

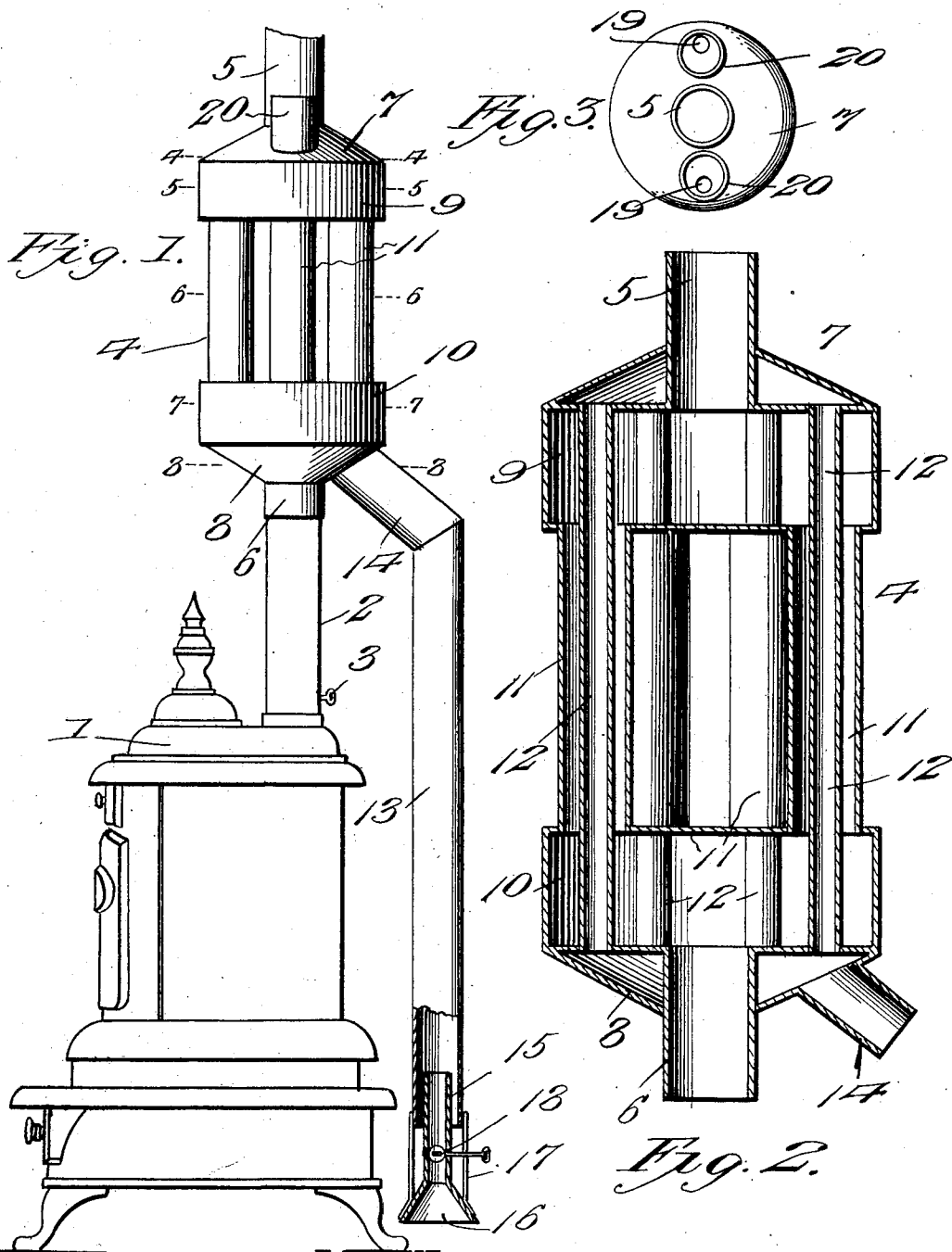
No. 762,203.

PATENTED JUNE 7, 1904.

C. J. SEGERSTROM.
HEATING DRUM.

APPLICATION FILED JAN. 16, 1904.

NO MODEL.



WITNESSES:

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HEATING-DRUM.

SPECIFICATION forming part of Letters Patent No. 762,203, dated June 7, 1904.

Application filed January 16, 1904. Serial No. 189,316. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. SEGERSTROM, a citizen of the United States, residing at Argyle, in the county of Marshall and State of Minnesota, have invented new and useful Improvements in Heating-Drums, of which the following is a specification.

This invention relates to a heating-drum for attachment to the smoke-pipe or smoke-flue means of a stove; and the primary object of the same is to provide a drum having an organization of elements whereby the products of combustion passing upwardly through the smoke-pipe will be caused to circulate through the drum in such manner that the caloric thereof may be practically utilized to heat the lower strata of air within a room or compartment, and thereby more uniformly preserve the temperature of the room without increasing the supply of fuel to the stove or furnace.

The invention consists in the construction and arrangement of the several parts, which will be more fully hereinafter set forth.

In the drawings, Figure 1 is a side elevation of a stove, showing a portion of the smoke-pipe or smoke-escape means with the improved drum operatively interposed therein, the cold-air feeder of the drum depending into the exterior of the stove having its lower end in section. Fig. 2 is an enlarged transverse vertical section of the drum. Fig. 3 is a top plan view of the drum.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates a stove or furnace of any preferred construction having a smoke-pipe or outlet-flue 2, provided with the usual damper 3. Interposed in the pipe 2 is a drum 4, having upper and lower collars 5 and 6, which are continued centrally into the opposite ends of the drum and project beyond the latter sufficiently for the reception of the sections of the pipe 2. The drum 4 is preferably disposed at an elevation above the stove or furnace and is formed with upper and lower conical chambers 7 and 8, into which the collars 5 and 6, respectively, extend, the said chambers being fully closed except at the

points which will be hereinafter specified. The chambers 7 and 8 are secured, respectively, to the upper and lower ends of cylindrical smoke-chambers 9 and 10, the said smoke-chambers and conical chambers forming the opposite heads of the drum. The inner opposing ends of the chambers 9 and 10 are connected by a series of smoke-conveying flues 11, and extending centrally through the said flues and communicating at opposite ends with the conical chambers 7 and 8 are air-flues 12, which are of materially less diameter than the flues 11.

A cold-air conductor or conduit 13 connects with the lower conical chamber 8 through the medium of an elbow 14, said elbow being disposed at an angle to the chamber with which it communicates and to one side of the center of said chamber. The lower end of the conductor or conduit 13 is open, and projecting thereinto is a reduced conveying-pipe 15, having a bell-mouth 16 at its lower end, to which hangers 17 are secured and also attached to the lower end of the conductor or conduit 13. The pipe 15, with its bell-mouth, serves to cause the lowermost strata of cold air to flow upwardly into the conduit 13 and provides an extension for the latter, which may be used as an air-conveying means when found necessary. This extension of the conduit 13 is supplied with a damper 18, which may be closed at any time desired, and thereby cause all the cold air to pass into the said conduit from the lower end of the latter. The advantage of this construction is that at times there may be a warm strata of air close to the floor and a colder strata at a slight elevation above the floor or base on which the furnace rests. By the use of the conduit having an extension all the cold air at an elevation above the floor may be heated by causing said air to be conveyed to the drum. After the cold air enters the lower chamber 8 it passes upwardly through the air-flues 12 into the upper chamber 7, the flues 12 and the chambers 9 and 10 becoming thoroughly heated by the smoke and products of combustion passing into and upwardly therethrough. The flues 12 will be heated, and the air passing therethrough will also be heated and be given the desired

temperature before delivery into the upper chamber 7, and to practically arrive at this result the flues 12 are made as long as possible. The heated air entering the upper conical chamber 7 is fed out into the compartment or room in which the drum is located through openings 19 in the top of said conical chamber at opposite sides of the center, the said openings 19 being surrounded by up-
 10 standing collars 20 of materially greater diameter than the openings. The collars 20 are secured in eccentric relation to the openings 19, the said openings being adjacent to the outer portions of the collars, so as to cause the air
 15 escaping from the chamber 7 to be thrown against the portions of the collars adjacent to said openings and deflected inwardly to spread the heated air and cause it to flow into the upper part of a room or compartment with less
 20 force and noiselessly. It is obvious that considerable upward draft or suction will be created in the drum, and to break up the blowing effect that might ensue the openings 19 and collars 20 are arranged as set forth. Instead of
 25 having the drum arranged over the stove or furnace, as shown, it may be interposed in a smoke-pipe length at a distance from the stove and be located in a separate compartment. A material advantage, however, in the heating
 30 effect of the drum is derived by positioning it over the stove, as shown. The upper air within a room or compartment is also permitted to circulate in and around the flues 11 between
 35 the heads of the drum and will thereby become rapidly heated. This operation will also result in a material economy in the use of fuel. The particular arrangement of the flues is clearly illustrated in the several horizontal
 40 sections, and said flues are used to demonstrate principally that the air-flues 12 communicate solely with the conical chambers 7 and 8.

The smoke passing into the lower cylindrical chamber 10 is conveyed through the flues
 45 11 into the upper chamber 9 and from the latter passes off through the collar 12 into the

smoke pipe or flue above the drum. As shown by Fig. 2, the collars 5 and 6, respectively, connect with the upper and lower ends of the chambers 9 and 10, and the heat of the smoke
 50 and products of combustion is utilized at every point where possible to increase the temperature of the air passing into the drum.

Changes in the proportions, dimensions, and minor details may be resorted to without
 55 in the least departing from the spirit of the invention.

Having thus fully described the invention, what is claimed as new is—

1. A drum for the purpose set forth, having
 60 upper and lower heads comprising cylindrical chambers with conical chambered ends, the conical chambered ends being incommunicative with respect to the cylindrical chambers, flues connecting the inner opposing ends of
 65 the cylindrical chambers, smaller flues extending centrally through the first-named flues and the said cylindrical chambers and communicating at opposite ends with the conical
 70 chambers, the upper conical chamber having outlet means at opposite sides of the center, collars extending centrally through the conical chambers and communicating with the cylindrical chambers, and a conduit attached to
 75 the lower conical chamber and having a lower open bottom and extension provided with a damper.

2. The combination with a heating-drum, of a cold-air conduit leading thereto having a
 80 lower open bottom, and an extension depending from the lower end of the conduit and provided with a damper, a part of the extension projecting into the lower end of the conduit and of materially less diameter than the
 85 latter.

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

CHARLES J. SEGERSTROM.

Witnesses:

M. H. NOVOTNY,
 P. H. LÉPINE.