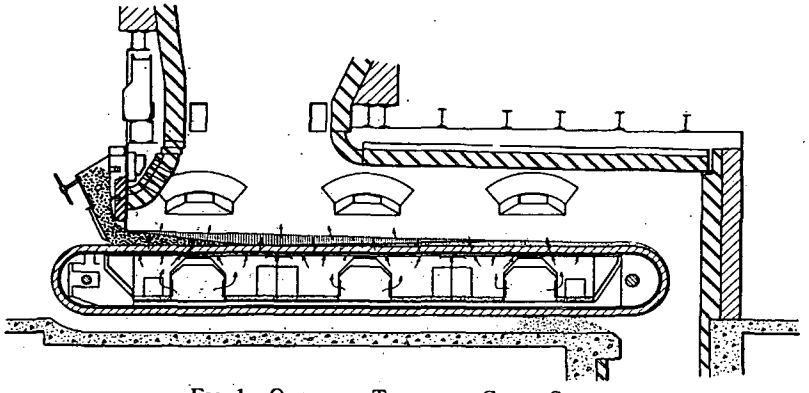

FIG. 1. OVERFEED TRAVELING-GRATE STOKER

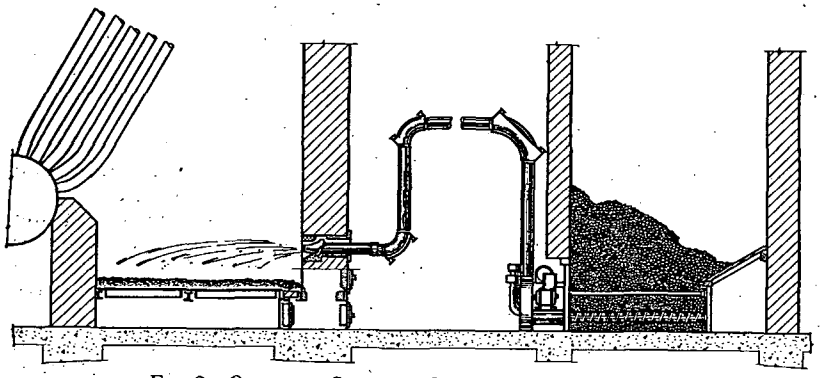

FIG. 2. OVERFEED SPREADER STOKER, PNEUMATIC TYPE

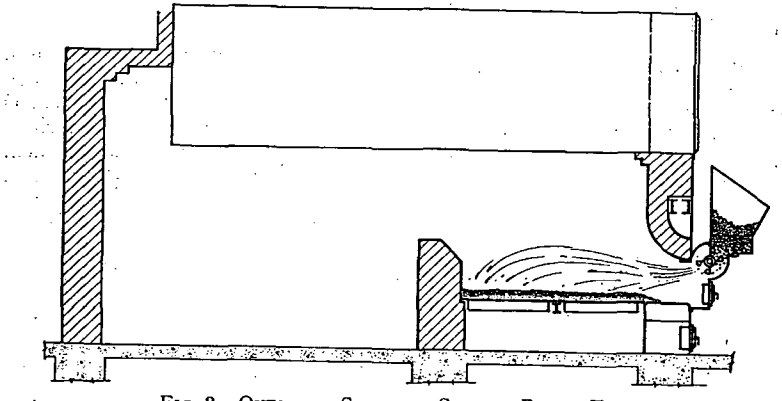

FIG. 3. OVERFEED SPREADER STOKER, ROTOR TYPE

rotating paddles or by air over the entire grate surface. This type of stoker has a wide application on small sized fuels and on fuels such as lignites, high-ash coals, and coke breeze.

Overfeed Inclined Grate Stokers

In general the combustion principle is similar to the flat-grate stoker, but this stoker is provided with rocking grates set on an incline to advance the fuel during combustion. Also this type is provided with an ash plate where ash is accumulated and from which it is dumped periodically. This type of stoker is suitable for all types of coking fuels but preferably for those of low volatile content. Its grate action has the tendency to keep the fuel bed well broken up thereby allowing for free passage of air. Because of its agitating effect on the fuel it is not so desirable for badly clinkering coals. Furthermore, it should usually be provided with a front arch to care for the volatile gases.

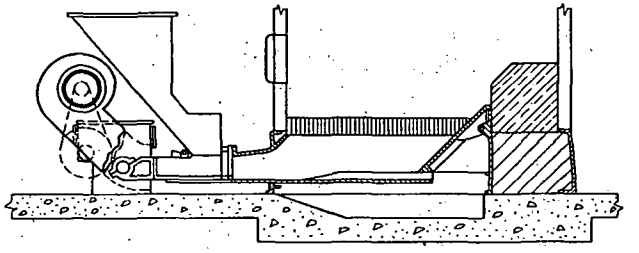

FIG. 4. UNDERFEED SIDE CLEANING STOKER

Underfeed Side Cleaning Stokers

In this type (Fig. 4), the fuel is introduced at the front of the furnace to one or more retorts, and is advanced away from the retort as combustion progresses, while finally the ash is disposed of at the sides. This type of stoker is suitable for all bituminous coals while in the smaller sizes it is suitable for small sizes of anthracite. In this type of stoker the fuel is delivered to a retort beneath the fire and is raised into the fire. During this process the volatile gases are released, are mixed with air, and pass through the fire where they are burned. The ash may be continuously discharged as in the small stoker or may be accumulated and periodically discharged. This stoker requires no arch as it automatically provides for the combustion of the volatile gases.

Underfeed Rear Cleaning Stokers

This type of stoker accomplishes combustion in much the same manner as the side cleaning type, but consists of several retorts placed side by side and filling up the furnace width, while the ash disposal is at the rear. In principle, its operation is the same as the side cleaning underfeed type of stoker.