The Teredo.

In the office of General Manager C. J. Smith, of the Oregon Improvement Company, are a number of cans of some poisonous compound intended to prevent the terror of Puget Sound, the teredo, from destroying piles or other timbers placed in the water. The stuff is to be sent over to the sound to be tested. A number of things have been tried to protect piles from the teredo, such as creosote, asbestos, coal tar, castor oil, strychnine, etc., but the only perfectly sure method for preventing the teredo from eating up piles is to make them of iron. Covering wooden piles with copper will protect them as long as there is no place in the joints of the copper where a teredo can poke his nose through, but if once the copper gets torn it is goodby, John, to the pile. So far the poisonous compounds used on piles seem to have pleased the teredo much, seeming to act as a condiment on what must be rather a monotonous bill of fare, and assisting in its digestion. The man who finds out the poison which will act as an antidote to the teredo will have a good thing. It may be that if the piles were washed with whale oil soap every day it might keep away the teredo, or if the piles were greased with tallow, perhaps the long, slimy, wriggling pest might not be able to get its teeth into the pile, as they would slip off. The people on the sound can rejoice that the teredo does not go ashore and hunt for tall timber, as if it did the lumber output of that section would soon be *nil*. It might be that if the sawmills on the sound would throw their sawdust into the sound the teredo would learn to like it, and would prefer "cut feed" to cutting up the piles themselves, and thus some good might be accomplished.—*Portland Oregonian.*

Wealth of the Northwest says: Not only sawmill owners, but all who build docks, booms, or log in the salt waters of this coast find in the teredo an enemy who works in the dark and one that is as uncertain in its movements as it is certain to be felt in some way not profitable sooner or later. Certain localities whose waters are salt and tributary to the Pacific Ocean are reported as free from the ravages of this pest. Mr. J. S. Mundy, of the Bellingham Bay Milling Company, at Fairhaven, Washington, is on record as saying that he has recently inspected piles at that point—under a dock—that have been in use for six years, and did not find a pile entirely destroyed by teredoes, though some were so badly eaten that it was necessary to replace them. Cedar posts under the mill were found in a condition that did not require that any of them should be replaced. On Gray's Harbor the statement is made that the teredo has never done any damage. There may be some local causes in both these places for this healthy condition, so to speak. It is thought by some that rough water caused by continuous winds prevents this worm from getting in its work. In other localities swift currents from tides may be a preventive. At any rate certain points seem more exposed to their destructive work than others. It may be that these worms haunt certain localities—as fish do—and avoid others, without any cause known to man. At Tacoma, Seattle, Victoria, and other points on the sound the teredo has cut docks down in a year's time, causing heavy damage, and in some instances loss of life. By some it is thought that after six months a pile is unsafe, but this is an extreme opinion. However, in the case of a dock that was cut down by these worms at Seattle within a year after it was built, this opinion is not very much out of the way.

The *Commercial News*, of California, says on this subject that "the teredo is a nuisance and expense here, but the great Northwest coast, which tries in many ways to prove its superiority over California, in one respect at least carries off the palm, and that is in teredoes. Captain Gibson, of the bark J. D. Peters, has presented this office with the section of a pile which was in a raft waiting to be used in the building of a wharf at Seattle. The pile had been in the water only thirty days, and when hauled out on the beach it was noticed the teredo had got in its deadly work, and the stick was, before it had ever been used, rendered worthless by this pest. The section referred to is about a foot in diameter, and contains, by actual count, 212 holes bored by this industrious woodworker. When this log was on the beach, it is said the little pests kept up boring, so that placing the ear near the pile it sounded as if a sawmill was in active operation. With such an illustration of the futility of using wood for wharves, why is it that here and at the north some plan is not devised by city or State authorities to make permanent improvements on the water front of each city? Docks built of stone, though the first cost is greater, would in a very short time be cheaper than wooden wharves constantly needing renewal, and this section of a pile, which is on exhibition at this office, is an object lesson which merchants, taxpayers, and particularly officials having charge of the wharves in this and other Pacific coast cities should study."

In the year 1884 it is said that one of the large sawmill companies of Puget Sound lost 50,000,000 feet of logs that were allowed to lie in the water until the teredo had ruined them.

So far nothing has been found to protect these piles that is not too expensive for general use. Some one will one day solve the problem and realize a fortune.

Treatment of Diphtheria.

Dr. Guntz, of Dresden, has had great success in the treatment of diphtheria with bichromate of potash in water containing carbonic acid, which he has found by numerous experiments on animals, as well as in the course of extensive clinical observation, to be entirely harmless. For an adult 600 grammes (about a pint) are ordered per diem, in which are dissolved three centigrammes (about half a grain) of potassium bichromate. The whole quantity is directed to be taken in about half a dozen doses, regarding which it is important to observe that they must not be taken on an empty stomach; a little milk or gruel should therefore be swallowed before each dose. Children, of course, take smaller quantities, according to age. They can be given the medicine in a tumbler mixed with some fruit sirup, and they do not generally object to it. At the commencement of the disease Dr. Guntz washes the mouth out with a 1 per cent solution of permanganate of potash containing 0·1 per cent of thymol, or with a corrosive sublimate solution of the strength of 1 in 3,000, taking care, in the latter case, that none is swallowed, and that the mouth is well rinsed with water afterward. In the case of young children the pharynx must be brushed out with the solution. Sometimes iodoform is employed, being applied on the tip of the finger to the affected spots. Dr. Guntz specially remarks that potassium bichromate, though harmless in the way described, is by no means so when in pills, powders, or in solution in non-carbonated water.—*The Lancet.*

RECENTLY PATENTED INVENTIONS.

Engineering.

SMOKE CONDUCTOR. — An improved smoke conductor, patented by Mr. James R. Johnson, of Charleston, S. C., is designed to adjust itself automatically where it is coupled to the cars of a train, and to retain its connection whether the train is on a curved or a straight track, the whole being arranged so that it may be regulated from the cab of the locomotive. A section of the conductor is mounted upon each car, and one is provided for the locomotive and another for the tender. The forward end of the conductor enters the smoke stack, and a valve is provided for directing the steam and products of combustion from the locomotive smoke stack through the rearwardly extending conductor. In front of the smoke stack is arranged a flaring mouthpiece opening into the stack opposite the conductor, the mouthpiece serving to gather air as the train moves forward, and assist in propelling the sparks, gas and steam through the conductor.

ASH PAN FOR ORE ROASTING FURNACES.—Mr. Simon B. Dexter, of Glendale, Montana, has recently patented an ash pan for ore roasting furnaces, especially those described in a former patent by the same inventor. The ash pan is provided with a water discharge pipe and arranged in connection with the water grate so as to receive the cooling water discharged by the grate and convey it, together with the ashes, to the discharge pipe leading away from the furnace.

PORTABLE SELF-RAISING LADDER.—Mr. Benjamin H. Burling, of Fort Ann, N. Y., has recently patented a portable self-raising ladder, which is readily placed in position for use. It is provided with an auxiliary ladder at the upper end, which may be used as an extension of the main ladder, or as a platform or fire escape, which may be projected horizontally into the windows of the upper stories of a building. The lower portions of the side pieces of the main ladder are thickened and provided with tubes, two on either side of the ladder, for conveying hot or cold water or steam for extinguishing fires. The ladder is supported upon a vehicle furnished with a tongue at either end, so that it may be drawn in either direction without the necessity of turning it around.

Railway Appliances.

AUTOMATIC RAILWAY SIGNAL.—Calvin W. Wilhelm, Mauch Chunk, Pa. This signal is set and locked by means of a lever depressed by the wheels of a train and actuating a series of locking levers and latches, the semaphore being released by the closing of an electric circuit as the train proceeds. The electrical parts are so arranged that one battery at each station operates two magnets; and a train may be signaled a block and a half to the rear.

SAFETY ATTACHMENT FOR RAILWAY CARS.—Robert M. Smith, Cherokee, Iowa. This is a support or platform adapted for attachment to the end of a car adjacent to the coupling device, whereby the cars may be coupled or uncoupled by a trainman without exposing himself to injury. A further safeguard is also provided to prevent the train hand from being jolted from the platform.

Mechanical.

A MACHINE FOR LAYING AND SPOOLING WIRE, patented by Messrs. G. B. Johnson and J. O. Hill, of Princeton, Kan., is designed for use with any variety of wire, or other material usually wound in coils, but it is especially adapted to be used in handling barbed wire fencing, the machine being constructed so that the wire may be laid and stretched at one operation. The frame carrying the wire-winding mechanism is mounted on wheels; a shaft journaled in the frame carries a spool containing the wire, and a rod pivoted to the rear end of the frame carries at its free end a guide roll to guide the wire to the spool. The machine has all the necessary adjustments to adapt it to the use for which it is intended.

DYEING MACHINE. — Mr. Joseph Hussong, of Camden, N. J., has recently patented a new dyeing machine. This machine is provided with a vat furnished with a cage supported by bell crank levers, the levers being connected by links and arranged to receive oscillatory motion from a rock shaft, the motion of the bell crank levers being made variable by placing the connecting rod in different notches of the arm of the rock shaft.

CHECK PUNCH.—Mr. George L. Banks, of Fall River, Kansas, has patented a check punch which will perforate a check with figures representing the amount of its face value. The device is provided with a series of figure punches mounted in a frame and capable of being brought to the same point before being operated, a registering and indicating device being provided for bringing the punches into the proper position for use. A pair of feed rollers is employed to move the check forward one space for each figure punched, the lower roller of the pair being mounted on a shaft operated by a pawl and ratchet connected with the punching key or lever.

AN IMPROVED GRINDING MILL for gradually reducing grain to different degrees of fineness for flour and feed has been patented by Mr. Le Grand D. Harding, of Colfax, Washington. In this mill one of the grinding rollers has in its periphery an annular recess to which is fitted the annular projecting portion of a second roller, the two rollers running in frictional contact with each other, or with the grain passing between them. The rollers are made hollow from the center to the ends, to receive spouts for conveying away any dust that may be discharged from the ends of the rollers. The grain is fed to the rollers by a feed roll working in a hopper located above the rolls. The rolls being made hollow in the manner described, afford a ready escape for any heat that may be generated in grinding, and by driving one roller by frictional contact with the other, an economy in power is secured.

Agricultural.

POTATO DIGGER.—Mr. John Franklyn Fowler, of Brooklyn, N. Y., has patented a potato digger, formed of a beam to which is attached a U-shaped hanger carrying a plow or point adapted to pass under the hill of potatoes, and provided along its rear edge with a series of divergent fingers or rods projecting upwardly and rearwardly, so that as the potatoes and the earth are raised together by the point as the implement is drawn forward, the potatoes are crowded over the rods or fingers, when the earth falls through and the potatoes are discharged over the rear extremities of the fingers upon the ground.

Miscellaneous.

WATER TROUGH.—Bernhard Koeppe, Kearney, Neb. This invention relates to an improved trough for watering stock, fowls, etc., and provides a device to be connected to the water supply to control the inflow of water, so that the desired height of water in the trough will be uniformly maintained by the automatic action of the controlling mechanism.

TRUSS PAD.—Joseph Garcia, Paterson, N. J. This invention provides a pad which may be conveniently filled with a liquid or with air as often as desired, while the interior of the pad may be effectually and thoroughly cleaned when necessary.

A NEW SERVICE AND CASH CHECK, patented by Mr. Geo. D. Smith, of New York City, is especially designed for use in restaurants where it is the rule for waiters to collect from the guests or patrons the value of the food served. His invention is designed to assure to the proprietor full returns for the value of the food served, and to prevent collusion between the employes and patrons, without offense to either, and to secure a more satisfactory service. The check is provided with a series of numerals indicating successively higher values of food served, and provided with a series of dots or marks opposite each of the numerals, so that like orders of the same value may be registered by punching out successively the dots or marks of the series opposite the corresponding numerals of the check.

NEW BOOKS AND PUBLICATIONS.

DIE DECORATIVE KUNST-STICKEREI. I. Aufnaeh Arbeit. By Frieda Lipperheide. Berlin. 1890. Franz Lipperheide.

The first part of "Artistic Embroidery" deals principally with cut-out figures or patterns attached by stitches or other means on the cloth. The handsomely illustrated book gives full instructions for making such artistic embroidery, and also gives description and illustrations of the tools necessary for the work. The book contains besides the text a number of colored plates and wood engravings illustrating beautiful designs of embroidered covers, curtains, chairs, etc., copied from original designs of the Spanish, German, Italian, and French schools of the fifteenth, sixteenth, and seventeenth centuries. The book, although primarily intended for the use of ladies doing handiwork, will no doubt be welcomed in many shops, factories, etc., requiring artistic designs for embellishing the goods manufactured.

The Charter Gas Engine Co., of Sterling, Ill., publishes a pamphlet giving a large number of letters of recent date, from users of their machines, testifying to their efficiency and economy. They are used for every variety of work, from printing presses to grain elevators, and are designed to be perfectly safe, compact and trustworthy, while working with great economy. The engine uses gasoline direct from a tank, and has an automatic governor whereby only as much gasoline is used as required to do the work.