

Iron Fireman Manufacturing Company

Automatic Coal Burners

Portland, Oregon

Factories: PORTLAND, ORE.; CLEVELAND, OHIO; TORONTO, CANADA

Retail Branches or Subsidiaries

CHICAGO, ILL. MILWAUKEE, WIS. ST. LOUIS, MO. NEW YORK, N. Y. MONTREAL, CAN.
Dealers in Principal Cities and Towns in the United States and Canada
Representation in numerous foreign countries.

IRON FIREMAN Automatic Coal Burners

"Forced Underfiring" Principle—Iron Fireman "Forced Underfiring" is based on the scientific principle of feeding fuel to the fire from below, under forced draft. From the conveyor screw coal enters the firebox under the fire and is gradually forced upward into the flame. As the coal approaches the fire, it is gradually heated. The volatile gases are distilled off in the presence of an excess of oxygen and are thoroughly ignited while passing through the incandescent fuel bed. This insures complete combustion. The ash is fused into clinkers which are easily removed.

Advantages—Iron Fireman saves money and increases heating plant efficiency in four major ways: (1) Cuts fuel costs; (2) Reduces labor costs; (3) Provides steady, even heat or power; (4) Eliminates the smoke nuisance.

Installation and Sizes—Iron Fireman is made in a range of hopper and bin-feed sizes for commercial heating and power boilers up to 300 b.h.p. and also for homes. It can be installed quickly in practically any solid fuel boiler or furnace, old or new. Machines are shipped complete from the factory. All parts are standard and interchangeable.

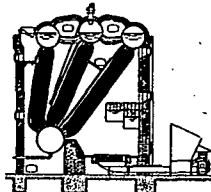
Features of Design and Construction—Construction and operation of the Iron Fireman are characterized by sim-



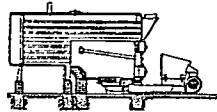
plicity throughout. Outstanding features of design and construction are: (1) Pressed steel construction. (2) Special patented transmission—three speeds and neutral. Gears run in bath of oil. (3) Electric motor—standard make. (4) V-belt drive. (5) Safety shear pin protects mechanism from damage. (6) Quiet ball bearing fan supplying forced draft to fire. (7) Automatic fire banking damper—conserves fuel and holds fire in proper condition when stoker is idle. (8) Positive pneumatic fume eliminator—an auxiliary air supply that insures positive movement of all gases through the fire. (9) Volumeter that supplies exactly the amount of air needed for perfect combustion regardless of fuel bed conditions or type of coal used. (10) Sectional retort especially designed to allow for heat expansion. (11) Dead plates of heavy iron and ribbed. (12) Sectional, self-cleaning tuyere blocks.

(13) Conveyor screw cast of special Iron Fireman alloy steel from one-piece pattern. (14) Automatic electric controls designed for and used exclusively on Iron Fireman.

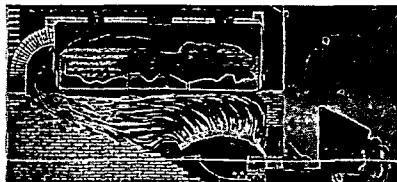
Automatic Controls—Iron Fireman starts and stops at the command of sensitive, accurate automatic controls. Directing controls govern stoker operation according to demands of time, tempera-



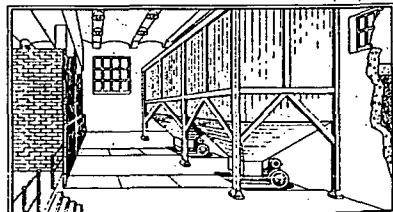
Typical Installation Four Drum Water Tube Boiler



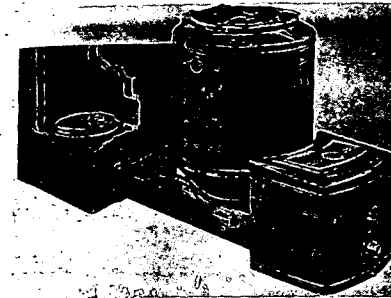
Typical Installation Down Draft Firebox Boiler



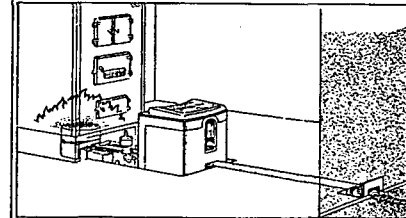
Iron Fireman in Operation in Horizontal Return Tubular Boiler, Low Bridge Wall



Multiple Installation of Bunker—Feed Stokers



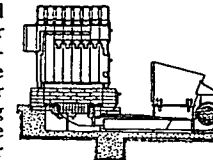
Domestic Installation—Hopper Model



Domestic Installation—Bin-Feed Model

ture, or pressure. An example of the superiority of Iron Fireman directing controls is the "Syncro-Stat" which provides automatic control of day and night temperature. Other directing controls include pressure regulators, hot water and furnace regulators, and the "Timetactor," a device which runs the Iron Fireman during predetermined intervals in order to keep the fire alive during mild weather.

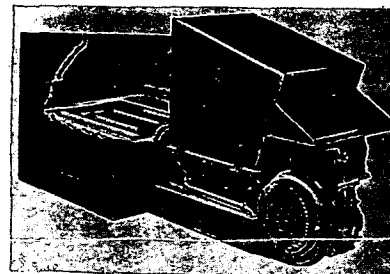
The most important unit of the operating control system is the motor-driven relay switch. This device starts and stops the stoker motor at the command of the Syncro-Stat or other directing controls. In the case of the larger stokers a magnetic operating switch works in conjunction with the relay switch.



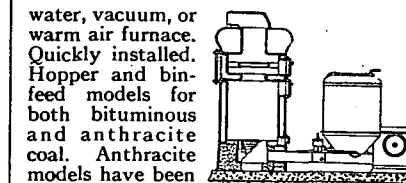
Typical Installation Cast Iron Boiler

Iron Fireman for Homes—The Iron Fireman residential model employs "Forced Underfiring" principle the same as larger machines, with simplified operation.

Can be recommended for any steam, hot



Commercial Model—For Heat or Power



Typical Installation Domestic Boiler

water, vacuum, or warm air furnace. Quickly installed. Hopper and bin-feed models for both bituminous and anthracite coal. Anthracite models have been tested and approved by The Anthracite Institute.

ENGINEERING SERVICE

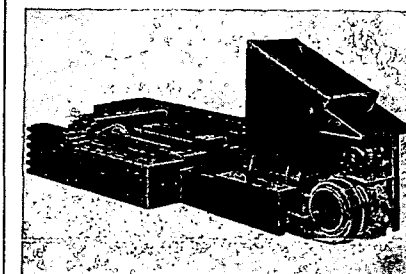
The Iron Fireman organization is nationwide. Trained men—backed by one of the largest manufacturing organizations in the field—are at your service to help you with the experience and practical heating information gained through servicing thousands of boiler rooms and heating plants in all parts of the country.

Any Iron Fireman engineer will gladly call and submit any additional information requested.

CATALOG AND INFORMATION

Catalogs give full information about the Iron Fireman. Descriptive folders give special data about installation in particular types of industries and in homes.

Secure them by addressing the factory or any Iron Fireman representative.



Industrial "Poweram" Model—For Heat or Power