

Types of Mechanical Stokers and Grates

Description of Various Styles of Mechanical Stokers and Grates. First Section of Article. Second Section will Take Up Grates, and will Appear in Next Power Edition.

The following article is intended to place before the readers of THE CANADIAN MANUFACTURER simple and accurate descriptions of the features of different mechanical stokers and grates which are now in operation in power plants in Canada or which may be within a very few years. More complete descriptions are given of the styles which have been placed on the market recently, as they will not be so familiar to readers of the paper.

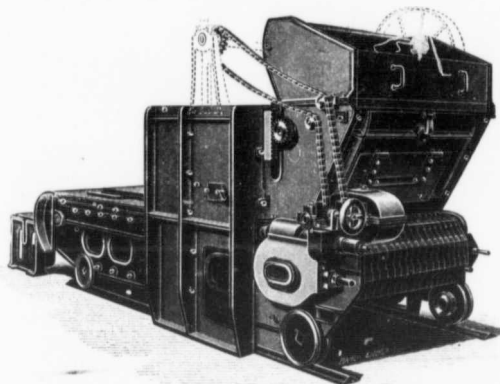


Fig. 1—B. & W. Mechanical Chain Grate Stoker, Forged Steel Construction Throughout.

This is the first section of the article, and is devoted exclusively to mechanical stokers. The second section, to appear in next month's Power Edition, will be devoted to different styles of grates—a line—not a definite one—being drawn between grates and mechanical stokers.

Babcock & Wilcox Mechanical Chain Grate Stoker.

The chain grate stoker has been long recognized by leading engineers as particularly adapted for burning bituminous coal without smoke and obtaining the best combustion results from the cheaper grades of this fuel

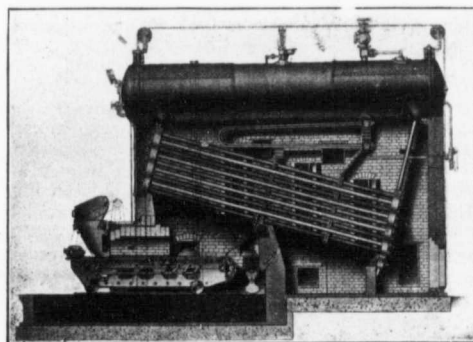


Fig. 2—B. & W. Mechanical Chain Grate Stoker, Installed in Connection with a B. & W. Water Tube Boiler.

and minimizing the cost of raising steam by reducing the labor of handling.

The patent chain grate stoker made by Babcock and Wilcox, Limited, Montreal, provides for the even and continuous firing of coal in small quantities so that the distillation of the gases proceeds at a uniform rate, the volatile gas being liberated at the front of the furnace and, by passing over the incandescent fuel at the rear end, complete combustion is obtained with the minimum excess of air.

The stoker shown in Figs. 1 and 2, is the result of years of experience and scientific investigation. Particular attention is being given to Canadian and American fuels so that the grates are arranged with suitable air spacing and the necessary changes for dealing with clinking coals.

Although the general arrangement is practically the same as that since adopted by other manufacturers

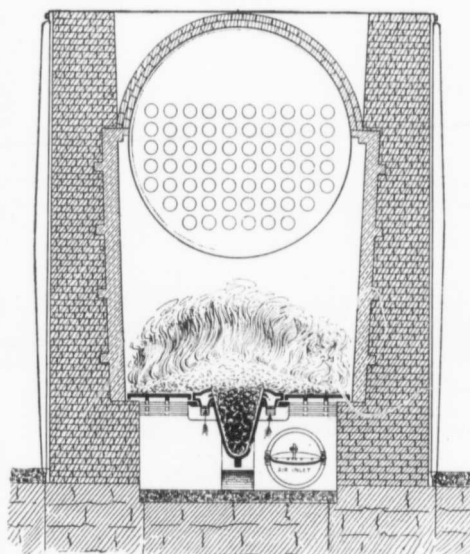


Fig. 3—Cross-Section Through Furnace Showing Retort, Dead Plates, Air Inlet, Etc., of the Jones Underfeed Stoker.

of chain grate stokers, it has many splendid features to recommend it—among the most important being, the design of the links and air seals which effectually prevent cold air from leaking past the grate, the facility with which the thickness of the fire and the speed of the grate can be regulated, the small amount of power required to operate it, and, in conjunction with this, the smooth running of the driving arrangement thus reducing riddling of fine coal through the grate to a minimum.

The proper adjustment for depth of fire and grate speed should be such that the fuel is burnt out by the time it reaches the ash plates over which the ashes and the clinker pass on to the doors, and are periodically dumped in the