

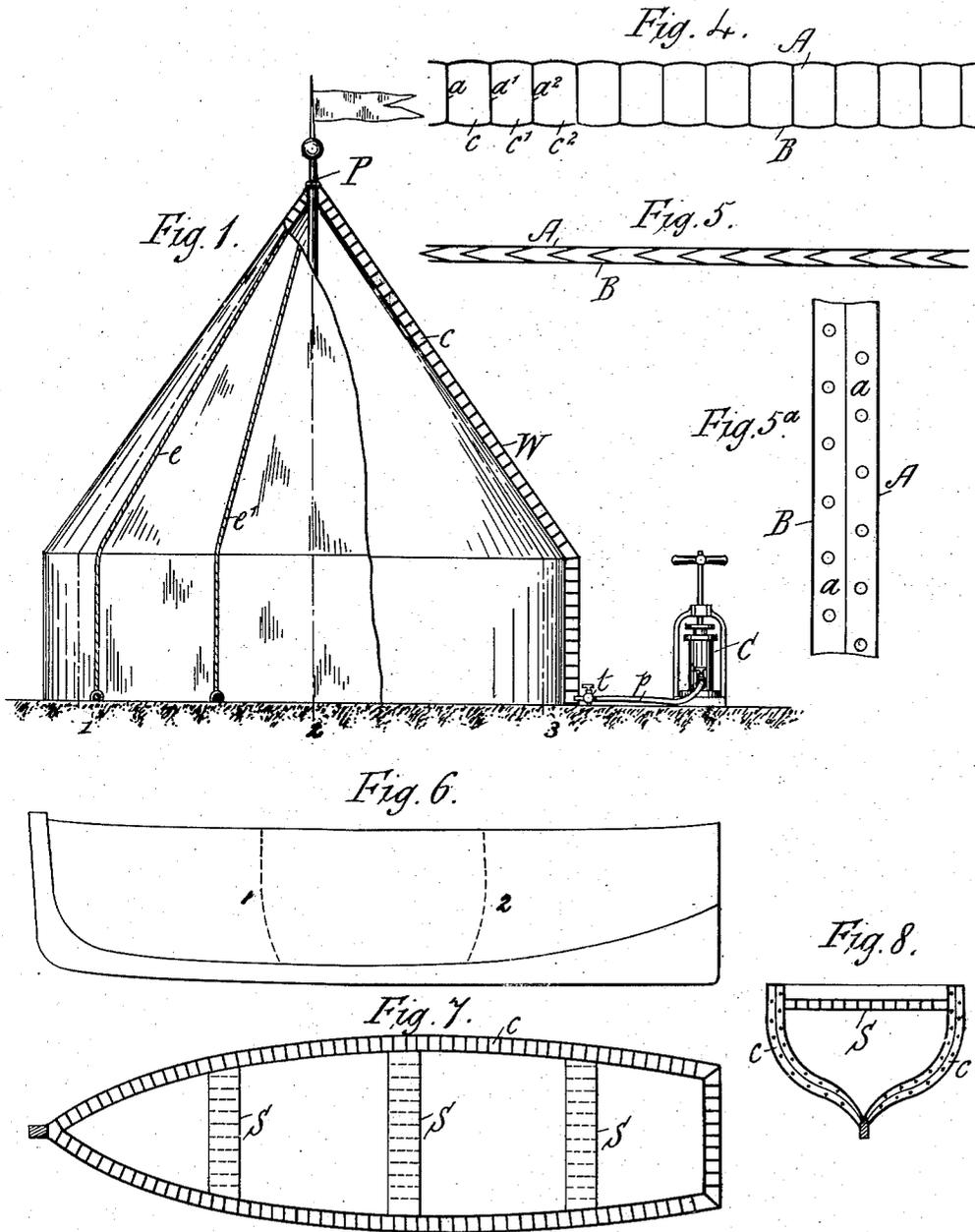
(No Model.)

3 Sheets—Sheet 1.

M. C. J. G. GIESSMANN.
INFLATABLE WALL TENT.

No. 468,455.

Patented Feb. 9, 1892.



Witnesses :-
E. K. Sturvant.
L. M. Low.

Inventor:
M. C. J. G. Giessmann
by Richards & Co.
attorneys

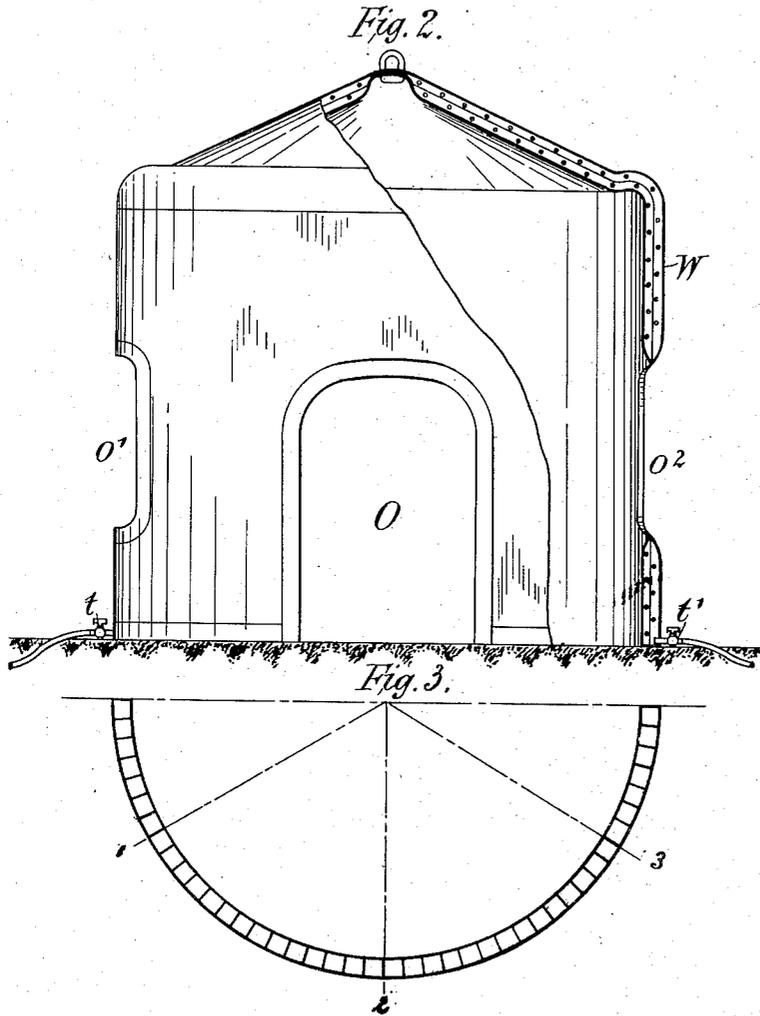
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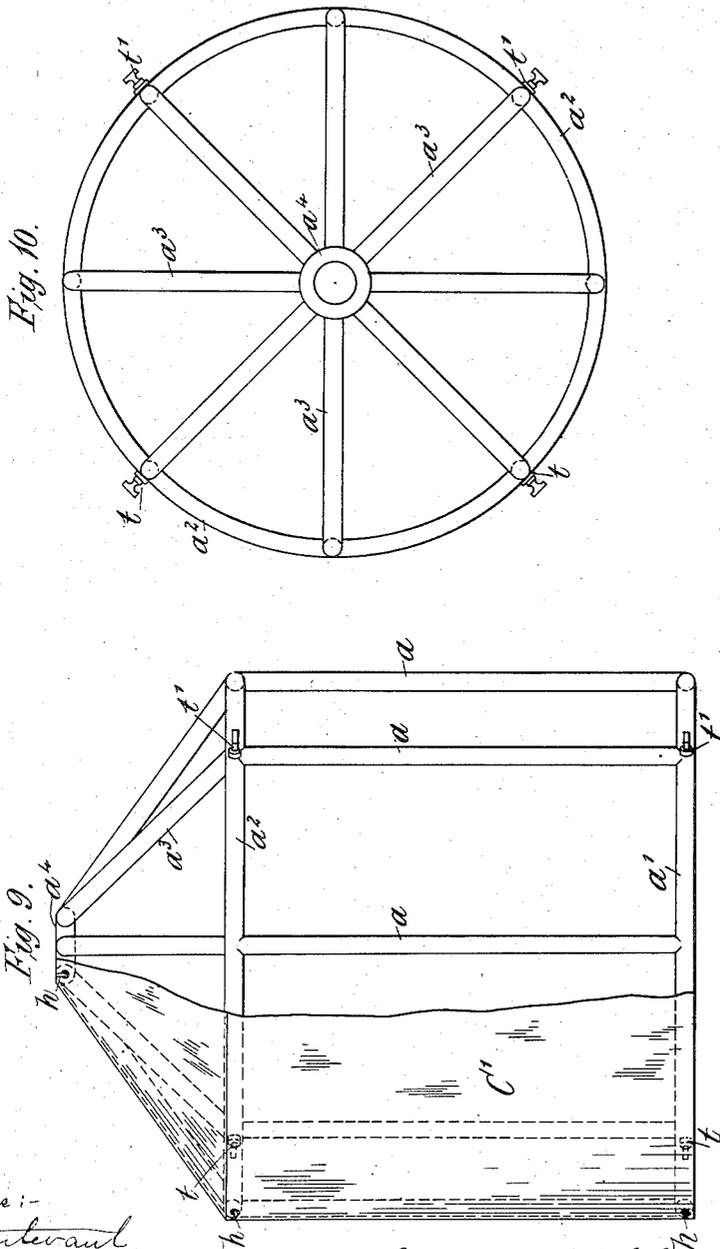
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3 Sheets—Sheet 3.

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UNITED STATES PATENT OFFICE.

MAX CARL JOHANN GOTTLIEB GIESSMANN, OF LONDON, ENGLAND.

INFLATABLE WALL-TENT.

SPECIFICATION forming part of Letters Patent No. 468,455, dated February 9, 1892.

Application filed April 8, 1891. Serial No. 388,176. (No model.)

To all whom it may concern:

Be it known that I, MAX CARL JOHANN GOTTLIEB GIESSMANN, engineer, a subject of the Queen of Great Britain, residing at London, in the county of London, England, have invented a certain new or improved inflatable and collapsible cellular wall, shell, or covering applicable to the construction of portable tents, huts, marquees, boats, and other hollow objects, of which the following is a full, clear, and exact description.

My invention relates to a new or improved wall, shell, or covering composed of inflatable and collapsible cells or chambers applicable to the construction of portable tents, huts, marquees, boats, and other hollow objects.

The chief object of my invention is to so construct tents, boats, trunks, and other similar objects which are formed of textile fabrics that they can be readily folded, rolled, or packed for transport, so as to occupy a very small space, while on arriving at their destination they can be unpacked, unrolled, or unfolded and then rapidly inflated with air entirely or in sections, whereby these objects can be used in their different capacity in the same manner as if they were built up—*i. e.*, made of solid material, such as wood, iron, or the like—such inflation being effected by means of an air-pump of small dimensions.

My invention is particularly applicable and especially valuable for explorers and their escort traveling in the unknown and dusky regions of Africa or in other parts, who will now be able to carry in a small bulk all the appliances or implements required to protect them from climatic *intemperies*, and in the case of trunks and the like to carry their food and provisions, which as they are being consumed will unburden some of the trunks, which can be immediately rolled and packed away, so as to occupy a considerably reduced volume. A similar advantage is obtained in the case of boats, which can be inflated and used to cross a river, then collapsed, folded, and placed in wagons or on camels' backs, so that a small fleet can be at any time improvised, and yet be carried wholly in a small wagon or on a single camel's, mule's, or horse's back.

In carrying my invention into practice I

form within two outer sheets of moderately-thick canvas, india-rubber cloth, or other suitable material a series of vertical or horizontal rectangular cells or chambers by means of collapsible perforated partitions of similar but thinner material, which partitions can be folded centrally in one sense or the other until the two outer sheets come in contact. A suitable number of cells or chambers form a section, the different sections in which the object is divided being inflated separately to prevent, in the event of one of the sections being torn open, hence collapsed, the other sections from being affected thereby. The partition forming the boundary of two sections is made solid instead of being perforated like the other.

According to a modification of my invention I provide collapsible tubes or pipes arranged in such a manner that when inflated they form vertical supports connected by an upper and a lower tubular ring surmounted by a tubular frame for the roof, the whole constituting the frame-work of the object required, such frame-work being covered inwardly or outwardly, or both, by sheets of canvas, india-rubber cloth, or other suitable material suspended from the upper tubular ring or fixed to the said tubes or pipes, the latter being provided with taps which, when closed and after the frame-work has been inflated, divide the latter into sections, so that if one of the pipes were torn open the remainder of the frame-work would not collapse; and in order that my invention may be more fully understood I have shown the same in the accompanying two sheets of illustrative drawings.

Referring to Sheet 1, Figure 1 illustrates in elevation, partly in section, the application of my invention to one form of tent or hut. Figs. 2 and 3 are respectively an elevation partly in section and a horizontal half-section illustrating the application to another form of tent or hut. Figs. 4 and 5 show my arrangement of cells or chambers in an inflated and collapsed state, respectively. Fig. 5^a shows one of the perforated partitions. Figs. 6, 7, and 8 show, respectively, a side view, a sectional plan, and a cross-section of a boat constructed according to my invention. Re-

ferring to Sheet 2, Fig. 9 is an elevation, and Fig. 10 a plan, of a modification of my invention likewise applied to a tent.

The above drawings show the various objects inflated. When collapsed, they may be made to assume any desired shape.

The arrangement of cells or chambers herebefore mentioned is fully illustrated in Figs. 4, 5, and 5^a, A and B being the two outer sheets of canvas, india-rubber cloth, or other material divided by the partitions $a' a^2$ into cells or chambers $c' c^2$, &c., which are perforated, as shown in Fig. 5^a, the whole forming a cellular wall. These partitions may be also formed with gauze. This cellular wall is used to form tents such as shown in Figs. 1 and 2.

In Fig. 1 the cellular wall is fixed at the top to a pole P and also the shape shown. Suitable ropes or cords $e' e'$, &c., are fixed at one end to the said pole and at the other to staples, hooks, or pegs forced in the ground. The cellular wall W, the series of cells of which are arranged horizontally, is divided in sections at 1 2 3, &c., each section being provided with a tap t , which is connected to the india-rubber pipe p of the air-pump C, the boundary partition of each section being solid.

Figs. 2 and 3 show the application of my invention to another tent provided with openings $O' o^2$, the former forming a doorway and the other two windows, $t' t'$ being, as above, taps which are connected in turn to the india-rubber tube p of the air-pump C in order to successively inflate the various sections. In this application the cells of the wall W are arranged in a vertical direction. 1 2 3, &c., indicate the different sections or impermeable joints formed of solid partitions.

Figs. 6, 7, and 8 show the application of the invention to a boat, the sides of which are formed of a cellular wall W, formed of a single row of cells or chambers. The seats S are formed in the same manner. 1 2 3 are

the sectional joints. k is a keel made of a solid or hollow piece of india-rubber or other substance.

Figs. 9 and 10, Sheet 2, show a modification of my invention, according to which I use a number of collapsible pipes or tubes $a a$, &c., $a' a^2 a^3 a^4$, &c., a^4 , arranged and connected together so as to form the frame-work of the tent, which is covered subsequently by canvas or other material. $a a$ &c., are vertical tubes connected at the bottom with another tube a' , curved in the form of a ring and at the top with a ring a^2 similarly formed. The tubes $a^3 a^4$ &c., represent the rafters and are connected to the ring a^2 and the small ring a^4 at the top. C' is the covering material torn off, as shown, to illustrate the tubular frame-work and fixed by hooks $h h h$, &c., to the rings a' , a^2 , and a^4 . The tubes are welded or cemented together wherever they meet. $t' t'$, &c., are taps fixed at the junction of the vertical and inclined tubes at the upper and lower rings $a' a^2$.

Instead of forming in the applications above described a number of cells into sections, I may allow all the cells to communicate, so that the object formed therewith may be inflated at once. I may connect the taps of several sections to a common feeding-pipe.

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

1. A cellular tent the cellular wall of which has a tap for each section, substantially as described.

2. A cellular tent the cellular wall of which has a tap for each section and a flexible pipe connected to each tap, substantially as described.

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