L. E. MINTON.

SMOKE CONSUMER.

APPLICATION FILED SEPT. 5, 1917.

1,279,895. Patented Sept. 24, 1918.

FIG. 1.

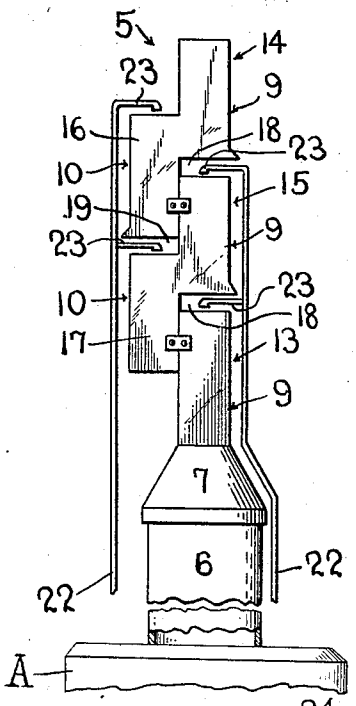


FIG. 2.

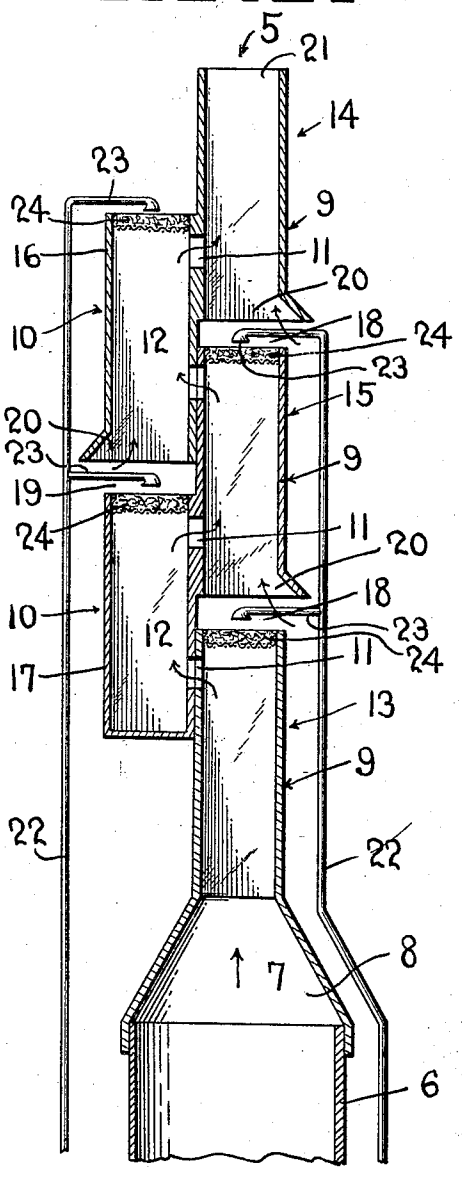
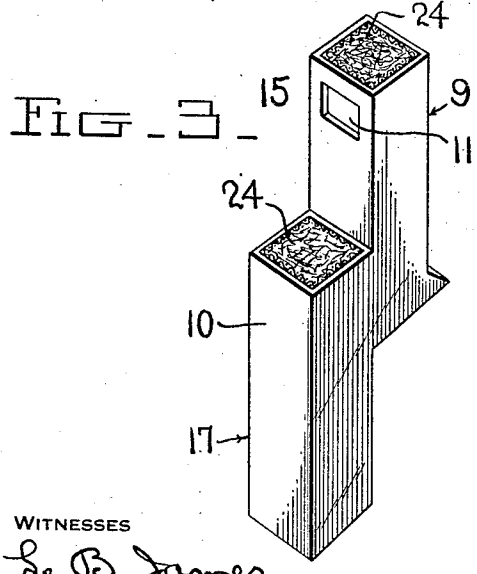


FIG. 3.



WITNESSES

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SMOKE-CONSUMER.

1,279,895. Specification of Letters Patent. Patented Sept. 24, 1918.

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To all whom it may concern:

Be it known that I, LAWRENCE E. MINTON, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented new and useful Improvements in Smoke-Consumers, of which the following is a specification.

This invention relates to an apparatus which is especially designed to reduce the smoke and fumes arising from combustion in furnaces, stoves or the like, in order that the waste products of combustion may escape in the air without carrying with them large quantities of undesirable smoke and fumes.

The primary object of the invention is the provision of a device of the above stated character, wherein the apparatus generally consists of a series of spaced sections so arranged with respect to one another to provide therein a tortuous passage through which the smoke ascends, and means disposed within each of said sections to permit of the smoke and fumes arising therein to be condensed.

With the above and other objects in view, the invention consists in the novel features, details of construction and combination of parts which will hereinafter be more fully set forth, illustrated in the accompanying drawing and pointed out in the appended claims.

In the drawings:—

Figure 1 is a side elevation of the apparatus installed for use with the flue shown in vertical section;

Fig. 2 is a view similar to Fig. 1 with the apparatus illustrated in vertical section; and

Fig. 3 is a perspective view of one of the condensers removed from the apparatus.

Referring more particularly to the accompanying drawing, in which like characters of reference refer to corresponding parts in the several views, the stack denoted generally by the character 5 is shown as mounted on and in communication with the main flue 6 through which the smoke and gases from the heating element A escape. The stack 5 here shown embodies an integral member formed on the lower end thereof with a flared base 7 which reposes upon and is secured preferably to the extreme upper end of the main flue 6 in any suitable manner to provide the main passage 8 of the stack in alinement with the flue, for a purpose to be hereinafter more fully stated. Rising from the base 7 of the stack is a series of spaced pipe sections 9 and a second series of pipe sections 10, the series of pipe sections 9 being disposed in vertical alinement with the main passage 8, while the second series of pipe sections 10 are disposed to one side of the main passage and in communication therewith by a restricted opening 11, providing within the stack a tortuous smoke passage 12, indicated by the arrows.

In the preferred embodiment of the invention here shown, the series of pipe sections 9 comprises a lower section 13, an upper section 14 and an intermediate section 15 connected to and communicating with the upper and lower sections through the medium of the second series of pipe sections 10, which in this particular instance are here shown as constituting an upper pipe section 16 and a lower pipe section 17. The tortuous smoke passage 12 is provided by forming at a point adjacent the upper and lower ends of the respective lower and upper pipe sections 13 and 14 the restricted openings 11, while the restricted openings 11 are provided at a point adjacent the upper and lower ends of the intermediate pipe section, as clearly shown and for a purpose to be more fully set forth. Furthermore, the relative spacing of the respective pipe sections of each series above one another, provides lateral draft openings 18 and 19 respectively, thereby permitting the updraft in the flue to cause any smoke and fumes not following the tortuous smoke passage to be drawn into the lower open ends 20 of each of the pipe sections as the same escape through the open upper ends 20 thereof, consequently, causing all of the smoke and fumes to be condensed by a device to be hereinafter described, previous to the escape of the waste products in the air.

The condenser hereinbefore referred to comprises a pair of pipes 22 connected with the suitable main supply (not shown) and are disposed to opposite sides of the stack and provided at intervals with nozzles 23, projecting in the passages 19 and directly above and in spaced relation with the upper open end 21 of each of the respective pipe sections. The purpose of these nozzles is to spray or moisten a suitable absorbent material, indicated by the character 24 contained in perforated pans, mounted in the extreme open upper end of each of the pipe

sections of each of the series 9 and 10 respectively. Consequently, is will be seen as the smoke and fumes arise from combustion in the heating member A, the smoke and fumes will rise through the main passage 8, certain of which will contact with the moistener contained in the upper extreme end of the lower pipe section 9, while the remaining portion of the smoke and fumes will follow the tortuous passage, to the extent of passing through the lowermost pipe section 17 of the second series 10, and thence into the intermediate pipe section 15, which, by the contact of the smoke and fumes with the moistener contained in the extreme upper end thereof, will cause a further condensation of the smoke and fumes, and the products of combustion will escape through the uppermost pipe section 14 in the air without carrying with them any undesirable particles of smoke and fumes.

From the foregoing description, taken in connection with the accompanying drawing, the advantages of construction and the method of operation will be readily apparent to those skilled in the art to which the invention relates, and while I have described the principles of operation of the invention, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative, and that such changes may be made when desired as are within the scope of the appended claims.

What is claimed as new, is:—

1. A smoke consumer comprising a base having formed therein a main passage, a plurality of pipe sections, the passage of certain of the pipe sections being disposed in alinement with the passage of the base, while the passage of the remaining pipe sections being disposed in non-alinement with the main passage to provide within the stack a tortuous smoke passage, and condensers carried by said stack.

2. A smoke consumer comprising a base having formed therein a main passage, a plurality of pipe sections, the passage of certain of the pipe sections being disposed in alinement with the passage of the base, while the passage of the remaining pipe sections being disposed in non-alinement with the main passage to provide within the stack a tortuous smoke passage, and moisteners carried in the upper end of each of said pipe sections.

3. A smoke consumer comprising a stack embodying a base having a main smoke passage formed therein, a plurality of pipe sections provided with a tortuous smoke passage, a condenser for moistening the smoke and fumes entering each of the pipe sections previous to the escape of the same from said stack.

4. A smoke consumer comprising a series of hollow pipe sections, a second series of hollow pipe sections communicating with the first series of pipe sections and into communication therewith forming a tortuous smoke passage, and a condenser associated with the sections to moisten the smoke and fumes previous to the escape of the same from said first mentioned series.

5. A smoke consumer comprising a base formed with a main smoke passage, a plurality of communicating pipe sections formed integral with said base to provide within said sections a tortuous smoke passage, the sections being vertically spaced from one another to provide between each of the sections a draft opening, and a condenser carried by said sections.

6. A smoke consumer comprising a base formed with a main smoke passage, a plurality of comunicating pipe sections formed integral with said base to provide within said sections a tortuous smoke passage, the sections being vertically spaced from one another to provide between each of the sections a draft opening, a moistener in each of said pipe sections, and a main supply pipe contained in the draft opening for retaining the moisteners in a moistened condition at all times.

In testimony whereof I affix my signature.

LAWRENCE E. MINTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."