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980,158

UNITED STATES PATENT OFFICE.

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ACETYLENE-GAS CONTAINER.

980,158.

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, CHARLES W. KAISER, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Acetylene-Gas Containers, of which the following is a specification.

This invention relates to the preparation of acetylene gas containers so that they can be safely shipped and handled in the use of the gas, and more particularly the invention relates to the filling substance with which the cylinder or other receptacle is packed to divide its chamber into minute spaces or interstices to be occupied by the gas and acetone or other solvent of the gas.

The objects of the invention are to secure a filler which will hold the solvent and gas in perfect suspension or perfectly subdivided condition; to thus secure complete safety; to obtain a filler which can be easily put into the cylinder or other receptacle and which completely fills the same; to secure a durable filler, which will not deteriorate in handling the containers; to secure an inexpensive filler; and to obtain other advantages and results as may be brought out in the following description.

In carrying out my invention, I mix plaster of paris with a large excess of water, for example about seven parts of water to six parts of plaster of paris. This makes a liquid of about the consistency of cream, or which can be readily poured. I then fill the cylinder or other receptacle with this liquid, preferably by pouring it through the valve opening of the cylinder, and let it set or harden. After the mixture has set sufficiently, the surplus water in it is driven off, and there is left a filling which has throughout itself innumerable little spaces or interstices. In other words, it is porous like a sponge, but the holes are very minute and evenly distributed; in fact, the said spaces or interstices are too minute to be seen with the naked eye. Such a filler readily receives the acetone or other solvent and gas and holds it in a finely divided or separated condition, so that there is no possibility of the collection of enough gas in one space to cause any danger.

It is an important point of my improved filler that while it is rigid enough to maintain its shape against sagging either before

or after being wet with the acetone or other solvent of the gas and against all jars and shocks of the containers as a whole, it is at the same time impressible so that it can be dented at its outer surface without affecting the rest of the filler. In other words, a blow upon the filler will only cause an indentation without cracking or fracturing the filler as a whole, and such indentation closely fits the instrument which has been driven into the filler or with which the blow was given. The result of this in practice is that a blow or impact upon the outside of the cylinder sufficient to dent it simply dents the filler inside the cylinder correspondingly and does not crack, crumble or fracture the filler otherwise. In other words, the effect of the blow or impact is restricted to the place which is hit or indented and not transmitted to the rest of the filler, or the filler is non-frangible by the same means to which it is impressible.

Furthermore, my improved filler because of its fine uniformly distributed spaces or interstices holds the solvent of the gas in suspension very effectively and reduces its loss by being blown out of the container with the escaping gas, since the gas releases itself slowly from my improved filler.

The surplus water may be driven off by heating, by passing warm air through the cylinder containing the set filler, or any other means commonly employed for similar purposes, or any combination of two or more of these means. I have found that simply heating to about 180 degrees Fahrenheit will produce satisfactory results.

The plaster of paris may be used alone, or there may be mixed with it any other substances, such as infusorial earth, magnesia, charcoal, asbestos, mineral wool, pumice stone, and so forth, which will vary its weight or absorbent properties. I also use the term "plaster of paris" to include what is known as Keene cement or gypsum burned or calcined with alum, calcium sulfate, and other plasters which are simply slight variations of plaster of paris and will produce the same characteristics in a filler as those above described.

The advantages of my filler are that it is molded in the cylinder or other receptacle and therefore completely fills the same; that it can be poured into the cylinder through the usual valve opening, and therefore after

the cylinder has been finished and tested; that the distribution of the minute spaces throughout the filler is even, uniform and unchangeable; that the filler is rigid enough
5 to maintain its shape against sagging, jars, shocks, and the like, and yet is at the same time impressible so that the cylinder or other receptacle can be dented at its outside without affecting the safety qualities of the
10 filler; that the filler readily absorbs the solvent and gas and retains it; that it is perfectly safe, and that it is cheap.

A filler of my improved composition can of course be molded or cast independent
15 of a cylinder or other receptacle and after drying be placed in the same and packed with asbestos or other substances, as in common. In such a case the filler could be molded in one piece or in several pieces, and
20 such shapes which are well-known. I prefer, however, to mold or cast the filler directly in the cylinder or other receptacle as above set forth, so that it forms an integral
25 core completely filling the cylinder and in intimate contact therewith at all points of its inner surface. In any event, the filler must be a solid or imperforate mass, that is, without borings or holes of any kind except
30 the minute spaces or cells invisible to the naked eye which are formed naturally, and if it is composed of several pieces put in one cylinder there must be no spaces or openings
left between or around them.

By the term "acetylene gas" I mean to
35 include any gas having similar explosive

properties whether in a normal condition, or compressed, or liquefied, or dissolved in a liquid, or the like.

Having thus described the invention, what I claim is:—

1. A filler for acetylene gas containers, containing plaster of paris set in an impressible non-frangible form.

2. In an acetylene gas container, the combination with a receptacle, of a filler in said
45 receptacle containing plaster of paris set in an impressible form.

3. In an acetylene gas container, the combination with a receptacle providing an interior chamber, of a filler in said chamber in
50 contact with the wall thereof and containing plaster of paris set in an impressible form.

4. In an acetylene gas container, the combination with a receptacle providing an interior chamber, of an imperforate filling
55 mass filling said chamber and containing plaster of paris set in an impressible form.

5. In an acetylene gas container, the combination with a receptacle providing an interior chamber, of an integral imperforate
60 core filling the said chamber and containing plaster of paris set in an impressible non-frangible form.

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

CHARLES W. KAISER.

Witnesses:

J. L. MANDEVILLE,
FRANCIS S. MAGUIRE.