

IMPROVED PORTABLE DUMPING CAR.

Our illustration represents a recently invented portable dumping car, which possesses the advantages of simplicity, capacity, and ready facility of transportation. It is adapted to carrying earth from excavations, or for the building of embankments, or any similar purpose necessitating the carriage of material from one locality to another.

The containing portion is constructed to hold one cubic yard of earth, and is pivoted, by central lugs upon its ends, to the slotted metal extremities of the bolsters, A. Attached to either end of the receptacle is a segmental shaped bar or plate, B B, which passes through a guide, C, on the bolster, and is secured therein, holding the car in an upright position by means of a pin. The bolsters are attached to the quadrilateral frame, which is supported upon trucks, and has handles formed upon the ends of its two longitudinal bars. Suitable metal braces, D D, extending from the cross piece to the bolsters, are provided to insure strong construction. The trucks are designed to carry the device over ordinary portable rails which may be laid down wherever desired.

In using the apparatus, a large number of cars may be coupled together, by the hooks shown, and drawn by a single horse, their light construction and small weight enabling a great quantity of material to be thus transported. From any point on the route the car may be lifted from its track, by hand, by the aid of the handles, and thus carried bodily to any required locality. To dump the load, it is only necessary to withdraw the pins which confine the curved bars, B, when the body is readily pushed over on its pivots to either side of the track into the position shown by the dotted lines. The lower portion of the receptacle, when thus turned, rests against and is supported by one side of the bolsters.

Patented April 15, 1873. For further particulars address the inventor, Mr. Henry J. Peters, Box 253, Quebec, Canada.

THE TANITE COMPANY'S EMERY GRINDER "E."

This is claimed to be the largest, heaviest, and most solid emery grinder yet put on the market, which, while running such large wheels, attains proper speed without jar or tremor. The special advantage due to the use of large wheels is illustrated in the engraving, which shows wheels 24 inches in diameter, with a stove rest across the side of one of them. This use of a long rest across the side of a wheel of large diameter enables the workman to accurately edge on square large plates or long bars. The rest arms, the reversibility of which is shown in the engraving, allow of the rests having unusual variation in height.

The feature which especially distinguishes the Tanite Company's emery grinder "E," from others is that the frame, instead of being composed of one solid casting, consists of two side frames, strongly arched, and connected by heavy iron bolts. This allows of the machine's being constructed of any desired width. The grinder is made in various forms—to carry one wheel, centerhung, two wheels overhung, five or more large wheels hung between boxes, and also with side frames set four feet apart, wheels so separated that two men can use the same machine at once, handling large stove or other plates without interference. This device is manufactured by the Tanite Company, Stroudsburg, Pa.

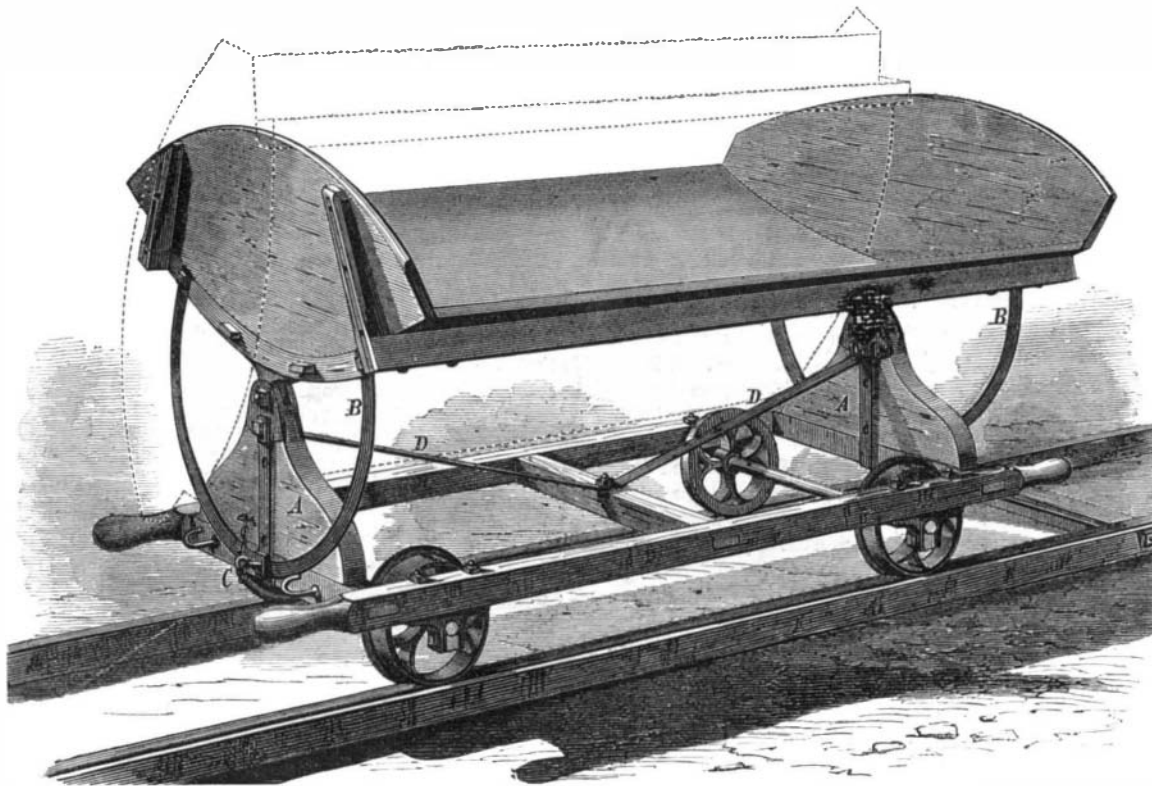
Overhead Telegraph Cables.

One of the things which attract the attention of a New Yorker visiting London is the telegraph cable stretched over the roofs of the houses in many directions. There are few of the single wires which are so common in New York, and none of those street nuisances the telegraph poles. Many wires are packed together with insulating material, and thus formed into a cable; but as the wires are slender (and presumably of copper), and the insulating material soft, the cable requires support at short distances. To this end a steel sustaining wire is first put up, and from this the cable is suspended.

Experiments with Ice.

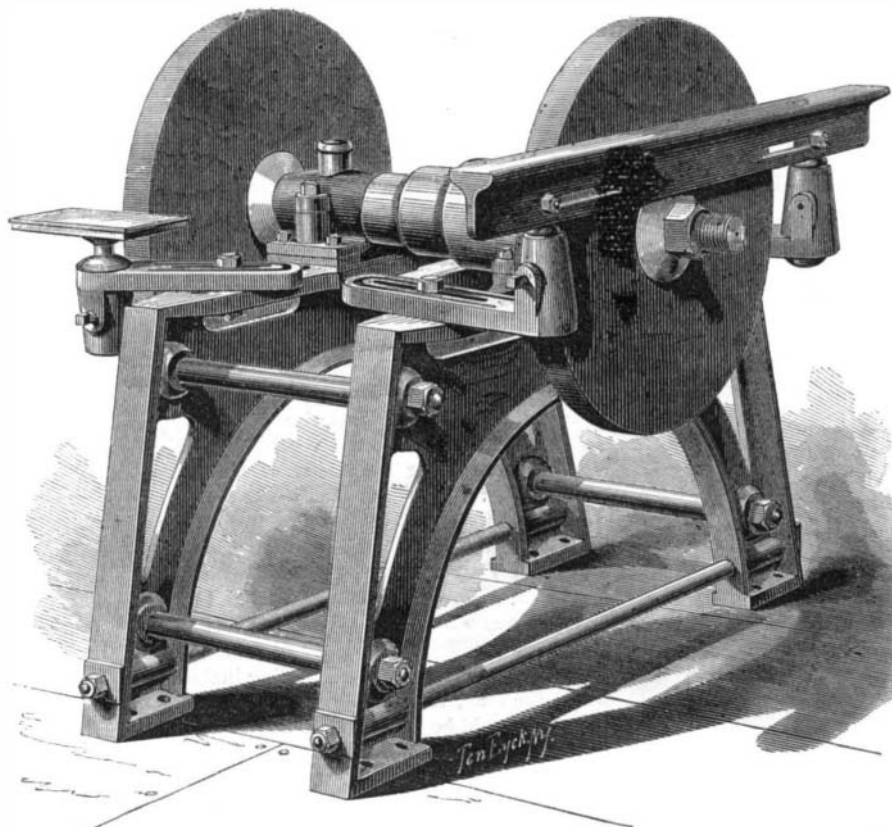
If two lumps of ice be pressed together, they will be welded at their points of contact. Faraday having communicated this observation to Tyndall, the latter took a hollow steel cylinder, put in some snow, which he compressed with

a piston fitting tight, and thus obtained a cylinder of transparent ice. In the same way two pieces of solid ice, if subjected to pressure in a mold of any shape, will come out in that precise form. Professor William Thomson explains this by saying that by pressure the points in contact are liquefied, that the water thus produced has rendered latent a portion of the caloric of the surrounding ice, whereby the temperature falls below zero; and that, consequently, as soon as the pressure ceases, this water freezes again. Both M. Helmholtz and Professor Tyndall accept this explanation; only the latter finds it so far insufficient that it does not

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take into account the air contained in the water. He also describes the following experiment of his: Having put a lump of ice into hot water, he submerged it by pressing it down with another piece of ice. Notwithstanding the all but infinitesimal pressure exercised, the two lumps instantly froze together. Again, it is well known that two floating bodies wetted with water will attract each other. Now, if they be two lumps of ice swimming on hot water, they will join and coalesce at once. When the bridge thus formed

also furnishes a material for the manufacture of cord and various tissues. Attempts made to grow cotton have succeeded, but for some reason have not been continued, the inhabitants preferring to purchase their fabric of this substance from English makers. Wool is probably the staple article of Moorish commerce, amounting to one quarter of the entire export of the country. The best varieties are those of Dar-El-Berda and Rbat, where the French have a monopoly of Seventy to eighty dollars per 2,200 pounds is the usual selling price of the best wool, of which, with the exception of that used for making the magnificent carpets for which Moorish looms are celebrated and the "haik" or Arab cloak, very little is employed in the country.

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has melted away, they will again separate, then meet and freeze together again, and so on, as long as there is any ice left. He concludes with mentioning an experiment made by M. Duppa, the upshot of which is that ice may be pressed into any shape—that of a statuette, for instance; a plaster cast may then be taken of it; and when the ice has melted away inside, there remains a hollow mold into which any metal may be poured. Professor Helmholtz replies that the non-conducting property of ice is an objection to the supposition that the caloric set at liberty by pressure can spread into the ice, and that great obscurity still prevails on the question.

The price of nails, by the keg, has lately fallen from \$5.50 to \$4.75.

The Resources and Productions of Morocco.

Under this heading we find, in the *Bulletin du Musée*, the following interesting facts regarding the above mentioned country, derived from the minutes of the Artistic, Literary, and Scientific Club of Antwerp:

As regards mineral wealth, gold is often found superficially disseminated, united with quartz and limestone, sometimes in grains but generally in thin scales. Native silver is obtained in the province of Soos, with the gold, and also with galena. The Sultan has absolutely forbidden the extraction of either of the above precious metals, and reserves

the right for his own benefit; but in spite of the restrictions and severe penalties, the Arabs succeed in stealing large quantities. Copper is very abundant, notably in the suburbs of Tetuan and Taroudant; the inhabitants work the mines with great ability, notwithstanding their rude and primitive methods. Iron exists in immense deposits, there being a mountain, Djibel Hadrid, said to be formed entirely of the ore. Lead is found principally in the state of galena, and tin has been discovered in small amounts, both metals being obtained from the mountains of Tedla. Rock salt is derived from the same locality, and large quantities of marine salt are obtained, almost without labor, on the shores of the salt lakes. Niter is also found to a small extent, and a peculiar kind of clay called *ghasoul* exists in the northern part of the country, which is largely employed as a substitute for soap.

Gum is exported to Manchester, England, for cloth printing purposes. In the textile industries, the American agave or

also furnishes a material for the manufacture of cord and various tissues. Attempts made to grow cotton have succeeded, but for some reason have not been continued, the inhabitants preferring to purchase their fabric of this substance from English makers. Wool is probably the staple article of Moorish commerce, amounting to one quarter of the entire export of the country. The best varieties are those of Dar-El-Berda and Rbat, where the French have a monopoly of Seventy to eighty dollars per 2,200 pounds is the usual selling price of the best wool, of which, with the exception of that used for making the magnificent carpets for which Moorish looms are celebrated and the "haik" or Arab cloak, very little is employed in the country.

Goat skins, under the name of "morocco," are exported all over the world, and serve an innumerable variety of purposes. Within the country, they are employed solely in the manufacture of the peculiar shoes of the people. The skins are sold principally during the months of May and November at from 3 to 6 dollars a dozen, according to size.

Leeches, for medical uses, are largely found in ponds between Tangier and Rbat. They are in color either green or black, the latter selling at six dollars and the former at five dollars per thousand; they are forwarded to the markets in boxes of wet sand, containing five thousand each.

The remainder of the productions of the country include ox hides, wax, honey, and ostrich feathers, about a quarter of a million dollars worth of the latter being yearly sold at Mogador.

The Dead Preserved like Wax.

The Brunetti method for the preservation of the dead consists of several processes: 1. The circulatory system is cleared thoroughly out by washing with cold water till it issues quite clear from the body. This may occupy two to five hours. 2. Alcohol is injected so as to abstract as much water as possible. This occupies about a quarter of an

hour. 3. Ether is then injected to abstract the fatty matters. This occupies two to ten hours. 4. A strong solution of tannin is then injected. This occupies for imbibition two to ten hours. 5. The body is then dried in a current of warm air passed over heated chloride of calcium. This may occupy two to five hours. The body is then perfectly preserved and resists decay. The Italians are said to exhibit specimens which are as hard as stone and retain the shape perfectly and are equal to the best wax models.

A more simple form of preparation for injection, well suited for anatomical purposes, consists of glycerin, 14 parts; soft sugar, 2 parts; nitrate of potash, 1 part. It is found that, after saturation for some days in this solution, the parts become comparatively indestructible, and change neither in size nor figure.