No. 731,354. PATENTED JUNE 16, 1903.

W. M. FULTON.

COLLAPSIBLE VESSEL FOR ATMOSPHERIC MOTORS.

APPLICATION FILED JUNE 6, 1902. RENEWED FEB. 10, 1903.

NO MODEL.

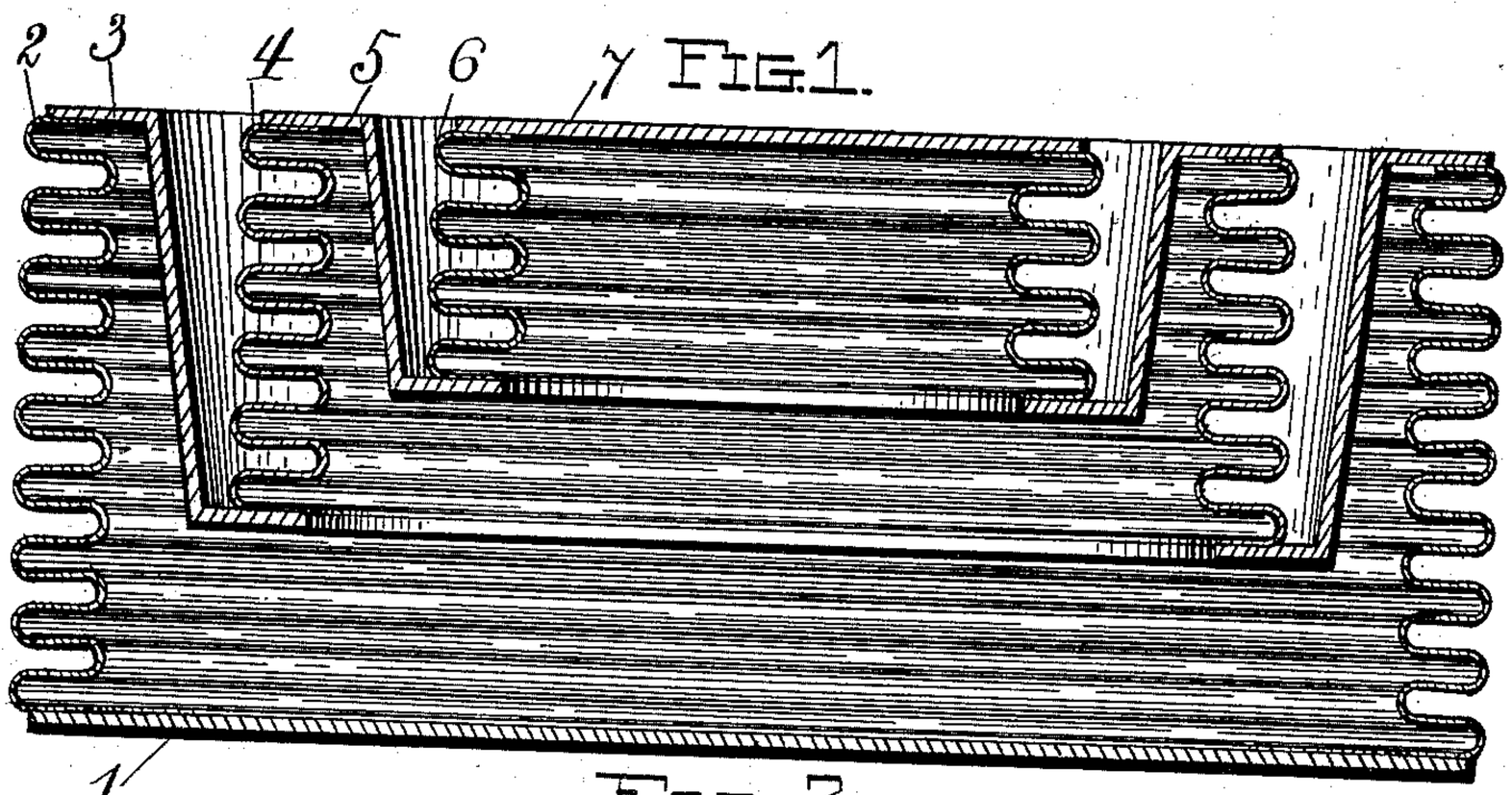

FIG. 1.

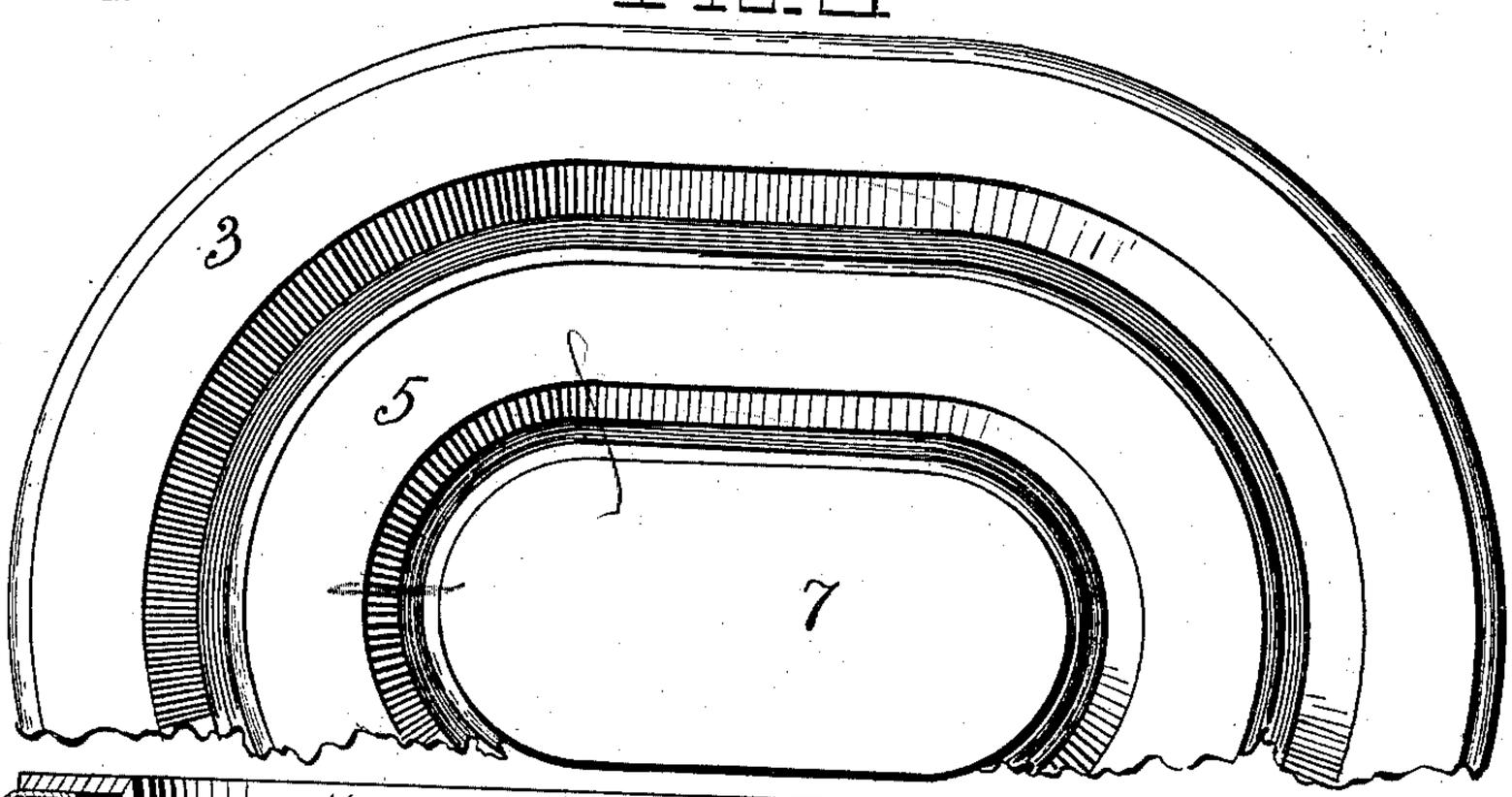

FIG. 2.

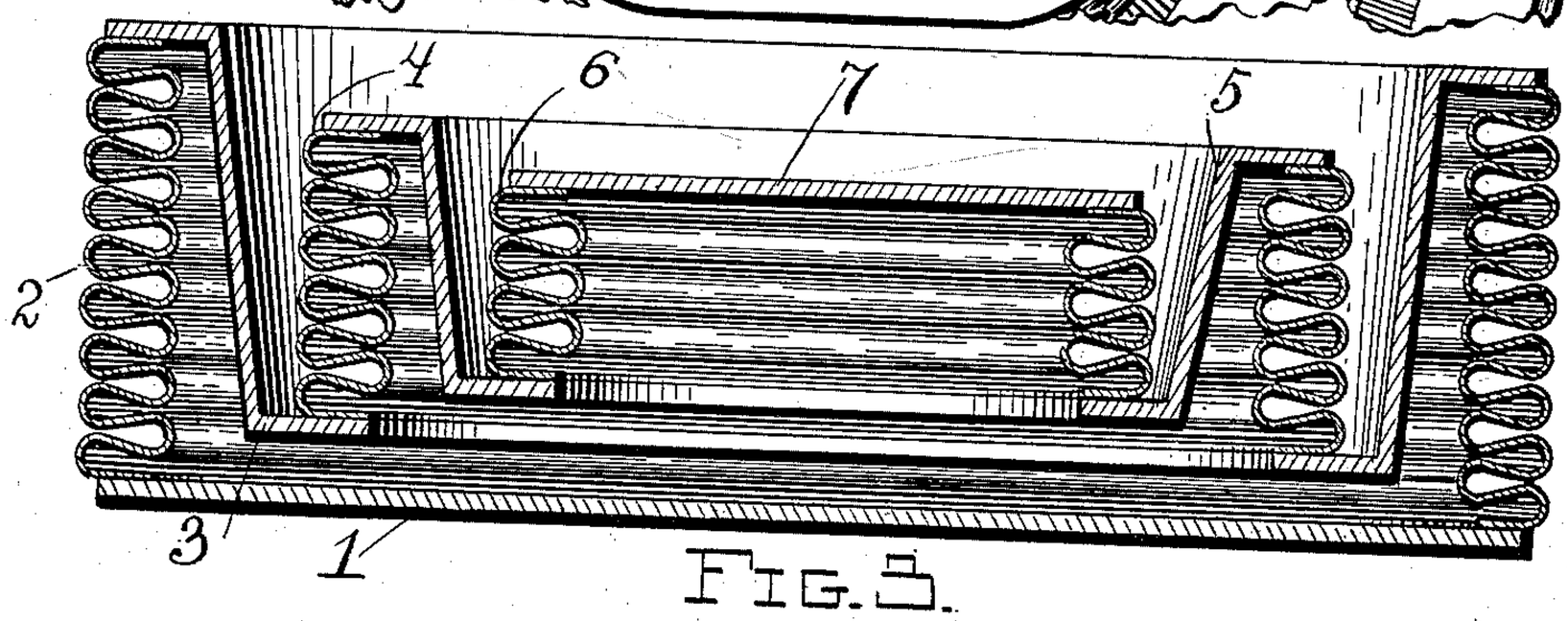

FIG. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

WESTON M. FULTON, OF KNOXVILLE, TENNESSEE.

COLLAPSIBLE VESSEL FOR ATMOSPHERIC MOTORS.

SPECIFICATION forming part of Letters Patent No. 731,354, dated June 16, 1903.

Application filed June 6, 1902. Renewed February 10, 1903. Serial No. 142,805. (No model.)

To all whom it may concern:

Be it known that I, WESTON M. FULTON, a citizen of the United States, and a resident of Knoxville, Tennessee, have invented a new and useful Improvement in Collapsible Vessels for Atmospheric Motors, which invention is fully set forth in the following specification.

My invention relates to collapsible vessels, and more particularly to vessels of this class which are designed for use in connection with atmospheric motors and like structures. When used for such purposes, it is desirable that the vessel should have flexible side walls which will enable it to respond to variations or fluctuations in external or internal pressure, that it should have a rigid wall to which the operative parts of the motor may be connected, and that it should when collapsed occupy as small a space as practicable.

With these objects in view I have devised a collapsible vessel having a rigid end or base wall, upon which is supported flexible and collapsible side walls within which other flexible and collapsible walls are supported, one of which carries the other end wall, the whole being so arranged that one part of the flexible walls shall be supported by and shall collapse within another part. By this means I am able to construct a very compact collapsible vessel.

The invention will be best understood in connection with the accompanying drawings, in which—

Figure 1 is a vertical section of the vessel partially expanded. Fig. 2 is a broken top plan, and Fig. 3 is a vertical section showing the vessel nearly collapsed.

Referring to the drawings, 1 is the base or end wall, preferably rigid.

2 is an exterior wall of flexible air-tight material, and 3 is a rigid member having a wall extending downward within the flexible wall 2 and provided with an outwardly-turned flange, whereby it is connected to and is supported upon the wall 2, and also having an inwardly-turned flange by which it supports and is connected to a second flexible wall 4, which in turn supports a second flanged rigid member 5. As here shown, this rigid member 5 also has an inwardly-projecting flange, upon which a third flexible wall 6 is supported, while a rigid end wall or top piece 7 is supported by this upper end of the vessel.

It will be seen that when the vessel is collapsed, as shown in Fig. 2, it is very compact and that the end wall 7 is capable of considerable vertical movement without rising above the top of the member 3, as will be clearly understood by inspecting Fig. 1, where the vessel is shown partially expanded.

In use the vessel contains some suitable fluid sensitive to variations of temperature and affording considerable expansion or contraction under such variations and also capable of compression and expansion under variations of atmospheric pressure. A suitable fluid for this purpose may consist of water and the non-saturated vapor of alcohol.

Any suitable means may be employed to convert the rectilinear motion due to the expansion and contraction of the vessel into rotary motion or the rectilinear motion may be employed without such conversion.

Having thus described the invention, what I claim is—

1. A collapsible vessel having rigid end walls, and a plurality of flexible walls disposed one within the other, one of said flexible walls being connected to one end wall, another to the other end wall and said flexible walls being also connected to each other.

2. A collapsible vessel having a plurality of flexible side walls disposed one within another, rigid members connecting said flexible walls, a rigid end wall connected to the outer flexible wall, and a rigid end wall connected to the inner flexible wall.

3. A collapsible vessel having a plurality of rigid end walls, and a plurality of flexible collapsible side walls disposed one within the other.

4. A collapsible vessel having a plurality of rigid end walls, and a plurality of flexible collapsible walls disposed one within the other, the outer flexible wall supporting the inner flexible wall or walls and one of the rigid end walls.

5. In a collapsible vessel, a rigid end wall or base, an outer flexible collapsible wall supported thereon, a second flexible collapsible

wall, a rigid member connecting the top of the outer wall with the bottom of the second collapsible wall, a third collapsible wall disposed within the second, a rigid member connecting the top of the second with the bottom of the third wall, and a rigid end wall supported by the third collapsible wall.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WESTON M. FULTON.

Witnesses:
W. R. MURPHY,
C. H. FLOURNOY.