Two Stage CRUSHING IN ONE MACHINE!

The GUNDLACH "Two Stage" Coal Crusher incorporates two crushing stages in one machine and is designed to reduce RUN-OF-MINE to STOKER COAL in ONE operation. Compact design simplifies structural supports and installation. Rugged simple construction combined with engineering proved in the field makes this machine a profitable and reliable unit.

Fulfilling an urgent need in the industry, the GUNDLACH "Two Stage" Crusher has delivered over 855 usable stoker coal from an Illinois mine run lot.

MATERIAL SIZE CAN BE CHANGED WHILE MACHINE IS RUNNING

All Gundlach Crushers are equipped with Gundlach Patented Crushing rollers. (Pat. No. 2578540)

Crusher is pictured without hopper and sprocket guards, but is delivered complete.

PHOTO STAGE — COURTESY ALLIS-CHALMERS

WRITE TODAY FOR CRUSHER BULLETIN P-3

T. J. GUNDLACH Machine Co., Belleville, Ill.

More TECHNICAL BRIEFS

Begins on page 150

but there is some carryover to be considered. Most boilers, especially the standardized types, are in themselves fairly effective cinder traps, yet occasionally there are complaints of cinder emission from them. In practically all such cases, the reason is lack of provision for proper removal of the trapped cinder; "removal" being accomplished by opening chamber doors or hopper gates under draft and hooing or dropping out some of the cinder while the rest is swept away and up the stack by in-rushing air. Elimination of this nuisance can be effected by application of air operated cinder ejectors, similar to those employed with spreader stokers, arranged to discharge the cinder to the ashpit below the dump grates.

(4) Secondary or overfire air can be used advantageously to a very limited extent. The older low pressure devices for secondary air injection were of very questionable value and have generally been abandoned. *ASME Paper No. 52-A-103.*

Turbulent Suspension Burning of Wet Wood, Bark and Other Fuels. *By Otto de Lorenzi, Combustion Engineering-Superheater, Inc.*

Turbulent suspension burning may be defined as the principle of showering particles of solid fuel downward from some considerable height in a tower-like furnace, through relatively large quantities of highly turbulent gas and overfire air to effect: (a) flash drying; (b) partial or complete devolatilization; (c) ignition of residual fuel constituents; and (d) uniform distribution of the residual fuel to the grate surface in the lower furnace zone where combustion is completed through the use of reduced quantities of undergrate air.

Fuel distributors in furnaces employing the principle of real turbulent suspension burning are at an elevation of from 12 to 20 ft above grate level. Overfire-air jets go in the furnace corners between feeder and grate levels. With this arrangement it becomes possible to use large fuel particles, because they are spun around in flight by the overfire-air streams and thus retained in the rising column of burning gas for a greater length of time before coming to rest at grate level. It is this increased time of flight through the hottest furnace zone that provides for flash drying, partial or complete devolatilization, and ignition of residual fuel constituents. Slug feeding produces no noticeable change at fuel bed level, and consequently there are no adverse ef-

Directions for ordering papers on p 132

More Accurate Level Reading of LOW TEMPERATURE LIQUIDS . . . JERGUSON Large Chamber NON-FROSTING GAGES

You get the highest accuracy of reading on low temperature, low boiling point liquids with the patented Jerguson Non-Frosting Gage in the New Large Chamber model . . . because it insures minimum turbulence at the meniscus for clear vision at the vision slot.

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Here's a dual feature gage that assures greatly increased accuracy of reading for the process industries. If you have a problem with low temperature gaseous fluids, or with gages frosting, it will pay you to investigate the new Jerguson Large Chamber Non-Frosting Gage . . . reflex or transparent.

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