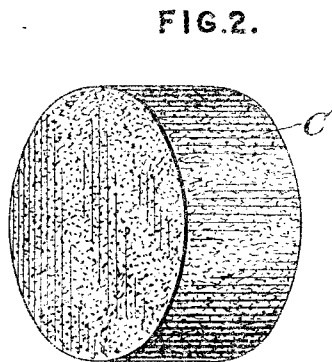
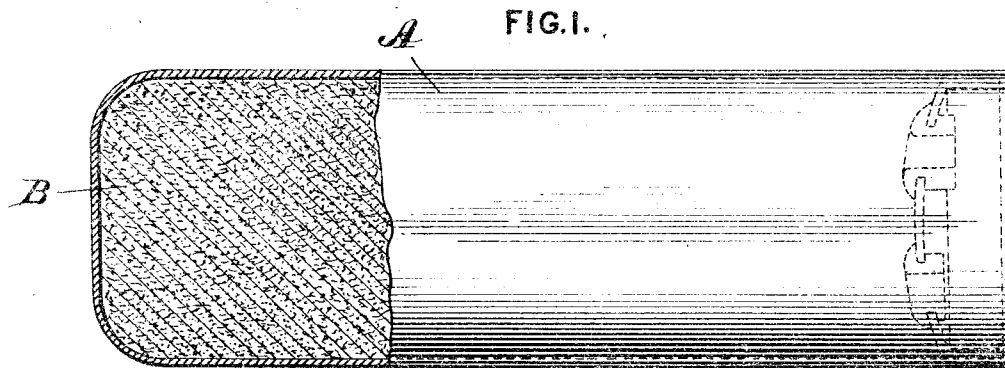


J. H. JAMES.
ACETYLENE STORAGE TANK.
APPLICATION FILED OCT. 16, 1911.

1,055,915.

Patented Mar. 11, 1913.



WITNESSES

A. E. Gaiter
Wm. McConnell

INVENTOR

Joseph H. James
By J. H. James

UNITED STATES PATENT OFFICE.

JOSEPH HIDY JAMES, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO SEARCHLIGHT GAS COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF DELAWARE.

ACETYLENE-STORAGE TANK.

1,055,915.

Specification of Letters Patent.

Patented Mar. 11, 1913.

Application filed October 16, 1911. Serial No. 654,868.

To all whom it may concern:

Be it known that I, JOSEPH HIDY JAMES, a resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have
5 invented certain new and useful Improvements in Acetylene-Storage Tanks, of which the following is a specification.

It is well recognized that for the safe storage and transport of acetylene in tanks
10 such tanks must be filled with porous material that will absorb a solvent of the acetylene, this in order to prevent the spread of a local decomposition of the acetylene to the main body of the gas and solvent. And
15 it has been demonstrated that to prevent such decomposition the diameter of the openings in the porous material should not exceed five-tenths of one millimeter.

The present invention is directed to providing an absorbent material the pores of which do not exceed the size stated, while the solid matter of such material occupies a minimum part of the tank-inclosed space. It is only under these conditions that a
25 maximum charge of solvent and gas is possible, it being always necessary to provide a space again as large as that occupied by the solvent when free of gas, the solvent extending in bulk to this extent when it has
30 received a commercial charge of acetylene. I have found that the cellular pith of plants of the order *Gramineæ* fulfils all of the requirements in a highly efficient manner. Commercially, the materials best suited for
35 the purpose is the pith of Indian corn, broom corn, sugar cane, and the like. Owing to the peculiar cellular structure or arrangement of these piths it is possible to obtain a porosity of ninety per cent., approximately only ten per cent. of the packed space
40 being occupied by the solid matter of the pith when compressed to a point where it makes an efficient filling. Such pith is so resilient that when properly packed there is no danger of the material settling and
45 forming dangerous voids.

The filling may consist entirely of pith of the character stated which may be either packed directly into the tanks, or it may
50 be molded into blocks of such size and shape as will completely fill the tank. If for any

reason it may be desired to adulterate the pith, as for instance to cause it to resist such heat as might result in charring, the pith may be mixed with a suitable quantity of
55 inert material, such as asbestos or infusorial earth. Substances present in the piths of the kind stated may alone serve as a binder, or any inert organic or inorganic cement may be used that will not dissolve in the
60 solvent. In this connection I may mention sodium silicate, colloidal silicic acid, albumen, glue, etc.

In the accompanying drawings, Figure 1 is an elevation of a tank in which the porous
65 filling material has been packed, a portion of the tank being broken away. Fig. 2 is a view of a molded block or section of the material.

In practice, the cylinder A may be packed
70 with an indiscriminate mass of the absorbent material B, or the material may be formed into blocks or sections C, Fig. 2, which when assembled within the tank fully fill the same. The material comprises a
75 commercial commodity which may be sold separately from the tanks, either loose or in block form, as desired.

I claim:—

1. A tank substantially filled with corn
80 pith, and a solvent for acetylene gas.

2. The combination with an acetylene gas storage tank, of an absorbent filling therein consisting of a compressed resilient body of
85 pith of plants of the order *Gramineæ*, and a solvent for acetylene gas.

3. A tank substantially filled with pith of plants of the order *Gramineæ*, and a solvent for acetylene gas.

4. A tank substantially filled with pith of
90 plants of the order *Gramineæ* having a binder, and a solvent for acetylene gas.

5. A tank substantially filled with pith of plants of the order *Gramineæ* and infusorial earth provided with a binder, and a solvent
95 for acetylene gas.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH HIDY JAMES.

Witnesses:

F. E. GAITHER,
J. M. NESBIT.