(No Model.)

M. P. FARNHAM.

STOVE PIPE DRUM.

No. 467,370. Patented Jan. 19, 1892.

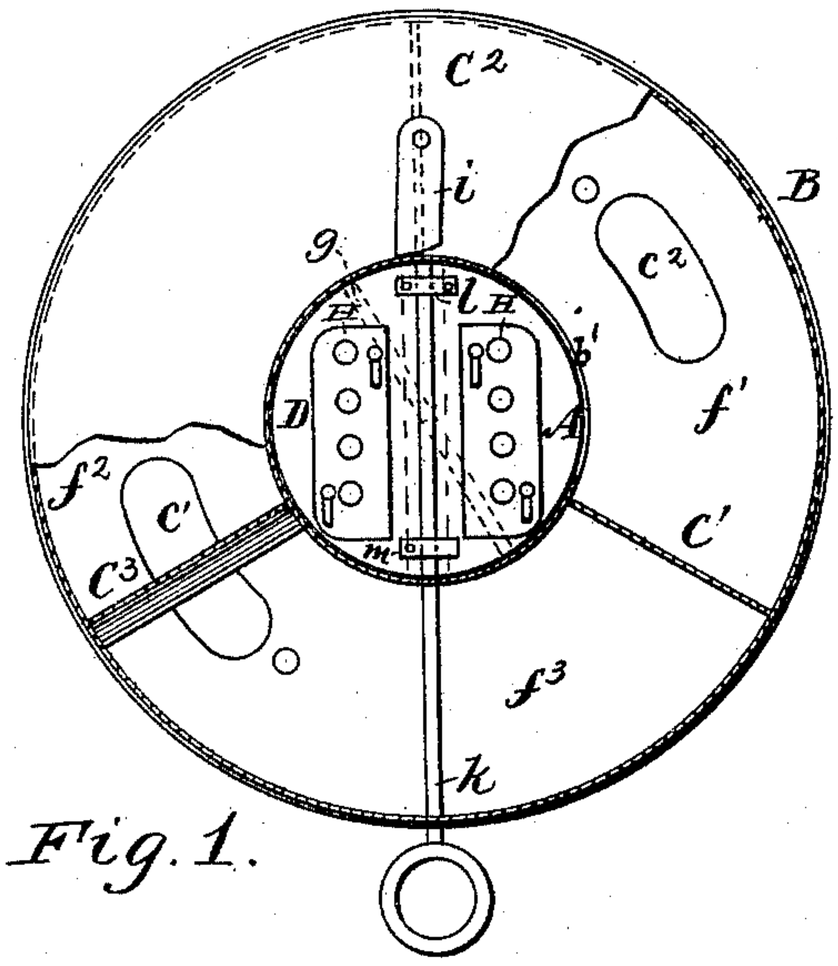


Fig. 1.

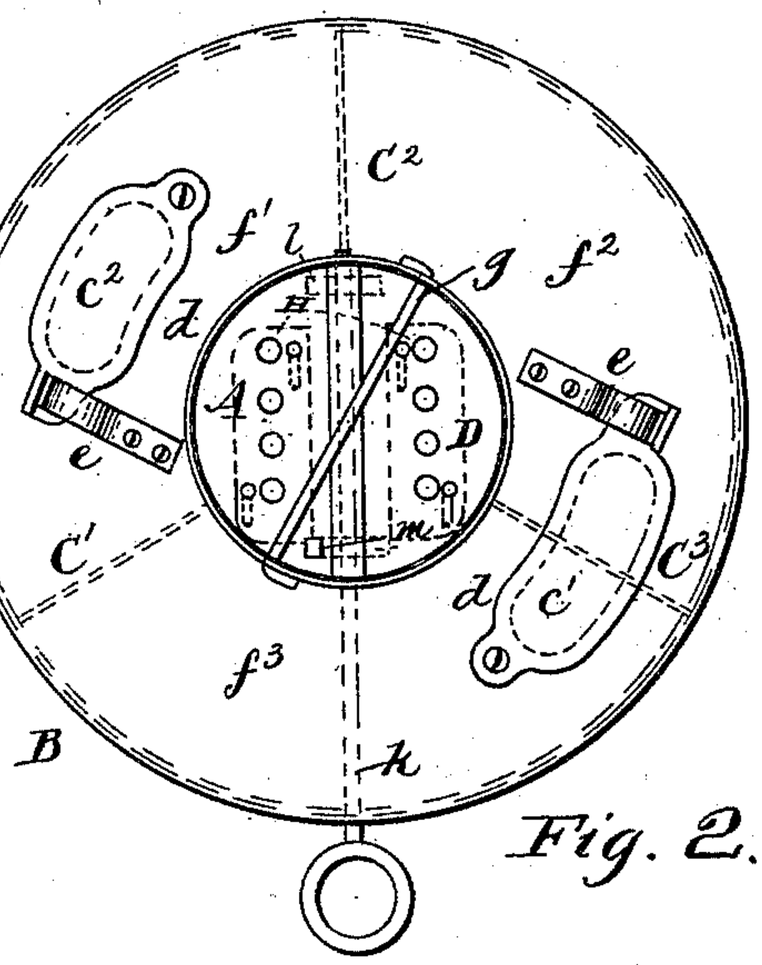


Fig. 2.

Fig. 3.

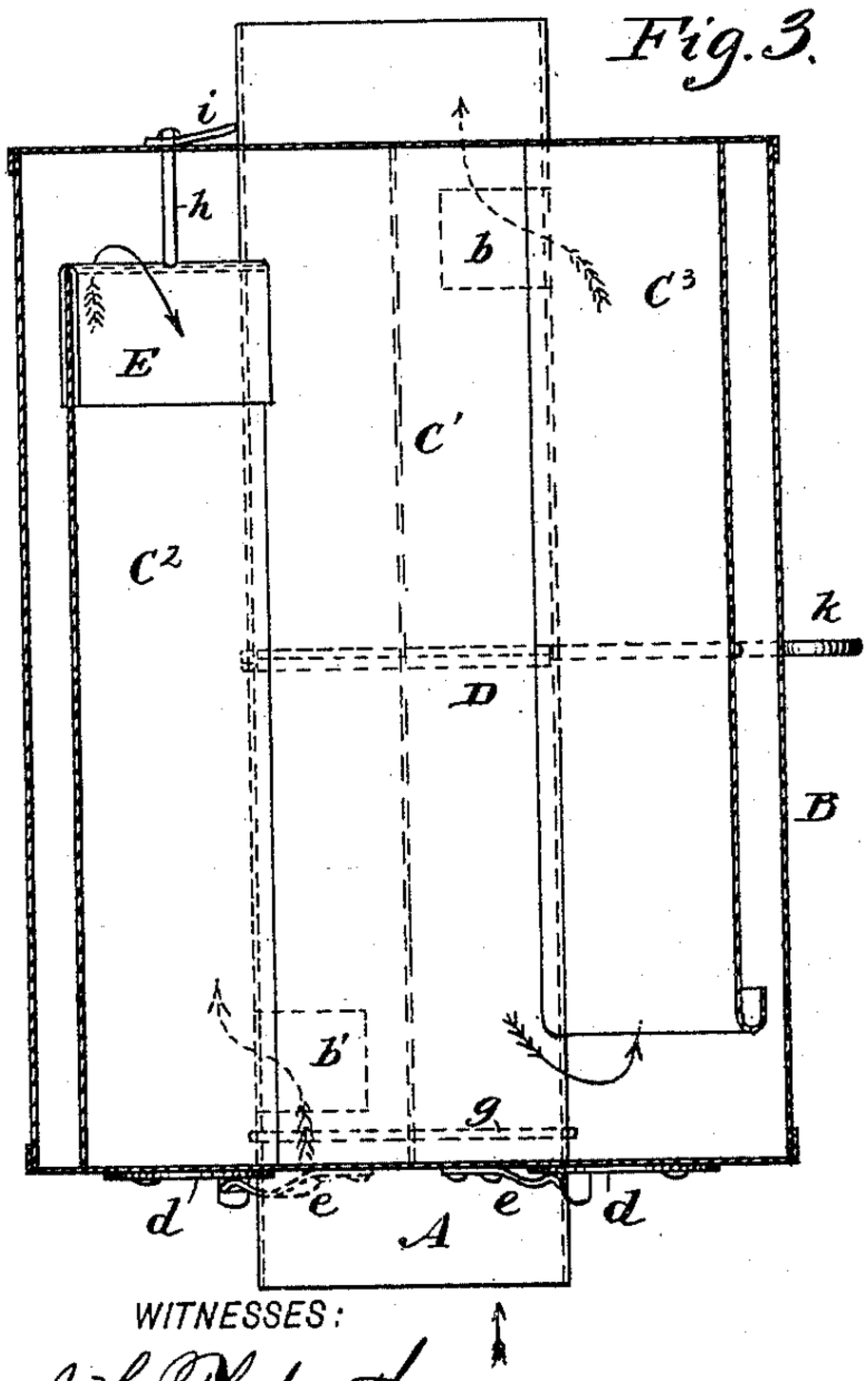
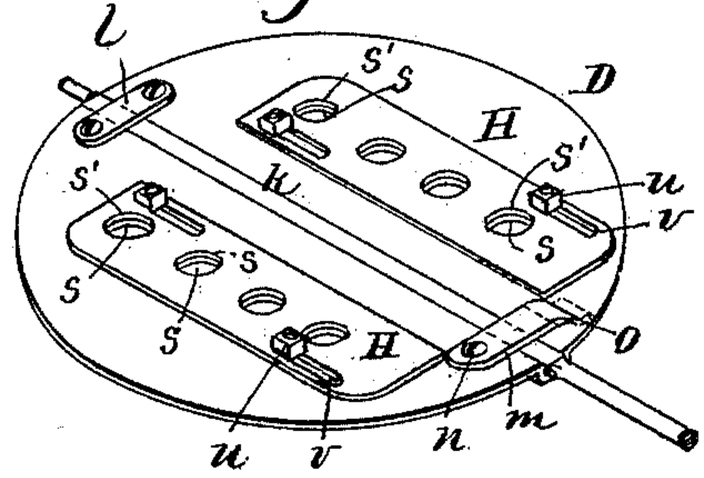


Fig. 4.



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MOSES P. FARNHAM, OF GERMANTOWN, CALIFORNIA.

STOVE-PIPE DRUM.

SPECIFICATION forming part of Letters Patent No. 467,370, dated January 19, 1892.

Application filed February 4, 1891. Serial No. 380,167. (No model.)

To all whom it may concern:

Be it known that I, MOSES P. FARNHAM, of Germantown, in the county of Colusa and State of California, have invented a new and useful Improvement in Stove-Pipe Drums, of which the following is a full, clear, and exact description.

This invention is mainly designed as an improvement upon the stove-pipe drum for which Letters Patent No. 194,590 were issued to me on August 28, 1877, and in which an end-closed drum applicable to different kinds of stoves or furnaces and for various heating purposes is formed around and arranged to take the place of a joint or length of pipe leading to the chimney, and in which there is combined, with the length of pipe running up through the drum and having upper and lower side apertures and radial partitions, a damper in said length of pipe whereby the draft circulation may either be established directly through the pipe or indirectly through the drum for the purpose of arresting sparks, confining or holding and regulating the heat in the stove or furnace, and for other uses or purposes.

The invention consists in the novel construction of such a drum in connection with the stove or furnace pipe passing up through the same and in sundry attachments applied thereto, substantially as hereinafter described, and more particularly pointed out in the claims, whereby numerous advantages are obtained.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents a broken partly sectional top view or plan of a drum embodying my invention applied to and around a stove or furnace pipe; Fig. 2, an under view of the same; Fig. 3, a vertical sectional view thereof; Fig. 4, a view in perspective of the damper with certain attachments which is applied to the length of pipe running through the drum.

A is a length of the stove or furnace draft-pipe; B, the end-closed drum arranged around the same and having any number (here shown as three) of radial partitions C′, C², and C³, connecting the exterior of the pipe A with the interior of the drum B, the one C′ extending from top to bottom of the drum, the next C² extending from the bottom but stopping short of the top of the drum, and the third one C³ extending from the top but stopping short of the bottom of the drum. In the sides of the pipe A are upper and lower apertures *b b′*, the upper one *b* being arranged between the partitions C′ and C³ and the lower aperture *b′* being arranged between the partitions C′ and C².

D is the rotatable damper arranged intermediately of the length of the pipe A for controlling or regulating the draft directly through said pipe or indirectly through the drum, as required. When said damper is turned square across the pipe A, the smoke and heated gases from the stove or furnace are made to pass up within the lower portion of the pipe A, thence through the lower aperture *b′* to the flue *f′*, formed by the partitions C′ C², over the partition C², and down the flue *f²*, formed by the partition C² and C³, under the latter partition, and thence up the flue *f³*, formed by the partitions C³ and C′, and out through the upper aperture *b*.

To clean the drum of collecting soot and ashes, especially when burning certain coal or pitch-pine, without taking down the drum from the stove or furnace or disconnecting it from the smoke-pipe, I provide in the lower head of the drum exterior to the pipe A directly under the partition C³, which stops short of the bottom of the drum, a clearance-hole *c′*, which serves to clear both flues *f² f³*, formed by the partitions C′ C³ and C² C³, and another clearance-hole *c²*, which serves to clear the flue *f′*, formed by the partitions C′ C². Where a greater number of flues are used, there of course will be a corresponding increase of clearance-holes. These clearance-holes are closed, when not required to be used, by any suitable lids or doors, which, however, are here shown as turning ones *d*, riveted at their one end to the lower head of the drum and held closed by a spring or button *e*. The providing of these clearance-holes is almost indispensable when the drum is used as a spark-arrester in field-engines, and in others where it is not only used as a spark-arrester, but as a device for holding down or retaining the heat in the stove or

furnace to save fuel or to establish special distribution of the heat.

To prevent the aperture b' from being closed or obstructed by a lower connecting-draft-pipe telescoping with the pipe A, which, as the damper D is designed to fit tight, would cause the stove or furnace to smoke, a suitable stop is provided in connection with the pipe A to arrest the telescoping pipe, so that it cannot be entered within the lower end of the pipe A to a greater height than will leave the aperture b' fully open. This may be accomplished by lugs projecting internally within the pipe, or, which is the same thing, by a cross-wire g, passed through the pipe A below the aperture b.

The radial partition C^2, which stops short of the top of the drum, has fitted on or over it a saddle-like slide E for closing at will the draft throat or passage over said partition to any extent required—as, for instance, in very windy weather or when the body of fuel in the stove or furnace requires a diminished draft. This slide is adjusted up or down, as required, by means of a stem h, attached to it and projecting up through the top head of the drum, said stem being provided with any suitable catch to hold it at the required adjustment of said slide, and which is here shown as a flexible strip i, attached to the upper end of the stem h and made to bind or butt against the side of the upper projecting end of the pipe A.

The damper D in the pipe A when made so large as when closed to close the pipe A, which is desirable in some cases, but is apt to make the stove or furnace smoke, is carried by a suitably-supported turning-rod k, which may be embedded in the damper and passed through a loop l near the inner end of the rod, that may be mainly square and be connected with the opposite marginal side of the damper by a clamp m, secured at its one end by a bolt n to the damper and passing at its other end through a slot o in the damper. If desired, a simple set-screw—such as is used for analogous purposes—may be employed, instead of the clamp m, to secure the turning-rod k of the damper. The damper D has a series of holes s through it on opposite sides of the rod k, over which are fitted adjustable slides H, having corresponding holes s', and attached to the damper by bolts u, passing through slots y in the damper. This provides for the perforated damper having the holes through it more or less or fully closed, as desired, according as the slides H are adjusted for the purpose. In this way or by these means, when the damper is a close-fitting one, smoking of the stove or furnace may be avoided by permitting draft through the damper, and it is a well-known fact that when two opposing currents of air come together a draft is established. Thus when the damper is turned across the pipe and the holes through the damper are left partly or wholly open the heated gases passing through the aperture b are met by a portion of the heated gases passing through the holes in the damper and the draft is quickened.

The ends of the radial partitions which stop short of either head of the drum are preferably bent over, as shown, for the partition C^3 to prevent an obstructing angle being formed and to establish curves in line with the draft.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with a pipe-section having an upper and lower opening, of a drum surrounding the pipe-section and having three vertical partitions, one extending from top to bottom and the other two being of less length than the drum, one terminating short of the top and the other short of the bottom, and a damper in said pipe-section, substantially as described.

2. The end-closed stove or furnace pipe drum having upright partitions within it of different heights or depths, establishing flues in between them, and having a central through-draft pipe provided with upper and lower draft-openings and an intermediate damper, and the lower head of the drum provided with a soot or ash clearance hole exterior of one side of the through-draft pipe, provided with a lid or door and arranged to form a clearance-outlet for two adjacent flues formed by the partitions within the drum, substantially as described.

3. The combination, with the radially-partitioned closed-end drum B and central draft-pipe A, having upper and lower side apertures b b' and intermediate damper D, and with the drum-partition C^2, which stops short of the top of the drum, of the adjustable slide E, substantially as and for the purpose herein set forth.

MOSES P. FARNHAM.

Witnesses:
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E. W. FARNHAM.