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UNITED STATES PATENT OFFICE.

SAMUEL G. BROWN, OF HENRIETTA, NEW YORK.

SPARK-ARRESTER.

Specification of Letters Patent No. 2,789, dated September 23, 1842.

To all whom it may concern:

Be it known that I, SAMUEL G. BROWN, of Henrietta, in the county of Monroe and State of New York, have invented a new and improved mode of creating or increasing drafts in furnaces, flues, and stacks and of extinguishing all sparks proceeding therefrom; and I do hereby declare that the following is a full and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view, designed to illustrate the principles of my invention. Fig. 2, is a transverse view of the drum and ball, or screen.

I construct a common fan wheel or double acting pump, W, and pipes, S, and Q, in the usual manner and of the most approved materials. I then arrange them so as to produce the required draft, and convey the smoke, etc., from the furnace, M, to any place desired. To prevent the pump from being clogged by ashes, dust, etc., I make apertures in the bottom, and at or near the ends of the cylinder, leading into boxes or chambers, N, into which the ashes, etc., that settle in the cylinder, will by the action of the piston, K, be passed, and from which they may be easily removed by means of a slid, or otherwise; these chambers may be made of sheet iron, and so attached to the cylinder as to surround the above named apertures.

When it is necessary to extinguish all sparks, and not convenient, or expedient to force the smoke, etc., immediately into water, I construct at some convenient point in the flue, a large drum, J; this may be a sheet iron cylinder of from one, to four feet in diameter, and about the same in length. I then make an orifice in the top, supplied with a faucet, Y, for admitting carbonic acid gas, or water; and another in the bottom for discharging the dirty water, ashes, etc. In this drum, I fix a cylindrical screen or bolt, P, made of perforated metal or wire gauze; this screen should be of nearly the same length as the drum, but at least one fifth less in diameter; it is sup-

ported in the upper part of the drum on its axes, O, so as to prevent the sparks from escaping over the top. I then put carbonic acid gas or water, A, into the drum until the screen is partly immersed; thus the smoke having no other way to escape, passes through the screen which is kept constantly revolving by attaching its axes to some moving power, or otherwise, while the sparks are entirely extinguished by being passed through, or plunged into the gas or water in the drum.

In all cases except where it is required to force the smoke into water, the common fan wheel may be advantageously employed, instead, and in the place of the pump, as that will produce sufficient draft, and force the smoke, heated air, &c., through the screen or down the flues passing through the side, or end of a boat or vessel.

I do not merely claim the peculiar arrangement as represented in the annexed drawings, but I do claim the principles, and parts therein illustrated in the following words to wit:

I claim as my invention and desire to secure by Letters Patent:

1. The method of extinguishing sparks by means of cylindrical, or circular screens, fixed, and made to revolve in smoke flues, so constructed as to contain each, a portion of water, or carbonic acid gas, into which a part of the screen is immersed as above described.

2. Also the method of producing or increasing the draft in furnaces, flues and stacks by exhausting them of heated air, smoke, etc., by means of pumps, as herein described; also the making of apertures in the lower, or bottom part, or parts, of the cylinders of said exhausting pumps, which apertures lead into boxes, or chambers, attached to their cylinders, into which, the ashes, etc., that settle in said cylinders, will, by the action of their pistons, be caused to pass as within described.

SAMUEL G. BROWN.

Witnesses:

JOSEPH BROWN,
A. MOORS.