Dec. 26, 1939. F. EINBECK ET AL. 2,184,795

GAS HOLDER

Filed July 13, 1937 2 Sheets-Sheet 1

Fig. 1.

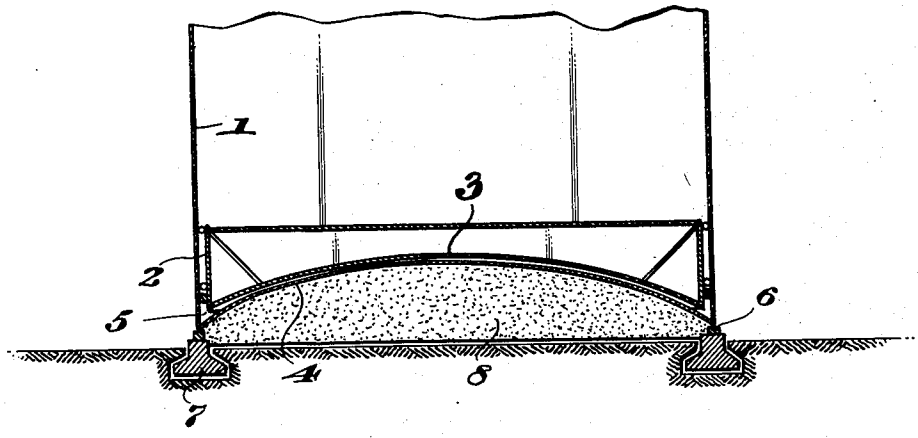
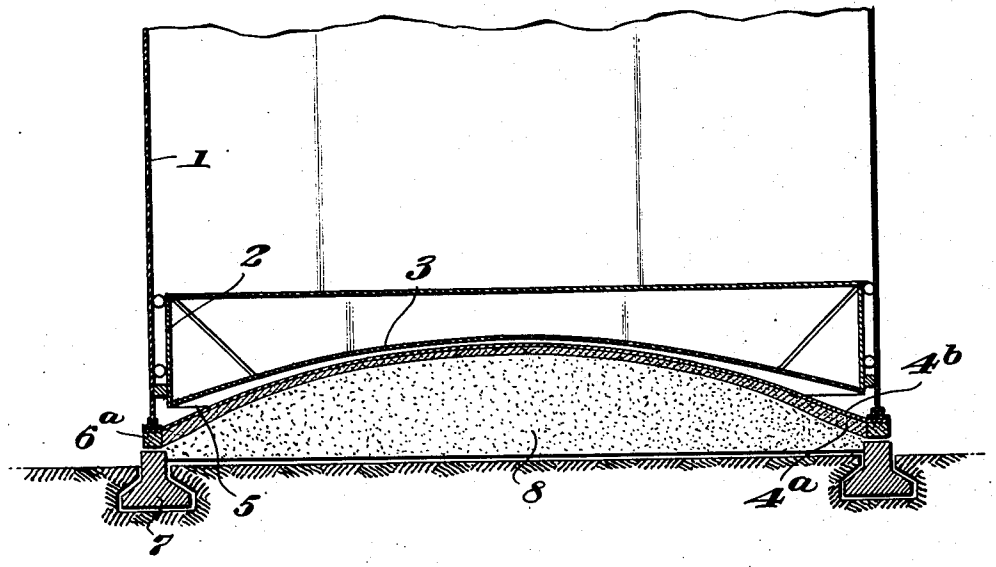


Fig. 2.



Inventors,
Friedrich Einbeck and
Otto Korbmacher

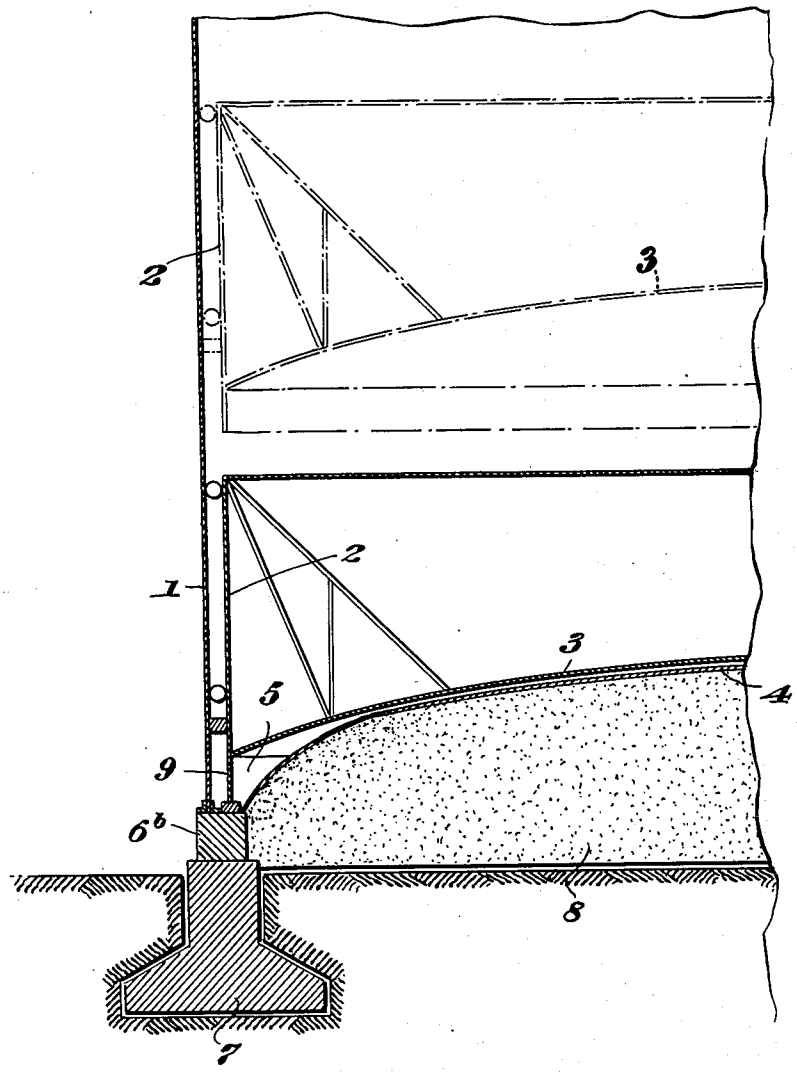
By Young, Emery & Thompson
Attys.

Dec. 26, 1939. F. EINBECK ET AL 2,184,795

GAS HOLDER

Filed July 13, 1937 2 Sheets-Sheet 2

Fig. 3.



Inventors,
Friedrich Einbeck and
Otto Korbmacher

By Young, Emery & Thompson Attys.

Patented Dec. 26, 1939 2,184,795

UNITED STATES PATENT OFFICE

2,184,795

GAS HOLDER

Friedrich Einbeck and Otto Korbmacher, Dortmund, Germany, assignors to the firm Aug. Klonne, Dortmund, Germany

Application July 13, 1937, Serial No. 153,456
In Germany August 13, 1936

6 Claims. (Cl. 48—176)

The invention relates to gas holders of the kind wherein the gas is expelled from the container by the descent of a piston in the container. The invention is concerned with the construction of the floor of the container, and the piston, and with the manner of supporting the container on the ground.

According to the invention the piston has a concave under face, and the floor of the container is inwardly curved, with a curvature corresponding substantially, at the central part, to that of the piston face, but much more pronounced at the circumferential part, so that when the piston is fully lowered there is at the circumference a gap between its face and the floor, adequate to provide a working space into which workmen can enter through a manhole. Such entry may for example be desirable when the lowered piston is to be partly raised by means of compressed air and supported in the raised position by means of props. The workmen are able to insert and adjust the props in the course of the raising.

The curved shape of the floor gives it such strength that it can in many cases be made only of sheet metal of moderate thickness. Water of condensation flows to the rim, where it can easily be removed.

The gap between the lowered piston and the floor, at the circumference, is very small compared with the aggregate capacity of the container, so that it does not form a dead space of any importance. If desired it may be filled with liquid, which is let out when workmen are to enter.

The floor and the wall of the container are preferably joined to an annular foot, and this may rest upon an annular bed sunk in the ground, without any rigid connection between the foot and the bed, so that if the bed becomes tilted through subsidence the container can be wedged upon the lowered side without interrupting its work. In the absence of rigid connection between the bed and the ring there is no risk of structural damage to the container if through some defect the bed drops away at part of the circumference.

Three embodiments of the invention are shown in the accompanying drawings, in Figs. 1, 2 and 3 respectively, these being vertical sections showing only the lower part of the container, with the piston therein.

Referring first to Fig. 1, the container 1 has therein a piston 2 with a concave under surface, and the floor 4 of the container is inwardly curved, with a curvature which in the main corresponds with that of the piston face but differs considerably therefrom at the part near the circumference, where the curvature of the floor is of much shorter radius than that of the piston face. Consequently, when the piston rests on the floor as shown in Fig. 1, there is a gap 5, wedge shaped in vertical section, between the rim of the piston and the floor of the container.

The bottom edge of the container wall and the rim of the floor fit into a channelled ring 6, in which they are made tight, and this ring stands upon an annular bed 7. The ring is not rigidly fixed to this bed, but is only so secured as to prevent lateral displacement by wind pressure. The cavity under the floor of the container is filled with wet sand 8.

In the embodiment shown in Fig. 2 the floor 4a of the container is made of ferroconcrete, with a sheet metal cover 4b, and is joined to a ferroconcrete ring 6a standing upon the annular bed 7.

In Fig. 3, illustrating the third embodiment, the piston 3 is shown in full lines in its lowest position and in broken lines in a raised position. The construction is substantially similar to that shown in Fig. 1, but the piston has legs 9, which when it is fully lowered rest on the ring 6b to which the container wall and the floor are joined.

What we claim as our invention and desire to secure by Letters Patent of the United States is:

1. In a gas holder the combination of a container having a wall and an inwardly curved floor, a channelled ring into which the bottom edge of said wall and the rim of said floor are joined, and a piston in said container having a concave under face, the curvature of said piston face corresponding substantially to that of said floor at the central part thereof, but being substantially less pronounced at the circumferential part, so that when the piston is fully lowered there is at the circumference a space for workmen between said piston and said floor.

2. In a gas holder the combination of a container having a wall and an inwardly curved floor, an annular foot to which said wall and said floor are joined, an annular bed upon which said foot stands, and a piston in said container having a concave under face, the curvature of said piston face corresponding substantially to that of said floor at the central part thereof, but being substantially less pronounced at the circumferential part, so that when the piston is fully lowered there is at the circumference a space for workmen between said piston and said floor.

3. In a gas holder the combination of a con-

tainer having a wall and an inwardly curved floor, an annular foot to which said wall and said floor are joined, an annular bed upon which said foot stands, and a piston in said container having a concave under face, and having also legs which rest on said annular foot when said piston is fully lowered, the curvature of said piston face corresponding substantially to that of said floor at the central part thereof, but being substantially less pronounced at the circumferential part, so that when the piston is fully lowered there is at the circumference a space for workmen between said piston and said floor.

4. In a gas holder the combination of a container having an inwardly curved floor, a filler in the cavity under said floor, and a piston in said container having a concave under face, the curvature of said piston face corresponding substantially to that of said floor at the central part thereof, but being substantially less pronounced at the circumferential part, so that when the piston is fully lowered there is at the circumference a space for workmen between said piston and said floor.

5. In a gas holder the combination of a container having a wall and a curved floor, an annular foot to which said wall and said floor are joined, an annular bed upon which said foot rests, and a piston in said container having legs which contact the annular foot to support the piston when fully lowered said piston having a bottom curved surface of less curvature than the curvature of the floor so that when the piston is fully lowered there is a space for workmen between the piston and the floor.

6. In a gas holder the combination of a container having a wall and a curved floor, a channelled ring into which the bottom edge of said wall and the rim of the floor are joined, and a base for supporting said ring whereby said container and ring may be raised at any point from said base.

FRIEDRICH EINBECK.
OTTO KORBMACHER.