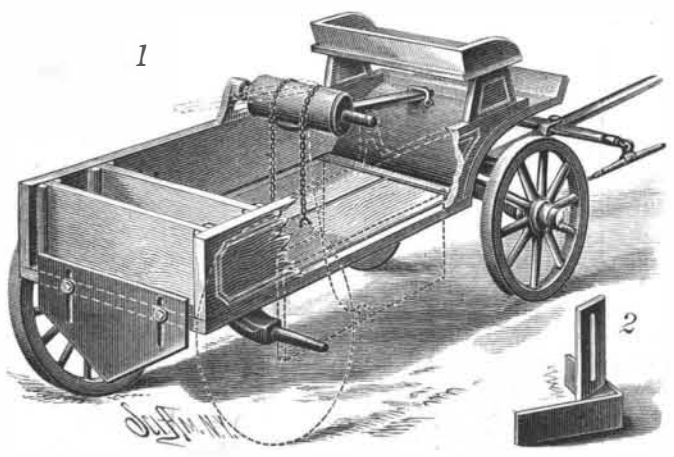
A DUMPING WAGON WITH ADJUSTABLE SCRAPER.

A wagon more especially designed for use in repairing roads, having hinged dumping bottom sections in combination with an adjustable scraper or leveler, is illustrated herewith, and has been patented by Mr. Wm. E. Hewlett, of Merrick, Long Island, N. Y. The bottom is centrally divided longitudinally, forming sections which are pivoted or hinged near the opposite sides of

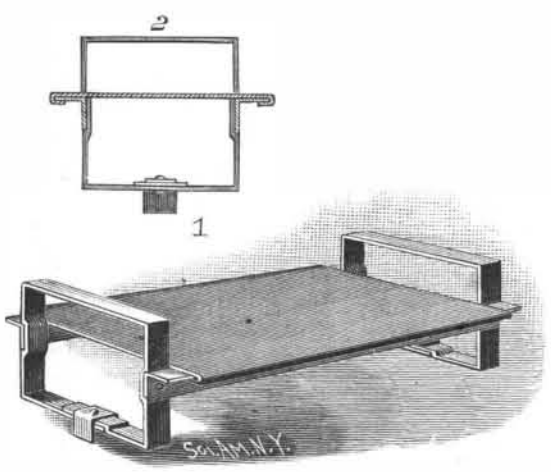


HEWLETT'S DUMPING WAGON.

the wagon body, chains attached to the inner edges of these sections being attached at their other ends to a drum on a cross shaft held above the wagon body. This drum has a lever that may be thrown downward in front and engaged with any suitable fastening to hold the bottom sections closed, or when released and allowed to swing back, as shown in dotted lines, the bottom sections are thrown down or open to dump the load. To level or spread the ridge-like heap thus deposited, a scraper or leveler is attached to the rear of the wagon body, which may be either in the form of a flat plate or board, tapering on its opposite edges toward the center, or it may be made in angular form, as shown in Fig. 2, adjustable up and down by one or more slots and bolts. Back of the main dumping bottom sections of the wagon, and at a suitable distance in advance of the tail board, a removable cross board is arranged, forming a convenient receptacle for shovels and picks, etc., or for other purposes.

AN IMPROVED PALLET FOR DRYING BRICK.

A pallet designed to afford improved means of piling brick in a drying kiln, whereby the brick may be protected and prevented from breaking, and a perfect circulation be obtained over and around them, is illustrated herewith, and has been patented by Mr. Charles T. Fitch, of No. 559 Morris Avenue, Elizabeth, N. J. The end pieces, or "heads," are formed of a single piece of metal bent to rectangular shape, their ends being united at the base by a rivet, while centrally in the sides is a depression, as shown in the transverse section, Fig. 2. The heads are connected by angle side strips, which are secured in the side depressions, a bench resting on the horizontal members of the angular side irons, and being held thereon by its turned-over edges. At the intersection of the ends of the head an angular strip is attached, by the same rivet that attaches the ends, the vertical member of the strip forming a locking lip, so that as one bench of bricks is placed upon another bench the locking lip will prevent lateral play. The several parts of the pallet are made of metal, and the



FITCH'S PALLET FOR DRYING BRICK.

side pieces and bench may be of any desired length, the bench being perforated if found desirable.

Population of Russia.

Government statistics recently published place the population of the Russian empire at 108,787,235, of which 81,725,185 are in Russia proper, 10,136,725 are in the other provinces of Russia in Europe, and 16,925,325 in Asiatic Russia. St. Petersburg is the most populous city, with a total of 861,303. The population of Moscow is 753,469, of Warsaw 454,293, and of Odessa 240,000.

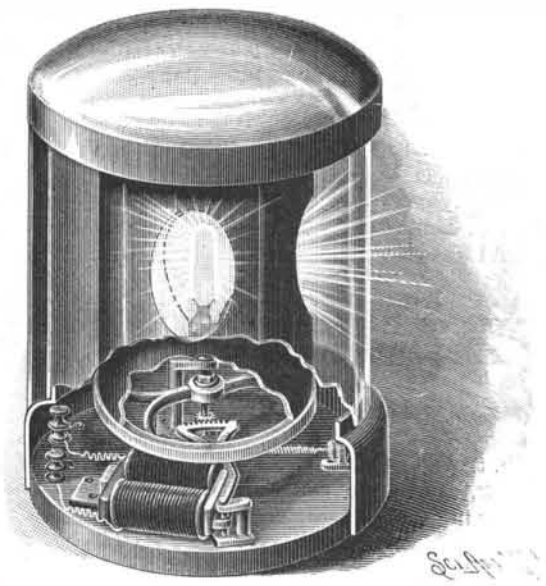
Refining Olive Oil without Chemicals.

According to G. Seidel, olive oil is put into a conical tub provided with a steam coil. About ¼ inch over the bottom, a faucet is inserted, to let off the water and impurities, and about 4 inches above this a second faucet is placed for drawing off the oil. The tube or tank may be made of any desired size, but that described by Seidel holds about 2,000 lb. It is placed upon a stone floor, and alongside of it are placed, at different levels, 5 to 6 clarifying tanks resting upon strong wooden frames. These tanks, which may also be of tinned iron, have a cylindrical form, a false perforated bottom about 1 or 1½ inch above the bottom, and above this, at the side, a stop cock. A layer of cotton, or preferably glass-wool, is placed on the diaphragm.

Glass wool is preferred as it may be easily washed and can be used for years, while cotton will last only for 2 or 3 operations. For every 100 lb. of olive oil to be clarified, 10 to 15 lb. of water are added. The oil is then brought to a boil, by means of steam, and kept so for 2 or 3 hours. It is then allowed to be at rest for 24 hours, during which time the water will separate. On opening the stop cock the partially clarified oil is allowed to flow into the first clarifying tank. When this is full, its contents are allowed to flow into the second, and so forth. When the first tank is empty, it may be refilled from the steam tank as soon as a new lot of oil has been treated as described above.—*Industriebl.*

AN IMPROVED RAILWAY SIGNAL LANTERN.

A signal lantern which may be used with advantage for block signals, to indicate when a section of road is

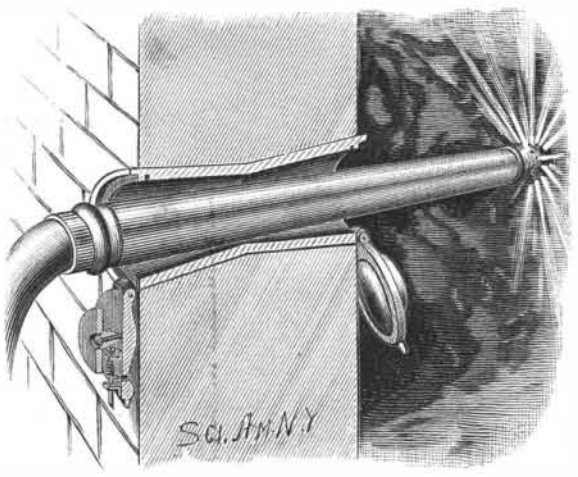


PETERS' RAILWAY SIGNAL LANTERN.

occupied, or to be used at crossings, and which can be readily operated by a train dispatcher or engineer, is illustrated herewith, and has been patented by Mr. Christian H. Peters, of Danville Ill. The upper part of the base casing has a collar for receiving a hollow glass cylinder, to the top of which is fitted a hollow cap, the cap and base casing being connected by bolts, to each of which is attached a plate for screening the bull's eyes not to be displayed. In a frame secured to the center of the base is pivoted a wheel having a flange on its upper surface for receiving a metallic cylinder, having several openings, preferably three, behind which are windows of different colored glass, the glass being bent to conform to the curvature of the cylinder. The wheel carrying the metallic cylinder carries also a pinion engaged by a toothed sector lever, pivoted at one side in the base casing, this lever carrying an armature that is drawn backward by an adjustable spring. An electro-magnet is supported by a bracket attached to the base in position to act upon the armature, and when the magnet is placed in a block signal line, and the circuit electrically closed, the armature is drawn toward the magnet, thereby turning the wheel and the metallic cylinder about one-third of a revolution. The cylinder contains a lamp, the light of which is colored by the colored glass windows, so that different signals may be displayed as the circuit is opened or closed.

A HOSE THIMBLE FOR WALLS OF BUILDINGS.

A tube or thimble adapted to be built into the walls of buildings, and through which a hose nozzle may be thrust for extinguishing fire, is illustrated herewith, and has been patented by Mr. Louis F. Stevens. The tube or thimble may be of brass, cement, or cast iron, and is preferably depressed in the center, with flaring ends, to facilitate the insertion of the hose nozzle, and also adapt it to be secured in the wall. Each end is provided with a hinged door having a spring-actuated locking bolt adapted to be operated by a key, while in the center of each door is a pin on which is adapted to slide a cone plate, so that when the plate is thrust forward on the pin, the cone will act to withdraw the locking bolt. When both doors are closed, all passage of air through the thimble is prevented, but in case of fire, and the outside door being opened by a key, the thrusting of the nozzle through the thimble against the cone plate automatically opens the inner

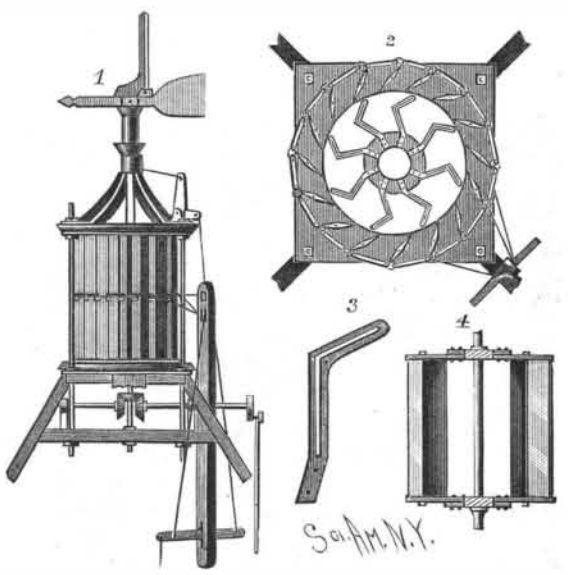


STEVENS' HOSE THIMBLES.

door. By this means the necessity of breaking holes in the walls of buildings to extinguish fire is avoided, and spray or distributing nozzles may be used to fight a fire at close quarters. For further particulars with reference to this invention, address Mr. L. F. Stevens, care of J. F. Donnell & Co., No. 822 Broadway, New York City.

AN IMPROVED WINDMILL.

A windmill having a wheel with angular wings inclosed in a casing whose sides are adapted to swing open and shut is illustrated herewith, and has been patented by Mr. Bernhardt Koeppe, of Kearney, Neb. In suitable bearings in the main frame is mounted to rotate a vertical shaft, carrying near its lower end a bevel gear wheel, by which the power is transmitted, the wind wheel secured to the shaft above having upper and lower grooved angular arms, in which are fitted plates forming the wings of the wind wheel, as shown in Figs. 2 and 3. The wind wheel is inclosed on its periphery in a casing, consisting of a number of sides that are diamond-shaped in cross section, whose edges are adapted to overlap each other when the casing is closed, so that no wind can get to the wings of the wind wheel, while permitting the easy entrance of the wind when the sides are opened. On the outer edge of each of the upright side pieces of the casing is a lug, a pivotally connected arm extending from each lug to the next following lug, and to one of the arms is secured a rope which passes under a pulley mounted on a post at the side of the main frame, as shown in Fig. 1, the rope extending upward and connecting, through a bell-crank lever, with the vane at the top. The construction is such that, with the casing open, the wind is guided by the side pieces to the angular wings of the wind wheel, so that its force may be most effectually utilized; but when the wind increases, causing the wheel to run above its normal speed, a lever connected with the vane exerts a pull on the rope connecting it with the arms pivoted to the side pieces of the casing, closing the



KOEPPE'S WINDMILL.

sides and shutting out the wind from the wheel. The sides of the casing can also be opened or closed by pulling a lever pivoted in convenient reach of the operator, ropes from which extend to the arms pivoted on the side pieces of the casing.

THE most effective show tablets for a chemist's window are opal glass with black lettering. Being translucent, they look as well by gaslight as by daylight.