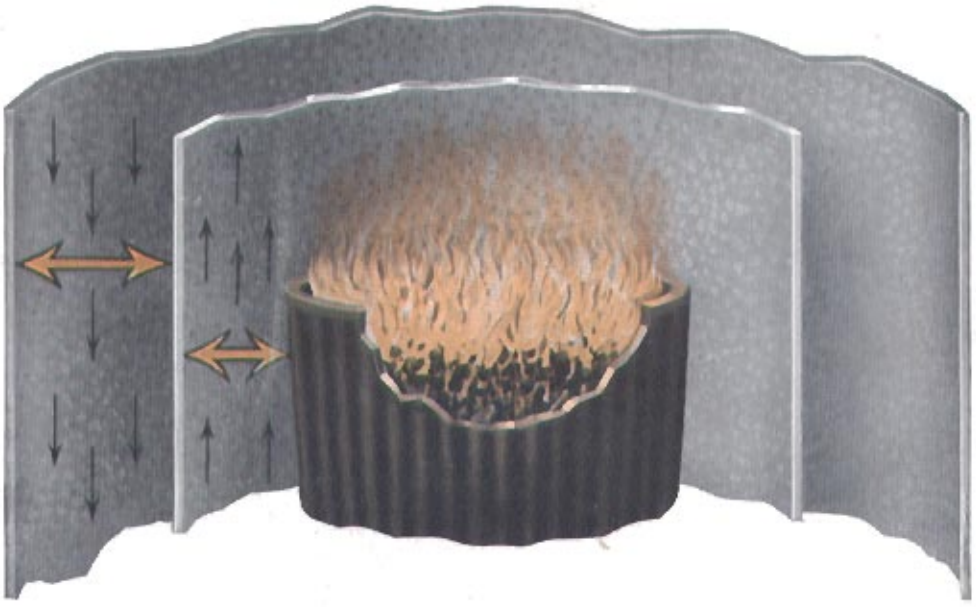
Oct. 1924

Heat at low cost



Richardson "Perfect"

the Pipeless Heater with extra-size air chambers

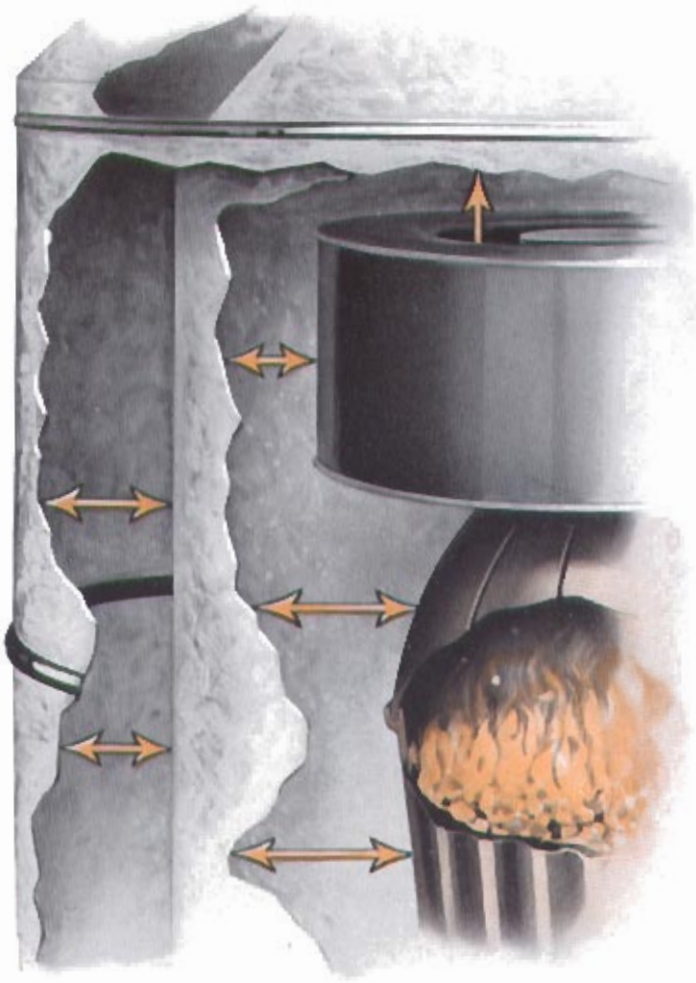
Manufactured by
Richardson & Boynton Co.

The Richardson "Perfect"

the Pipeless Heater with extra-size Air Chambers

Numbers 117, 119, 122, 124, and 126

See page 7 for data and dimensions



More Air Warmed and Less Coal Burned

THE air chambers, or passages, of the **"Perfect"** Pipeless Heater are about twice as great in size as those of other pipeless heaters. Let us explain how this enables the **"Perfect"** to give much more heat than other pipeless heaters, and with much less coal.

The success of a pipeless heater depends entirely upon the easy and continuous circulation of cold air down from the house, through the heater, and of the free circulation of this air, *warmed*, upward from the heater and through the house.

The natural movement of cold air is *downward* and the natural movement of warm air is *upward*. This is the general principle which makes the pipeless heater possible.

A heater is nothing more nor less than a machine for making warm air

Note the great amount of space for air circulation

It is this liberality of air space that makes the Richardson **"Perfect"** *the greatest Pipeless Heater*

Numbers 117, 119, 122, 124, and 126

See page 7 for data and dimensions

out of cold air. In other words, it is an air-consuming, air-breathing machine. It lives and operates on air.

The ideal pipeless heater is one in which *all* of the cold air in the house passes freely and naturally through the heater, *without stopping*, and becomes quickly warmed and passes back up through the house as warm air.

Imagine all of the air in the house as moving in a circle—passing freely through a heating machine at one point on the circle—passing through this machine *without stopping*—and you have a correct picture of the operation of the **"Perfect"** Pipeless Heater.

Note that we say "*without stopping*." In the *average* pipeless heater narrow air passages between the casings and within the inner casing do not allow of free circulation of air. The *breathing* of the heater is not as free and easy as it should be.

In the **"Perfect,"** there is a big, ample chamber in which the cold air can come *down*, and another big, ample chamber in which the warm air can go *up*.

The cold air comes down through the big outside chamber, and the warm air goes up through the big inner chamber. It does not halt for an instant. It is not *burned* and made unhealthful for human breathing as in many pipeless heaters.

Compare the **"Perfect"** with other pipeless heaters and see how much greater the distance is between the two big casings or walls in the **"Perfect,"** and also between the inner of these walls and the fire box.

The outer chamber is always comparatively cold. With the **"Perfect,"** you do not spend money for coal to *warm the cellar*. The heat goes up, not *out*. A warm cellar means a cold upstairs. You can store your vegetables in the cellar if you install the **"Perfect"** Pipeless Heater.

The study of air circulation and heat movement is a science all in itself, and Richardson engineers have mastered it, and have designed a pipeless heater which is scientific.

There are thousands of **"Perfect"** Pipeless Heaters in use, cozily warming homes, churches, halls, stores, everywhere, and saving coal and money for their owners. Read what some of these owners have said in letters to us, on the back of this folder.

The pipeless heater is the lowest-priced heating system that you can possibly purchase, and the **"Perfect"** is the most economically operated of them all. *It warms more air and burns less coal*, chiefly because of its over-size air chambers. You may burn hard coal, soft coal, wood, or any other fuel. Be sure your pipeless heater is a **"Perfect."**

Years and Years of Warmth

YOUR grandmother toasted her toes in front of a cosy Richardson & Boynton Co. stove. And possibly your great-grandmother did, too, for Richardson & Boynton Co. have been making heating apparatus since 1837—almost four generations!

Today, Richardson & Boynton Co. products are used in every country—they warm the world. Wherever sure heating comfort is wanted, in bride's cottage or magnificent mansion, there you are very apt to find a Richardson & Boynton Co. stove or range or heating system of some sort.

When this company recommends a Pipeless Heater for your home or other building, they can do so without prejudice, because they also manufacture and sell every other known type of heating apparatus.

They are heating experts and know exactly what kind of heating apparatus a house or other building should have. They, or their representatives, can tell you frankly the merits of each system.

If you are thinking of buying a Pipeless Heater, buy it of a company which knows all sides of the heating question, and of a company which has kept faith with the warmth-wanting world for the greater part of a century.

That a company has grown gradually and steadily for so many years, and held the friendship of so many generations means a great deal to a person who is about to install a heating system of some sort.

For once a heating system is in, it is *in*.

It mustn't be a "fairly good" heating system, or an "almost all right" heating system. It must be good in every sense. You want to feel the same confidence in the heating equipment that you buy that you feel in the bank in which you put your money. And when you choose a bank in which to deposit your money, you usually choose an old, reputable, reliable bank that has years of fine reputation behind it. We

believe this is precisely the standing that Richardson & Boynton Co. enjoy when it comes to heating and cooking apparatus.

When you put in a Richardson & Boynton Co. Pipeless Heater, you can know that you have chosen the best. You can rest easy that, when the coldest winds come, you will be well fortified against them.

After all, most any manufacturer can make claims for his product, and about the best way for an ordinary person to decide what he shall buy is for him to buy from the manufacturer who has lasted a great many years, and grown, and made an enduring reputation for honesty and skill.

Here are the present products of Richardson & Boynton Co.:

"Perfect"	"Richardson"	"Perfect"
Warm Air Heaters	Boilers *for* Steam, Hot Water *and* Vapor Vacuum Pressure Heating	Ranges *for* Coal, Gas, Coal and Gas; Plain Black or Lustrous Gray Enamel Finish
Pipeless Heaters	Garage Heaters	
	Laundry *and* Tank Heaters	

In short, "everything that heats and cooks," for the modern building and home.

Nothing adds to the value of a home or other building like first-class heating and cooking equipment. Good heat is an investment. And, since they are all coal savers, Richardson & Boynton Co. heaters of all types are real, actual money savers.

When you think of heat, think, as generations before you have thought, of *Richardson & Boynton Co.*

Which Size for You?

Description	117	119	122	124	126
Diameter of Fire Pot, inches	17	19	22	24	26
Grate Area, inches	113.10	201.06	283.53	346.36	415.48
Size of Feed Door Opening with Pipe Holes, inches	10½ x 11	9 x 10¾	10 x 12	10 x 12	10 x 12
Size of Feed Door Opening less Pipe Holes, inches	11 x 13	9 x 13¾	10 x 14½	10 x 14½	10 x 14½
Size of Smoke Pipe, inches	7	8	8	8	8
Diameter of Inner Casing, inches	32	36	40	44	50
Diameter of Outer Casing, inches	43	47	53	58	63
Size of Register, inches	22 x 24	24 x 27	30 x 30	30 x 36	36 x 36
Size Warm-air Pipe, inches	16	18	22	24	28
Shipping Weight, Steel Radiator, pounds	887	1015	1180	1300	1500
Shipping Weight, Cast Radiator, pounds		1040	1220	1375	1600
Capacities Cubic Feet	7–9000	9–13,000	13–18,000	18–28,000	28–40,000
Height from Floor to Top of Bonnet, inches	66	68	70	71	72
Height from Floor to Top of Pipe, inches	90	90	90	90	90

Minimum height of cellar required, 6½ feet

If the building is spread out (that is, if the first floor has wing extensions, or if there are rooms on the second floor not directly over those on the first floor), use a heater "one size larger" for your building. That is, if your building has a total cubical content of 13,750 feet, and is a spread-out building, you should have a 25,000-foot heater—which is one size larger than you would need for the same building if it were compact.

IT IS EASY TO DECIDE SIZE OF HEATER YOU NEED

"Perfect" Pipeless Heaters are made in five sizes. Multiply the length by the width by the height of each room and each hall, and add the results. This will give you the total cubical content of the building. Refer to the table and choose the heater having the capacity nearest above the total cubical content of your building. That is, if your building has a cubical content of 13,750 feet, you should have the No. 122 heater.

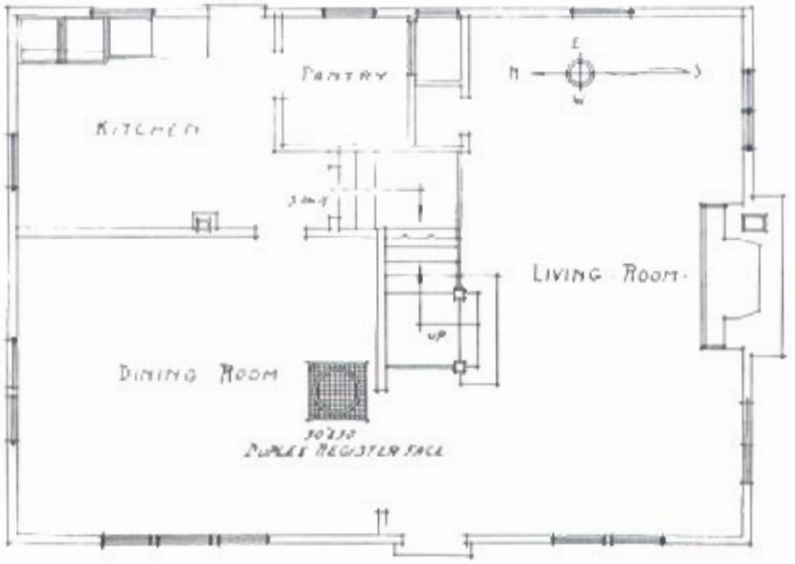
It will HEAT THIS SMALL HOUSE *of from* 4 to 7 rooms

—or this LARGE HOUSE *of from* 8 to 15 rooms

It Has Been Proved Practical and Economica

PEOPLE marvel at the comfortable warmth which the **"Perfect"** Pipeless Heater will send to every room of even very large houses. To those who have not seen a **"Perfect"** in operation, its accomplishments seem almost impossible.

The **"Perfect,"** with its extra-size air chambers, simply takes advantage of the natural laws of air and heat circulation which hold good in every building. While it is true that there are certain buildings so



FIRST FLOOR PLAN

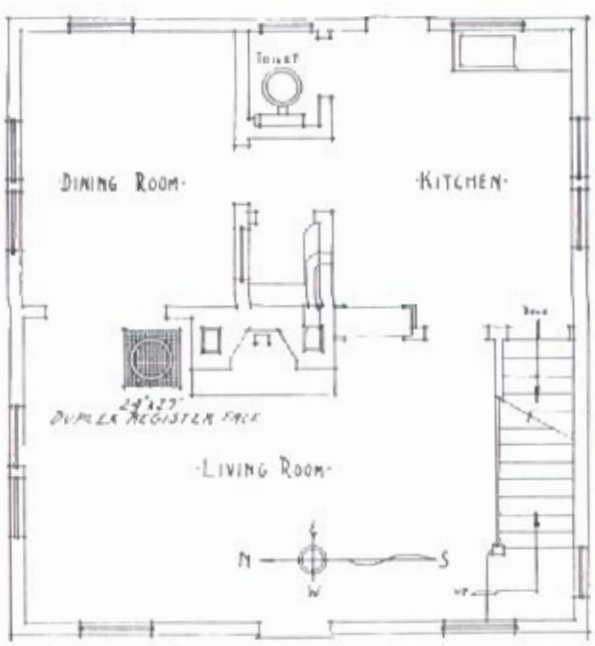
—*or this* CHURCH

—*or this* STORE

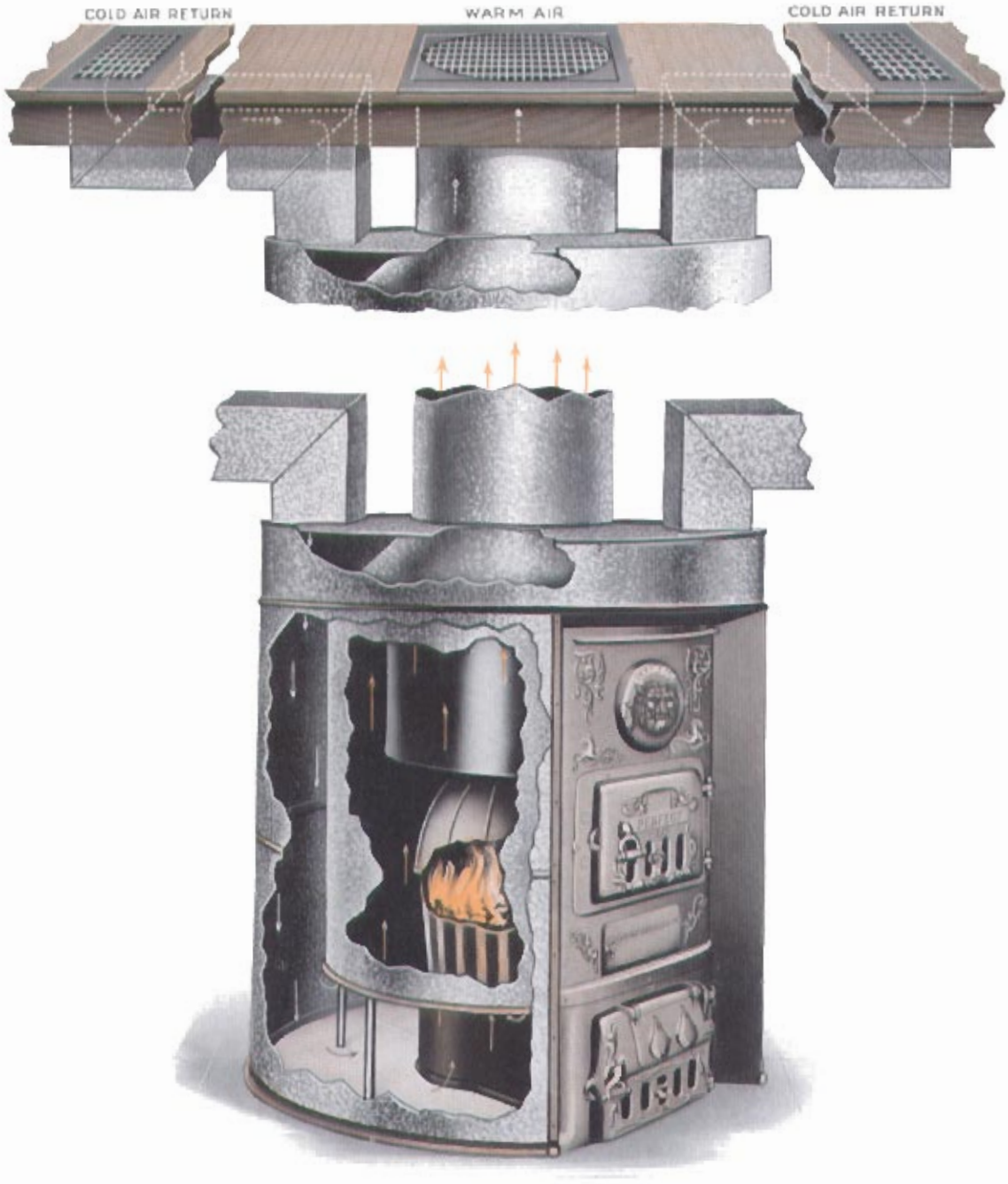
for Residences and Other Buildings of all Sizes

built as to prevent the satisfactory use of pipeless heaters, they are few in number, and our dealer will tell you quickly and honestly if yours is one. Or, if you will send a rough diagram of your building to us, giving size of rooms, we will advise you as to whether or not the **"Perfect"** Pipeless Heater will do for it, and tell you what size to install. We could not, of course, afford to advise these heaters for buildings in which they would not give satisfaction.

THE warm-air grating should be properly located. Two typical correct warm-air grating locations are shown in these plans. Consult with your dealer or correspond with us on proper location of heater when ordering. Success depends on free circulation of air.



FIRST FLOOR PLAN



"Perfect" Indoor Re-Circulating Heater

The same generous air spaces are provided in this model as in the **"Perfect"** *100 Series Pipeless Heater*

Numbers 319, 322, 324, and 326

See page 11 for data and dimensions

The "Perfect" Indoor Re-Circulating System

With Direct Heat Pipe and Two Return Cold-Air Grilles

THIS is a new type of the Pipeless Heater, that will appeal to many. The warm-air grating is placed in the proper location for the best distribution of heat throughout the house. The cold-air grilles may be placed in different rooms, drawing the cold air by connecting pipes to the top of the Heater Casing. In this manner warm air is drawn to distant or isolated rooms, which would not otherwise be well heated.

It insures a perfect circulation of warm air up through the house and cold air down to the heater.

The wooden cold-air grilles may be stained the color of the floor, to be inconspicuous.

The construction of the heater itself is exactly the same as the Pipeless Heater as shown on preceding pages.

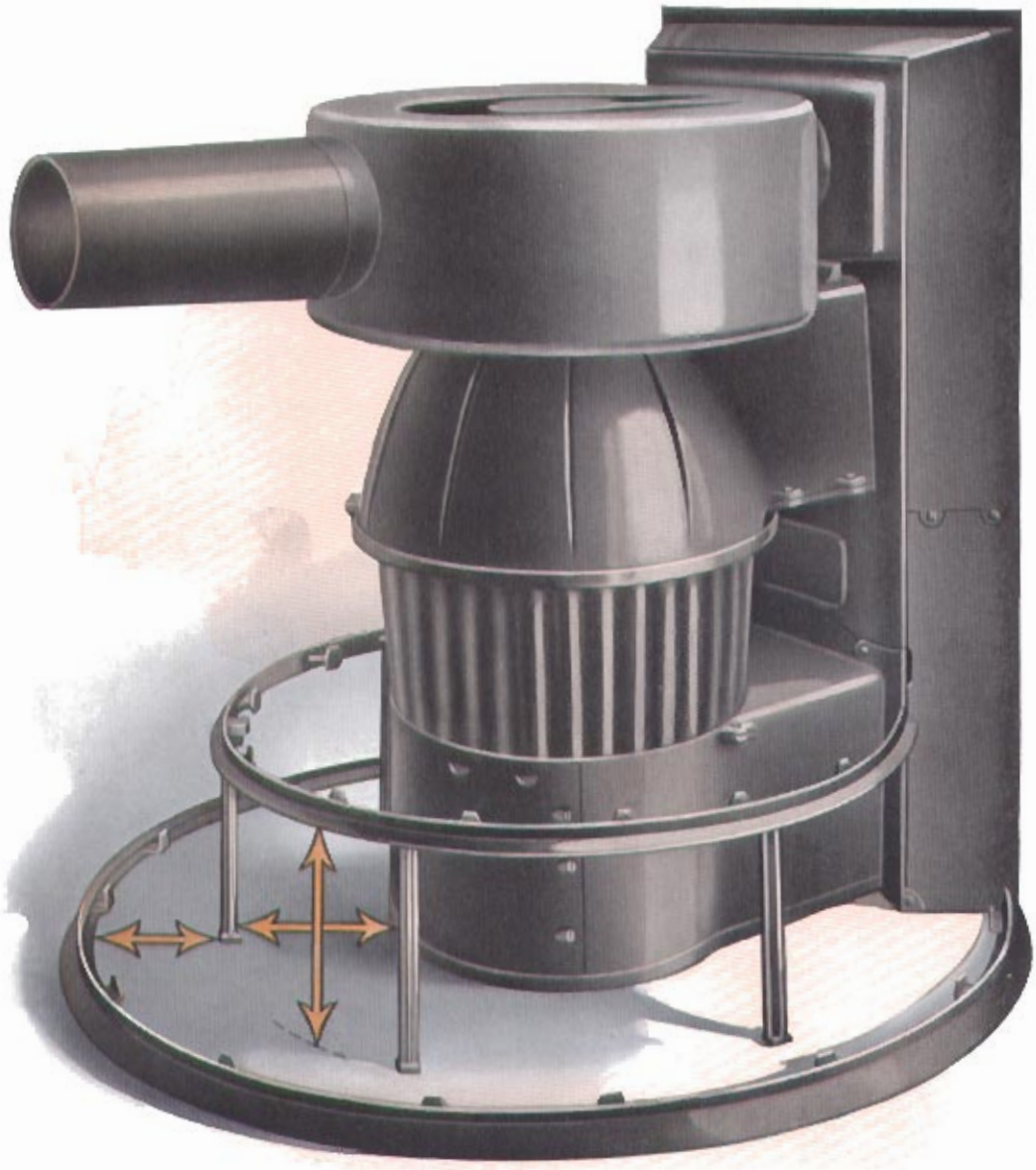
Description	319	322	324	326
Diameter of Fire Pot, inches	19	22	24	26
Grate Area, inches	201.06	283.53	346.36	415.48
Size of Feed Door Opening with Pipe Holes, inches	9 x 10¾	10 x 12	10 x 12	10 x 12
Size of Feed Door Opening less Pipe Holes, inches	9 x 13¼	10 x 14⅞	10 x 14½	10 x 14½
Size of Smoke Pipe, inches	8	8	8	8
Diameter of Inner Casing, inches	36	40	44	50
Diameter of Outer Casing, inches	47	53	58	63
Size of Warm-air Register, inches	21 x 21	25 x 25	27 x 27	31 x 31
Size of Warm-air Pipe, inches	18	22	24	28
Shipping Weight, Steel Radiator, pounds	1040	1250	1375	1590
Shipping Weight, Cast Radiator, pounds	1070	1300	1450	1700
Capacities Cubic Feet	9–13,000	13–18,000	18–28,000	28–40,000
Height from Floor to Top of Pipe, inches	90	90	90	90
Height from Floor to Top of Bonnet, inches	63½	64½	65¾	66
Size of Wood Cold-air Grilles, each	10 x 24	12 x 30	14 x 30	20 x 30
Size of Cold-air Opening in Bonnet, each	10 x 14	10 x 22	10 x 24	12 x 30

Minimum height of cellar required, 6½ feet

If the building is spread out (that is, if the first floor has wing extensions, or if there are rooms on the second floor not directly over those on the first floor), use a heater "one size larger" for your building. That is, if your building has a total cubical content of 13,750 feet, and is a spread-out building, you should have a 25,000-foot heater—which is one size larger than you would need for the same building if it were compact.

IT IS EASY TO DECIDE SIZE OF HEATER YOU NEED

"**Perfect**" Pipeless Heaters are made in five sizes. Multiply the length by the width by the height of each room and each hall, and add the results. This will give you the total cubical content of the building. Refer to the table and choose the heater having the capacity nearest above the total cubical content of your building. That is, if your building has a cubical content of 13,750 feet, you should have the No. 322 heater.

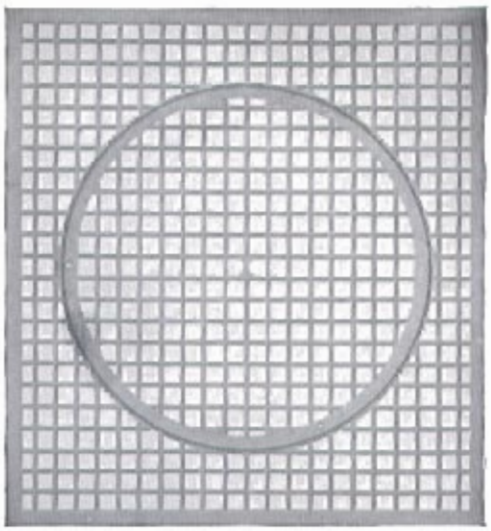


SHOWING HEATER ONLY. In another way this illustrates the great *air room* of the **"Perfect"** Pipeless Heater. The walls or casings of the heater set on the two large circular rings. The arrows indicate the great width of the air chambers thus formed. The cold air comes down through the outer chamber, and turns up into the inside chamber next to the heater. Note how great the *air space* is in proportion to the size of the heater. Because it has *more air*, the **"Perfect"** burns less coal. And air is cheaper than coal!

This One Duplex Grating Heats the Entire House

DO not confuse this with an ordinary warm-air duplex grating such as you have seen in buildings heated by a many-pipe heater. The pipeless heater operates on a principle quite different from that of the many-pipe heater.

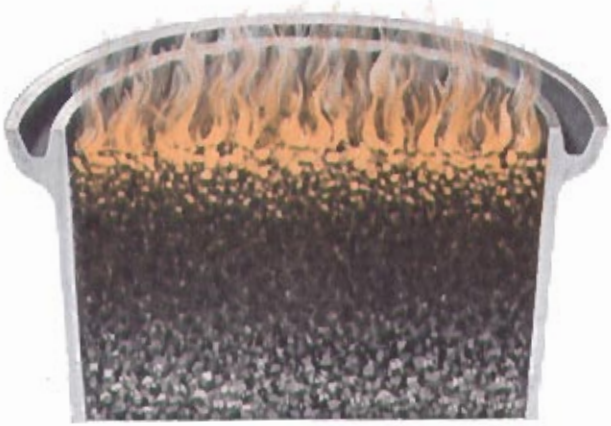
The pipeless heater creates a continuous "circle of warmth," the warmer air ascending and the colder air descending. In a short time, of course, all of the air in the house is thoroughly warmed, but at the start all of the cold air travels, by the force of natural gravity, down into the heater to become warmed.



This duplex grating, therefore, is built both to take down the cool air and to send up the warm air. It is a two-purpose duplex grating. The cooler air descends down the outer section of the duplex grating, and the warm air ascends through the cylindrical center. This one duplex grating performs this double function efficiently for an entire house or other building.

It is strong and attractive in appearance. It bespeaks the simplicity of the "Perfect" pipeless heating system.

THERE are two of these wood cold-air grilles, which together have equal capacity with the round warm-air pipe. They can be stained same as wood floor, and are not at all conspicuous. Cold air only passes down through these grilles by return pipes to top of heater.



The Straight-side "**Perfect**" Fire Box

The Ordinary Flare Fire Box

The sides or walls have a decided slope on which dead ashes and clinkers tend to clog and rest. This interferes with the draft through the fire box, and really decreases the size of the fire chamber.

The Exclusive "Perfect" Fire Box—Another Coal Saver

COMPARE the two illustrations above. The sides of the "**Perfect**" fire box are straight and slanted only slightly. The fire box of ordinary heaters either slants a great deal or flares out.

The "**Perfect**" fire box gives out more heat and uses less coal. The reason is simple. Dead ashes and clinkers cannot catch and stick to the sides of the "**Perfect**" fire box, as they do in slanting, flared or square fire boxes. Therefore, in the "**Perfect**" there is no encircling crust or insulation between the fire and the walls of the fire box. The walls are evenly heated; whereas, in ordinary fire boxes the ashes keep much of the heat from the walls, and cause a great deal of the heat to fly uselessly up the chimney. If heat cannot get *out*, it goes *up*. A slanting or flared pot will not last so long as a "**Perfect**," because the uneven heat to which it is subjected—red hot at the bottom and cold near the top—causes uneven expansion, which, in turn, causes cracking.

A straight-side fire pot gives much larger grate area, and all engineers figure grate area in determining the heating capacity of the heater, while diameter at the top is given for catalogue size. For this reason, the "**Perfect**" straight-side fire pot has a larger grate area than the other fire pots of the same listed diameter.

"Perfect" Revolving, Ventilated Clinker-cutting Grates

"PERFECT" grates are placed in all "**Perfect**" heaters and are therefore an important part of this pipeless heater. They are the most easily operated, most effective, most durable clinker-clearing grates ever made. They completely clear the fire from ashes and clinkers with very little effort.

Each of the four grates is a revolving triangle. Each edge of the triangle is cast solid, so that each grate has three strong backbones. The end of each grate, whether shaker or non-shaker, is reinforced by a steel ring, so that it is practically unbreakable.

The bars contain over 65 per cent of air space, which insures a fine draft and complete coal consumption. They shake in pairs, to agitate only the dead part of the fire. One-quarter turn cleans the fire of ashes.

The bars have cutting edges which easily crunch the toughest clinkers.

A HEALTHFUL moisture is introduced into the warmth of the "**Perfect**" Pipeless Heater by the use of this special vapor pan, an integral part of the heater. You simply fill it with water now and then. It is so placed that it can be easily filled or cleaned without opening any doors. Its position does not interfere with the passage of air around the fire pot.

Satisfaction!

Heated Ten Large Rooms—Exposed to Winter Winds

Mr. Foulous installed a Richardson Pipeless Heater in my farm house of ten large rooms, not including a large kitchen, 13 x 20 feet, and let me say now that I couldn't ask for a better heating proposition.

I burn coal nights and wood chunks days, and this heater is very economical on fuel considering the size of house, and also that the house is located on a knoll where the winds of winter sweep round at sixty miles an hour, and pile up snow so I can hardly get across the street to my barn.

CHESTER C. BROWN, *Washington Depot, Conn.*

Eleven Rooms—All Night and Nearly All Day on One Coaling

While the heater was only medium size, it heated a house of eleven rooms and bath to perfection, and some of the very coldest days this past winter, which were indeed cold, the rooms on the second floor were very comfortable, and one could sit in them with comfort.

I also wish to say that the Richardson heater does not require near the amount of coal that an ordinary coal stove does. I have found that if the heater was properly attended to at night, before retiring, it would run nearly all the following day, without being coaled again, until that night.

LYDIA A. AXFORD, *Little Falls, New Jersey*

Heated Sixteen Rooms and Large Hall

We used the Richardson Pipeless Heater in our hotel the past winter and found it very satisfactory. It is the best fuel saver I know of.

During seven months, we used eleven tons of furnace coal, and we were perfectly comfortable and never had a water pipe freeze-up the entire winter. Our Inn is a large building, one of the oldest residences in Red Bank, situated on the North Shrewsbury River, containing thirteen bedrooms, three dining-rooms, kitchen, pantries, cellar, and large hall running through the main floor of the house.

ESTELLE J. THOMAS, *Thomas' Inn, Red Bank, N. J.*

Seven Times Better

It burns less fuel to heat seven rooms than a stove would to heat one.

W. T. DOUGLASS, *Saco, Me.*

40 Degrees Below Outside, 70 Degrees Inside

For the first time in Vermont we have been comfortable through a long, hard winter. We installed a Richardson Pipeless Heater in our ten-room house, and we cannot say enough in praise of the comfort it has given. It is less work than a coal stove, and gives no dust or gas in the house.

Thermometer has registered to 40 degrees below outside, and our house kept 70 degrees above. We could easily have made it 90 degrees.

MARSH-ALLEN COMPANY, *Barre, Vermont*

Tenant and Buyers of His Three Houses Like the Richardson

The three Pipeless Heaters which I installed last fall, I have not had any complaint from. One is in a house I rent, and the tenant said he never lived in as warm a house before. He is very much satisfied with it. The other two I put in cottages that I sold, with four rooms downstairs, and three rooms and bath upstairs. They both speak very well of them, and are well satisfied; and if they were not they would not be afraid to say so.

F. A. STEARNS, *1387 Main Street, Worcester, Mass.*

Eminently Satisfactory—and Safe—in a Church

It may be of interest to you to know the success we are having with the heater installed in the United Baptist Church. It is giving eminent satisfaction from the standpoint of heating the building and from the standpoint of security against fire. This has been one of the worst winters we have had. The heater has stood the test well.

Then, in the matter of fire risk: with the cold-air jacket around the whole plant, there seems to be no fire risk whatsoever from the pipe into the building or from the heater in the cellar. This is no mean consideration in the matter of a church furnace.

H. F. HUSE, *Pastor, Dover, Me.*

This is the Foundry of Richardson & Boynton Co., at Dover, N. J., in which "**Perfect**" Pipeless Heaters are made. This company had its beginning over eighty years ago, and has always had a reputation for making only the highest grade furnaces, boilers, heaters and ranges

Bartlett Orr Press, New York