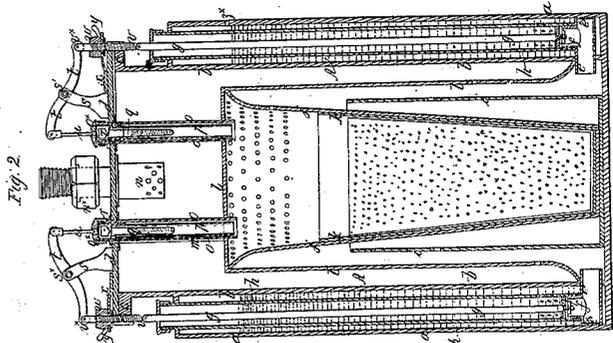
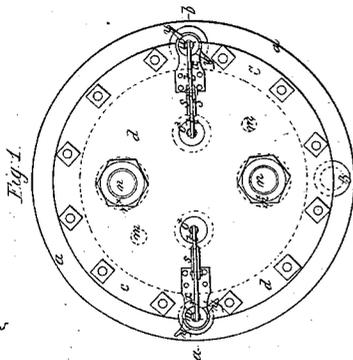
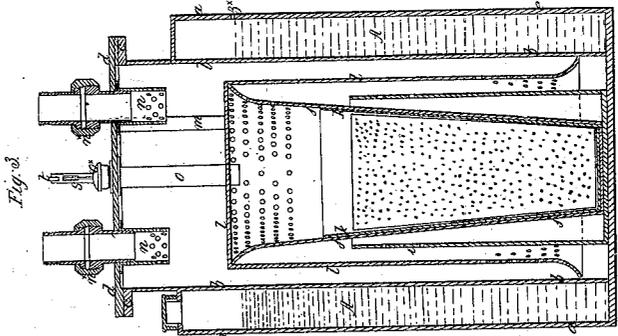
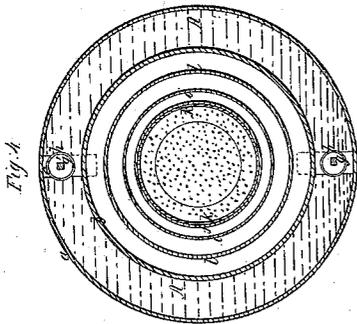
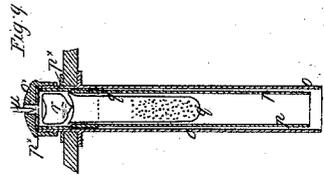
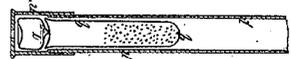
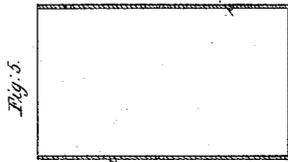
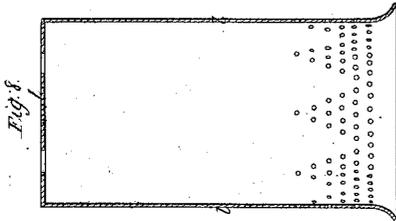
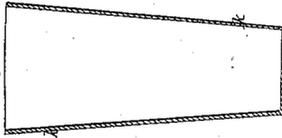
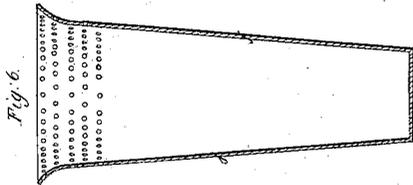


*H. Phillips*  
*Fire Annihilator*

*N<sup>o</sup> 7,269*

*Patented Apr. 9, 1850*



Witnesses

*Joseph Burgett*  
*Subscribed and sworn to before me*

Inventor *H. Phillips*

# UNITED STATES PATENT OFFICE.

WILLIAM HENRY PHILLIPS, OF LANGTON PLACE, NORTH BRIXTON, ENGLAND.

## APPARATUS FOR EXTINGUISHING FIRE.

Specification of Letters Patent No. 7,269, dated April 9, 1850.

To all whom it may concern:

Be it known that I, WILLIAM HENRY PHILLIPS, a subject of the Queen of Great Britain, late of Bloomsburg Square, in the county of Middlesex, but now residing at Langton Place, North Brixton, in the county of Surrey, engineer, have invented or discovered certain new and useful Improvements in Means and Apparatus for Subduing and Extinguishing Fire; and I the said WILLIAM HENRY PHILLIPS do hereby declare the nature of my invention and the manner in which the same is to be performed are fully described and ascertained in and by the following statement thereof, reference being had to the drawings hereunto annexed and to the figures and letters marked thereon that is to say.

The invention consists in generating in large quantities and with great rapidity carbonic acid gas and other gases resulting from combustion and discharging such gases while intermixed with steam or vapor of water upon or about any burning mass and diffusing the same into the atmosphere where fire is burning for the purpose of subduing and extinguishing fire. This object I have found can be effected in the most advantageous manner by the use of certain materials hereinafter described which materials I employ in the apparatus described and referred to in the accompanying drawings, herewith deposited. But although the particular ingredients will be found to answer the purpose in a most satisfactory manner, I do not intend to confine myself exclusively to the employment of them alone as other substances or materials may be found to answer, the purpose the object being as above mentioned to generate the gases and vapor in large quantities and in a very rapid manner so as to arrest the progress of a raging fire almost instantaneously, by depriving the air of that degree of purity requisite to support vivid combustion or by supplying gases and vapor to the fire to be extinguished which mixture of gases and vapor have the effect of displacing the ordinary atmosphere and thus stop the progress of combustion the materials and the proportions which I have found to answer the purpose satisfactory are as follows: Fifteen pounds of wood charcoal powdered fine, five pounds of coke or anthracite coal powdered fine, sixty pounds nitrate of potash or refined saltpeter—reduced to powder, five

pounds of gypsum (plaster of Paris), ten pounds of strong size, these materials I mix well together and being intimately mixed I denominate them the gas evolving compound. In order to have gases and other products of combustion under perfect command and ready to be brought into play at any required time the apparatus shown in the accompanying drawing is to be employed.

*Description of the drawings.*—*a*, *a* is a cylindrical vessel closed at top and bottom forming a water chamber A about the cylindrical body *b*, *b*, *c*, *c* is a strong flanch upon which the top plate *d*, *d* is secured with wrought iron bolts and nuts, *e*, *e* are tubes connected together at right angles forming passages to allow a flow of water from the water chamber A to the inside of cylinder *b* the end of these passages at *e*\* are closed and the surfaces of the upper openings are ground flat so as to allow a water tight joint to be made by the valves and washers *f*. The valves and washers are secured to the square rods *g*, *g* which extend above the top of the water chamber, these rods *g*, *g* are for the purpose of raising or depressing the valves. The valves are kept in a central position over their seats by guide tubes *h*, *h*, the lower ends of which tubes are perforated in order that when the valves *f* are raised by the rods *g*, water may flow from the chamber A through the passage *e* into the cylinder *b* *i* is a cylindrical vessel open at top and closed at bottom and having perforations or holes as shown in detached vertical section Fig. 5—*j* is a conically formed vessel having its larger end open and made of a bell mouth or spreading form and perforated shown in section Fig. 6, *k* is a vessel formed conically so as to fit within the vessel *j*, this vessel is closed at bottom and open at top as shown detached in Fig. 7, *l* is a cylindrical vessel closed at top its lower end being open and of a bell mouth form and perforated as shown detached in section Fig. 8, *m*, *m* are projections attached to the top plate *d* for the purpose of preventing the cylindrical vessel *l* from being raised by internal pressure—*n*, *n* are outlets or passages through which the gases and vapors pass the lower part of these passages are perforated as shown in section *n* Figs. 2 and 3, the union-joints *n*\* are for the purpose of connecting them with branch pipes or hose, *o*, *o* are pipes communicating to within the cy-

lindrical vessel *l* they are provided with caps *o*\* made to screw over the top ends, these caps have each a hole in the center to allow the free passage of the pin *u*, *p*, *p* are tubes having caps *p*\* to screw off and on, these caps have also a hole in the center to allow the pin *u* to pass through, these parts are shown on a larger scale at Fig. 9, *q* *q* are tubes of glass, containing a mixture of equal parts by weight of powdered chlorate of potash, and powdered loaf sugar well mixed together in a dry state the tubes *q* *q* have rims to allow them to rest on the metal tubes *p*, *p*—*r*, *r* are bottles hermetically sealed containing a few drops of sulfuric acid these glass vessels being inclosed within the metal tube as shown in section on an enlarged scale Fig. 9 I term igniters as they are employed to ignite the gas evolving compound contained in vessel *k*—*s*, *s* are supports fixed on the top plate carrying levers *t*, *t*, to the ends of these levers the pins or rods *u* are connected by pin joints, *v*, *v* are worms or screw rods jointed to the tops of the rods *g*, *g*, and also to the end of the levers *t*, *t*, the screw rods are made to pass through the nut *w*, *w* which have corresponding female screws through the plates *x*, *x*, screwed on to the top plate *d* form collars round the neck of the nuts *w* for the purpose of holding them in their proper positions so that by turning round the nuts *w* by means of the arms or levers *y*, the screw rods *v*, *v*, are made to ascend or descend by which the valve *f* may be opened or closed while at the same time the pins *u* are depressed or raised.

Having explained the construction of the apparatus I will now describe the mode of charging and preparing the same ready to be brought into operation. Previous to charging the apparatus the valve *f* should be proved to be in proper condition and the other parts should be well cleaned and dried, a lining of brown paper and plaster of Paris about one eighth of an inch thick placed in the vessel *k* the gas evolving compound mixture above described is then to be put into its place in the vessel *k* (Fig. 7) the vessels *i*, *j*, *k*, *l*, are then to be placed in the order in which they are shown Figs. 2, 3, and 4 the top plate *d* with its appendages is then to be fixed on with the bolts and nuts and the joint made good with plaster of Paris or other such luting. The rods *g* and *v* are to be jointed together by a pin or screw at *v*\* and the valve *f* closed by turning the lever *y*, attached to the nut *w* so as to depress the rods *g* and valve *f*. The valves being closed water is to be poured into the chamber A through the aperture *z* until it is filled up to the vent hole *z*\* the vent hole and aperture *z* are then to be closed. The tubes *p* containing the igniting materials are then placed within the tubes *o*, *o*, the caps *o*\*, *o*\*

are then screwed on the pins *u* are introduced into the holes made to receive them and the pins or screws *s*\* are put into their places to form axes for levers. Strong canvas hose of close texture and double seamed may be connected on by the unions *n*\*, for the purpose of directing the gases and vapors evolved upon the burning materials where fire is to be extinguished, a spiral of strong wire should be placed within the hose to insure a free passage for the gases and vapors to be discharged. The apparatus thus charged and prepared for use should be conveyed into the room or chamber where fire is raging or into the immediate vicinity of the fire to be extinguished the mouth pieces of the hose are then to be led to as near the burning materials as circumstances will allow a half turn of each of the levers *y* repeated alternately until the worm rods *v*, *v*, are made to ascend to their full limit will by opening the valves *f* allow water to flow into the cylinder *b* while each pin is alternately being made to descend through the guide holes in the caps *o*\* *o*\* when the pins are made to pass through the glass bottles containing the sulfuric acid a drop of which falling upon the mixture of chlorate of potash and sugar instantaneous ignition is caused when the inflamed mixture bursts the glass that contains it and falling upon the gas evolving compound in vessel *k* causes the upper surface to ignite and to commence deflagrating with great rapidity.

The gases evolved by the combustion of the materials pass through the holes or perforations on the upper part of the vessel *j* in a highly heated state and pressing down the surface of water about the cylinder pass through the perforations in the vessel *l* and ascending through a quantity of water between *l* and *b* escape through passages *n* and ultimately through the mouth pieces at the end of the hose during the passage of the gases through the water between *l* and *b* their temperature is considerably reduced whilst that of the water is raised and vapor or steam is rapidly generated and delivered intermixed with the gaseous products set free by the deflagration of the gas evolved material employed. The mixed atmosphere of gases and vapor produced and given off are of that nature that wherever dense clouds of them are thrown upon materials on fire they immediately extinguish the flame, the red combustion and heat are also reduced and extinguished by the temporary exclusion of atmospheric air and substitution of the humid clouds of gases and vapors evolved as above described. The charge of the gas evolving materials will be very quickly burned out and if it be considered that the fire of that extent that a small apparatus will not evolve a sufficient quantity of the

above mentioned gases and vapor two or more apparatus of adequate size may be employed either together or in succession as it is evident that the power requisite to preserve any quantity of property from destruction by fire must be proportionate to the extent of the fire raging at the time of operation. The apparatus above described and referred to is drawn upon a quarter scale of those intended for use in rooms or chambers of ordinary size in moderate private dwellings. The size may be increased in any degree required and the proportions and arrangements of the parts may also be varied without departing from the nature of the invention which is in substance and means as above described the rapid generation of gases from material while in a state of combustion and the means of diffusing gases while intermixed with steam or vapor into the space where the fire is burning for

the purposes of subduing and extinguishing destructive fires which is to be effected as above described by the employment of one or more apparatus according to the extent and intensity of the fire to be extinguished.

I would remark that I have not found it necessary to apply any safety valve to the apparatus but if desired a safety valve may be applied to each apparatus.

What I claim is—

The means of subduing and extinguishing fire by generating carbonic acid gas and other gases resulting from combustion in apparatus substantially as herein described and applying them by the pressure of their generation to the purposes above described.

W. H. PHILLIPS.

Witnesses:

JOSEPH MARQUETTE,  
WILLIAM EWING.