

Capturing Enemy Patents

Some British Patents of Enemies that are Available*

The new Patents Act of Great Britain empowers the Board of Trade to confer upon British subjects the right to manufacture under enemy patents. The list given below includes some of the British patents relative to mining which have been granted in favour of residents of Germany, Austria or Hungary. If any patent listed has been assigned to a non-enemy proprietor, the law does not apply.

20145 11—Preparing peat. Raw peat to be dried is mixed with hard, dry, compressed peat and the mixture compressed, the product being used as fuel, or mixed with further supplies of raw peat, and treated in the same way. The pressure is continuously and gradually increased. E. Albrecht, Germany.

20312 11—Fuel, grinding, crushing, etc. P. Hoering, Berlin.

20633 11—Gas producers; ashes, removing. Gas producer of the kind having a rotary ashpans carrying a rotary grate. A. von Kerpely, Vienna.

21019—Haulage rope grips. Relates to lead actuated grips for suspended cableways, in which the haulage rope enters the grip jaws from below, and comprises an arrangement whereby any tendency to drag the rope out of the grip increases the gripping force. M. A. and M. P. Bleichert, Germany.

22424 11—Composition fuel, treating ores. Close burning coal, coke, ore, or other material difficult to agglomerate by pressure alone, is mixed with a binding agent made by adding hot liquid pitch or other ingredient that liquefies when heated, to wet caking coal, the mixture being strongly compressed to form briquettes. A mixture of pitch, tar, naphtha, and mazut, or of two parts resin and one part of mineral oil, may be used instead of pitch. A binding agent, consisting of three parts by weight of finely-ground, dry caking coal, one part of preferably cold water, and one part of the hot liquid ingredient, may be added to about 20 parts of the material to be agglomerated, and the product pressed at about 400 atmospheres. F. O. Gripp, Germany.

22696 11—Coking. Coal of inferior quality, peat, lignite, wood waste, etc., is mixed with a binding agent, such as pitch, tar, or the like, and compressed to a high degree into small briquettes or the like, which are fed continuously through coking chambers heated, at least partly, by the introduction of steam superheated to coking temperature. E. Enke, Germany.—W. J. D.

Fire Losses

Education in Fire Prevention Gradually Showing Results

Canada is making headway in the matter of reduction of fire losses. From reports of fires in Canada for the two months of 1915 a loss is shown of \$2,498,884 as against \$5,717,061 for the same period of 1914, or a reduction of \$3,218,177. This is the lowest fire loss for over five years.

Of the 581 fires which occurred in February, 1915, however, 364 took place in dwellings, and the majority of these originated from easily preventable causes. Defective pipes and flues are well established as the causes of the largest number of fires. Flues are defective in numerous ways and even close inspection may not reveal a dangerous condition. Critical examination is, in most cases, impossible, as the construction is in itself faulty, and a cold spall, with forcing of the heating apparatus, finds the weak places.

ILLUSTRATION FARMS

In his report on the inspection of the Illustration Farms conducted by the Commission of Conservation, the agriculturist of the Commission at the annual meeting said:

"This work has been intensely interesting, and the manner in which the farmers have undertaken and so successfully carried on the work outlined is indeed gratifying. Another feature which must not be overlooked has been the interest aroused among the young people in the great possibilities of the old home farm when scientific and up-to-date methods are adopted. On one of the Illustration Farms, among the French-speaking farmers of Quebec, the farmer and his six grown-up sons would drop all work to accompany the instructor each time he visited the farm, all joining in the discussions and asking questions relating to the farm operations. This farmer himself stated that, since following the advice of the Commission's instructors, he had the first successful crop of clover and of corn he had ever grown on his farm. This was in 1914."

In a forthcoming report on Waterworks Systems of Canada, to be issued by the Commission of Conservation, information on sewage and sewage-disposal has also been obtained. The information gathered reveals the fact that, in Canada, 57 river-systems on inland waters receive raw sewage from 159 municipalities, while 111 water-supply systems obtain their water from streams or bodies of water into which raw sewage has been discharged above the intake points. Good progress, however, is to be noted in the installation of sewage treatment plants, of which there are now 61 in operation in Canada.

Farm Losses

POOR AND INSUFFICIENT CULTIVATION

Poor ploughing and careless and insufficient cultivation in preparing the seed bed account for more poor yields than we are able to estimate accurately. On the 1,000 farms visited last year in connection with the agricultural survey conducted by the Commission of Conservation, a lamentably large number of fields were seen which had been poorly ploughed, scratched over once or twice with the harrow, and seeded. The result of such practice is that visible ridges are left where every furrow is turned, and the farmer jolts over these ridges when harvesting his crops until the ground is ploughed again; unfortunately, in many cases in Quebec and the Maritime Provinces this is not until about ten years later. The small seeds cannot do their best under such conditions. They are not entirely covered and consequently there is poor germination. Then the young plant cannot send its root hairs, by which it feeds, through soil particles themselves; they must go between the soil grains. The more the soil is pulverized, the more openings between grains, and the greater room for root growth. Poorly tilled soil gives plants limited feeding ground, retards beneficial chemical changes and causes soil to dry out in dry weather, all of which mean loss in crop yield. More and better tillage mixes the humus and eliminates the undesirable air spaces under the furrow, increases the feeding ground of the plants, hastens beneficial chemical action and conserves moisture. These mean increased crop yields.

The following table is of interest in showing profits from various yields:

Yield in bushels.	Price	Market value per acre	Cost of production including rent	Net profit or loss per acre
20 . . .	80 . . .	638 \$12 76 87	89	+ 84 87
16 . . .	638 10 21 7 89			+ 2 32
12 . . .	638 7 66 7 89			- 23
10 . . .	638 6 38 7 89			- 1 51
8 . . .	638 5 10 7 89			- 2 79

From the above table it will be seen that as large a net profit is realized from one crop of 20 bushels per acre as from two crops of 16 bushels. An extra two or three bushels per acre in yield can easily be obtained by better cultivation and the net profit increased at very slight expense.—F. C. N.

Care in removing projecting nails from boards, boxes, barrels, sidewalks and floors will often prevent accidents through stepping on nails.

Smut in Grains

Simple Treatment Will Prevent Continuance of Pest

It is estimated that the field loss in the United States due to smut amounts to over 35 million dollars annually. A proportionate loss in Canada would be from nine to twelve million dollars.

Out of the 500 farmers in Quebec and the Maritime Provinces visited by representatives of the Commission of Conservation, only three were found to be treating their seed grain for smut. In Ontario 23 per cent, and in the Prairie Provinces about 90 per cent were found to treat their seed grain. The losses from this source are much greater than imagined by the farmer, and, even if only a small amount of smut was present in last year's crop, it will pay to treat the grain before sowing this spring.

Several methods have been devised to control the various forms of smut, but, as the formalin treatment is the cheapest, simplest and most effective for stinking smut of wheat, smut of oats, and cover smut of barley when properly used it will be described. The commercial (40 per cent) formalin is used in solution with water at the rate of one pint (1 lb.) to forty gallons. The grain to be treated should be spread out upon a clean floor or canvas, in a layer two or three inches thick. The solution is then sprinkled over it. An ordinary sprinkling can or smut spray pump is useful for this purpose. The grain covered should be shaded or raked over during sprinkling to insure that every grain is thoroughly wetted. After this the grain is shoveled into a close pile and covered with canvas or sacks to hold in the fumes of the formalin. The grain should remain in the covered pile for five or eight to ten hours, after which it must be spread out thin so as to dry without sprouting. One gallon of solution is sufficient for bushel of grain.

After drying, the seed may be planted at once or stored for future use. Here it is important to remember that the seed may become re-infested from old seed bins or even the drill itself. Everything, therefore, which comes in contact with the grain after this treatment should be first thoroughly disinfected with a strong formalin solution. Commercial formalin usually costs from twenty-five to fifty cents a pound (pint). If the grain is planted before it is completely dry, enough more should be sown to compensate for the increase in size of the seed through swelling. In treating stinking smut of wheat it is best to immerse the grain so that the smut balls of the seed are skinned off.—F. C. N.

Employees should understand that the "safety first" movement is a humanitarian effort in the own interest and that of the nation.

*Condensed from *Colliery Guardian*, Dec. 24th, 1914.