APPARATUS FOR TRANSPLANTING TREES.

In order to reconstruct the Bois de Boulogne, the great pleasure ground of Paris, which, during the late war, suffered almost total demolition at the hands of the contending forces, it has been necessary to transplant a large number of trees to replace those cut down. This work being found very costly, as well as difficult to perform with existing means, a less expensive method has been devised for its accomplishment, which consists in the use of wagons especially built for transporting the trees bodily from place to place.

Our illustrations show two forms of the apparatus, Figs. 1 and 2 giving different views of the small one horse vehicle, and Fig. 3 of the largest machine, requiring the power of several horses. The former is constructed of wood and the latter of iron. The mode of operation consists in first digging an annular trench around the tree, so as to leave sufficient earth about the roots of the latter. As the excavation progresses downward, the exterior of the clod is enveloped in branches or with barrel staves encircled by iron hoops held by binding screws. The tree is sustained by guys from falling. When a sufficient depth is reached, the earth under the tree is cut away and planks shoved beneath.

Timbers are next laid on the surface to serve as ways for the vehicle, which is run thereon. The rear crosspiece of its frame is detachable, so that the machine can be placed directly over the hole and surrounding the trunk. Chains are then carried down from the two windlasses and led under the planks beneath the roots. The windlasses being turned, the tree, roots and clod are lifted bodily up between the wheels, and there remain suspended while the wagon is dragged off to the point at which the tree is to be placed. There, the hole being dug, and its interior well watered, the tree is lowered in and the earth packed around, thus completing the operation. The smaller vehicle is used for moderate sized trees; but with the larger one and its more powerful machinery, trees of considerable magnitude, it is stated, may be readily transported.

It may be added that vehicles for transplanting large trees have long been in use in this country. In the Central Park, in this city, and Prospect Park, Brooklyn, many large trees have thus been transplanted with much success.

Fig. 1.

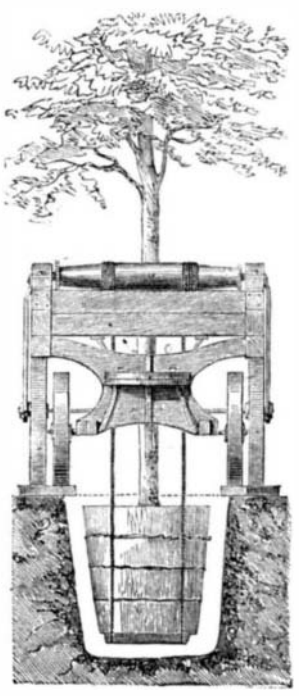
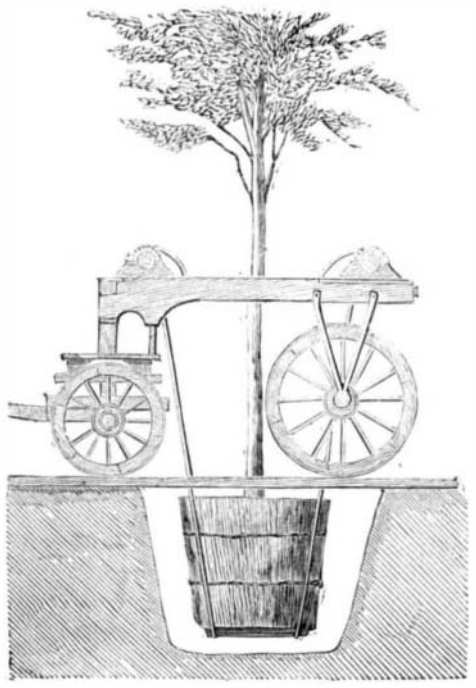


Fig. 2.



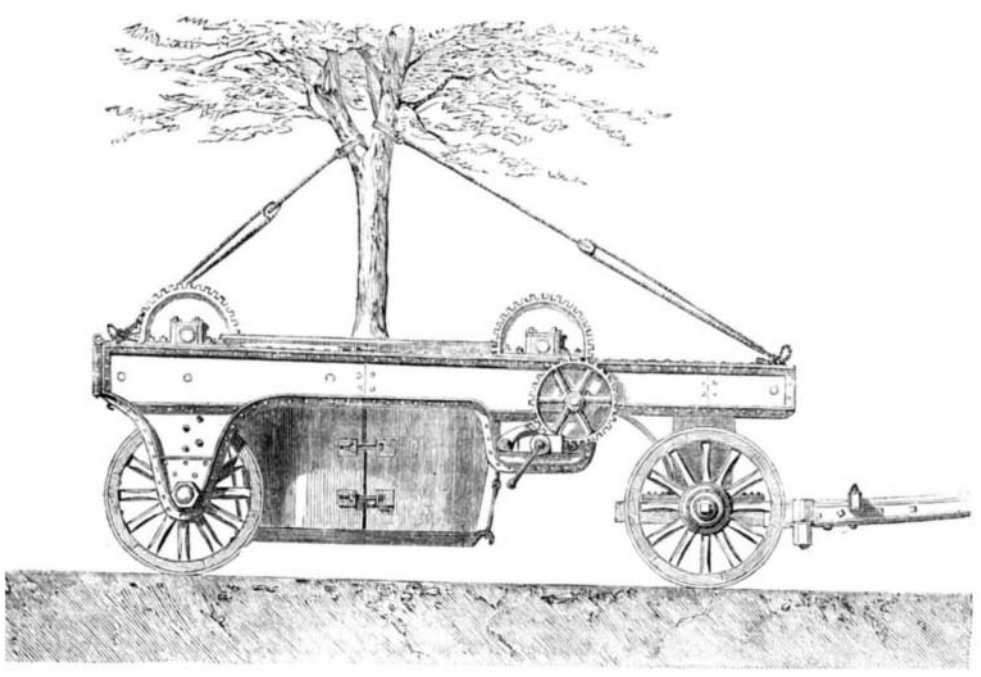


Fig. 3.—APPARATUS FOR TRANSPLANTING TREES.

Sad Fate of a Nevada Inventor.

The coolest and most refreshing item we have read since the commencement of the heated term lately appeared in the Virginia City (Nevada) *Enterprise*. The story runs thus: A gentleman who has just arrived from the borax fields of the desert regions surrounding the town of Columbus, in the eastern part of this State, gives us the following account of the sad fate of Mr. Jonathan Newhouse, a man of considerable inventive genius. Mr. Newhouse had constructed what he called a "solar armor," an apparatus intended to protect the wearer from the fierce heat of the sun in crossing deserts and burning alkali plains. The armor consisted of a long close-fitting jacket made of common sponge, and a cap or hood of the same material, both jacket and hood being about an inch in thickness. Before starting across a desert this armor was to be saturated with water. Under the right arm was suspended an india rubber sack, filled with water, and having a small gutta percha tube leading to the top of the hood. In order to keep the armor moist, all that was necessary to be done by the traveler, as he progressed over the burning sands, was to press the sack occasionally, when a small quantity of water would be forced up and thoroughly saturate the hood and the jacket below it. Thus, by the evaporation of the moisture in the armor, it was calculated might be produced almost any degree of cold. Mr. Newhouse went down to Death Valley, determined to try the experiment of crossing that terrible place in his armor. He started out into the valley one morning from the camp nearest its borders, telling the men at the camp, as they laced his armor on his back, that he would return in two days. The next day an Indian, who could speak but a few words of English, came to the camp in a great state of excitement. He made the men understand that he wanted them to follow him. At the distance of about twenty miles out into the desert, the Indian pointed to a human figure seated against a rock. Approaching they found it to be Newhouse, still in his armor. He was dead and frozen stiff. His beard was covered with frost, and, though the noonday sun poured down its fiercest rays, an icicle over a foot in length hung from his nose. There he had perished miserably, because his armor had worked but too well, and because it was laced up behind where he could not reach the fastenings.

THERE are Pullman palace cars on all lines in Upper Italy.

A Queer Looking Prescription.

For all that might be recognized, after careful examination, the scrawl which we give in facsimile herewith might indicate either the vagaries of planchette or the tracks of a spider whose legs had been dipped in ink. It happens, however, to be neither, but, on the contrary, a physician's prescription, printed in the London *Chemist and Druggist*—a formula for a medicine which, if wrongly compounded, might produce death directly, or be indirectly injurious by failing to better the sufferer. We publish it as a specimen of the difficulties and doubts which dispensers of drugs are too often called upon to decide. It is not an uncommon thing for physicians, lacking knowledge of chemistry, to order compounds the ingredients of which exercise their mutual affinities in some unlooked for manner, tending perhaps to neutralize the remedial effect sought in the mixture; but where ignorance may be palliated, carelessness may not be,

and for a doctor to emulate the calligraphy of Rufus Choate or Horace Greeley is a fault which cannot be condoned. Druggists receiving illegible prescriptions, or those in which there is the least ambiguity in the terms, should return them; promptly to the patient with reasons.

The Sanitary Condition of Water.

There is no more prolific source of disease than bad water; but to distinguish whether the fluid is unfit for consumption or not is somewhat difficult. Water from a certain river, spring, or well may be repulsive to the senses, and yet harmless to the stomach, in comparison with other water which has a much more attractive appearance. Perhaps the best mode of determining the question is to examine the condition of the organisms dwelling in the proposed source to be utilized. If, for example, an industrial establishment or a collection of dwellings empties refuse into the stream, and as a result fish disappear or are found dead upon the surface, it is certain that the water is strongly and injuriously affected. The gradual infection may be noted by the fish first rising to the top, apparently ill at ease, and subsequently dying.

In vitiated water also mollusks perish, and their bodies decompose rapidly. In the air they merely seem to dry up and retain life, though torpid for some time, becoming revivified by return to water. Cresses cannot live in corrupt water, and their existence is a sign of purity in the fluid. White algæ deprived of their green color indicate absolute corruption.

M. Gerardin, in referring to this subject, in a recent note to the French Academy, states that the best method of measuring the degree of purity or of infection in water is by determining the amount of oxygen in a given quantity. Water containing a large per centage of the gas is pure and good; but when little of the latter is present, the water is decidedly deleterious to health.

A New Alkaloid from Morphine.

G. Nadler has obtained an alkaloid by the action of ammoniacal solution of oxide of copper on morphine, the chlorine compound of which is dazzlingly white, sparingly soluble in cold but easily soluble in hot water, and insoluble in alcohol and ether. The aqueous solution gives with ammonia a dense, white, amorphous precipitate, which does not alter in the air while moist, but dries up, like aluminum hydrate. Ferric chloride produces in the aqueous solution an amethyst red color, which rapidly darkens. Strong sulphuric acid dissolves the alkaloid on warming, forming a dark green solution, which does not alter when heated sufficiently to volatilize the acid. Blue ammoniacal copper solution assumes a splendid green color. Potash, like ammonia, produces in the aqueous solution a curdy precipitate, which however, dissolves in excess in the cold. In this respect the alkaloid resembles morphine. The potash solution, when heated to boiling, deposits the alkaloid in silvery scales. The alkaloid rapidly reduces silver nitrate, and gives with platinic chloride a pale yellow platinum salt. Dilute sulphuric acid throws down from the solution in hydrochloric acid a white amorphous sulphate. The new alkaloid is distinguished from morphine by being precipitated in the amorphous state by ammonia, by its behavior with ferric chloride, ammoniacal copper solution, potash, and strong sulphuric acid, and by the sparing solubility of its sulphate; and from apomorphine by the fact that in the moist state it does not become colored on exposure to the air, but remains perfectly unaltered.—*Journal of the Chemical Society*.

THE manufacture of cast iron nails and shoe pins is peculiar to the South Staffordshire (Eng.) district, although, curiously enough, the demand for one description, known as lath nails, is almost entirely for Scotland. The smallest nail made is ¼ inch in length, and of these a good workman will mold upwards of 750,000 in a day. The largest measure 2½ inches long, and of these a good day's work is about 52,000. The yearly production of cast nails is about 1,000 tuns.

A new air machine has lately been put in operation in the House of Commons, London. By means of this apparatus a constant supply of air, cooled to any required degree even in the warmest weather, can be supplied at the rate of from 60,000 to 90,000 gallons per minute. The House contains about 900,000 gallons of air, so that, when the apparatus is working at its maximum, it is possible to renew the air without sensible draft every six minutes.

M. TOMMASI, inventor of the hydro-electric cable, a device by means of which signals are transmitted through fine tubes filled with water, has lately succeeded in sending ten signals per second over a distance of two miles and a half. A full description, with illustrations of the invention, is contained in *Science Record* for 1872.