

## A NEW WAY OF WARMING MOTOR CARS.

Many attempts have been made to use the waste heat of a motor car engine for warming the body of the car, but nearly all the devices hitherto tried for this purpose have had serious drawbacks. For example, if some of the hot exhaust gases are passed through heating coils in the car body, the engine power would be diminished by back pressure, the temperature would depend on the output of the engine, and there would be a risk of unpleasant or dangerous escapes of gas. These and other drawbacks are avoided in a new device brought out by a British company. The exhaust operates an ejector which draws air through a combined silencer and air heater and then through a nest of tubes in the car body. When the load on the engine is heavy and more exhaust gas is being passed, the ejector draws in more air and so keeps the temperature from rising above a limit, which is determined by the design of the apparatus, at several degrees below boiling point. There is no risk of gas leaking into the car, because the ejector creates a partial vacuum in the system and thus causes air to be drawn inwards through any leaks which may happen to be present. The tubes get hot within five minutes after starting the engine, but they never get hot enough to "burn" the air and cause an unpleasant smell.

## ANCIENT GUILDS AND MODERN SCIENCE.

The ancient guilds of the City of London, England, are famous the world over for their historic traditions, their wealth, and the munificence of their gifts to education, charities, and public services in general. That they can move with the times is shown by the striking action of the "Worshipful Company of Fan Makers". For centuries this Company has confined its attention to ladies' fans, but now it is taking within its range the ventilating fans designed by the engineer. A medal is being offered by the Company for the best essay on a subject connected with the theory and practice of ventilation. The Fan Makers' Company has also decided to promote an exhibition in London of smoke-consuming and ventilating appliances for improving the atmosphere of towns

## THAT SECURITIES EMBARGO

The financial editor of the Times returns to the discussion on the Canadian embargo on securities held abroad, making special reference to Sir Henry Drayton's speech a month ago, in which the Minister said he wanted the embargo continued until the Canadian grain crop was sold.

For Canada, the disposal of her crop is a vital necessity, says the Times, but Sir Henry's view fails to appreciate how the embargo is going to help the Canadian farmer sell his wheat or improve the trade balance.

If supporters of the embargo will explain how the reduction of Europe's purchasing power will be able to dispose of opposition, but up to the present no such explanation has been offered.

# Aids to Industry

## Some Interesting Details Relative to Technical and Industrial Progress in Engineering and Machinery

and factories. A short time ago the Goldsmiths' Company of London erected and equipped a magnificent metallurgical laboratory for the University of Cambridge.

## OIL FIRE RISKS ON BOARD SHIP.

The increased risk of fire on board ship arising from the use of oil fuel instead of coal induced the British Board of Trade to form a special committee to inquire into the matter. This committee suggests that the chief engineer should take a sample of each supply of oil brought on the vessel and test it to see that its flash-point is not below 150 degrees F. The apparatus for this purpose is very simple. It is also proposed that oil may be carried in cellular double bottoms under engine and boiler compartments. Recommendations are made to prevent leakage of oil or the spread of fire, but the committee is satisfied that no drastic measures are necessary to meet the fire-risk on oil-burning passenger vessels. In view of the very high standard of safety set up by the British Board of Trade, this conclusion is very satisfactory.

## PORT OF LONDON RECORDS.

Convincing progress has been made recently in the volume of trade handled at the Port of London. During 1919, the Port imported and exported goods to the valued of nearly £828,000,000, or nearly one-third of the total for the whole country, and half as much again as the total dealt with in the previous year. Over 800,000 square feet of storage space has been added during the year, and there has been a marked speeding up in the processes of loading and unloading.

## BRITISH ALL-WOMEN FACTORY.

An interesting industrial experiment has been set on foot in a British manufacturing town. A factory staffed and operated exclusively by women is about to be opened. The beginning is to be made on a small scale in order to gain experience which will be useful in development on a broader basis. The first order secured by this factory was for hosiery needles and for machining parts of a new type of pump. It is hoped to develop the business on a co-partnership basis, but the venture is being run on a strictly business basis. The important part played by women in British machine shops during the war is probably responsible for this unique enterprise.

## NEW BRITISH ENGINEERING SOCIETY.

A new engineering society has been formed in Great Britain to encourage the study of the history of engineering and industrial technology. The founders claim that this field has been neglected and that the world does not appreciate how much it owes to the British and other engineers who have done greater service to the world than generals and politicians. Many distinguished British engineers have interested themselves in the formation

of this body, which will be known as the Newcomen Society. Members will be sought in the British Colonies and Dominions, and also in other countries.

## SCIENTIFIC WORK BY "LLOYD'S."

As a record of the world's shipping "Lloyd's Register" is familiar everywhere, but much less is known of the scientific work undertaken by the body which compiles this register. More than a year ago the Chamber of Shipping of the United Kingdom and the Liverpool Steamship Owners' Association requested Lloyd's to consider the subject of the sub-division of passenger vessels, and definite progress has been made towards securing international agreement on a matter which directly concerns the safety of ocean passenger services. Lloyd's also instituted a series of researches into the strength of riveted joints—a matter on which the whole fabric of a ship's hull depends. Standardisation of ships' boilers, and rules for electric fittings on board ship, were among the other problems tackled.

## DAMMING THE CLYDE.

A century ago the River Clyde was fordable at points close to where liners are now docked. Great as the transformation has been, it does not represent the last word in the enterprise of those concerned. The Clyde Navigation Trust, under whose auspices a long and magnificent series of improvements have been carried out, is considering the construction of a barrage at a point somewhere below the harbour to keep the water in the harbour at a constant high level. The question has been referred to a special committee which also has in hand important schemes for the construction of new docks.

## SCHOLARSHIPS FROM BRITISH SHIPYARDS.

Two leading British shipbuilding firms have each agreed to grant two University scholarships, one in marine engineering and the other in naval architecture, to their apprentices. The object of the firms is to encourage self-improvement and the pursuit of scientific studies among their apprentices. The scholarships will be for three years and will be awarded by competitive examination in which general conduct, character, workmanship, and time keeping will be considered as well as technical qualifications. All fees will be paid, a grant made towards the purchase of books, and a subsistence allowance of £2 a week added.

## USE HARDWOOD FOR GROUNDWOOD PULP.

Under the supervision of the Laurentide Forestry Department, about one thousand cords of hardwood are being cut in the vicinity of the Manigance Rapid, about twenty miles north

of Grand'Mere, which will later be brought to the mill for the manufacture of groundwood. Experiments carried on for the past two years show that hardwood can be used for groundwood in place of spruce and balsam, up to a certain percentage, and this year the experiment will be carried on with much greater quantity of hardwood.

The hardwood that is being cut is yellow and white birch, maple and poplar. The yellow birch and the maple will be brought down the river in barges, and the white birch and poplar will be boomed down. If costs of cutting and bringing this hardwood to the mill prove to be satisfactory and the wood itself is found to be useful in the manufacture of paper to supplant to some extent the use of spruce and balsam, there are thousands of cords of this wood at easy distance from the mill that can be used advantageously.

According to Ellwood Wilson, head of the Forestry Department, the cutting of this hardwood is a great aid to the natural reforestation of the woods by the soft woods, which grow somewhat slower than the hardwoods and which, unless the hardwood is cut out, fail in the competition for growth.

## ANOTHER PULP MILL FOR B.C.

The erection of a pulp mill at Stave Falls, where there is said to be a billion and a half feet of suitable wood for the industry, is projected. There is unlimited electrical power close at hand, easy access to the timber limits by way of the Stave River and the lake, and connection with the Canadian Pacific Railway by way of the standard gauge road of the Western Canada Power Company. These and other things are said to be attracting the attention of foreign and eastern capital leading towards the construction of a pulp and paper mill. Extensive logging operations are being carried on by Abernethy and Loughheed, several camps being in operation up the lake, the logs being towed down the river to Stave Falls, where they are loaded on cars and transported to Ruskin, there to be dumped into the Fraser and make up into booms.

## FRANCE HAS GREAT WHEAT CROP.

This year's wheat crop in France, according to official advices, will compare favorably with that of Canada and will show a heavy increase over last year. For 1920 the estimated wheat crops of the two countries are: France, 232,729,480 bushels; Canada, 239,498,000 bushels. The yield per acre in France is 19.1 bushels, as compared with 16.5 bushels in Canada. Last year's wheat crop in France was 182,488,348 bushels, the acreage under cultivation being 11,509,275, in comparison with this year's acreage of 12,135,850. Since the trying days of 1917, with their heavy drain on man power, France has made a remarkable recovery. In that year France had 10,478,625 acres under wheat, and the crop was only 94,361,456 bushels.