

L. W. HOWARD.
DRAFT CONTROLLER FOR SMOKE CONDUITS.
APPLICATION FILED OCT. 7, 1918.

1,328,565.

Patented Jan. 20, 1920.

Fig. 1.

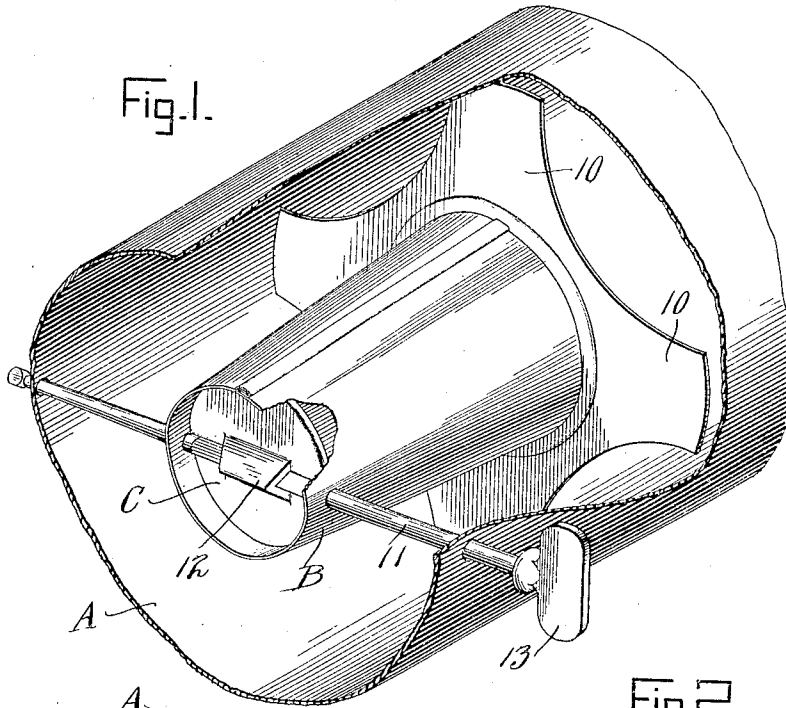
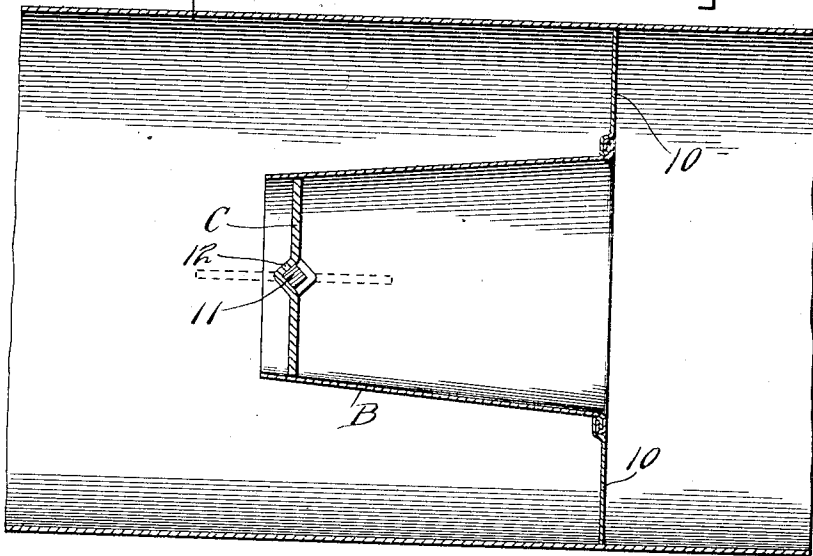


Fig. 2.



Inventor
Lawrence W. Howard

By *Richard Doolittle*
Attorneys

UNITED STATES PATENT OFFICE.

LAWRENCE W. HOWARD, OF MANCHESTER, NEW HAMPSHIRE.

DRAFT-CONTROLLER FOR SMOKE-CONDUITS.

1,328,565.

Specification of Letters Patent.

Patented Jan. 20, 1920.

Application filed October 7, 1918. Serial No. 257,193.

To all whom it may concern:

Be it known that I, LAWRENCE W. HOWARD, a citizen of the United States, residing at Manchester, Hillsborough county, and State of New Hampshire, have invented and discovered certain new and useful Improvements in Draft-Controllers for Smoke-Conduits, of which the following is a specification.

My said invention consists in an improved construction of dampers, or draft controllers, for the smoke flues or stacks of stoves, furnaces, etc., whereby the draft may not only be controlled, but a large percentage of the heat which commonly is wasted may be conserved and utilized, the fire controlled, and congestion in the smoke pipe or flue avoided, resulting in a material saving of fuel, all as will be more fully pointed out in the claims.

Referring to the accompanying drawings which are made a part hereof and on which similar reference characters indicate similar parts,

Figure 1 is a perspective view of a section of a smoke pipe, or flue, provided with a draft controller of my improved construction, the shell of the flue being broken away to illustrate the construction and arrangement of parts more clearly; and

Fig. 2, a central sectional view through the same.

In said drawings the portion marked A represents the shell of the flue, B the body of the draft controller, and C the damper or valve.

The smoke pipe or flue may be of the form illustrated, or of any form desired, either round, square, or of other cross-sectional shape, and composed of iron, brick, or masonry as may be desired.

The draft controller comprises a tubular member or body B having a base flange of flexible material, such as sheet iron, secured to its lower end, and having cut out or recessed portions between projecting arms 10, which arms are adapted to impinge against the walls of the smoke pipe or stack as shown. By bending these arms 10 more or less, the draft controller is adapted to fit smoke pipes or smoke stacks of various sizes, as will be readily understood. The body member B is preferably tapered slightly, as shown, and has the damper C mounted on a rod 11 which extends through the upper end of said body B and an angular socket

12 formed on said damper and also through perforations in the sides of the pipe, and has a handle 13 on its outer end by which it may be turned or adjusted.

It is well known that the hotter part of the products of combustion go out through the smoke pipe or stack at the center, and that the outer portions of the body of said products of combustion are the cooler portions. In operation, by closing the damper C after the fire is started, the central portion of the smoke stack is closed and the heat contained in the products of combustion is retarded and deflected to the outer part of the smoke stack and compelled to pass through the recesses or cut out portions between the arms 10 of the flange, with resultant increased heat radiation. It has been found in actual operation that after the fire is started, the damper C may be completely closed and a fire maintained in satisfactory condition for a long period of time. Where the capacity of the smoke stack is too greatly restricted by the complete closure of the damper, however, it can be regulated to leave as much or as little of the space open as required for the purpose of securing the most favorable results.

By the use of this device, a complete combustion of all gases and coal may be secured, thus saving practically all of the heat units in the fuel and preventing their escape through the flue, and also avoiding congestion in the smoke pipe. In burning wood, it has been found that the damper C may be kept closed even while the fire is being started.

Having thus fully described my said invention, what I claim as new and desire to secure by Letters Patent is:

1. A draft and smoke controller comprising in combination with a smoke conduit a restricting tapering member coaxial with the conduit, a plate extending outwardly from the base of the conical member perpendicular to its axis, smoke passages cut from the periphery of the plate forming resilient fingers bearing against the interior of the conduit, and means positioned within the conical member for further restricting the passage therethrough.

2. A draft and smoke controlling mechanism comprising in combination with a smoke conduit a tapered member, a supporting plate perpendicular to the axis of the supporting member, smoke passages cut

from the periphery of the supporting plate,
and a second supporting member passing
through the conical member at the end oppo-
site the plate and provided with a damper
5 disposed within the smaller end.

In witness whereof, I have hereunto set
my hand and seal at Manchester, New

Hampshire, this 3rd day of Oct., A. D. nine-
teen hundred and eighteen.

LAWRENCE W. HOWARD. [L. S.]

Witnesses:

IRVING E. FORBES,
WILLIAM W. FORBES.