

(No Model.)

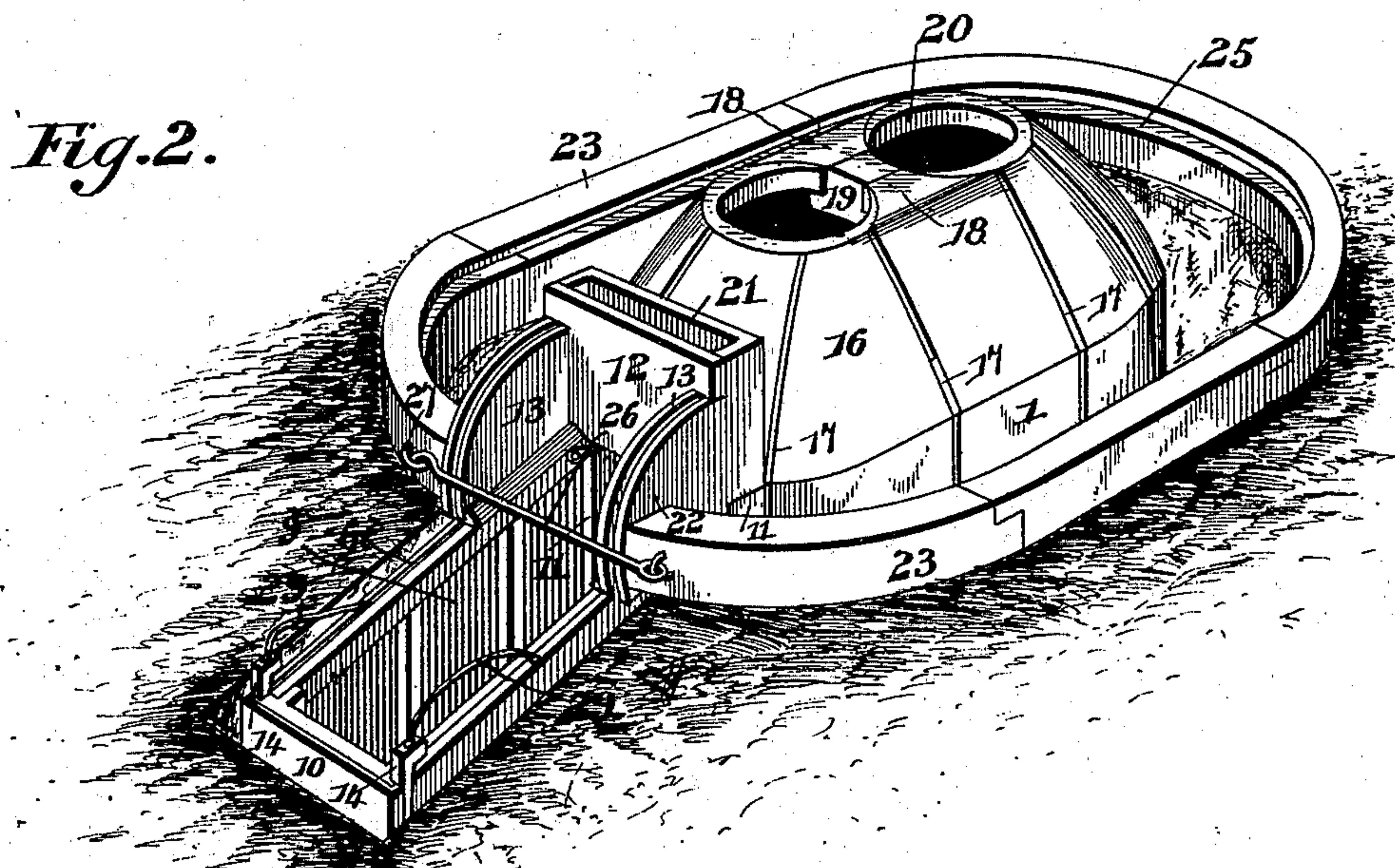
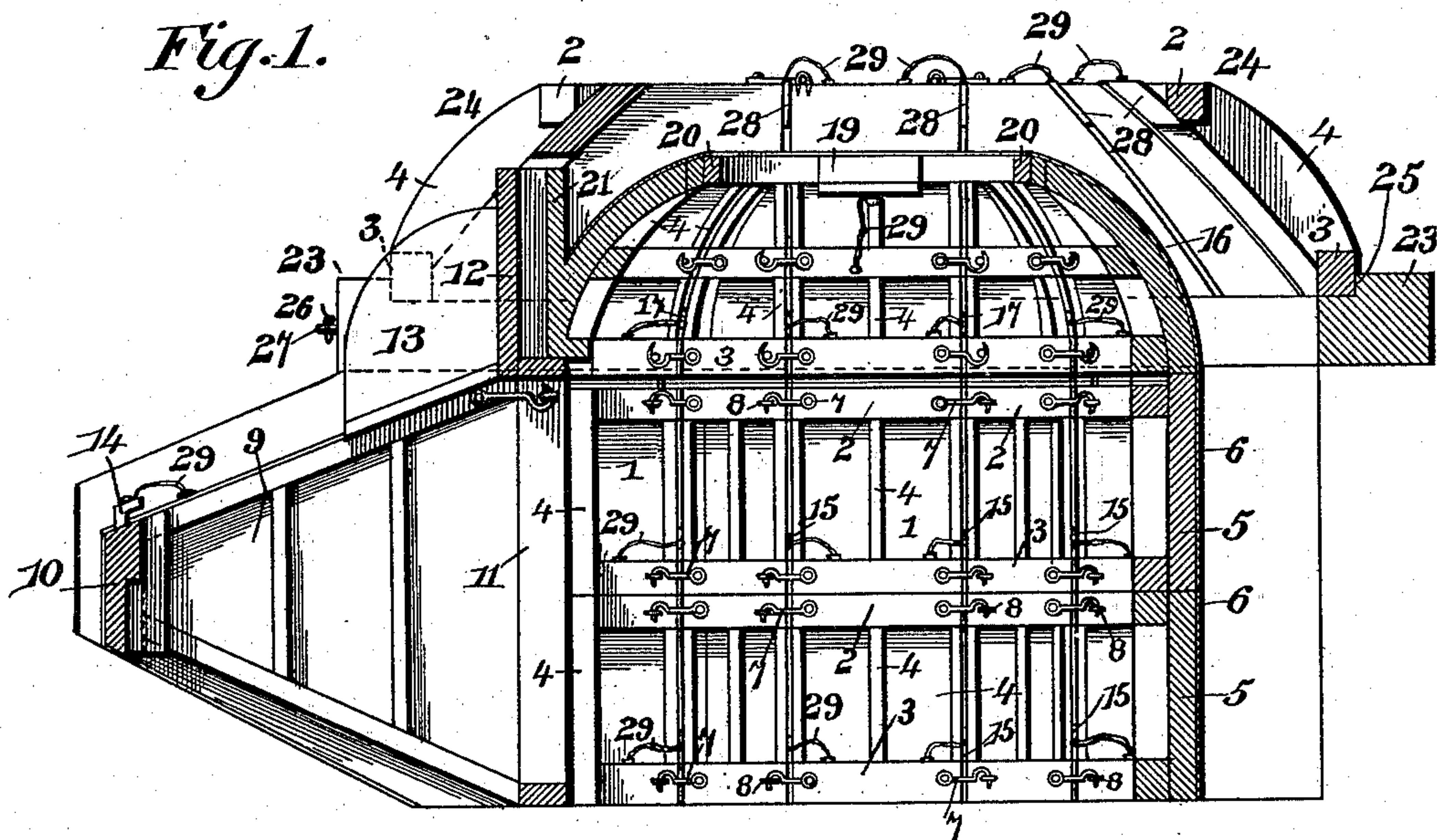
2 Sheets—Sheet 1.

R. G. MOON.

MEANS FOR CONSTRUCTING STORM CELLARS, &c., OF CONCRETE.

No. 578,891.

Patented Mar. 16, 1897.



Inventor

Witnesses

Jas K. McLaughlin
V. B. Hillyard.

By *his* Attorneys,

Robert G. Moon

C. A. Snow & Co.

(No Model.)

2 Sheets—Sheet 2.

R. G. MOON.

MEANS FOR CONSTRUCTING STORM CELLARS, &c., OF CONCRETE.

No. 578,891.

Patented Mar. 16, 1897.

Fig. 3.

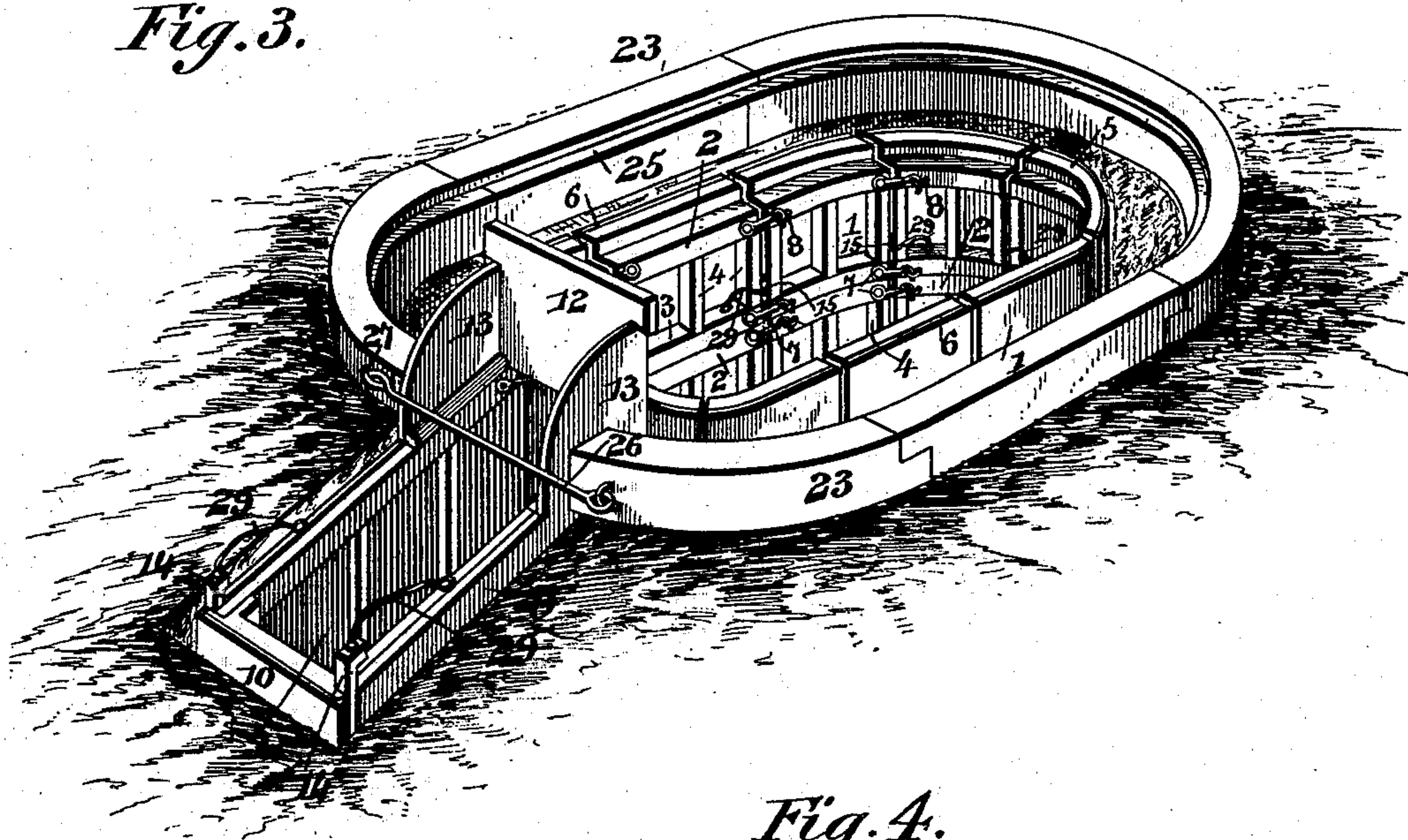


Fig. 4.

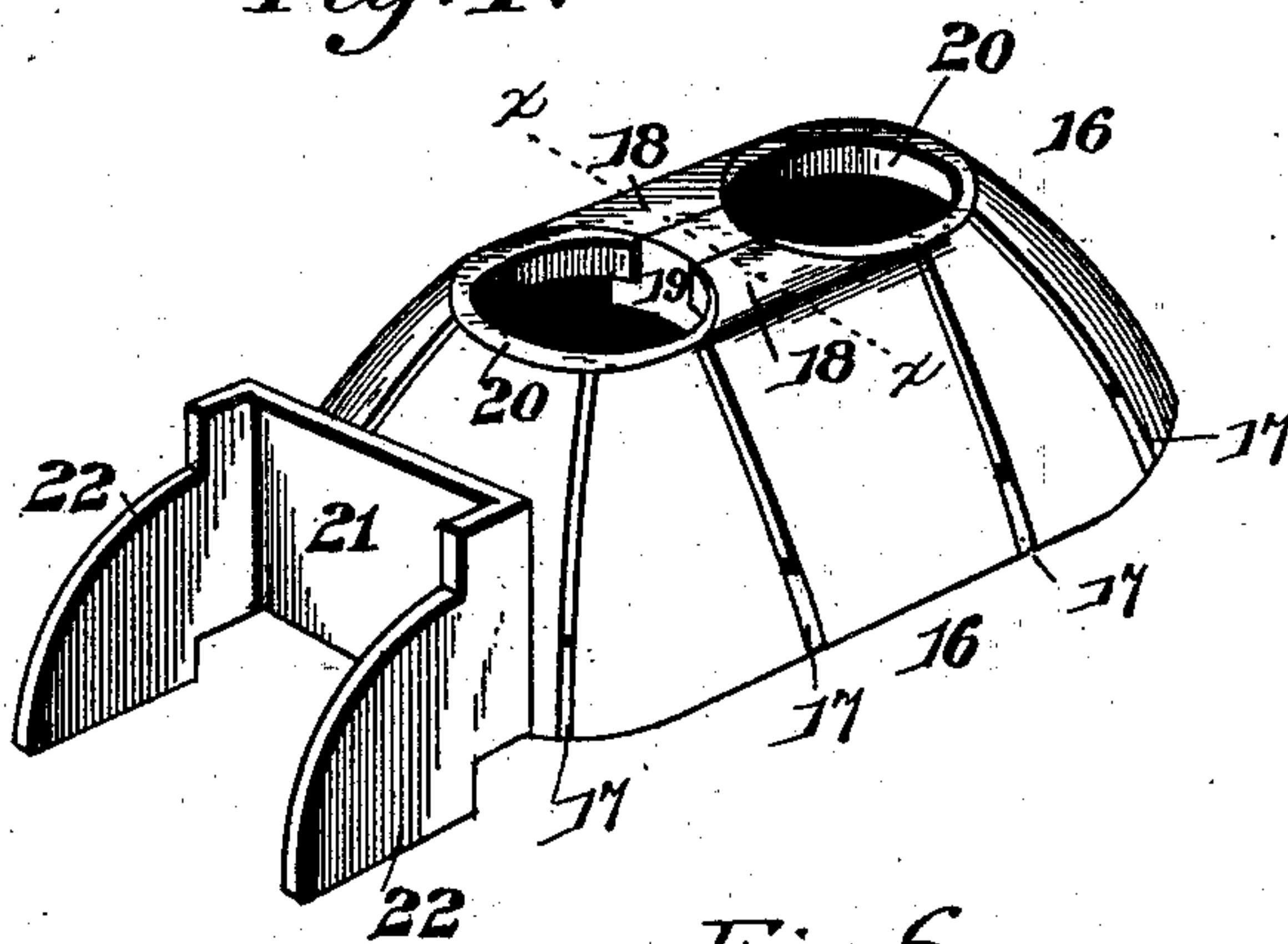
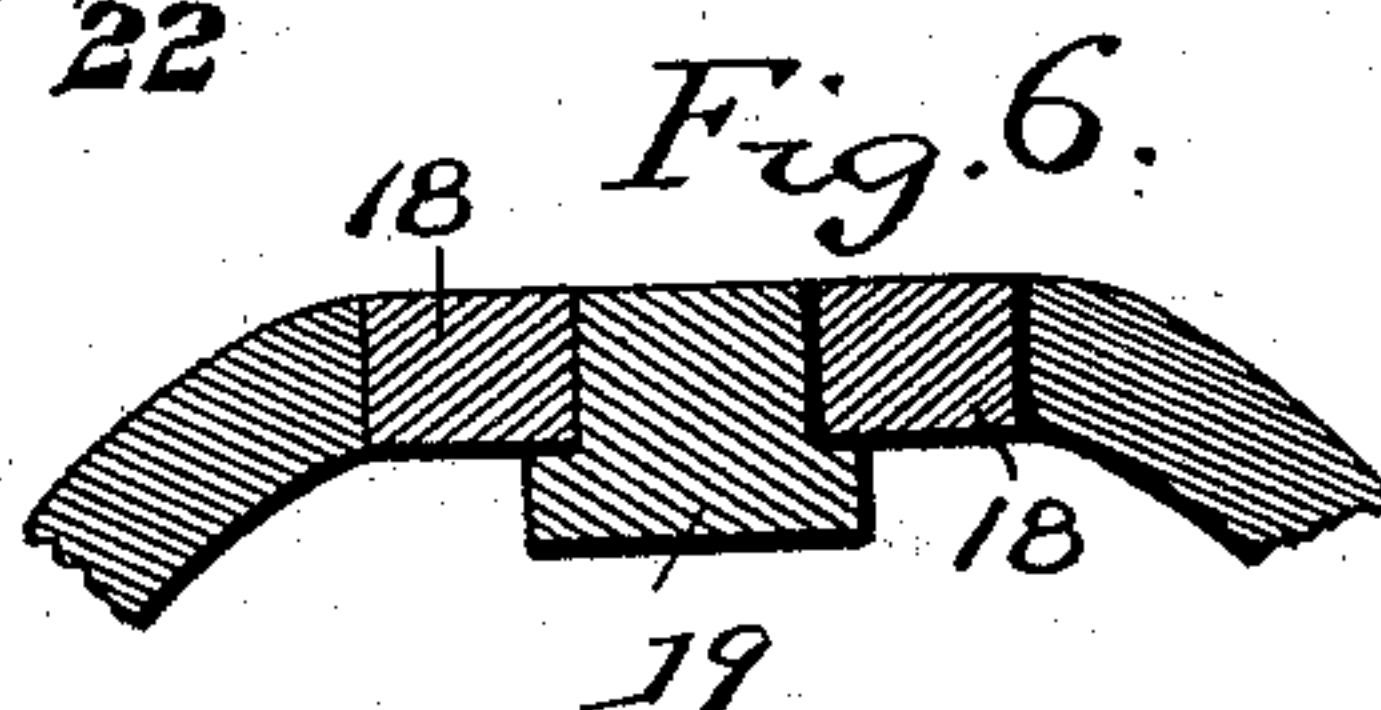
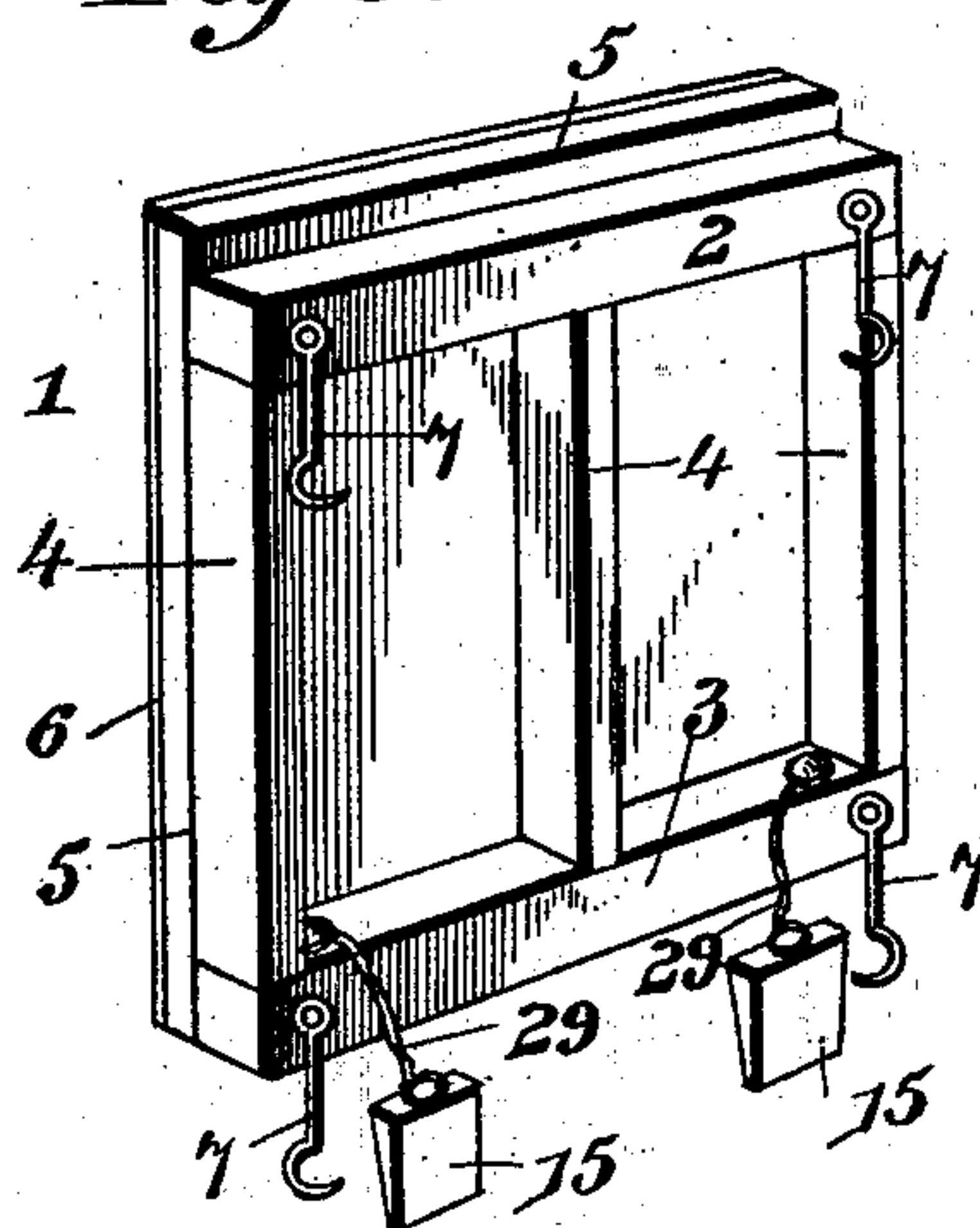


Fig. 5.



Inventor

Robert G. Moon

Witnesses

Jas H. McCutchan
U. B. Hillyard

By *His* Attorneys,

Chas. Snow & Co.

UNITED STATES PATENT OFFICE.

ROBERT G. MOON, OF BEDFORD, IOWA.

MEANS FOR CONSTRUCTING STORM-CELLARS, &c., OF CONCRETE.

SPECIFICATION forming part of Letters Patent No. 578,891, dated March 16, 1897.

Application filed March 31, 1896. Serial No. 585,641. (No model.)

To all whom it may concern:

Be it known that I, ROBERT G. MOON, a citizen of the United States, residing at Bedford, in the county of Taylor and State of Iowa, have invented a new and useful Means for Constructing Storm-Cellars, &c., of Concrete, of which the following is a specification.

This invention relates to the means employed for constructing cellars, vaults, subterraneous, and other structures of kindred nature for storing purposes or to be used as a safe retreat and which will be practically free from dampness and proof against burrowing animals.

The object is to provide a curb or structure made in sections and capable of being enlarged or contracted according to the required size of the vault to be formed and which can be set up so as to make a round, oval, or oblong structure, as desired, the curb being formed with especial reference to be quickly and easily removed after the vault has been formed and sufficiently set or hardened.

For a full understanding of the merits and advantages of the invention reference is to be had to the accompanying drawings and the following description.

The improvement is susceptible of various changes in the form, proportion, and the minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention an adaptation thereof is shown in the accompanying drawings, in which—

Figure 1 is a vertical central longitudinal section of a mold or curb for constructing a cellar or vault of concrete or similar plastic material. Fig. 2 is a detail view of the mold or curb having the upper or outer top section removed. Fig. 3 is a detail view of the main or body portion of the mold or curb, the crown and cap being omitted. Fig. 4 is a detail view of the crown, showing the means for keying the sections at their upper ends. Fig. 5 is a detail view of a section of the mold or curb. Fig. 6 is a detail section of the crown on the line X X of Fig. 4.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference-characters.

The mold or curb is especially designed for constructing subterraneous apartments, such as cellars and vaults, and is illustrated in this connection in the drawings, although with slight adaptation it can be arranged for constructing a vault or apartment of kindred nature above the ground. The mold or curb is composed of a series of similarly-constructed sections 1, which are adapted to be arranged in tiers, so that the vault or cellar may be formed in parts and thoroughly tamped. The sections comprising the end walls of the vault or cellar are curved, whereas the sections designed to enter into the formation of the side walls are straight, but each section comprises an upper cleat 2, a lower cleat 3, and vertical cleats 4, connecting the upper and lower cleats and forming a frame, which is closed on one side by a board 5, faced on the molding side with sheet metal 6, which prevents the moisture from the concrete or plastic material from warping or swelling the board 5 and which gives to the walls of the vault a smooth, hard, and finished appearance. These sections are placed edge to edge and are held in fixed relation by suitable means, such as hooks 7 and staples 8.

The cellar-way by means of which ingress and egress are had to and from the cellar or vault will be an integral part of the structure when completed and is formed by side pieces 9 and an end piece 10, which are held in place in a manner similar to the sections 1 or in any substantial and convenient way. These side pieces gradually decrease in height from the inner to their outer ends to correspond with the decreasing height of the cellar-way. A door-frame 11 is located at the entrance end of the vault or chamber, and the side pieces 9 are secured thereto, so as to maintain the parts in proper position. A shield or protector is located about over the door-frame 11 and is supported upon the inner ends of the side pieces 9 and consists of a vertical plate 12 and end pieces 13, secured together, so as to sustain the parts against the pressure of the concrete or other substance used in constructing the vault or chamber. Wedges or keyes 14 are interposed between the side pieces 9 and the end piece 10 to admit of these parts being easily removed after the vault has been completed

and hardened. Similar wedges or keys 15 are interposed between the sections forming the body of the mold or curb to admit of the latter being taken apart and removed when it is required to dismember the mold or curb after the vault is fashioned and set.

The crown 16 is composed of a plurality of sections constructed in substantially the same manner as the sections entering into the formation of the walls of the curb or mold, excepting that the sections incline at their upper ends and spread at their lower ends, so as to form a vault or chamber having a dome-shaped top. The several sections of the crown are held together in any desired way, preferably by hooks and staples, the same as the other sections, and a wedge or key 17 is forced between adjacent sections, so that when withdrawn the sections are loosened and can be removed. Blocks 18 are interposed between the upper ends of the side sections to hold them apart, and a key 19 is fitted between the inner ends of the blocks 18 to hold them in position. Curved stays 20 are located at the ends of the blocks 18 to brace the upper ends of the extreme sections. Upon removing the key 19, the curved stays 20, and the wedge 17 the crown can be readily taken apart and removed from the vault or chamber. This crown is supported upon the upper end of the topmost tier. A shield or protector similar in construction to the one supported upon the side pieces 9 is located at the front end of the crown 16 and comprises a vertical plate 21 and end pieces 22, and the space formed between the corresponding parts 12 and 21 and 13 and 22 receives the concrete or plastic substance, which forms a protecting-wall at the inner end of the cellar-way, as will be readily comprehended.

After the sections comprising the crown have been assembled and secured together the blocks 18 and key 19 are forced home between the upper ends of the side sections and are held in place in any desired manner, usually the binding action and the frictional engagement of the parts being sufficient. It must be remembered that the parts 18 and 19 are constructed of a size so that unitedly they exceed slightly the distance between the upper ends of the side sections. Hence some force is required to be exerted to force these parts into position. Any looseness resulting from any cause may be taken up by forcing a wedge-shaped splint between the parts, as will be readily understood.

When the vault, cellar, or chamber is formed in an excavation in the ground, an outer support to sustain the concrete is not required, since the sides of the excavation act as a curb, but when the soil is sandy or the chamber is to be constructed above the ground an outer curb will be necessary to form a space exterior to the inner curb into which the concrete is placed. When the vault

has been constructed to about the height of the crown 16, a curb 23 is placed in position and forms a support for the cap 24. This curb 23 is made in sections and is rabbeted on its inner top side, as shown at 25, to receive the lower end of the cap 24, so as to hold the latter in place. The sections comprising the curb 23 will be held from inward displacement by the wall of concrete and by the cap 24 and will be secured against outward movement by packing the earth against them. The ends of the sections adjacent to the end pieces 22 will be secured together in a positive manner by a long hook 26, secured at one end to one section and engaging with a staple 27 near the front end of the opposite section, said hook extending over the cellar-way.

The cap 24 is formed in a similar manner to the crown, excepting that its upper part is removed opposite the top portion of the crown to admit of the concrete being packed into the space formed between the crown and the cap. The inner or concave side of the cap is the molding-face and is protected by sheet metal, whereas the outer or upper side of the crown is the molding-face and is protected by sheet metal. The sections comprising the cap are connected together similarly to the sections of the crown and main portion of the mold and incline at their upper ends and spread at their lower ends to correspond with the sides of the crown. A key or wedge 28 is interposed between the edges of adjacent sections to admit of the cap being readily taken apart after the completion of the vault. That portion of the vault or chamber opposite the opening in the cap is finished by compacting the concrete by mallet and troweling, and in order to secure ventilation an opening will extend from the top of the finished vault or chamber to the surface of the ground.

To construct a vault or chamber in accordance with this invention, an excavation of suitable size is made in the ground considerably larger than the vault, so as to leave a space between it and the mold or curb into which the concrete or like plastic composition is tamped in the manner set forth. The door-frame, side pieces 9, end piece 10, and lower tier of the curb are placed in position and the concrete packed into the space about to a level with the top of the first tier of the curb. Another tier is placed in position upon the lower tier and the concrete filled in as before, and this operation is repeated until the vault or chamber is of the requisite height, when the crown and cap are placed in position and the vault or chamber finished, as herein set forth. After the concrete or composition has set or hardened the mold or curb is removed, the same being facilitated by withdrawing the several wedges or keys in the manner set forth. To prevent the loss of the keys or wedges, they are connected by a short length of cord 29 to an adjacent section, and this cord can be pulled upon to facilitate the re-

removal of the first section after the sections are loosened by the removal of the keys or wedges, as will be readily understood.

Having thus described the invention, what is claimed as new is—

1. In a mold or curb for constructing vaults and other subterraneous chambers having a cellar-way, the combination of an end and side pieces forming the cellar-way, a shield at the inner end of the cellar-way supported upon the side pieces at the inner ends thereof and comprising a vertical plate and end pieces, a crown, and a shield at the front end of the crown, comprising a vertical plate and end pieces to cooperate with the corresponding parts of the first-mentioned shield, substantially in the manner and for the purpose described.

2. In a mold or curb for constructing vaults and like chambers of concrete or plastic composition, an oval-shaped crown composed of a series of sections inclining toward their upper ends and held together by positive means, blocks placed between the upper ends of opposite middle sections, and a key interposed

between the blocks, substantially as shown and described.

3. In a mold for constructing vaults and like chambers of concrete and plastic composition, the combination of a crown composed of a series of sections inclining toward their upper ends and held together by positive means, said crown being of oval shape and the sections having their upper ends forming a space of corresponding outline, blocks interposed between the upper ends of opposite middle sections, a key located between the blocks, and curved stays at the ends of the oval space and bearing against the upper edges of the end sections and against the ends of the blocks and key, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ROBERT G. MOON.

Witnesses:

C. S. McCLOUD,
JOB MOON.