

UNITED STATES PATENT OFFICE.

THOMAS GASKELL ALLEN, OF LONDON, ENGLAND.

MEANS FOR STORING COMPRESSED OR DISSOLVED ACETYLENE GAS.

1,234,600.

Specification of Letters Patent.

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No Drawing.

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To all whom it may concern:

Be it known that I, THOMAS GASKELL ALLEN, a citizen of the United States, residing at 106 Victoria street, London, S. W., England, have invented certain new and useful Improvements in Means for Storing Compressed or Dissolved Acetylene Gas; and I do hereby declare the following to be the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improved method of and means for storing compressed or dissolved acetylene gas.

As is well known, acetylene gas can only be stored under pressure with safety when dissolved in a solvent such as acetone, which in its turn must be absorbed by a porous material adapted to fill the space of the containing vessel.

Government regulations require that the porosity of the absorbent material in the container must not exceed 80% and that the porosity shall be homogeneous throughout the material without any free gas space.

Heretofore it has been customary to employ as the absorbent body granulated solid material such as charcoal or an animal filament such as silk, but all these materials are subject to certain disadvantages. Granulated charcoal and like solid materials tend to disintegrate into dust by attrition of the particles if the container is subjected to repeated vibration or bumping.

This disintegration creates free-gas space and also dust particles which are liable to blow forward with the gas and block the container valve or the nozzle of the blow-pipe which is employed when using the dissolved acetylene for oxy-acetylene welding. Silk owing to its fibrous nature does not disintegrate, but on the other hand, it is not sufficiently resilient to obviate packing when saturated with the liquid solvent and subjected to repeated vibration or bumping.

The consequence is that free-gas space can be created after the container has once been packed to the prescribed porosity and put into use.

The object of the present invention is to provide a new type of filling material which is superior to the above and which over-

comes the inherent defects above mentioned.

According to the invention the material proposed to be employed is sometimes known as kapok, Javanese fiber, or Indian kapok. One form of kapok suitable for the purpose of this invention is *Eriodendron anfractuosum*, but the invention covers the use of any suitable variety of kapok.

It has been found that by using this material a much smaller quantity by weight, than of substances previously used, is necessary to obtain a porosity of 80% in the container. Further, kapok has a tendency to swell when it absorbs the liquid solvent thus precluding altogether the possibility of free-gas space forming within the container after it is once packed to the required porosity. Again, the extreme lightness in weight of kapok and its comparative cheapness add considerably to the portability of the container and materially reduce the cost of its preparation.

An additional advantage of the kapok is that it has short fibers and does not form into knots or lumps. It therefore packs more closely at the start with a more homogeneous porosity, and the formation of pockets of free solvent, liable to blow forward with the issuing gas is thereby prevented.

I claim:—

1. The method of storing compressed acetylene gas which consists in absorbing a liquid solvent in kapok and dissolving the acetylene gas in said solvent.

2. The method of storing acetylene gas which consists in absorbing liquid solvent in kapok and dissolving the acetylene gas in said solvent.

3. The method of storing acetylene gas which consists in absorbing liquid solvent in kapok and dissolving acetylene gas in said solvent under pressure.

4. An apparatus for storing acetylene gas comprising in combination a container, kapok packed in said container, and a liquid solvent of acetylene absorbed in said kapok.

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

THOMAS GASKELL ALLEN

Witnesses:

A. R. RAMSEY,
A. C. WESTON.