

out on its tramway, when the compressed bags are removed, each containing an oil-cake. But even after submission to severe hydrostatic pressure some oil is still left in the cakes, and to extract this they are subjected to a second pressure in what is called the "wedge-press." In it the bags are exposed to the pressing action of wedges—inclined planes—driven by heavy stampers of timber, and, for this reason, sometimes called "stamper presses." The cake now left in the bags is used for the food of cattle, and the oil thus obtained is raw linseed. The wedge-presses are also called "Dutch mills"; they are the oldest kind used, and in some oil-mills in England no others are employed. Good flax seed weighs from 48 to 62 lbs. per bushel, and good American seed has yielded as much as 26½ per cent of oil. During the past year its price has been rather low, its average being but 64 cents per gallon. On page 220, Vol. VII. (old series) of the SCIENTIFIC AMERICAN, there is an illustrated description of the patented horizontal oil press of Mr. D. L. Latourette, and since that date W. Wilbur has invented a peculiar roller oil press, principally designed, however, for cotton seed, from which 1,660,000 gallons could be made annually from the usual American crop.

Great complaints have recently been made in regard to the quality of the linseed oil sold for painting purposes, both here and in England. It is said to be greatly adulterated with sunflower and resin oil, neither of which are suitable for painting, because they do not harden in a proper manner and bind the particles of the pigment in a solid and enduring coat. Resin may be added to linseed oil as it will dissolve in it, and the oil thus adulterated will, when cold, apparently dry, but in very warm weather, it becomes soft and sticky. Resin oil, which is a cheap adulterator of linseed, does not dry completely and become permanently hard. It is also injurious to the colors of the paints, because it effloresces and injures the tints of the finer kinds. All adulterations of linseed oil should be reprobated, yet it appears to us that it is scarcely possible to sell the pure article for the prices which have lately been ruling. Those who desire to have their houses treated with durable paint should look well to the quality of the oil used, as the very first requisite in accomplishing their wishes.

Every fixed fluid oil has its own specific gravity, and as linseed is the heaviest, its purity can be determined by testing with an "oilometer." This instrument, however, will afford no clue to the nature of its adulteration. Resin oil can be detected very easily by simply heating a small quantity of it in a cup. The odor of this oil is so peculiar that a very small quantity of it mixed with linseed can thus be smelled by that useful and beautiful instrument of scenting and snuffing called the nose. In the hands of practiced chemists and oil merchants, different kinds of oils can be detected by the use of sulphuric acid, but no practical information for common purposes can be given by words on this head; such knowledge can only be acquired by visible examinations. It is greatly to be regretted that linseed oil should be adulterated in the least, as its quality for painting purposes is decidedly injured in proportion to the amount of foreign mixtures in it.

THE NEW YORK ZOOLOGICAL GARDENS.

The Special Committee appointed to methodize a plan for the Zoological and Botanical Garden, prepare a draft of an Act of Incorporation and confer with the Commissioners of the Central Park (this city), have made a full report on the subject, from which we make the following extracts:—

The committee have examined with some care the reports on the Gardens of Kew (England), and of the Zoological Society of London, and an idea may be gathered of the number and variety of the requisite buildings, and the extent of the collections from the following facts:—In the Zoological Gardens there are, besides invertebrates, one thousand three hundred individual specimens of more than six hundred species of vertebrate animals. The structures for the accommodation of these are three aviaries, a crane enclosure, four water-fowl enclosures, the young pheasants' and emeus' enclosures, the zebra and antelope house, three small carnivora houses, the pheasant aviary, alpaca enclosure, the great carnivora, the bear pit, bear pond, camel house, the seal pond, kites' aviary, three eagle aviaries, the small mammalia, raccoons' cage, vulture cage, antelope enclosure, the aquavivarium, the beaver pond, otter

cage, the armadillo enclosure, the coypus cage, the monkey house, the porcupine enclosure, dove cote, owls' cage, reptile house, kangaroo enclosure, sheep and goat sheds, parrot house, deer house, elephant house, the wild boars' sties, the brush turkeys' enclosure, the giraffe house, antelope house, two antelope sheds, hippopotamus' houses, and the ostrich house.

In the Gardens of Kew there are two museums of economic botany, the conservatories, the orangery, tropical aquarium, palm house or palm stove, mesembry anthemum, house for the African fig, marigold, orchideous house, double orchideous house, Victoria house for the Victoria regia and other water plants, succulent house, hardy aquarium, the New Zealand and coniferous house, the Australian house, the tropical fern house, the heath house, museum stove, double miscellaneous tropical house, azalea house, temperate fernery, rhododendron and camelia house, propagating house, double propagating house.

The portions of the Gardens at Kew devoted to scientific purposes consist of seventy-five acres.

The Zoological Garden in Regents' Park occupies twenty-six acres, and the Botanical Garden eighteen acres.

The number of visitors at Kew in 1841, was 9,174; in 1850, 179,627, and in 1858, 405,376. At the Zoological Gardens the average number of visitors for the seven years previous to 1847, was 111,500; and for the seven years ending December 31, 1858, 350,620. The receipts of this institution were about \$70,000, and the expenses \$60,000, leaving a surplus of \$10,000.

The committee have been unable to form an exact estimate of the amount requisite to put the garden in order for exhibition; but upon full consultation, the opinion seems general, that the effort should not be made without a capital of two hundred and fifty thousand dollars.

WEEKLY SUMMARY OF INVENTIONS.

The following inventions are among the most useful improvements patented this week. For the claims to these inventions the reader is referred to the official list on another page:—

RETORT FOR BURNING BONE BLACK.

The object of this invention is to obviate the difficulty hitherto attending the warping of the metal plates which retain in proper position the upper parts of the cast metal chambers or tubes in which the bone black is burned. The invention also has for its object economy in space, the parts of the retort being so arranged that the charged chambers or tubes will be exposed in the most advantageous manner to the fire, and the contents of all the chambers or tubes simultaneously burned. The invention has further for its object the perfect controlling of the fire so that the chambers or tubes may be uniformly heated, and no part of their contents injured by too intense a heat, and so forming the chambers or tubes as to resist the action of the heat, the parts most exposed being thicker than the other parts. The invention has lastly, for its object a more facile mode than usual, of connecting the coolers to the chambers or tubes so that the former may be readily attached to, and detached from the latter, and also in an improved mode of drying the bone black, after it has been used, so that the same may be deprived of the moisture it contains both by evaporation and draining, thereby greatly expediting the drying process, and rapidly preparing the bone black for the chambers or tubes. The credit of this contrivance is due to William Mitchell, of this city.

BRACKET FOR STAGING.

The object of this invention is to enable the workmen to erect a staging with greater ease, and with the same security, than by the present mode; and to secure the brackets, upon which the foot-boards are laid, to a wooden building either before or after plastering, which in the latter instance cannot be done with the present mode of attaching the brackets. The attachments are readily made by one man, and the staging can be removed and the whole taken down with ease and facility. The invention for effecting this, consists in constructing the bracket itself in a peculiar manner, and in the use of a screw having a collar and square-eyed head, which screw is driven into the building at suitable places, and the bracket attached to the same by a wedge key bolt. The inventor of this improvement is T. J. Gifford, of Salem, Mass.

PIANO-FORTE.

This invention consists in the employment either in a horizontal or upright piano-forte, of a bridge or bridges,

of a depth equal or nearly equal to the whole depth between the strings and the bottom or back of the case, supporting the strings upon or against a single sound-board which either constitutes the bottom or back, or is annexed in the extreme lower or rear part of the case. It also consists in the employment, for the purpose of holding the strings at the two bearings or points between which they vibrate, or at either of the said bearings or points, of a metal clamp of novel construction by which they are confined more securely than by the short oblique pins commonly employed for the purpose. This improvement was designed by Spencer B. Driggs, of this city.

RIBBED KNITTING.

This invention consists in a novel mode of applying and arranging a series of sinkers to operate in combination with two series of needles for the production of ribbed knitting. It also consists in a series of elastic plates so applied in combination with the ribbing needles and in relation to the needle plate which contains the principal series of needles, as to support the rib loops of the last course of knitting against the action of the ribbing needles as they draw the new stitches tight, but as to yield readily to allow any knots or inequalities in the yarn in the finished portion of the knitting to pass between themselves and the principal needle plate. The patentee of this invention is John Chantrell, of Bristol, Conn.

CARTRIDGE.

This invention consists in providing a cartridge with a larger and a smaller chamber, the one surrounding the other, and each containing a separate charge of powder, the charge in the smaller chamber being fired before the charge in the larger one by the priming of the gun, and the charge in the larger one by the bursting of its chamber by the explosion of the smaller charge, and serving by its own explosion to act upon the projectile with the force necessary to project it. This device has been patented to J. W. Cochran, of this city.

MEASURE FAUCET.

This invention consists in the employment of a plurality of vessels attached to the cask or reservoir containing the liquid to be drawn, and arranged with partitions, one or more, and valves and cocks, whereby the liquor may be expeditiously drawn by measurement direct from the cask or reservoir, and the whole quantity required to be drawn at once, however much, enabled to be drawn continually, without waiting for vessels or measure to refill. M. W. Nalton, of Utica, N. Y., is the inventor.

ELECTRIC TELEGRAPH.

S. F. Van Choate, of Yreka, Cal., has an important improvement in electric telegraphs, the principal object of which is to effect a repetition of the signals from one line of electric telegraph to another in such a manner as to enable the operator at any station on one line to write or send messages to any or every station on another line or its branches, and to receive messages therefrom. The claim will enable its nature to be understood by persons familiar with telegraphs.

SPRINGS FOR HOOP SKIRTS.

The object of this invention is to obtain a machine for covering in a continuous manner the springs for hoop skirts, with any textile or other suitable fabric. The invention consists in the employment or use of glue or cement distributing rollers, cutters, guides, folders, and drawing and pressure rollers, whereby the desired end is obtained. The credit of this contrivance is due to John T. Loft, of Brooklyn, N. Y.

COMPOSITION FOR CLEANING AND SILVERING METAL.

Messrs. C. P. Brockett, E. Todd and John Brockett, of New Haven, Conn., have patented a most useful composition for coating metals, such as brass, with a cuticle of pure silver by simply rubbing on the compound. With it harness and other articles upon which the silver plate has been worn, may be re-silvered with facility without fire, heat or an electric battery to deposit the precious metal.

JERSEY BITUMINOUS SHALE.—A seam of bituminous shale has been discovered near Plainfield, N. J. It is situated about thirty feet from the surface, and has a slaty appearance. It burns with a strong flame, somewhat smoky, and appears to contain considerable uranium. Good coal oil can, no doubt, be obtained from it by distillation.