A. S. ISAACS.

HEAT PRODUCING COMPOUND.

APPLICATION FILED JULY 31, 1908.

1,010,768.

Patented Dec. 5, 1911.

Fig. 1.

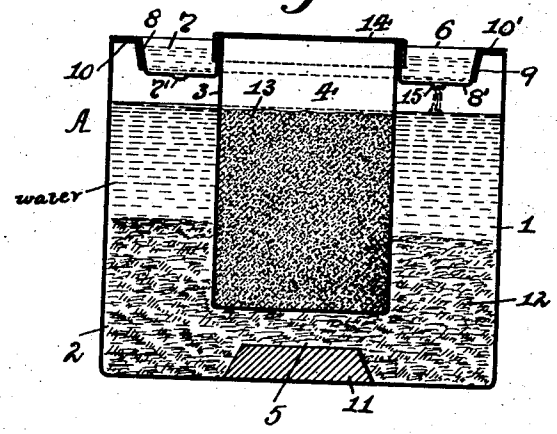


Fig. 2.

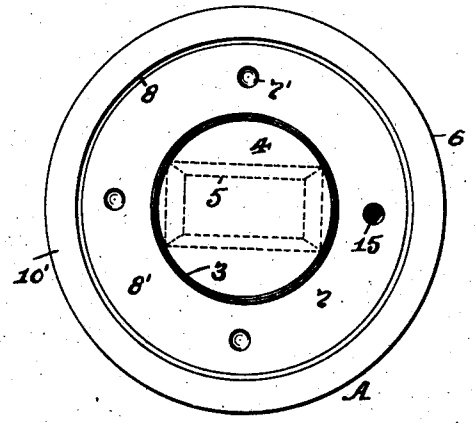
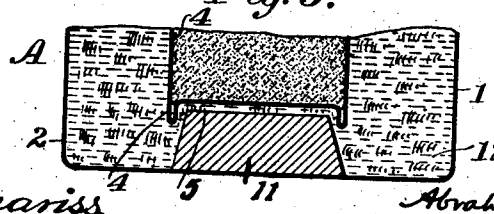


Fig. 3.



WITNESSES

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HEAT-PRODUCING COMPOUND.

1,010,768. Specification of Letters Patent. Patented Dec. 5, 1911.

Application filed July 31, 1908. Serial No. 446,281.

To all whom it may concern:

Be it known that I, ABRAHAM S. ISAACS, a resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Heat-Producing Compounds; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to a heat producing compound or element, and has special reference to such a compound or element for use in connection with a heater or other device in the heating of chemicals for disinfecting, as well as for the heating of other goods or materials therein, and for other purposes.

The object of my invention is to provide a cheap, simple and efficient heat producing compound or element which will overcome the forming of any flame when used for the purposes intended, will give the heat required, and will prevent all liability of any accidents or injury to the person handling the same or to the premises in which it is used.

My invention consists, generally stated, in the novel combination of materials for the heat producing compound or element, as hereinafter more specifically set forth and described and particularly pointed out in the claims.

To enable others skilled in the art to which my invention appertains to make and use my improved heat producing compound or element, I will describe the same more fully, referring to the accompanying drawing, in which—

Figure 1 is a vertical central section of a heating device for disinfecting, in which my improved heat producing compound or element is contained therein. Fig. 2 is a top view of the device with the cover of the inner receptacle removed. Fig. 3 is a detail sectional view of the device showing another form of the same.

Like symbols of reference herein indicate like parts in each of the figures of the drawing.

As illustrated in the drawing, my improved heat producing compound or element is shown in connection with a heater A for disinfecting, which is preferably of tin or other suitable thin sheet metal having the cup-shaped outer portion 1 to form the outer receptacle 2 for the heat producing compound or element hereinafter described, and the cup-shaped inner portion 3 to form the inner receptacle 4 for the disinfectant or other goods to be heated, as hereinafter described. The inner receptacle 4 extends into the outer receptacle 2, so as to form a space 5 between the bottom or lower end of the same and the bottom or lower end of said receptacle 2, and such receptacle 4 is preferably carried by and forms part of a lid or cover 6 for said receptacle 2. This cover 6 is provided with an annular recess or depression 7 around the same, and in the bottom or wall 8′ forming said depression are formed thin indented portions 7′, while the outer wall 8 of said depression is inclined outwardly for engaging with an inwardly extending like-shaped portion 9 on a flange 10 at the upper end of the receptacle 2, and a flange 10′ on said cover and at the upper end of the inclined wall 8 is adapted to fit over the flange 10.

In the use of the heat producing compound or element for the heating of the goods or chemicals in the heater A, such as for disinfecting purposes, such heater has the heat producing compound or element formed of aluminum and an alkali-metal hydrate, such as caustic alkali in a dry state, which are placed within the receptacle 2 by locating a mass or block 11 of said aluminum and of about an ounce in weight in the space 5 between said receptacle and the bottom of said receptacle 4, such block being held in place, if desired, in any suitable manner, or by any suitable means on the receptacle 2, and over and around said block, such as at 12, the dry caustic alkali of about three ounces in weight, is placed. If desired, the block 11 can be held in place in the space 5 by a flange 4′ on the receptacle 2 and extending below the bottom of the same, as shown in Fig. 3. The receptacle 4 is then placed within the receptacle 2, which will allow the caustic alkali to extend around the same, and the receptacle 4 is inclosed by the cover 6 surrounding the said receptacle 4, which is also secured to said receptacle 2 by suitable pressure upon the same, so that the inclined wall 8 on said cover is firmly pressed down onto the inclined flange portion 9 on the receptacle 2 to hold the same in place, and if desired, the said receptacle 2 and said cover can be hermetically sealed together by soldering between the flanges 10 and 10′ or in any other suitable manner.

The matter to be heated is placed within the receptacle 4, such as a disinfectant, as shown at 13, and it is inclosed therein by a lid or cover 14 placed and secured over the upper end of said receptacle. When the parts are thus assembled, the heater A is ready for use, and all that is necessary is to remove the cover 14 from the receptacle 4, punch holes, such as is shown at 15, through the thin indented portions 7′ in the wall 8 forming the bottom of the depression 7 in the cover 6, and after this is done a sufficient quantity of water and of about eight ounces is poured into the said recess, and such water in passing through such holes will contact and mix with the caustic alkali 12 and the aluminum block 11. The action of such water on the compound or element formed by the aluminum block 11 and caustic alkali 12 will form a heating agent in the receptacle 2 by the said caustic alkali going into solution to produce a slight heat, and then the further and desired heat is produced by such caustic alkali solution on the aluminum block 11. The heat so generated or formed in the receptacle 2 is conducted to the disinfectant 13 in the receptacle 4 which will thus be heated to the required temperature and for the required period, and any gases or vapors generated in the receptacle 2 will pass out the vents formed by the holes 7′ in the cover 6, while the gases or vapors generated from such disinfectant can pass out of the top of the receptacle and into the room or apartment to be disinfected.

It will thus be seen that my improved heat producing compound or element can be used in heaters or other similar devices for disinfecting and for other purposes with perfect safety, and being flameless will not be liable to damage or cause injury or burning of persons handling the same or to the room or apartment in which it is used, as would be the case with the ordinary forms of disinfecting devices employing fuel which emits flames for heating the same.

It will be obvious that various materials for being vaporized can be used for being heated by my improved heat producing compound or element in disinfecting, and that the same can be used for heating other materials, objects and articles, as well as heaters, containers or cans, for canned goods, foods, etc., while the form of the heater or such other device employed with the compound or element may be varied, and the quantity of the materials used for the heat producing compound or element may also be varied.

Various modifications and changes may be made in the materials composing my improved heat producing compound or element may be resorted to, without departing from the spirit of the invention or sacrificing any of its advantages.

What I claim as my invention and desire to secure by Letters Patent is—

1. A heat generating compound composed of aluminum and dry caustic alkali.

2. A heat generating compound composed of a block of aluminum and dry caustic alkali.

3. A heat producing element comprising the combination of an alkali-metal hydrate and aluminum.

4. A heat producing element comprising the combination of an alkali-metal hydrate and aluminum in the form of a unitary mass.

In testimony whereof, I, the said Abraham S. Isaacs, have hereunto set my hand.

ABRAHAM S. ISAACS.

Witnesses:

J. N. Cooke,

James L. Wehn.