No. 674,918. Patented May 28, 1901.

R. G. HEBDEN.

HEATING DRUM OR RADIATOR FOR STOVEPIPES.

(No Model.) (Application filed Oct. 12, 1900.)

Fig. 1.

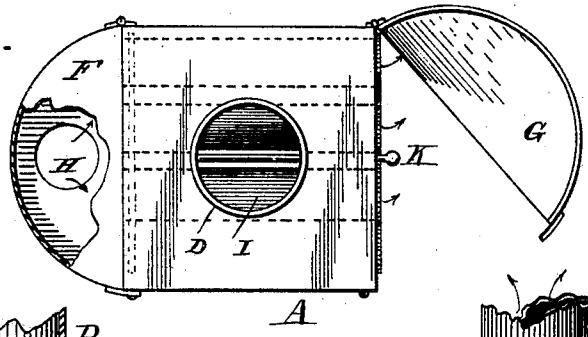


Fig. 2.

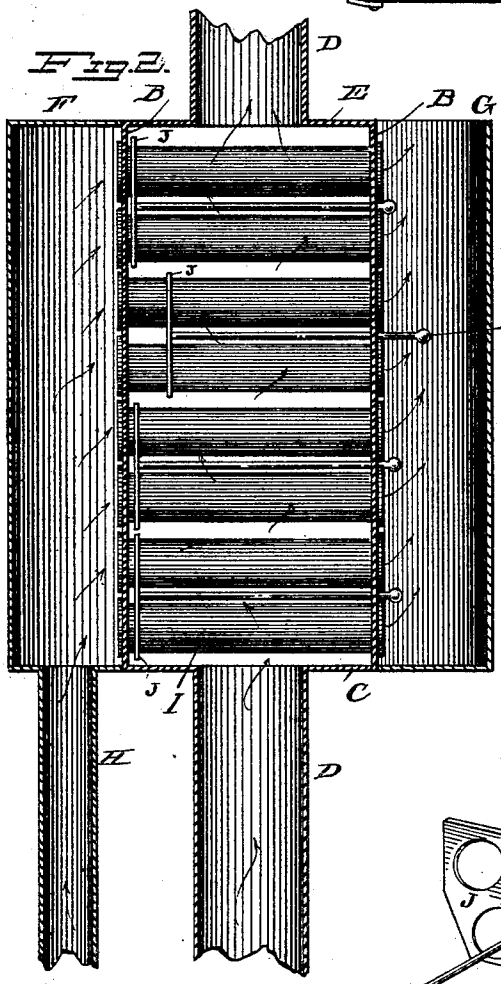


Fig. 3.

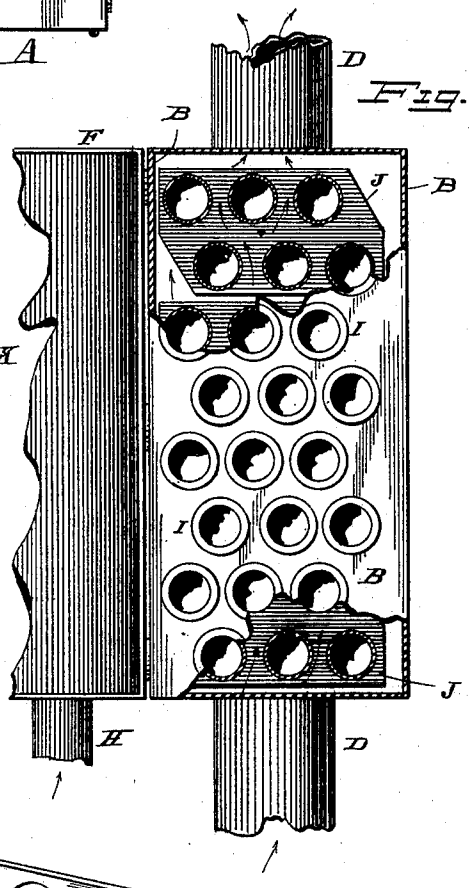
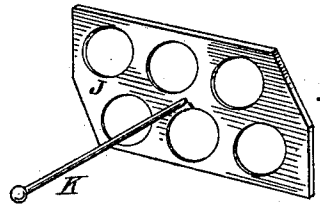


Fig. 4.



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UNITED STATES PATENT OFFICE.

RICHARD G. HEBDEN, OF PEORIA, ILLINOIS.

HEATING-DRUM OR RADIATOR FOR STOVEPIPES.

SPECIFICATION forming part of Letters Patent No. 674,918, dated May 28, 1901.

Application filed October 12, 1900. Serial No. 32,816. (No model.)

To all whom it may concern:

Be it known that I, RICHARD G. HEBDEN, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Heating-Drums or Radiators for Stovepipes; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to heating-drums or radiators for attachment to pipes of stoves, gas-heaters, and other devices of like nature.

The object of this invention is to provide a simple, cheap, and easily-constructed heating-drum for attachment to stovepipes and intended to utilize the heat which usually passes away through the chimney.

Furthermore, the object of the invention is to provide a heater which can be easily kept free from soot and ashes, as will hereinafter appear.

In the accompanying drawings, Figure 1 is a top view of my improved heater, showing a portion thereof swung open on its hinges. Fig. 2 is a side elevation of the heater in part section. Fig. 3 is a front elevation of the heater, showing one of its hinged sections open to show or expose the flues. Fig. 4 is a perspective view of a flue-cleaner.

In the figures, A represents the body of the heater, consisting of a square box formed by the four sides B, as shown. Said box is made considerably longer than its width and thickness, as the drawings indicate, and in constructing it I prefer to use Russia iron, but of course other suitable material may be used. The smoke-pipe D enters the bottom C, while from the top E the said smoke-pipe continues and finally enters the chimney or flue. (Not shown.) On two opposite sides of the body A, I attach a semicircular casing F and G. These may be attached to the body in any desired manner, so that they may be readily detached; but for convenience I prefer to hinge them, as shown in Fig. 1, with a suitable catch or lock, by which they may be held securely in the closed position. These casings are opened at the sides adjacent to the body A, and the portion F has a pipe H at its bottom, which descends to the floor of the room for drawing cold air therefrom to be heated. The top of such portion F is closed, so that no air passes out in that direction. The casing G is closed at the bottom and open at the top, as shown in Fig. 2. Within the body A are placed a series of horizontal flues I, arranged as shown in Fig. 3, in which each flue of one row is beneath the space between two flues above in order to cause the heat as it rises from the smoke-pipe D to impinge the bottom of each flue, so that all of them may be heated alike and absorb all of the heat possible from the products of combustion. The ends of these flues open through the sides B and communicate with the passages formed by the casings F and G, as shown. The products of combustion rise within the pipe D, circulate among the flues I, and reach the outlet to the chimney after thoroughly heating the said flues by their passage upward between them. When heated, the air within the flues is rarefied and passes up and out through the casing G. This naturally sets up a suction within the casing F, which, in consequence, draws air through the pipe H to take the place of the rarefied air passing out. Since all the flues are heated they will create a suction and raise the cold air from the floor, heat it, and deliver it into the room in the manner stated.

I desire to direct attention to the fact that there are various devices of the nature described which employ a drum having a number of horizontal flues therein, through which the products of combustion pass, while the air to be heated is made to pass among or between the pipes. The disadvantages in this construction are that the flues cannot be cleaned, and in consequence the soot will lodge within them and gradually fill them up, and by adhering thereto causes much of the heating-surface to be lost, as it is a well-known fact that pipes when covered with soot cannot absorb heat, and consequently cannot impart it. The utility of the device is thus destroyed. Furthermore, the air passing between the flues strikes the under surfaces, which are the coolest, because the upper surfaces are those that receive it as the heat passes through. However, I am aware that certain devices employ flues through which the air to be heated is adapted to pass in the

same manner as mine; but these flues are not arranged so that they can be free of the soot in an easy manner. In still another device the flues are arranged vertically; but when so arranged the results obtained are not as good as when placed horizontally.

As a means of removing the soot from the flues and keeping them free I provide a perforated plate J, as shown in Fig. 4, through which the flues are introduced at the time the apparatus is being constructed. Each plate serves to clean two tiers of flues, as shown in Figs. 2 and 3; but evidently a larger plate may be used to accommodate more flues, or they may be made smaller, so as to clean but one tier at a time. At the middle of the plate is a rod K, which passes through one of the walls of the box A and carries a suitable knob or handle, by which the plates may be drawn from end to end of the flues, thereby removing the adhering portions.

In operation the top rod is drawn entirely out and then pushed back to its original position. This removes the soot from the first two tiers of flues. The next plate below is then shifted back and forth in like manner, and so on until all the flues are cleaned. The soot removed falls down through the smoke-pipe D to the stove, from which it is easily removed. The flues are thus easily kept clean, so that all the heat may be utilized for heating them, and thereby obtain the best results. In using the scrapers thus described it is only necessary to swing the chamber G on its hinge to expose the handles of the rods, as shown in Fig. 1.

The advantages of my device are now evident. It is simple and can be made at very little cost. The results are far better than any known to me, and especially by reason of the flue-cleaners combined therewith.

It is true that the arrangements referred to hereinbefore, which contains the vertical flues, is provided with scrapers for removing the soot; but since the said flues are perpendicular very little use is found for the said scrapers, since but a small quantity of the soot and ashes will adhere to them. In using the horizontal flues, from which the greatest advantage is to be had, the scrapers are necessary. As arranged, the rods for operating the scrapers in my device are covered from view and no unsightly appearance is presented. The advantages of being able to swing the casings F and G to expose the rod K and to simplify the construction, as well as to be able to reach the interior of the device, is evident.

I claim—

In a heating-drum for stovepipes, the combination of the drum A, a series of horizontal pipes opening entirely through the said drum, a series of scrapers J surrounding the flues, the handle for operating them extending through the wall of the drum containing the heads of the flues, a casing hinged to the drum at each side thereof and adapted to inclose the ends of the flues whereby communication is set upon between the casings through the flues, one of the casings inclosing and concealing the handles of the said scrapers, said casing being open at its top for egress of air, an opening in the bottom of the opposite casing, the smoke-pipe D opening into the said drum A at the bottom beneath the flues, a continuing smoke-pipe opening out of the top of the said drum for carrying off the products of combustion, as set forth.

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

RICHARD G. HEBDEN.

Witnesses:

FRANK T. MILLER,

J. H. BLUSCH.