No. 688,836.

Patented Dec. 17, 1901.

J. H. DIEHL.

DRAFT REGULATOR.

(Application filed May 11, 1901.)

(No Model.)

Fig. 1

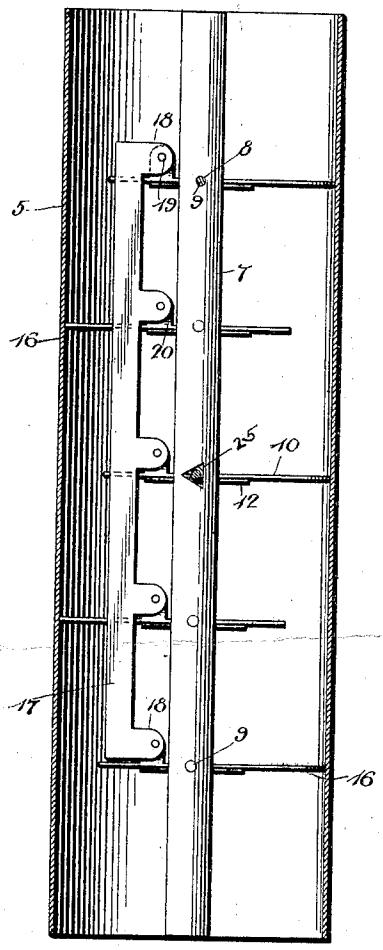


Fig. 2

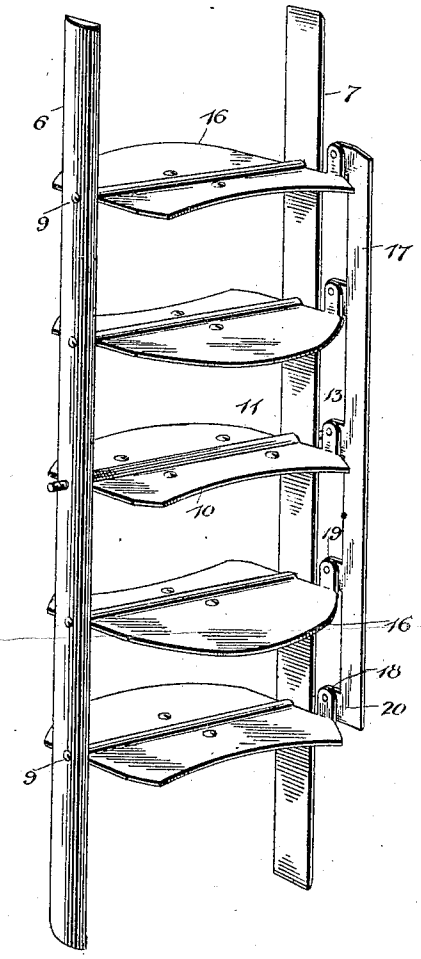
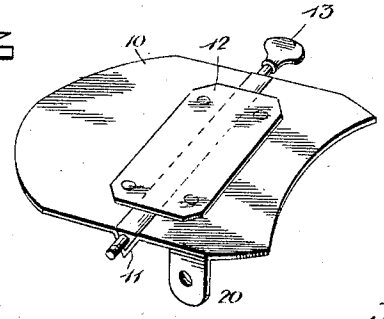


Fig. 3



Witnesses

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UNITED STATES PATENT OFFICE.

JOSEPH HERBERT DIEHL, OF DANVILLE, PENNSYLVANIA.

DRAFT-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 688,836, dated December 17, 1901.

Application filed May 11, 1901. Serial No. 59,785. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH HERBERT DIEHL, a citizen of the United States, residing at Danville, in the county of Montour, State of Pennsylvania, have invented certain new and useful Improvements in Draft-Regulators; 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 heating-drums for use in connection with smoke-pipes, the object of the invention being to provide a construction which may be attached and detached after the manner of an ordinary section of stovepipe and wherein the efficiency of the drum may be varied as may be desired.

A further object of the invention is to provide such a construction and arrangement of dampers that they may be easily and quickly applied to or removed from the drum to permit of repair or replacement, a further object being to so construct and arrange the shifting-bar and its connections with the dampers as to take them out of the direct draft through the apparatus, so that they will not quickly burn out.

Other objects and advantages of the invention will be understood from the following description.

In the drawings forming a portion of the specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is an elevation of the heating-drum, partly in section, and with the dampers adjusted transversely of the drum. Fig. 2 is a perspective view showing the dampers and their carrying-frame removed from the drum. Fig. 3 is a perspective view showing one of the dampers.

Referring now to the drawings, the present heating-drum includes an exterior shell 5, consisting of an ordinary section of stovepipe, in which are disposed a plurality of dampers adapted for movement to lie across the pipe and having such shape as to form a circuitous passage therethrough when they are in their transverse positions. The dampers are mounted in a frame including side bars 6 and 7, having perforations 8, which aline in pairs transversely of the frame, and in each pair of alining perforations are engaged the ends of spindles 9, having their ends upset or riveted, so as to hold the side bars securely in their spaced relation. The central spindle of the group of spindles is, however, rotatably mounted in perforations in the side bars, and this central spindle is cross-sectionally angular intermediate of its ends and receives the central damper 10. This central damper is of disk shape, with a segment removed from one edge, and diametrically of the damper and parallel with the cord of the removed segment is formed a corrugation 11, the sides of which are at approximately an angle of sixty degrees to each other, so as to fit against two sides of the central spindle. A supplemental plate 12 is riveted to the damper 10 and is corrugated to receive the other two sides of the spindle, against which it fits closely. The spindle is adaptably engaged with the passage formed by these registering corrugations, and after the side bars and their connected mechanism are placed in the shell of the drum this angular spindle is engaged with the passage by passing it through a registering perforation in the side of the pipe, the spindle at one end being provided with a knob 13 to facilitate rotation of it. The spindle is passed entirely through the pipe, so that both ends engage perforations therein, and it thus acts to prevent displacement of the side bars and their dampers from the pipe. Upon each of the other spindles of the frame is mounted pivotally a damper 16, which also is of substantially disk shape to fit transversely in the pipe and having also a segmental section removed from one edge, these openings in the dampers resulting from the removal of the segmental sections lying alternately at opposite sides of the pipe, so that when all of the dampers are disposed transversely of the pipe a circuitous or sinuous passage is the result. When the knob of the central spindle is operated, the central spindle and its damper are also operated, and in order that the several dampers may be operated simultaneously and rotated the same angular distance a shift-rod 17 is provided. This shift-rod consists of a metal strip having laterally-projecting perforated lugs 18, which are spaced apart to correspond to the spacing of the spindles and with the perforations of which lugs are en-

gaged rivets 19, which engage also the upturned integral perforated ears 20 upon the dampers, these ears being all at one side and adjacent to one of the side bars, so as to be out of the direct draft passing through the openings at the edges of the dampers. When the dampers are shifted, there is then a direct passage at each of two diametrically opposite sides of the pipe, which are at points remote from these ears, and thus the intense heat does not reach the ears and these working parts do not quickly burn out.

As above mentioned, the central spindle of the mechanism is cross-sectionally angular, this section in the present instance being triangular, and the opening 25 in the side bar adjacent to the handle of the spindle is likewise triangular, and thus if the spindle be rotated to shift the dampers and the spindle is then drawn outwardly to a slight degree the triangular portion of the spindle will engage the triangular opening in the side bar and the spindle will be held from rotating, it being understood that the end portions of this central spindle, which are normally in engagement with the openings in the bars, are cylindrical. When it is desired to remove the dampers from the pipe, it is only necessary to draw the central spindle outwardly and the frame may be withdrawn.

It will be understood that in practice modifications of the specific construction shown may be made and that any suitable materials and proportions may be used without departing from the spirit of the invention.

What is claimed is—

1. In a heating-drum, the combination with a shell, of a frame disposed therein and including spaced bars and connecting-spindles, said shell and bars having alining perforations and the perforation of one bar being angular, a cross-sectionally-angular spindle having cylindrical ends disposed in the perforations and adapted for movement to engage its angular portion with the angular perforation to hold it against rotation, a knob attached to the last-named spindle for rotating it, a damper in the shell and with which the spindle is slidably engaged and with which it is adapted to rotate, additional dampers mounted upon the remaining spindles for pivotal movement, the dampers having each an opening in its periphery and which openings lie alternately at opposite sides of the shell, and each of the dampers having an ear remote from its opening, and a connecting-rod pivoted to all of the ears.

2. In a heating-drum the combination with a shell of a frame disposed therein and including spaced side bars and connecting-spindles, said shell and bars having alining perforations and the perforation of one bar being angular a cross-sectionally-angular spindle having cylindrical ends disposed in the perforations and adapted for movement to engage its angular portion with the angular perforation to hold it against rotation, a knob attached to the last-named spindle for rotating it, a damper in the shell and with which the angular spindle is slidably engaged and with which it is adapted to rotate, additional dampers mounted upon the remaining spindles for pivotal movement, and a connecting-rod pivoted to all of the dampers.

In testimony whereof I hereunto sign my name, in the presence of two subscribing witnesses, on the 28th day of March, 1901.

JOSEPH HERBERT DIEHL.

Witnesses:
J. A. C. DODGE,
GEO. F. SWEITZER.