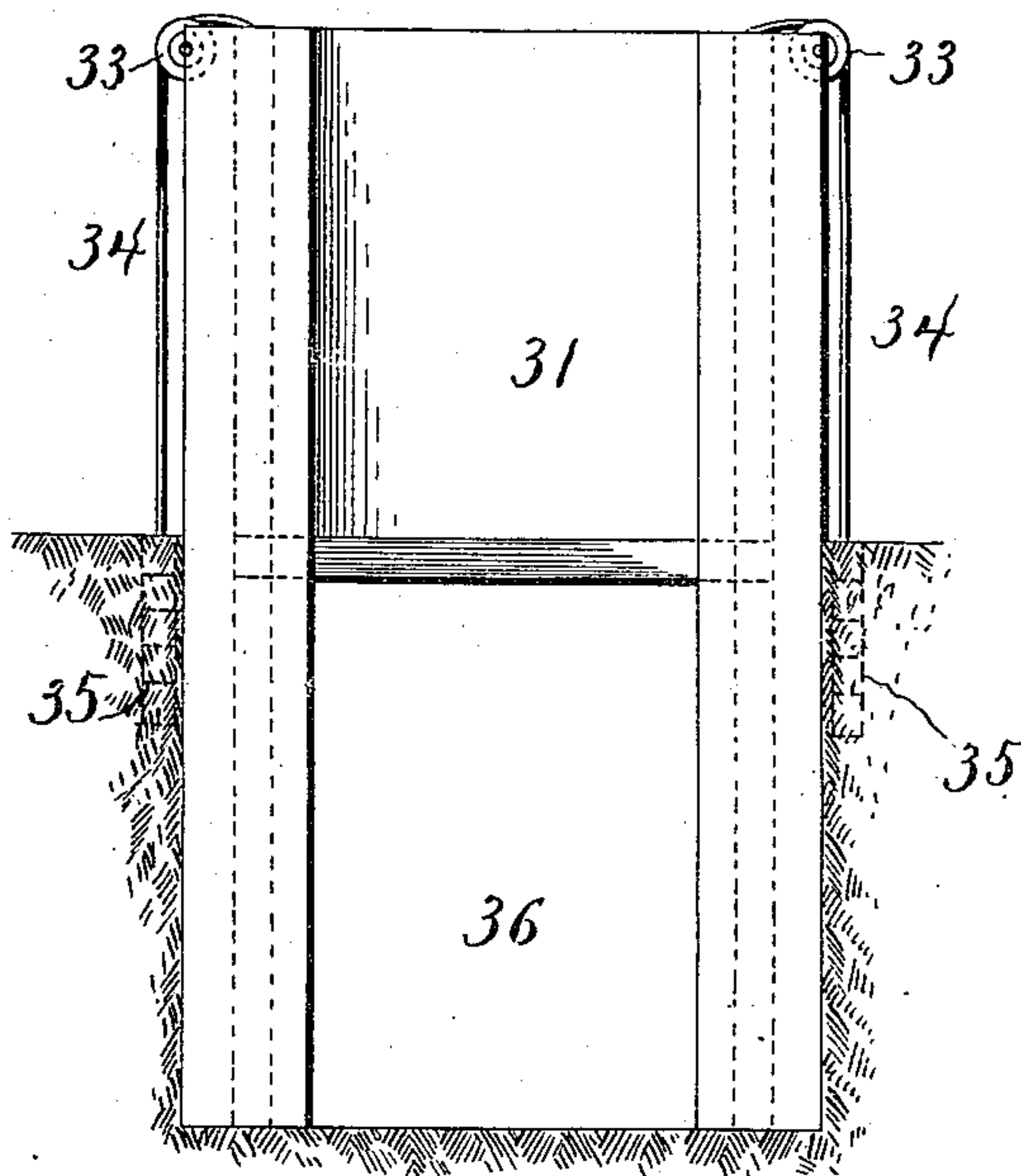
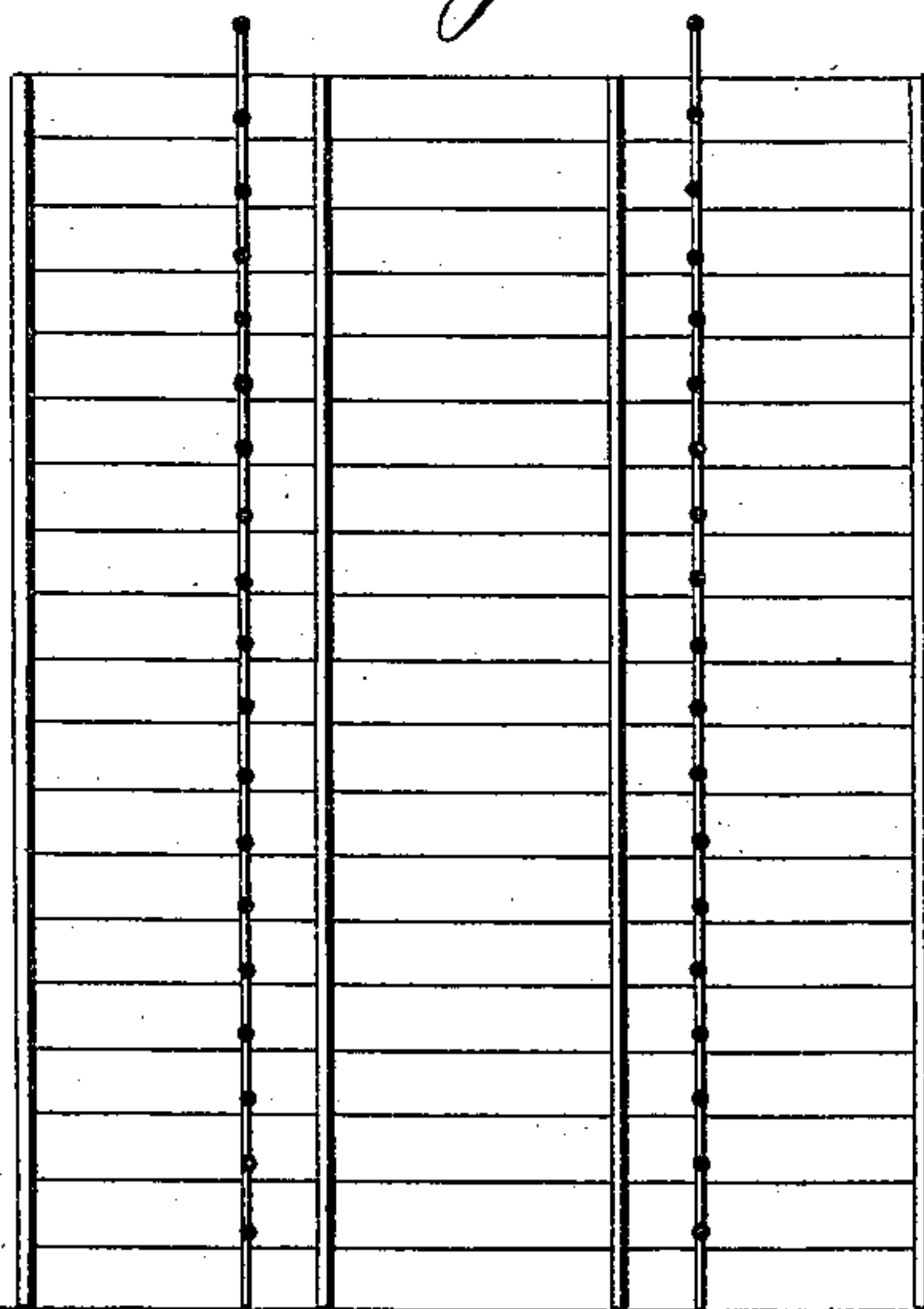


Fig. 9.



Witnesses:
 Jas. E. Hutchinson,
 Dennis Sumby.

Inventor.
 Claude L. Hagen,
 by James L. Norris,
 atty.

UNITED STATES PATENT OFFICE.

CLAUDE L. HAGEN, OF NEW YORK, N. Y.

CONSTRUCTION OF THEATERS.

SPECIFICATION forming part of Letters Patent No. 546,528, dated September 17, 1895.

Application filed May 20, 1895. Serial No. 549,962. (No model.)

To all whom it may concern:

Be it known that I, CLAUDE L. HAGEN, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in the Construction of Theaters or Similar Buildings, of which the following is a specification.

My invention relates to the construction of theaters or similar buildings used for dramatic, scenic, or operatic representations.

It is the purpose of my invention to provide a novel construction and operation of the stage whereby a considerable number of scenes may be permanently built, while the shifting of scenery between the acts or scenes may be practically avoided by setting the scenery in proper order on a circular stage which surrounds the entire auditorium and revolving said stage at suitable intervals.

It is a further object of my invention to provide means whereby scenic and spectacular effects of great variety and of most striking and impressive character may be readily produced and the reality of many scenic effects made far more perfect.

My invention, also, has for one of its objects the provision of means whereby an audience of great size may find such ample egress from the building that the latter can be entirely emptied in a few moments without crowding, egress from each tier being made by the shortest and most direct lines leading to the exterior.

Finally, it is my purpose to provide a building which can be used for any of the purposes heretofore referred to, and which shall also be capable of use as a circus or amphitheater for water displays, athletic contests, and exhibitions of every kind.

My invention consists, to the several ends mentioned, in the novel features of construction and new combinations of parts hereinafter fully described, and then particularly pointed out in the claims.

To enable others to fully understand my said invention and to make and use the same, I will now proceed to describe the same in detail, reference being made for this purpose to the accompanying drawings, in which—

Figure 1 is a vertical section showing the

interior of a building constructed in substantial accordance with my invention, the line of sight being toward the center of the stage. Fig. 2 is a plan view of the interior shown in Fig. 1. Fig. 3 is a vertical section of one side, showing the arrangement of the traveling stairing and the lines of exit from different tiers. Fig. 4 is a detail view showing the construction of the endless traveling stairs. Fig. 5 is a further detail view showing the means by which the relative positions of the parts are maintained. Fig. 6 is a plan view, on a slightly-enlarged scale, showing the construction of the pit, the lock-gate, and the position of the cistern, from which water is supplied to the pit. Fig. 7 is a detail section taken vertically in the line of the lock-gate in Fig. 6. Fig. 8 is a detail transverse section showing the construction of the lower edge of the lock-gate, by which a tight joint is made. Fig. 9 is a detail view showing a portion of one of the permanent stairways with traveling sections included therein.

The reference-numeral 1 in said drawings indicates the vertical inclosing wall of the building within which my invention is placed. While this structure may be of any form preferred, economy of space and material will require that it be either circular or polygonal, an octagonal or even hexagonal form being compatible with my improvements.

Within the wall 1 and in suitable proximity thereto is a circular stage-platform 2, of suitable width and extending entirely around the interior. This platform will have any well-known construction and may be supported upon stills 3, the latter resting upon suitably-braced stanchions 4. These stanchions are provided with grooved wheels 5, which rest upon a series of circular concentric rails 6. To impart movement to the circular stage shafts 7 are provided at suitable intervals, and upon these shafts are spur-gears 8, which mesh with one or more circular racks on the inner margin of the stage. Power is supplied from any suitable source for the operation of these shafts, which lie substantially in the radial lines of the stage, and as the latter has ample support it can be caused to travel at any required speed—as, for example, that of a horse running a race, whereby the entire

spectacle of an actual horse-race can be seen by an audience from beginning to end.

The numeral 9 denotes the proscenium-opening through which the visible portion of the stage is viewed by the audience. In the center of the structure is the pit, which will be circular, preferably, though other forms may be used, if desired. Surrounding the pit, the latter being of a diameter suitable for the purposes hereinafter mentioned, are the successive tiers of seats 10, rising to higher levels as they recede from the center. Those adjacent to the proscenium-opening may be constructed like the stage-boxes seen in all large theaters. The concentric tiers of seats, each one rising above those in front, will extend in circular arrangement around the interior space, excepting only that occupied by the proscenium-opening, and may include the division into orchestra, dress-circle, family-circle, &c., adopted in other theaters. In the diametrical line drawn through the center of the proscenium and upon the side of the pit opposite the stage I provide a driveway 12 for carriages and entrances 13 for foot passengers. The driveway is of such width as to permit carriages to pass each other and is continued around the circular pit, so that each, after discharging its load, can drive around and emerge without obstructing others.

Between the carriage-way and the first tiers of the auditorium is a concentric passage 14 for those walking, with which a series of radial passages 15 communicate leading to the several circular tiers. To gain access to these tiers I also provide traveling stairways 16, which may form sectional portions of permanent stairs or, if preferred, may constitute an entire flight. These stairs may be arranged at suitable points upon the exterior of the building, as shown in Fig. 3, or elsewhere. These "lifts," as they may be termed, are shown in detail in Figs. 4 and 5. They consist of a series of steps 17, each of which is connected at its two forward angles to rolls 18 by means of bars 19, which are rigid with the steps and at right angles to the same. The rolls 18 are connected in pairs by shafts 20, and ways 21 having a suitable inclination are provided to support said rolls. The shafts 20 are connected at or near their ends by parallel chains 22, which pass over pulleys 23 at top and bottom of the movable stairs, said pulleys having teeth 24, which engage the chains and act like sprockets. The length of chain 22 between the successive shafts is such as to maintain the rolls at such intervals that the steps will lie horizontally and will travel upward in that position until they reach the upper pulley 23. A series of safety-dogs 25 is provided on each way, mounted on pivots 26 and turning against stop-pins 27, in order to arrest any step or the whole series of steps in case the sprocket-chains should break. Each shaft 20 as it passes tilts one of these dogs, which drops back to vertical po-

sition the instant the shaft has passed, thus affording a very secure guard in case either or both chains should give way at any point.

Landings 28 are provided at suitable points, and the pulleys carrying the stairs are arranged a little above their level, so that the passengers can easily step off, while all danger of the foot being caught and crushed is avoided. The steps are provided at their ends with rigid uprights 29 to afford a support for the passengers.

The traveling stage will be provided with tanks for water, so that marine scenes with ships or boats can be produced. All movable effects can be stored in rooms in rear of the proscenium, where space may also be afforded for dressing-rooms by constructing this part of the building of rectangular form.

In the center of the circular pit a fountain 30 may be placed to cool the heated air, and by providing a lock-gate 31 the entire circular space may, if desired, be filled with water for any purpose. In climates where the temperature permits this space may be used temporarily as a skating-rink. By drawing the water off a large space may be formed by merely boarding over the fountain, which is well adapted to athletic contests or other exhibitions.

The fountain-bowl will preferably be constructed of glass and in such manner as to permit of an illumination being given to the water of any desired color or combination of colors. The jets supplying the water may be arranged in clusters or in any form desired to cause the water to assume any shape upon escaping. The variation in color may be effected by employing lights having different colors or bulbs by using flames of various colors or by any other preferred means.

The roof of the rear portion of the theater is utilized as a roof-garden for summer use and as a café in connection with the promenade around the theater.

The lock-gate 31, by which the inclosed space comprising the pit may be filled with water to a suitable depth, is shown in Figs. 6, 7, and 8. It is placed across the driveway and footways at a point exterior to the pit. Its edges are oppositely beveled to V shape and lie inwise in the parallel walls which inclose the entrance to the pit. These ways are V-shaped and the edges of the gate fit therein, said ways being in line with pulleys 33, over which pass cables 34, attached at one end to the gate and having at their other ends weights 35, which are sufficient to more than counter-balance the gate. When the latter is lowered, it lies wholly beneath the surface of the driveway in a chamber 36. The lower edge of the gate is so formed as to increase uniformly in thickness, so that from its lower edge to a point some inches above it is substantially wedge-shaped. The top of the subterranean chamber 36 is correspondingly shaped, so that as the gate is drawn upward its lower edge

will be wedged into the opening at the top of the chamber 36 and form a tight joint.

The water for filling the pit will be contained in a cistern or series of cisterns surrounding the pit. When the lock-gate 31 is dropped into its chamber, its upper edge will lie flush with the roadway and carriages will drive over it.

The landings 28 are preferably trussed to give the necessary strength. They are pivotally connected at the ends adjacent to the tiers 10, and are normally raised out of the line of movement of any scenery that may be upon the circular stage by cables 37 running over pulleys 38. These cables are provided with weights 39 heavy enough to just overbalance the landings, so that whenever the outer ends of the latter are released the landings will rise to the position shown in dotted lines in Fig. 3. A moderate force will return them to horizontal position, so that in case an alarm of fire is given the members of the audience can readily swing said landings down and make their escape.

My invention is well adapted not only to theatrical entertainments, but to spectacular and panoramic exhibitions, to circuses, to marine exhibitions, and aquatic sports and contests. The circular stage, also, when the scenery and other appurtenances are removed, may be used as a race-track, the stage being caused to move in a direction opposite to that in which the horses run and at such speed as to keep the horses in view through the proscenium-opening. In the same manner the whole course of a steeple-chase, a hurdle or other race, or a fox-hunt can be shown to an audience, with all the variety of fences, walls, water-ways, and other scenery, in a similar way a battle-field, with its various scenery, the camp, hospital, and the adjacent country, with its homes and signs of industry and peace. Spectacular exhibitions showing historical events can also be given—such as Columbus discovering America, and an infinite variety of other subjects.

What I claim is—

1. In a theater, a circular stage entirely surrounding the pit and supported by wheels adapted to move upon circular rails, which pass in rear of a proscenium opening, said stage to have movement at proper intervals to bring the successive scenes into view through said opening, substantially as described.

2. A continuous circular stage for a theater

supported upon rails which extend entirely around the auditorium and in rear of a proscenium opening, and means for giving rotary movement to said stage to cause the successive scenic representations to pass the proscenium opening, substantially as described.

3. A circular stage for a theater supported by wheels movable upon circular rails, a proscenium opening for the same, and an auditorium consisting of successive tiers of seats concentric with an open pit and facing the proscenium opening, substantially as described.

4. A movable, continuous, circular stage, extending entirely around and adapted to move concentrically with the pit and auditorium, from which said stage is concealed save at a single proscenium opening in rear of which the stage passes, said stage being provided with necessary furniture which is set in advance of the successive movements, substantially as described.

5. A theater or similar structure having a continuous circular stage adapted to travel on rails and to move behind a proscenium opening, an auditorium surrounding a central circular space, and a drive-way passing beneath the circular stage and entering said circular space, substantially as described.

6. A theater, or similar structure, having a circular space surrounded by the auditorium and separated from the latter by a wall, a drive-way, or entrance entering said space from the exterior, and a water-gate arranged in a recess below the surface and adapted to be raised to close said entrance to enable the central space to be converted into a tank or basin, substantially as described.

7. A theater, or other structure, having a circular space surrounded by the auditorium and separated from it by a wall, a drive-way, or entrance from without communicating with said space, a water-gate arranged in a recess beneath the surface and means for raising and lowering said gate to hermetically close the entrance and enable the central space to be converted into a tank or basin, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CLAUDE L. HAGEN.

Witnesses:

J. CHAS. DAVIES,
H. C. MINER.