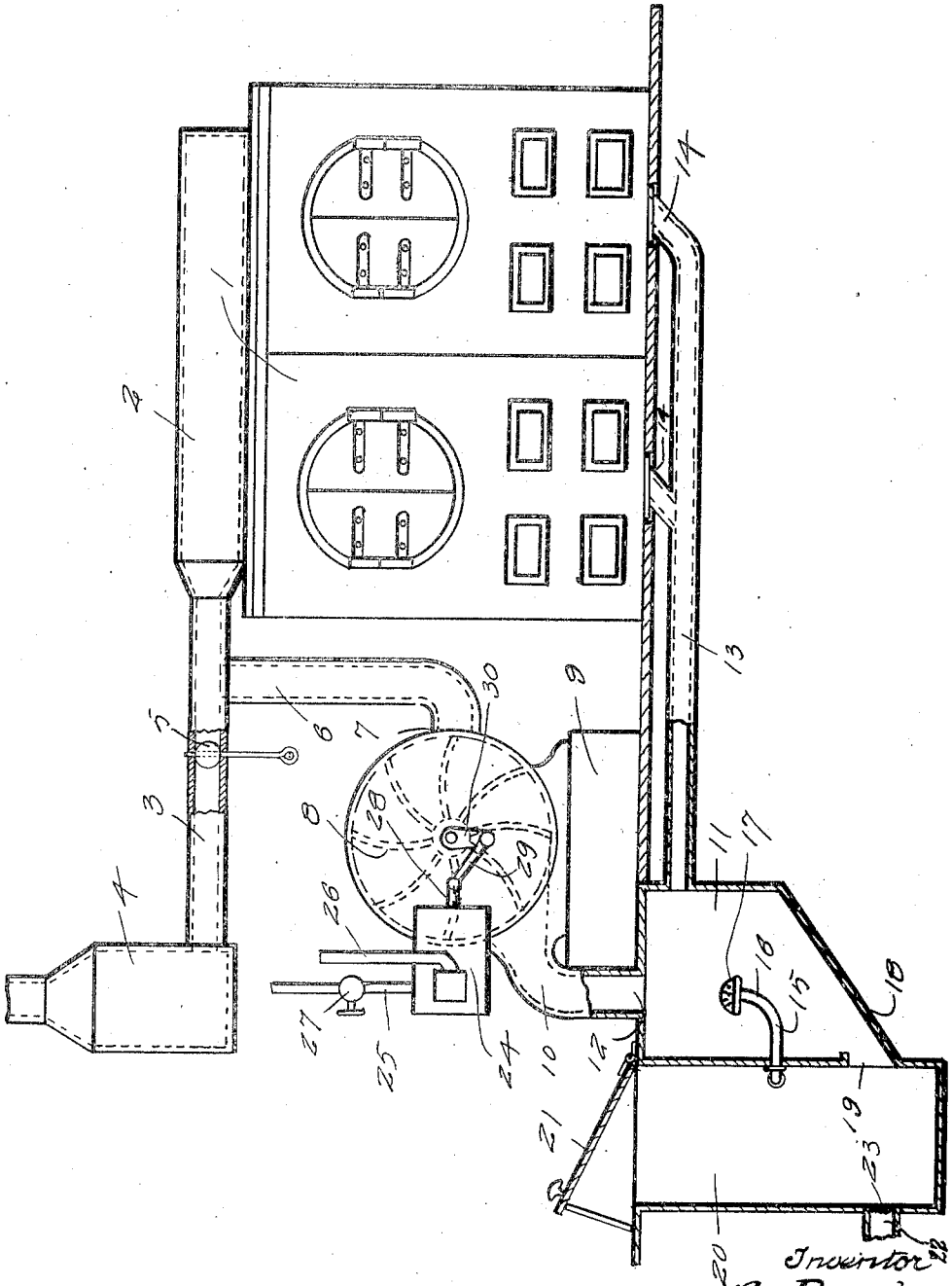
A. BURDA.

SMOKE CONSUMER.

APPLICATION FILED MAY 10, 1918.

1,357,441. Patented Nov. 2, 1920.



Witnesses.
Cooke alk.
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By
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UNITED STATES PATENT OFFICE.

ANTON BURDA, OF RACINE, WISCONSIN.

SMOKE-CONSUMER.

1,357,441. Specification of Letters Patent. Patented Nov. 2, 1920.

Application filed May 10, 1918. Serial No. 233,742.

To all whom it may concern:

Be it known that I, ANTON BURDA, a citizen of the United States, residing at Racine, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Smoke-Consumers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to smoke consumers and the primary object of the invention is to provide an improved trap for catching cinders and the like in a smoke-consuming furnace so that the cinders can be readily removed therefrom and thus not interfere with the operation of the furnace.

A still further object of the invention is the provision of an improved means for operating the improved blower, so that the same can be operated at the desired speed, for regulating the draft of the furnace.

A still further object of the invention is to provide an improved smoke consumer for furnaces, which is durable and efficient in use, one that is simple and easy to construct and one that can be placed upon the market at a reasonable cost.

With these and other objects in view, the invention consists in the novel construction, arrangement and formation of parts, as will be hereinafter more specifically described, claimed and illustrated in the accompanying drawing, forming a part thereof, in which:—

The figure is a front elevation of a furnace constructed in accordance with the invention with the improved smoke consumer attached thereto showing the improved trap in section.

Referring to the drawing in detail, wherein similar reference numerals designate corresponding parts, the numeral 1 indicates a well known type of twin furnaces having connection with the smoke pipe 2, which is connected by a pipe 3 to a smoke stack 4. A suitable damper 5 is interposed in the pipe 3 to control the passage of the products of combustion from the furnace to the atmosphere with which the upper end of the smoke stack 4 communicates. A smoke pipe 6 is connected to the pipe 3 intermediate the ends thereof and the pipe 6 has its lower end connected with the inlet port 7 of the centrifugal pump or blower 8 having the base 9 thereof secured to the floor of the room. The outlet of the pump or blower is connected by a pipe 10 to the upper end of the smoke box 11 as at 12. The smoke box 11 is connected at a point adjacent to the upper end thereof with a blower pipe 13, which extends underneath the furnace and communicates with the ash pits thereof as at 14. The water pipe 15 extends into the smoke box 11 and has an upturned end 16 which is positioned directly under the pipe 10 and has a suitable spray nozzle 17 connected thereto, which is adapted to separate the cinders and the like from the smoke as the same enters the box and drive the cinders to the bottom of the receptacle, which is inclined downwardly as at 18 and the lower end of the smoke box is provided with an outlet opening 19 which communicates with the trap 20 which is adapted to receive the cinders. The trap 20 is preferably cylindrical in formation and extends up into the level of the floor and is provided with a hinged lid 21, whereby entrance to the trap may be readily had, so that the cinders can be readily removed therefrom. An outlet pipe 22 is positioned on the lower end of the trap so as to allow the water from the spray nozzle 17 to be drained therefrom. A suitable screen 23 is interposed in the drain pipe 22 to prevent the cinders from passing down into the same.

Thus it will be seen that an improved trap is provided for the smoke consuming furnace which will permit the ready removal of the cinders from the system.

A steam engine 24 is secured to the casing of the blower 8 for running the same and the engine has a steam pipe 25 and an exhaust pipe 26 connected thereto, the steam pipe 25 having a suitable valve 27 located therein for controlling the supply of the steam to the engine intake manifold, not shown. The piston rod of the engine, designated by the numeral 28 is connected by a pitman arm 29 to the crank arm 30 secured to the shaft of the blower 8.

The steam for operating the engine may be derived from any suitable source and if the furnace which the device is used in connection with is of the steam variety, the steam can be readily piped therefrom to the engine.

If desired the fan or blower 8 may be shut down at any time and the furnace operated in the ordinary manner at which time the damper 5 may be regulated to control the furnace drafts.

In practice, I have found that the form of my invention, illustrated in the accompanying drawings and referred to in the above description, as the preferred embodiment, is the most efficient and practical; yet realizing the conditions concurrent with the adoption of my device will necessarily vary, I desire to emphasize the fact that various minor changes in details of construction, proportion and arrangement of parts may be resorted to, when required without sacrificing any of the advantages of my invention as set forth.

What I claim as new is:—

1. A smoke consumer comprising the combination with a furnace including an ash pit and a smoke pipe having a damper located therein, of a blower, a pipe leading from the smoke pipe rearwardly of the damper to the blower to form communication therewith, a smoke box, a pipe leading downwardly from said blower to said smoke box, a trap communicating with said smoke box, a water pipe extending from said trap into said smoke box and terminating in an upturned end having a nozzle formed thereon below the pipe leading from the blower to the smoke box, a screened outlet for said trap, and a pipe leading from the upper portion of said smoke box to the ash pit of the furnace.

2. A smoke consumer comprising the combination with a furnace including a double ash pit and a smoke pipe and smoke stack mounted on said smoke pipe, and a damper within said smoke pipe, of a blower and a blower casing, a pipe leading from said smoke pipe at a point between the furnace and the damper to the interior of the blower casing, a smoke box below said blower and blower casing, a spray nozzle mounted in said smoke box means for conducting a supply of water to said nozzle, a downwardly extended pipe leading from said blower casing to the upper end of said smoke box at a point above said spray nozzle, said smoke box having an inclined bottom, a trap connected with said smoke box and having communication therewith immediately above the lower edge of the inclined bottom of said smoke box, a cover for said trap, a screened outlet, and a return pipe leading from the upper portion of said smoke box and having flanges extended to the double ash pit of the furnace, and means for operating the blower within said blower casing.

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

ANTON BURDA.

Witnesses:
F. N. SELBY,
V. C. EYER.