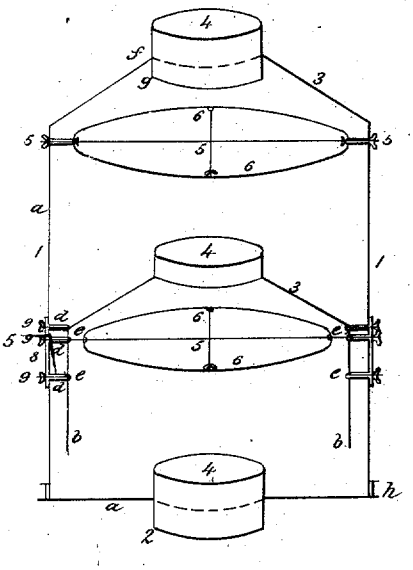
9681X

A. Whitney,

Spark Arrester.

Patented May 23, 1836.



N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

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Abner Whitney Albany N. York

Letters Patent

The Schedule referred to in these Letters Patent and making part of the same containing a description in the words of the said Abner Whitney himself of his improvement in the Spark Extinguisher and Heat condenser, said Whitney having assigned all his right title and interest in and to the equal half of this Patent to Levi S. Beers.

To all to whom these Presents shall come. Be it known that I Abner Whitney of the City and County of Albany and State of New York have invented a new and useful Spark extinguisher and heat condenser and that the following is a full and exact description thereof; The Spark extinguisher and heat condenser made of any proper material which will withstand fire in the form of a cylinder is represented (see No 1 on Diagram A.) flat and parallel at the bottom with an opening in the middle to receive the top of the furnace below (No 2 on 4.) at the top (No 3.) it is made elliptical and is also formed somewhat in fashion of a common funnel) that it may enter if required at A. as high as the same dimensions as that figured upon it proceeding from the furnace (No 4.) Immediately below the shoulder No 3. where the ellipse begins is placed two iron bars No 5. which pass from side to side and cross each other at right angles in the centre. No 5. Underneath these bars is placed a plate of iron called a damper No 6. Two openings must be gauged to the same size Boys and just the bigness of the hole in proportion to the superficies of the top of the furnace which must always regulate the bigness of the cylinder. That is if the flue be ten inches 10 in diameter the cylinder ought to be near about the superficies of thirty inches 30 in circumference that is about 3 ft 1. and according to about that proportion if the flue is larger or smaller. The Damper No 6 placed at the top as above mentioned would appear to the inspection upon to be about 9 inches in diameter which will be a good

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Ins: inches 2. around its circumference through which the cords are to pass. And it is recommended to have the apertures a little wider on the outside than on the inside to prevent the cords from chafing against them.

Within this cylinder is placed another cylinder (No 7-6) of about the same size of the furnace above described, constructed in the same manner and form as the outer cylinder but made without any bottom. The top ought to be made of the same bigness as the flue of the furnace which for small fires may be made stationary, but in cases where the draft of the furnace should require to be increased occasionally it might be constructed to turn on the crown according to the pleasure of the user by means of sticks (No 8.) as shown & recommended. This cylinder No 7. should come down so far as to cover the neck of the piece of the furnace within the outer cylinder but leaving a space open at the bottom of the cylinder large enough for the operation of the air, and to receive the ashes & sediment as may chance to collect. This cylinder is suspended within the other by means of cross bars of iron passing through both cylinders on which is also fixed a damper in the same manner as above described and around the circumference of this damper is a groove into this cylinder which an endless cord passes (see the figure) the bars No 5. which support this inner cylinder and by which this damper is suspended will be seen to pass through both cylinders from side to side and are fastened on the outside of the outer cylinder by nail screws on the ends of No 7. and on the inside between the two cylinders ought to be placed thimbles (d) to keep the inner cylinder in its proper position, and further to assist and support the inner cylinder there ought to be two other screws with heads (e) passing from the inside of the inner cylinder through the outer cylinder and also both inside screws (4 in all) one on each side one above and the other below each end of the bars above mentioned. on these also ought to be placed thimbles (d) to aid in keeping the inner cylinder in its position because it will be found that all the inner machinery will be heated so nearly red as will become disordered and without this precaution will

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dampers to the chamber No 3 nine inches (9). No 3. from the decomposition of matter within the ashing pit there will collect an explosive gas known as small sparkles called ashes this will fall upon the bottom of the cylinder and may be removed by a small door (b) upon each side of the cylinder at the bottom of which may be opened & closed in manner this invention is used in open air. but otherwise if used in water. If the operator wishes further to condense heat he may why that he can do it by adding one or more dampers to the inside of the cylinder and also add flanges depended from the cylinder above the dampers. But in all cases likewise introducing a flange or object that may bear any other name he must take care to preserve the throats or apperture for the smoke to pass freely. It must not be understood that the cylindrical shape is insisted to be the only form in which this invention may be made any other form that fancy may dictate will be of equal utility if the conditions will stay all conducive to the just proportions of the parts that the shape of the cavities may not be obstructed and that no projecting edges or ornaments be introduced within the cylinder. What I claim as my own invention and not previously known in the above described machine is the invention combination & apportioning and disposing the whole machine or improvement as described with the working and benefits as presented in the said above specifications and to be applied to the purposes of steam ships to prevent the emission of sparks of fire and to condense and create heat. Also to the purpose of a locomotive car or engines and to steam boats for the prevention of sparks. also if placed near a furnace where the melting of ore or smelting requires escape of heat this machine will be found highly useful

In testimony that the above is a true specification of my said improvement as above described I have hereunto set my hand this day of February 1836.

Witnesses
J.O. Cole
W.S. Osborn

Abner W. Gilman

Drawing

Ex'd
Ch. of W.

(Granted May 23. 1836)