

mainder of the crew is divided into two watches and works in shifts of 6 hours. At noon on Saturday the work stops. Only two holidays, Dominion Day and Labor Day, are given throughout the season. The boarding of the men is done by contract with the captain of the vessel, at so much per man.

Prevention of Smoke in Cities.

United States government experts, who have been studying the smoke evil of American municipalities have just issued a bulletin showing how the pollution of the atmosphere can be avoided and how certain cities are earnestly endeavoring to solve this problem. The general statement is made that coal can be burned smokelessly, as are gas, gasoline, or kerosene oil, if the furnaces are properly designed and adjusted. Each of these fuels, it is known, will smoke if conditions are not favorable.

Many steam power plants in the large cities are burning bituminous coal practically without smoke, and

if this can be done in certain plants, it may ultimately be done in all. The purpose of authorizing these investigations, which were carried on by the United States Geological Survey, is to increase the efficiency and thus to prevent the waste of fuels, especially such as are used by the United States Government. Mr. D. T. Randall, engineer in charge of smoke abatement investigations and author of the bulletin, declares that it is a recognized fact that the more nearly perfect the combustion of any fuel the greater the efficiency. With perfect combustion there is no smoke.

"With the knowledge that it can be prevented, there has come an increasing demand from the people of the large cities that smoke shall not be allowed to pollute the atmosphere," says Mr. Randall. "In nearly all cities of the United States efforts are being made to abate the smoke. As a result of the demands of the public the ordinances of some of these cities require that all new plants be equipped properly and that old ones be remod-

eled, and permits are now necessary for the installation of all boilers and furnaces.

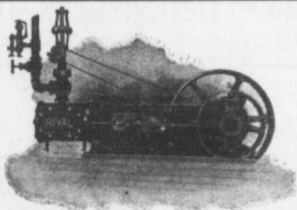
"At present no city in which a considerable quantity of bituminous coal is burned is free from smoke. The cities of the East have avoided this problem by a general use of anthracite coal. For this reason it is not surprising that the greatest improvement in the methods of burning bituminous coal has been made in the Central and Western States.

SMOKELESS FURNACE REQUIREMENTS.

"All of the authorities on the subject of combustion and smoke prevention agree upon the following conditions as requirements for a smokeless furnace:

"The coal should be supplied to the furnace in small quantities at frequent intervals. The more nearly the feed approaches a continuous and uniform supply the better the results.

"The air supply should be slightly in excess of the theoretical amount required and be admitted principally through the fuel bed, with an auxil-



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