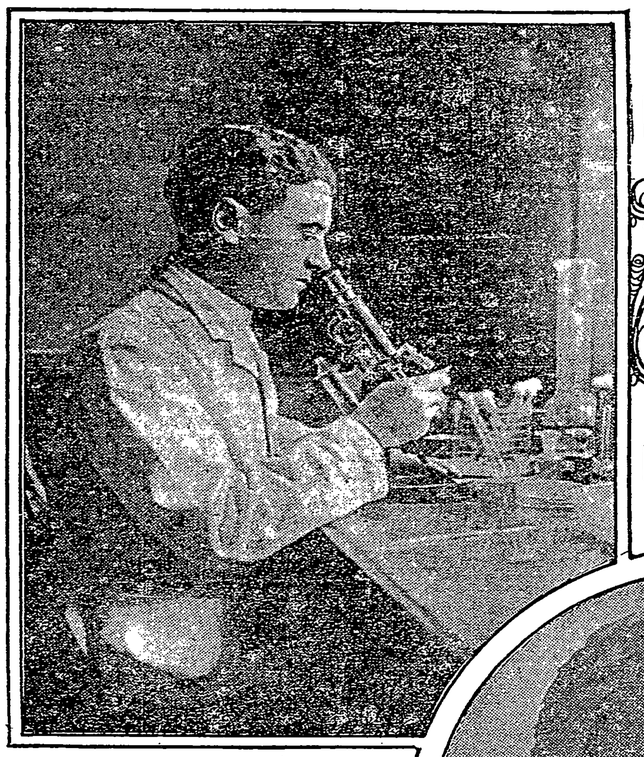
INVENTORS WHO TAKE NO PROFITS FROM THEIR WORK

Give the Results of Their Skill and Study Without Charge for the Good of Mankind, Declining Royalties.



Dr. Manon Dorset, Whose Cure for Hog Cholera Has Been Given the World Free.

IF you had discovered and patented a cholera antitoxin that could stop an annual loss of $30,000,000 worth of hogs in the United States, would you give the invention away to the general public?

Or if you had found that oil and cement will mix to form a new style of concrete which may completely revolutionize the building industry, would you patent the process for your own pocketbook, or for the free use of the people?

These questions are hypothetical to the ordinary citizen, but they have been real to two men. The man who discovered the hog cholera serum might have been rich now, with a stupendous fortune in sight. The man who is about to obtain a patent on the new building material modestly admits that there would probably be "millions in it" as a patent right, but that he has no desire to take profits from his discovery.

Both of these inventors, Dr. Marion Dorset and Logan Waller Page, are employes under the Agricultural Department of the Government. They are by no means the only ones who have within the last three or four years dedicated to the public inventions of great value. A certain obligation rests upon the man who uses public property, and whose time is paid for by the Government, to turn over his discoveries or inventions to the Government, but many private citizens have deeded to the public inventions from which they might have made large incomes.

John Jacob Astor is one who has disclaimed any desire for royalties on several of his inventions, and has thrown them open to general use and manufacture. In a similar way, but unusual in the methods of modern railway corporations, the Pennsylvania Railroad has dedicated to the public an invention of William F. Kiesel, Jr., covering an improvement in the construction of tank cars. The railroad company's unprecedented letter of assignment of the patent says:

"The Pennsylvania Railroad is desirous that the improvement may be freely made and used within the United States and its territories, without compensation to this company."

The two public patents that are likely to stand forth as the most important of recent years are those covering the cholera antitoxin and the new oil-concrete. The history of the former is well known in medical and agricultural circles, but it will bear repeating here. The story of the latter invention, when it is finally told in all its details to the engineering world, will prove to be one of the romances of world one of the most important discoveries of agricultural science. Dr. Dorset found it impossible to locate the germ of hog cholera, but he found that certain hogs were immune from the disease.

The blood of diseased hogs was injected into those that were immune. This stimulated the production of the antitoxin in the immune hogs, and the blood from these animals was then injected into those that were not immune. The result was to make them permanently immune from attack by cholera.

"We could hardly believe that we had actually discovered the secret," says Dr. Dorset. "When the process worked out the first time, we thought it must be accident. It was not until it had worked out time after time that we realized we had at last found the means for fighting hog cholera."

Dr. Dorset retained the privilege of patenting his discovery abroad and obtaining royalties from it there. In only one or two instances, however, did he take out patents, and little effort has been made to commercialize the invention. In Hungary, one of the great hog-raising countries of Europe, the Government has been given free use of the invention, has erected a large central plant for the manufacture of the antitoxin, and has already inoculated a half million hogs to protect them from disease. Properly applied, Dr. Dorset's discovery can absolutely eradicate hog cholera with its great property loss to the farmer and stock raiser.

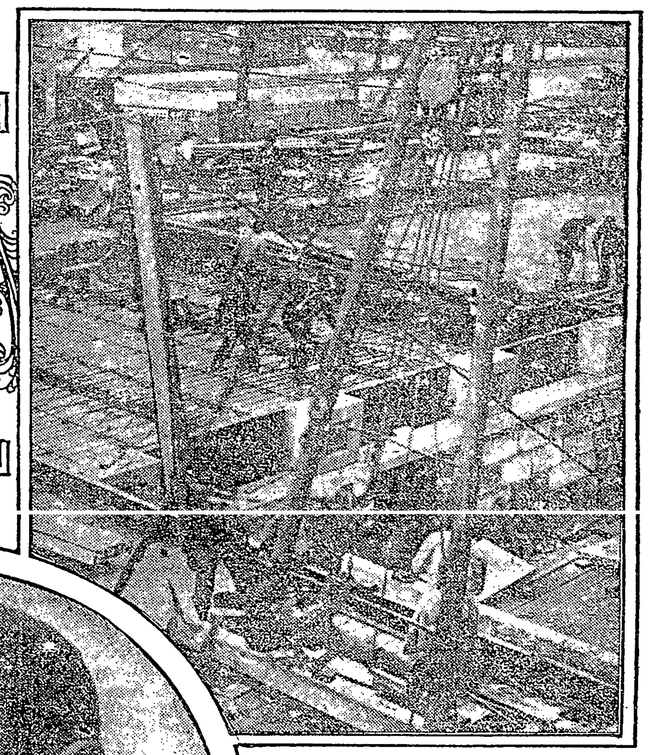
Patents for the public are becoming more numerous and important each year. It is only within the last few months that the Patent Office has established the official classification of "Dedicated to the Public" in its official gazette of patents, and has attempted to assemble the records of those discoveries and inventions that have been taken out for the benefit of the people of the United States.

These patents are secured to insure the free use of the patented object by the public. If such action were not taken the principle of the invention or discovery might at once be incorporated in some other invention and patented by another person, with the result that the benefits intended for the public would go to some private corporation.

Many inventions for the benefit of the army and navy have been made by officers in the service, and their free use given to the Government. The most important of these is undoubtedly the Buffington-Crozier disappearing gun, used for coast-defense fortifications on both sea lines of the Nation.

Gen. William Crozier, now chief of ordnance of the army, and then a Captain, with Capt. A. R. Buffington, took out the patents on this mechanism over fifteen years ago. The patents were turned over to a manufacturing company, but later it was specifically provided by the inventors and the steel company that the United States Government should have the right to use the patents in the manufacture of guns, without the payment of any royalties. Later Gen. Crozier secured important patents on a wire-wound gun, and these were dedicated to the public. While foreign patent rights were retained by the inventors on the disappearing gun and carriage, Gen. Crozier made no efforts to protect his foreign rights to the wire-wound gun invention.

The invention of Major O. M. Lissack of



Building U. S. Treasury Vaults of Mr. Page's Concrete.

Gen. William Crozier, Inventor of the Disappearing Gun.

John Jacob Astor, Who Donated an Invention to the Public.

Logan Waller Page, Who Gave Up the Secret of His New Concrete.

has reached a stage of development where its success seems assured; and it is apparently destined to take the place of ordinary forms of concrete in the more important building operations of the future. Royalties amounting to millions of dollars are within the reach of the inventor, had he cared to withdraw from the public service, carry on his experiments privately, and patent the process for his own use. But Mr. Page has become one of the "inventors for the common good," as they have come to be called.

Dr. Marion Dorset is already known throughout the scientific world for his discovery of the remedy for hog cholera. His discovery was not the inspiration of a moment, but was the result of long-continued efforts on the part of the Government to find the means for stopping the great slaughter of hogs by the baffling disease.

Once secured, the process was immediately patented to prevent some private concern from monopolizing it by placing its own patent on it. The patent, made out to the public, thus threw open to the

the Ordnance Department of the army have been so important as to induce the war officials to recommend that Congress reward him with an appropriation of $25,000. These inventions cover the cartridge machines used at the Federal arsenals, and save the payment of large royalties to inventors outside the service who might have patented the processes.

In another line of activity connected directly with the saving of lives in coal mining operations, Harold H. Clark, an electrical engineer in the Government's mine testing plant at Pittsburg, has patented and dedicated to the public an invention that gives warning of impending explosions in mines. The apparatus will detect small quantities of inflammable gases, indicating their presence by means of an electrical current and affording time to clear the mine of employes if such action is necessary.

Another patent recently given the public was secured by Thomas W. Smillie of the Smithsonian Institution. It is of special interest in scientific circles, where objects have to be photographed so that the details will be fully preserved. Mr. Smillie found that all discolorations on the original object could be covered with a transparent preparation of aniline oil, the photograph later showing all the details of the surface but none of the discolorations.

It is in agricultural research and invention that most of the public patents have been obtained during the last two or three years. One of the early inventors was George W. Moore, now an instructor in Washington University, St. Louis. He discovered the method for preparing and keeping the bacteria which store up nitrogen in the soil.

The value of the discovery lies in the fact that the means is thus artificially provided for making a poor soil replenish itself. Nitrogen is necessary for crops, and it cannot be kept in the ground unless the bacteria are there to store it up. By Mr. Moore's process these bacteria may be inoculated into the seed before it is planted, or small quantities may be inoculated into the soil. The bacteria do the rest, and the soil improves at once.

Mr. Moore's patent was given absolutely to the public, but the fact that he held an interest in a plant for the commercial manufacture of nitrogen drew some criticism, and he later left the Federal service.

Some of the more important patents in agricultural lines, which are open to use by any one and to manufacture by any private concern, have been made by private experimenters who declined to commercialize their discoveries.

Warren E. Hinds of Auburn, Ala., has patented a cotton cultivator to help eradicate the boll weevil. It throws the fallen cotton forms out into the space between the rows, instead of pushing them back under the growing plants, and the heat of the sun's rays kills the weevils in whatever stage they may be.

There are others of these patents. All of them are open to manufacture by any private concern. The inventors have given away their rights to royalties, and the manufacturers of the country are free to make whatever profits they can from the inventions.

building development.

Logan Waller Page is Director of the Bureau of Public Roads of the Federal Government. He is a man of independent means, who is devoting himself with great success to the work of developing a National good roads scheme, to be carried out in co-operation with the States, and to aid them in their road work.

Mr. Page was experimenting a year ago with the mixing of oil and water to form a dressing for macadam roads. No one had ever proposed the direct mixing of oil and Portland cement; but the idea occurred to Mr. Page that if they could be made to mix thoroughly an important problem in roadmaking and waterproof building construction would be solved.

Experiments were started at once in the bureau of public roads. Mr. Page threw a quantity of oil into some raw cement, worked it thoroughly and left it to set. In a short time it had hardened as thoroughly as ordinary concrete does. Tests of the small block showed it to be tough, durable and entirely impervious to moisture.

Then the experimental work began in earnest. Mr. Page was confident that if the new concrete showed the strength and endurance of ordinary concrete it would work a revolution in the building world. For while ordinary concrete absorbs water, dusts and chips off and disintegrates in some cases, the mixture of oil with the cement in place of water seems to remedy most of these troubles.

Tanks have been built of the new material, so thin that water would have spurted through the usual concrete wall; but the oil concrete shows no leakage after months of use. A short stretch of road has been built of the material in Washington. While automobile tires pull up the fine particles of a macadam road, they seem to have no effect on the new surface, and the material embraces the virtues of asphalt without its great cost.

The tests have been so thorough that the mixture of oil and cement is now being used to construct new vaults in the United States Treasury. It will probably be used for a short section of an important engineering work in New York next year. Experimental pieces of the substance, after six months of hard usage, have sustained a pressure of 2,400 pounds to the square inch before breaking. Cement manufacturers have been sending carloads of cement to Washington, and oil producers have furnished many barrels of oil for the conduct of the experiments.

This is the invention which Mr. Page has asked to have patented in the name of the people of the United States. It

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