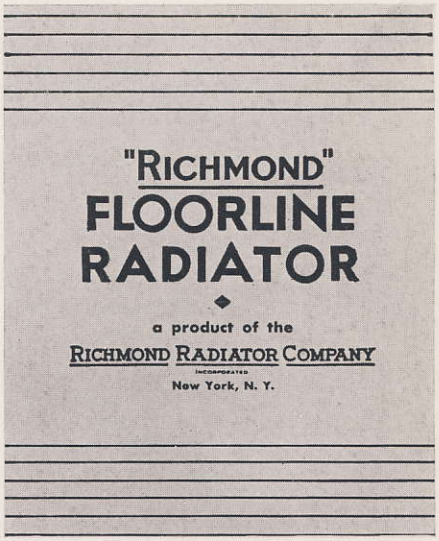
"RICHMOND"

FLOORLINE RADIATOR



Executive Offices

1480 BROADWAY, NEW YORK, N. Y.

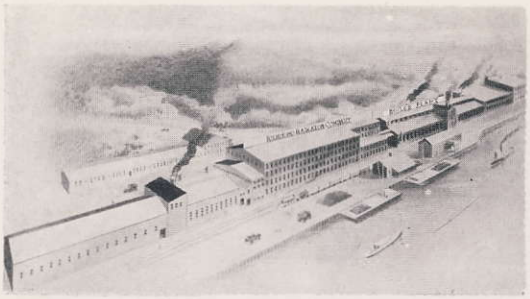
SALES OFFICES

Chicago . . . 1010 Wrigley Building South
Philadelphia . . . 2241 N. American Street
Gas Division . 2220 Chestnut Street
Boston . . . . 460 Park Square Building
Cleveland . Cedar Ave. and Ashland Road

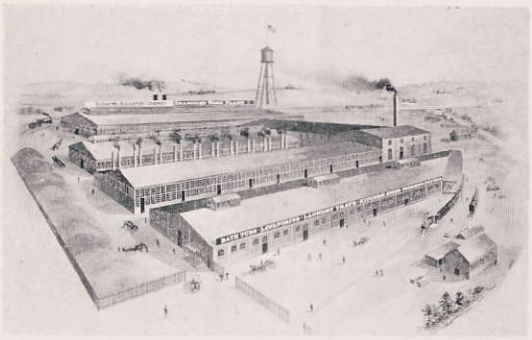
WAREHOUSES

Chicago . . . . 1531 South Peoria Street
Philadelphia . . . 2241 N. American Street
Boston . . . . . North Cambridge
Cleveland . Cedar Ave. and Ashland Road
Newark . . . . Newark Seaboard Terminal
Long Island City . . . . 50-02 27th Street

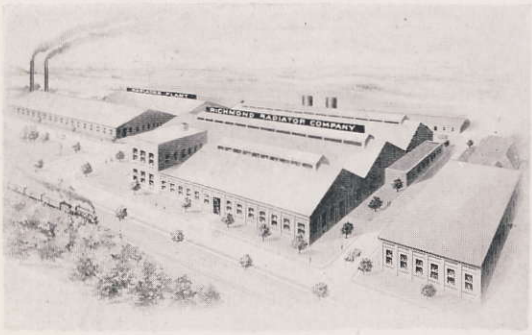
A. I. A. CLASSIFICATION 30 C 4



BOILER PLANT, NORWICH, CONN.



ENAMELED WARE PLANT, UNIONTOWN, PA.



RADIATOR PLANT, UNIONTOWN, PA.

"RICHMOND"

An Organization With 40 Years' Experience in the Heating Industry

For nearly half a century this Company has designed and built fine heating equipment. Richmond Boilers for steam, hot water, and vapor systems are recognized as unexcelled by heating engineers. The Richmond Heatomat Gas Boiler, Richmond Cast Iron Radiators, and Richmond Enameled Ware are of equally high quality. The manufacturing methods and quality of Richmond products have the approval of the Architects and Engineers Investigating Committees.

All of this experience is incorporated in the Richmond Floorline Radiator, the ultimate in radiator design.

WHY

Radiators are receiving so much attention today...

Precedent is no longer a master. Almost every day sees some convention, thought to be enduring, surrendering to improvement.

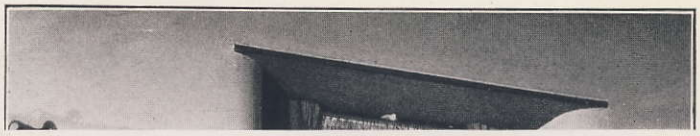
When cast iron radiators were first installed they were accepted as the last and final word in heating equipment. The fact that interior decoration in those days consisted largely of placing as many pieces of furniture, bric-a-brac, pictures, and so forth, in a room as was possible, was probably the reason why so little attention was given to the old type radiator. That is of the past.

To-day interior design means the elimination of the superfluous, and the artistic arrangement of the essential and comfortable. Simplicity has replaced confusion.

During the evolution of architecture and interior design there has been a growing realization among architects, builders and owners, of the greater amount of useful floor space and the better arrangement of furniture that would be possible if radiators were less conspicuous.

Manufacturers struggled with the problem and several types were evolved. These were designed for complete concealment between the inner and outer walls. Unfortunately, the cost, due to the materials used and the method of installation, was almost prohibitive.

It has been generally known that a radiator that could be made almost unnoticeable, or completely hidden, and installed at a reasonable cost would be heartily received. And that this prophecy was true is evidenced by the endorsement that has been tendered the Richmond Floorline Radiator.



THE RICHMOND FLOORLINE RADIATOR...

Adapted to every need...

The Richmond Floorline Radiator is unquestionably the most flexible and adaptable of all radiators. It possesses many exclusive features and advantages.

There are three methods of installation —attached to the baseboard—partially recessed—and entirely recessed behind the wall. Any one of these installations may be made with less trouble and expense than with any other form of compact or concealed radiation.

The photograph on this page pictures the Richmond Floorline Radiator attached to the baseboard. It is but eight and one-half inches high and three and one-half inches in depth. Painted to match the trim, it is indeed almost invisible.

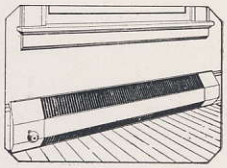
Contrast this with the average cast iron radiator which often extends ten inches from the wall and from twenty to thirty-eight inches in height.

On the opposite page the other two methods of installation are illustrated. In the upper photograph the radiator is partially recessed. It projects beyond the baseboard a scant two inches.

In the lower picture the completely recessed installation is shown. A decorative grille covers the recess, flush with the wall. No other radiator offers so many methods of installation to choose from.

With Richmond Floorline Radiators installed, there are no restrictions on decoration and furniture placement. Chairs, tables, and other pieces may be placed close to this finer radiator without danger of injury.

Nor is it unpleasant to sit next to the Floorline Radiator. The mild warmth is so



low and radiated over so great a length, that there is a complete absence of the unpleasant heat that comes from a high radiator.

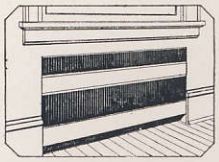
In succeeding pages it will be explained why this low heat is superior to any other form, and why the peculiar design of the Floorline Radiator means the absolute elimination of cold floors and cold spots in the room.

This modern radiator does not smudge the walls and draperies. It does not collect or circulate dust. This is because it is so low that there are no strong undercurrents of air. But if one wishes to make certain of the absence of all dust it is a very simple matter to cover the upper part of the radiator with a cloth and apply the suction power of an ordinary vacuum cleaner to the under fins.

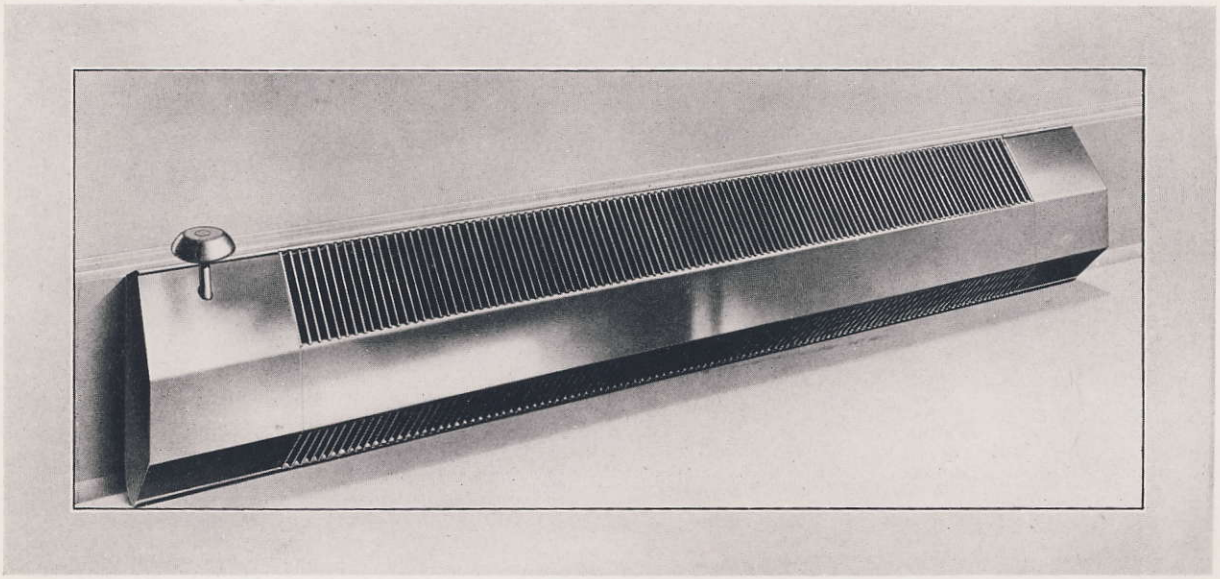
During the period of installation in new buildings the radiator is protected against dirt, plaster and other waste by a protective covering placed in position at the factory.

Richmond Floorline Radiators may be installed in old dwellings as well as new. The installation may embrace every room in the house or a limited number. The replacement of present radiators by Floorline Radiators is a simple matter for the heating contractor and not disturbing to the occupants of the house.

The Floorline Radiator is designed for use with steam, vapor, vacuum, and hot water heating plants. The exact method of connecting to every type of heating plant and the various methods of installation are explained and illustrated in detail on succeeding pages. In brief, the Richmond Floorline Radiator is not only inconspicuous but a flexible, inexpensive and efficient heating unit.



.... Simple construction .... nothing to get out of order.. easy to install ... inexpensive and efficient .....



This modern radiator is actually as simple in construction as its design indicates. Metal fins are welded on a metal tube, becoming an integral part of the tube. The standard radiator is made of steel fins on steel tube but it is also made with copper fins on brass tube on special order. There is no possibility of leaking, freezing, cracking. This multiplicity of fins heated by the tube, in turn heats the cool air that enters at the bottom of the radiator and emerges as warm air at the top. This simple law of thermal science is responsible for the operation of all radiators, but upon the design of the radiator depends the efficient application of this principle.

It has frequently been asked why the fins could not have been made rectangular. Mechanically there is no reason, but the efficiency of the radiator would have been impaired and its bulk increased without any compensating gain.

Not only the shape of the fins but the space between each, and the size of the tube to which the fins are attached, were determined after the most thorough tests for the points of maximum efficiency.

The total surface area of all the fins in a single three-foot section is more than twenty-six square feet. The efficiency of the radiator is due to this tremendous heating surface confined to a limited area, yet permitting the unimpeded travel of air currents.

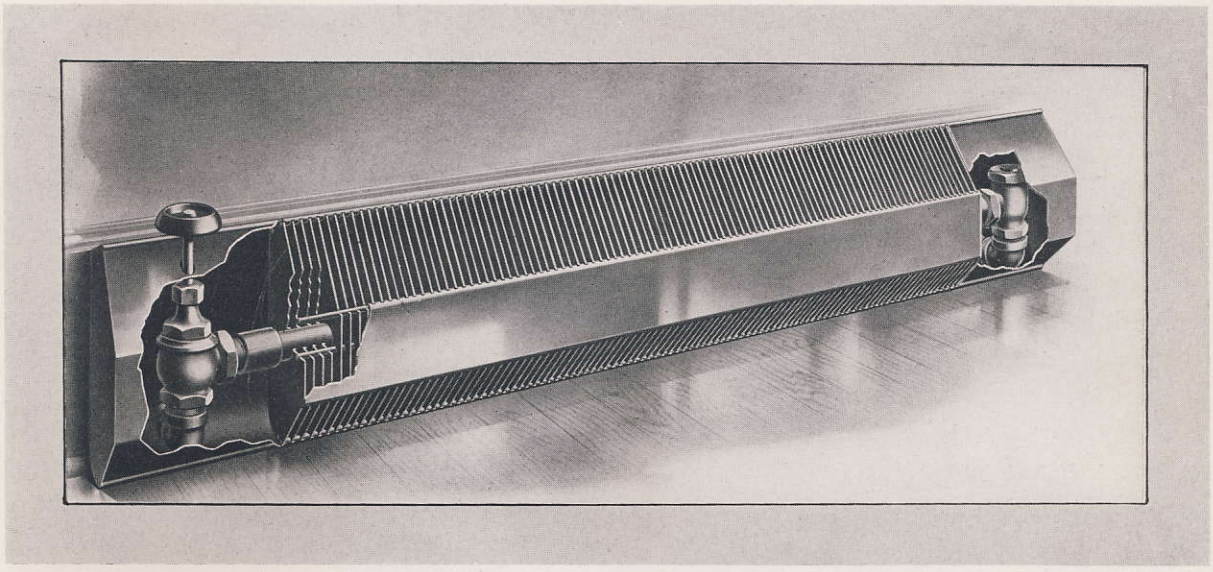
The fins of the Floorline Radiator are covered with a solid metal back-plate extending from the bottom to the top. At the top, this plate curves slightly forward, thus projecting the warm air currents out into the room. This control of the direction of air currents, plus the short draft that cannot exceed the maximum eight and one-half inch height of the radiator, prevents the smudging of walls and draperies and projects the heated air into the room at a low point, thus ensuring warm floors and an evenly heated room. The front perpendicular edges of the fins are also covered with a metal plate to which they are firmly locked.

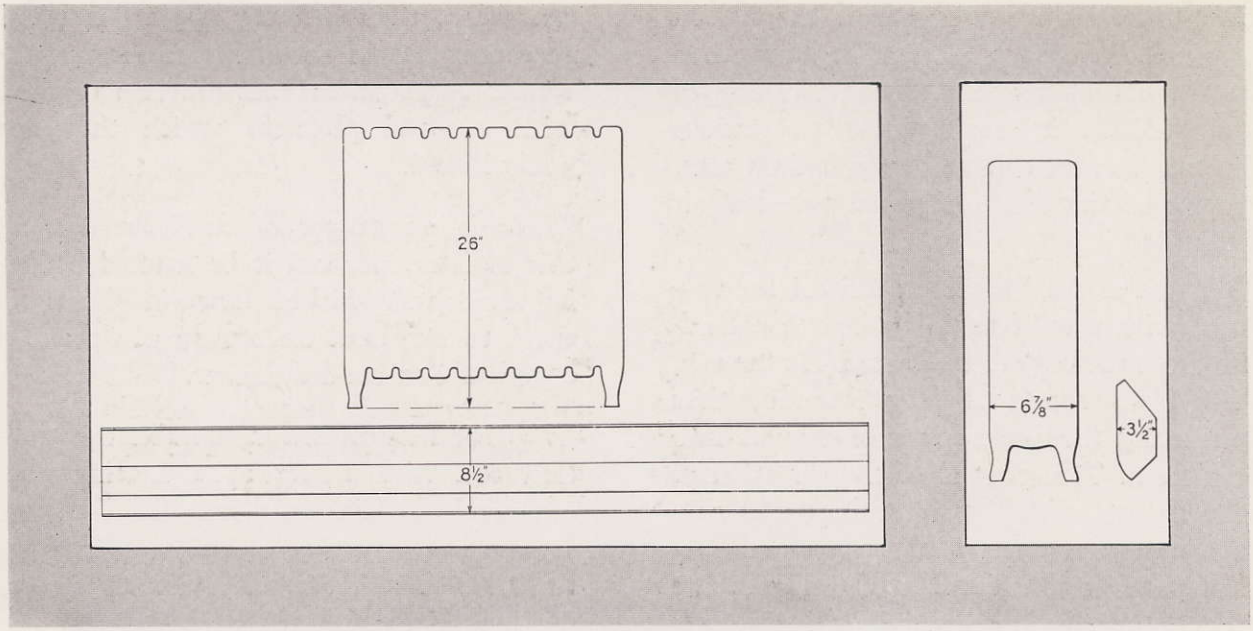
There is no danger of furniture denting this radiator, nor can it be harmed by being accidentally kicked. Once in place it is there to stay and its sturdy construction completely resists defacement.

The simplicity of design, durable construction and high rating as a heating unit commend the Richmond Floorline Radiator for use in every type of building. Offering three methods of installation it is always possible to select one that best meets the need and the budget.

THE ILLUSTRATION on the opposite page pictures a single Richmond Floorline Radiator attached to the baseboard. Note how the valve at one end, and the outlet trap and pipe at the other are concealed. These cover plates are furnished with the radiator when desired.

BELOW is the same radiator with each end cut away to show the construction, and the valve and trap as they actually are connected to the radiator. This also illustrates the rigid construction of the radiator.





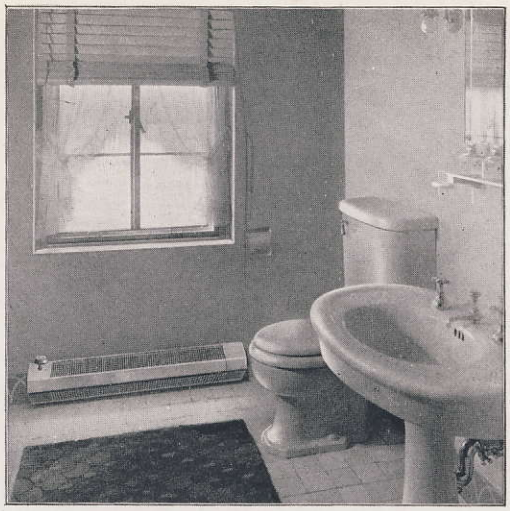
...Comparison of Floorline Radiator with standard cast iron radiator

The picture tells the story. Here is an outline drawing of a cast iron radiator twenty-six inches high and six and seven-eighths inches wide. This particular radiator is made up of ten sections and has a rating of twenty-nine and one-quarter square feet. Beneath this sketch is an outline drawing of two of the three-foot sections of the Richmond Floorline Radiator which have a total heat value of thirty square feet, when installed against the baseboard. Note the area of useful wall space that would be occupied by the cast iron radiator. The fact that it is twenty-six inches high and extends nearly seven inches into the room means that furniture cannot be placed close to it, nor is one likely to want to sit adjacent to such a radiator when it is hot.

Actually the Floorline Radiator, although it extends along a greater length, occupies half the cubic space of an equivalent cast iron radiator. The exact difference depends upon the particular size and design of the iron radiator chosen for comparison.

If the Richmond Floorline Radiator is partially recessed it projects into the room but two inches. Completely recessed, an attractive grille flush with the wall is the only indication that a radiator is installed.

It is not surprising that a radiator occupying the least useful space in a room and but a small portion of that, compared to the old style radiator, should be so enthusiastically approved.



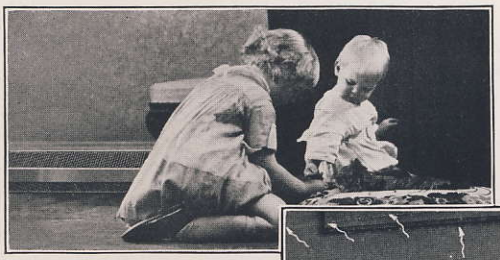
Heat that spreads out from near the floor...

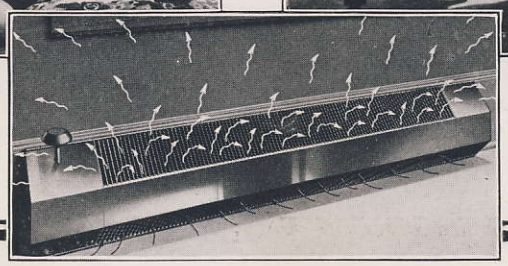
MORE USEFUL ... MORE EFFICIENT ...

Richmond Floorline Radiators project heat into the room as from a funnel, the low point being but five inches above the floor and the highest point only eight and one-half inches.

Compare this with the heat that rises from the top of a cast iron radiator that is rarely less than twenty inches high and may be as much as thirty-eight inches.

This explains the reason for cold floors with the ordinary radiator equipment and how the Richmond Floorline Radiator overcomes this discomfort. The Richmond Floorline Radiator must necessarily extend along a greater length of wall than does an equivalent cast iron radiator, in order to deliver the same volume of heat. In this there is decided value. The Richmond Floorline Radiator throws a mild warmth over an extended length of the room *at the floor level*. In the drawing on the opposite page the Floorline Radiator is twice the length of the equivalent cast iron radiator, and this aptly illustrates the greater useful efficiency of this improved radiator.



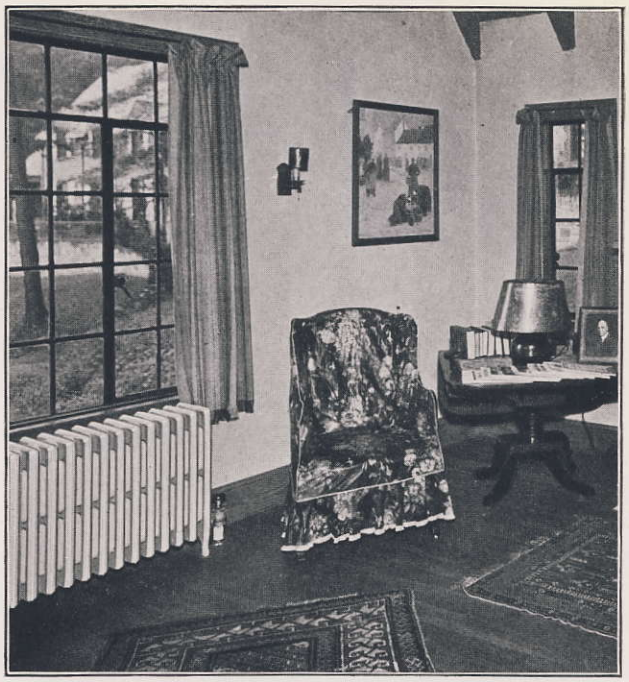


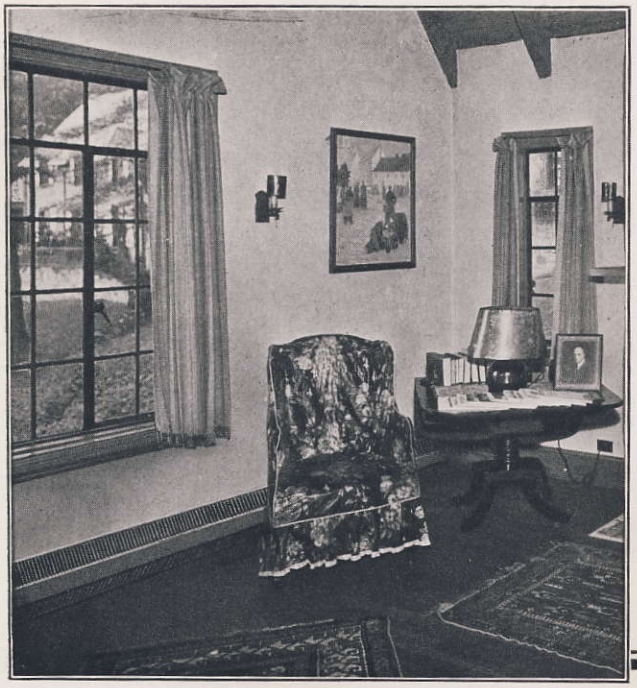
... Replacing present Radiators with the Richmond Floorline Radiator

The Richmond Floorline Radiator may be quickly and easily connected to a steam, hot water, vapor or vacuum heating system.

The only addition that may be required is the installation of a return pipe on a steam system, if it is not already installed. When attached to a hot water system, provision must be made for forced or overhead gravity circulation, if not already in use.

The simplest installation is, of course, obtained by attaching the radiator to the baseboard. Partial recessing requires nothing more than cutting away the baseboard and plaster. This makes a recess approximately two inches deep. Mechanical drawings on the last pages of this book illustrate the method of completely recessing the radiator. If this method is used the recess back of the radiator should be insulated with asbestos cement, mineral wool or other equivalent.





Replacing cast iron radiators with Richmond Floorline Radiators is often no more costly than the installation of substantially made radiator shields. An appreciable salvage value for the cast iron radiators now in use reduces the cost of installation.

It is not necessary that every radiator be replaced. Frequently installations are limited to the living rooms and hallways.

It is this flexibility that makes the Richmond Floorline Radiator so practical and adaptable to every need.

The photographs reproduced on this page graphically contrast the Richmond Floorline Radiator with the cast iron type.

Installing Richmond Floorline Radiators in new dwellings . . .

Richmond Floorline Radiators add comfort and value to every home. Single family homes, or two family dwellings erected for sale or rent are more easily and profitably disposed of if equipped with Richmond Floorline Radiators. They are the newest modern convenience and improvement in heating.

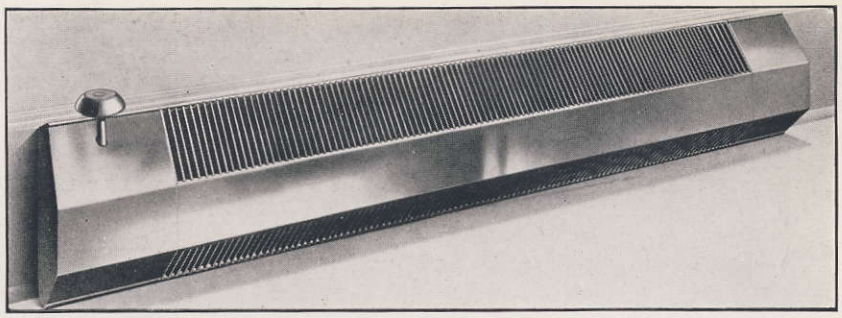
The value of Richmond Floorline Radiators in apartment houses, hotels and office buildings

Apartments are homes, and Richmond Floorline Radiators add to the comfort and convenience of tenants just as they do in private homes. They permit the better use of limited space. The manner of installation may vary—entirely recessed in the living room, dining room and main bedroom for example, and attached to the baseboard in others.

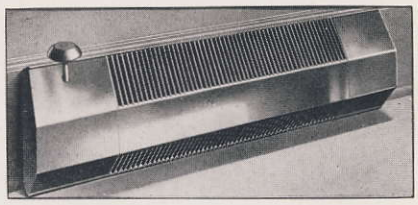
Likewise hotel rooms are far more attractive to guests when equipped with Richmond Floorline Radiators.

Space rates in office buildings are usually established on a square foot basis. But deductions are never made for the appreciable amount of space occupied by the usual type of radiator. Business men quickly appreciate the added amount of useful space in offices equipped with Richmond Floorline Radiators. Desks may be placed close to this radiator without danger of injury. Employees may sit next to this type of radiator without being unpleasantly affected by the heat.

In commercial buildings of all types Richmond Floorline Radiators save space and upkeep costs. Rarely does this low radiator with a minimum of dirt collecting surface require repainting. And walls stay fresh longer because there are no strong vertical currents of dust laden air.



TWO SIZES ~
used singly or in multiple, meet every requirement....



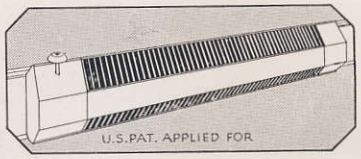
Floorline Radiators are made in two lengths, thirty-six inches, and eighteen inches. This standardization on two sizes simplifies ordering and installation. A Floorline Radiator weighs but half as much as a cast iron radiator of equal heat value. One man can easily carry two Floorline Radiators.

The required amount of radiation is obtained by connecting the radiators end to end. An assembly of sections totalling not over twenty-one running feet operates efficiently on six ounces of steam pressure and can be served by a single valve, and a single outlet trap.

If all of the radiation is not wanted along a single wall, or space does not permit such an installation, a right angle connection may be made at a wall corner and a part of the assembled units extended along the second wall. Or the total radiation may be divided into as many separate units as desired, or the exposures of the room require. Each group of radiators would then have its own supply pipe and outlet connection.

Connected Floorline Radiators installed along the baseboard, either exposed or partially recessed, appear to be a single radiator. The small space at the union of two radiators is concealed by a special grille covering of the same design as the radiator.

Recessed installations under windows, in hallways, or stairways usually comprise two or four sections. These are placed one above the other and concealed behind the attractive grille. Painted to match the wall, they are almost unnoticeable.

"RICHMOND" FLOORLINE 

RADIATOR

Richmond Floorline Radiators have been thoroughly tested for efficiency . . . Ratings are conservative

It has long been known by heating engineers and contractors that ratings established by the Richmond Radiator Company are always dependable. This company was the first to test and rate its boilers and radiators according to the codes of the American Society of Heating and Ventilating Engineers. This method has been recommended to all other manufacturers by the Investigating Committees of Architects and Engineers.

This same radiator testing code was applied to the Richmond Floorline Radiator. To the technically minded we say parenthetically and briefly, that this means establishing the equivalent heating surface at 240 B. T. U. square feet, at two pounds steam pressure, radiator standing in still air with temperature of 70 degrees at breathing point (5 feet above floor).

The Frost Research Laboratory conducted the tests, and the efficiencies and ratings here printed have been certified by S. E. Dibble, Professor of Heating and Ventilating at the Carnegie Institute of Technology.

THESE TESTS ESTABLISHED THE FOLLOWING RATED CAPACITIES

FOR RADIATORS EXPOSED ON BASEBOARD

	A Sq. ft. equivalent steam radiation at 240 B.T.U.		B Sq. ft. heating effect equivalent to cast iron radiation. (See Note C)	
	Single tier	Double tier	Single tier	Double tier
No. 36S Steel, 36 inches long..	12½	23½	15	27
No. 18S " 18 " " ..	6	11¼	7	13
No. 36C Copper, 36 " " ..	20½	29	24½	33½
No. 18C " 18 " " ..	10	13¾	12	15¾

Note C. The Floorline Radiator (due to its low height) heats the living zone of a room (from floor to breathing line) to as high a temperature as a cast iron radiator at column "B" rating, but because the Floorline Radiator does not overheat the upper zone (from breathing line to ceiling) the amount of steam condensed does not exceed that given in column "A."

FOR RADIATORS CONCEALED IN WALLS

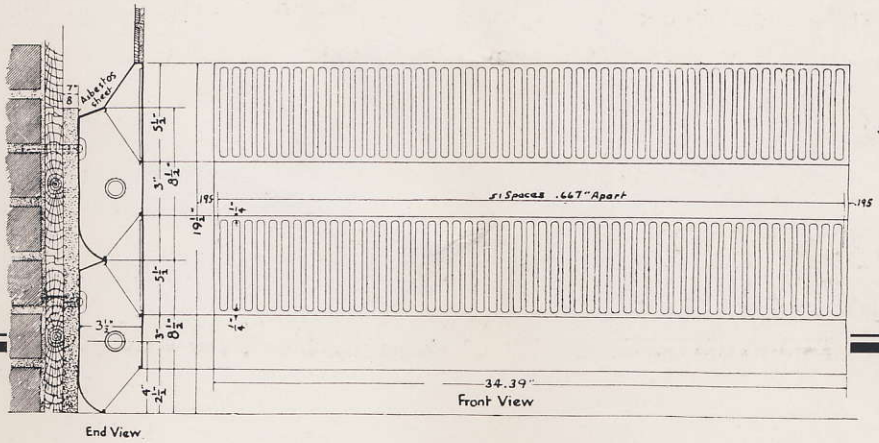
(Sq. ft. equivalent steam radiation 240 B.T.U.)

	Single tier Capacity one section		Double tier Capacity two sections	
	In enclosure of		In enclosure of	
	11" height	25" height	19½" height	25" height
No. 36S Steel, 36 inches long..	12½	15½	23½	23½
No. 18S " 18 " " ..	6	7½	11¼	11¼
No. 36C Copper, 36 " " ..	20½	24	29	29
No. 18C " 18 " " ..	10	11½	14	14

FOR RADIATORS PARTIALLY OR ENTIRELY RECESSED

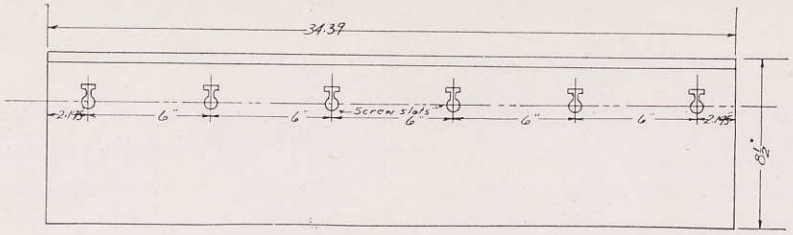
Single tier in recess, 11 inches high (without front screen); double tier, 19½ inches high (with front screen); ratings same as for radiators exposed on baseboard.

Installation of Grille in Richmond Floorline Radiator

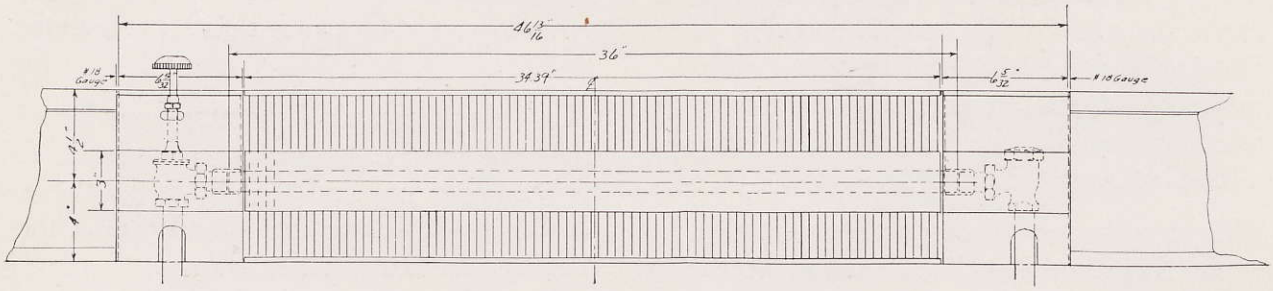


Illustrates two 36" sections tiered one above other

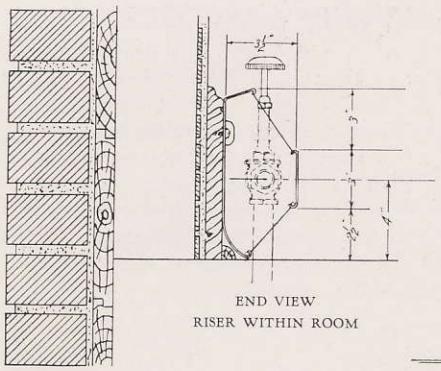
Installing the Richmond Floorline Radiator



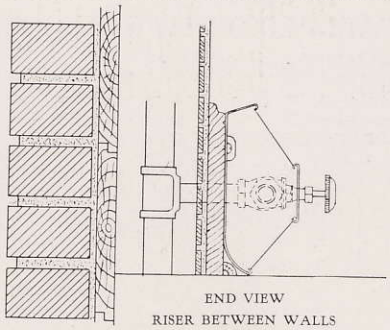
REAR VIEW OF RADIATOR SHOWING SLOTS IN COVER



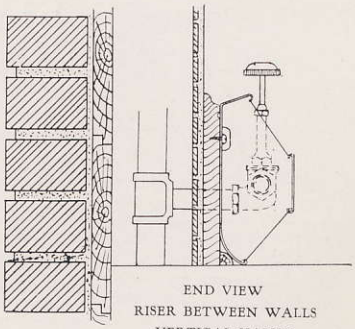
FRONT VIEW OF SINGLE RADIATOR ATTACHED TO BASEBOARD



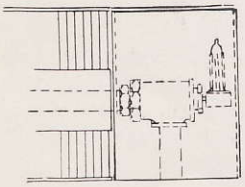
END VIEW
RISER WITHIN ROOM



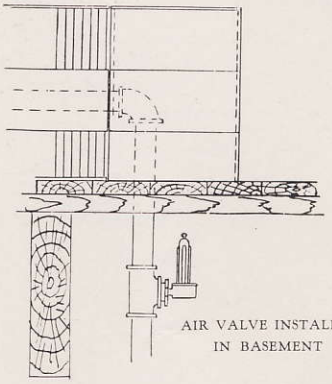
END VIEW
RISER BETWEEN WALLS
HORIZONTAL VALVE



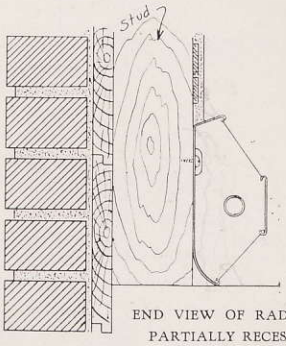
END VIEW
RISER BETWEEN WALLS
VERTICAL VALVE



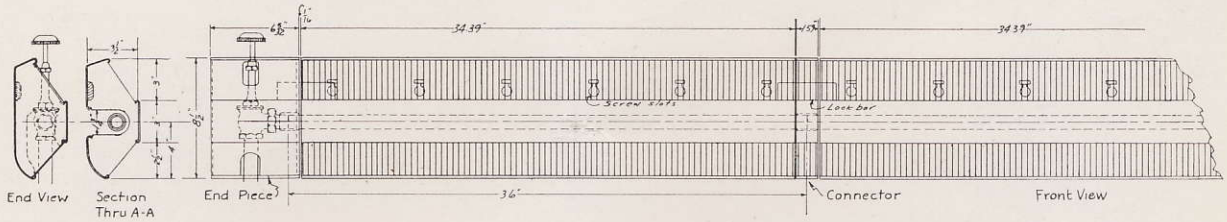
AIR VALVE INSTALLED
ABOVE FLOOR LEVEL ON
RETURN END OF RADIATOR



AIR VALVE INSTALLED
IN BASEMENT

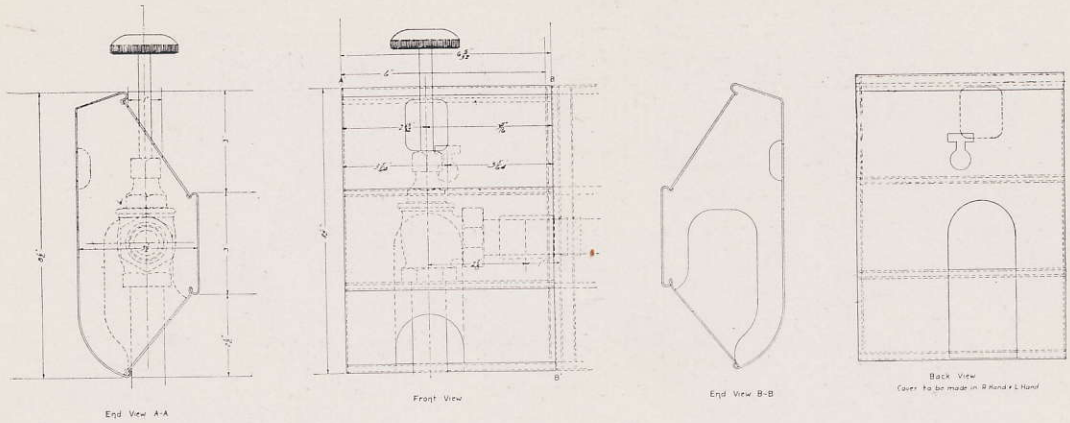


END VIEW OF RADIATOR
PARTIALLY RECESSED

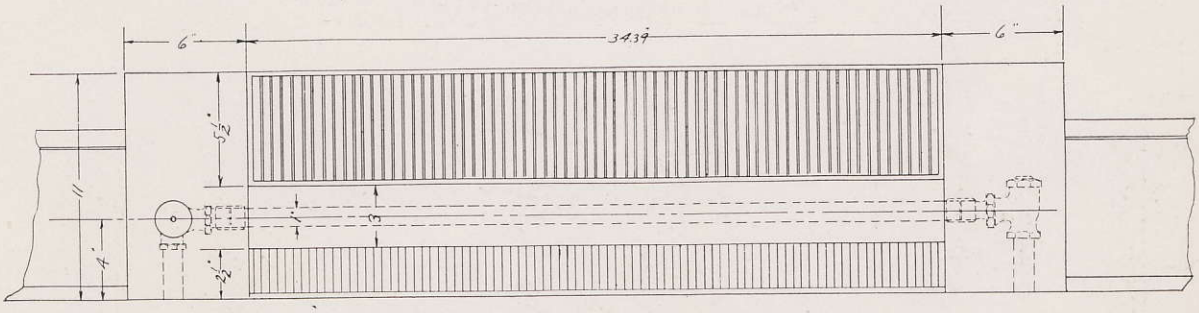


ABOVE DRAWING EXTENDING ACROSS THE TWO PAGES ILLUSTRATES

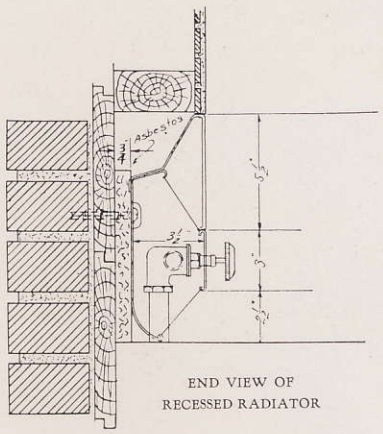
Installing the Richmond Floorline Radiator



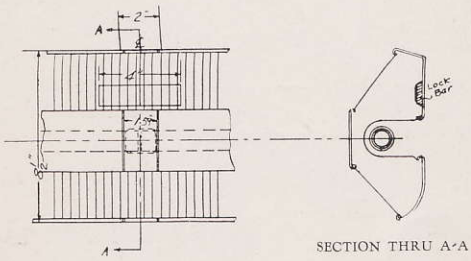
ILLUSTRATING DESIGN AND PLACEMENT OF VALVE COVERING PLATE



FRONT VIEW OF SINGLE RADIATOR RECESSED IN WALL

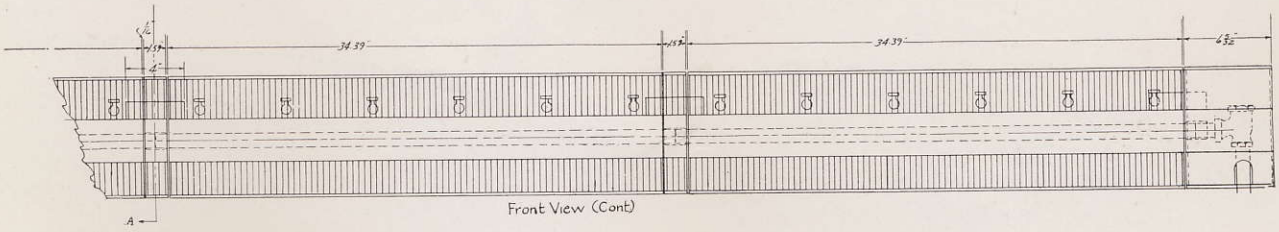


END VIEW OF
RECESSED RADIATOR



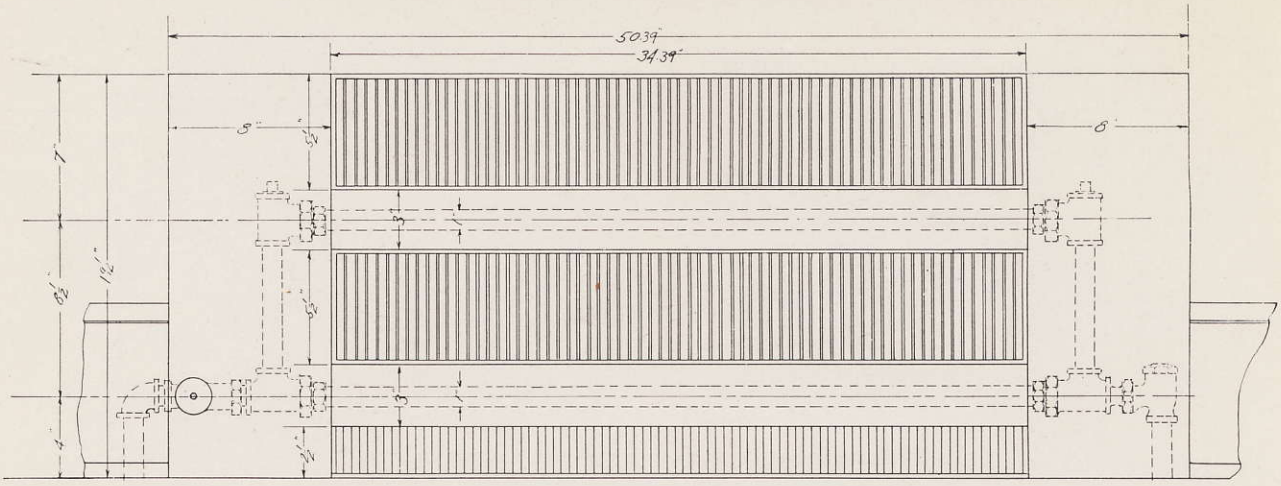
FRONT VIEW SHOWING
FALSE FINS AT CONNECTION
BETWEEN RADIATORS

SECTION THRU A-A

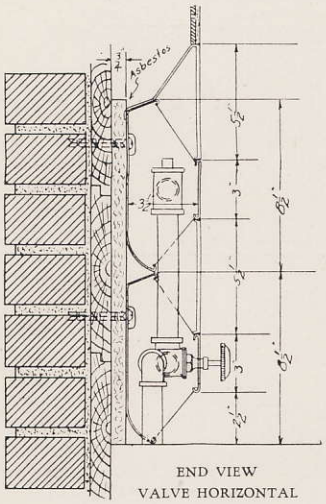


FOUR 36" SECTIONS CONNECTED ON A SINGLE VALVE AND TRAP

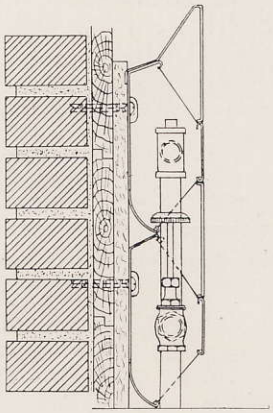
Installing the Richmond Floorline Radiator



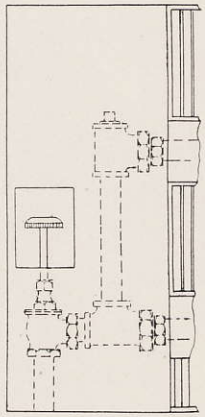
FRONT VIEW OF DOUBLE RADIATOR RECESSED IN WALL



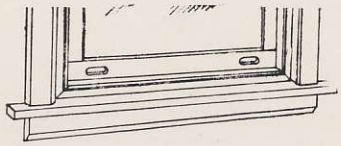
END VIEW
VALVE HORIZONTAL

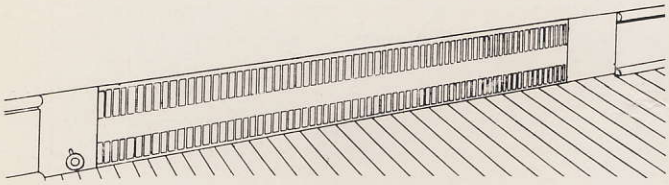


END VIEW VALVE VERTICAL
WITHIN WALL

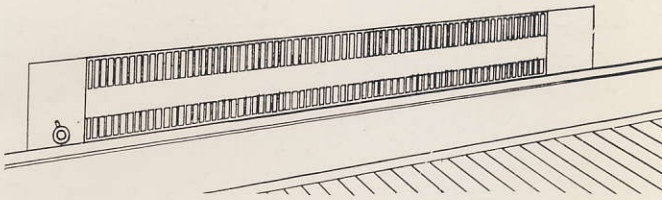


FRONT VIEW VALVE
VERTICAL WITHIN WALL





RECESSED INSTALLATION BEHIND BASEBOARD



RECESSED INSTALLATION ABOVE BASEBOARD

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