

## Correspondence.

## Alleged Vermont Marble.

To the Editor of the Scientific American.

I see that in your last issue you quote a report on marble, by Professor J. P. Henderson, of Loyola College, Baltimore, and Professor J. E. Watson, of Oberlin College.

Permit me to say that no such person as J. E. Watson has ever been connected with this college in any way, and the president of Loyola College denies that any such man as Henderson was ever there.

I suspect that the paper which you quote is a fabrication of some marble company in an endeavor to create a prejudice against dark colored marbles.

I have no pecuniary interest in the matter, but I think a fraud ought to be "spotted." I have seen a copy of the *Rutland Herald* for April 5, which exposes this pseudo-scientific report.

ALBERT A. WRIGHT,

Prof. Geol. and Nat. His., Oberlin College.

Oberlin, Ohio, April 29, 1879.

## Preparation of Nitric Oxide.

BY S. K. HITCHINGS.

This gas as usually prepared, by the action of nitric acid on copper, contains nitrous oxide and some free nitrogen, as is well known; but the extent of this impurity, I think, is not generally known.

I have in a number of cases observed failures in class experiments with it, by its supporting ordinary combustion brilliantly instead of extinguishing it, as it should. This fact led me to make a quantitative examination of it, in which I found that the gas first formed in the reaction contained about 95 per cent of nitric oxide, but as the solution in the generator became saturated with cupric nitrate, the quantity of impurity gradually increased, and when it became nearly saturated, an analysis resulted as follows: Nitric oxide, 53.6; nitrous oxide, 31.6; nitrogen, 14.8; total, 100.0. This would, of course, account for its supporting combustion so readily and causing so much trouble to teachers, and I would suggest that a piece of apparatus might be easily made, which would avoid getting so much of this impurity, by simply introducing a siphon tube through the cork of the generator, and attaching a piece of rubber tubing and a compressor to the delivery tube, so that when the acid became somewhat saturated the delivery tube could be closed and the solution drawn off, then more acid added and the process go on. By this means, I think, a gas sufficiently pure for ordinary experiments could be obtained.

## A Cheap Greenhouse.

The *Germantown Telegraph* says: The cheapest plan of erecting a greenhouse that we have any knowledge of—and we used one successfully for many years—is to dig out a pit in a side hill, where the upper end will be just above ground and the lower end will be two or three feet above ground, where the door must be, with two or three steps down for an entrance. Wall up, roof the wall, and cover the whole with sash, as in hotbeds, the sash having more fall, say three feet in a width of two, the house being fifteen by ten. Erect in this the stand of shelves, and when it is time to take up the summer flowers, bulbs, etc., store them here. The glass should be covered with thick straw mats, which can be removed even when the weather is coldest, in clear weather, for an hour or two at midday, to get the warmth and influence of the sun. At such times ventilation also should be attended to, by slightly opening a sash or two. No fire is needed. Nearly all readily flowering plants will bloom, and there will scarcely be a week during the winter that a bouquet may not be gathered, if the house is properly managed.

## Asphalt and Timber Floors.

A new method of laying down floors has been adopted in France, and is said to have obtained a wide application. It consists in putting down flooring, not as hitherto, on joists, but in embedding the boarding in asphalt. The new floors are used mostly for ground stories of barracks and hospitals, as well as churches and courts of laws. Pieces of oak, usually 2½ to 4 inches broad, 12 to 30 inches long, and 1 inch thick, are pressed down into a layer of hot asphalt not quite half an inch thick in the well known herring bone pattern. To insure a complete adhesion of the wood to the asphalt, and obtain the smallest possible joints, the edges of the pieces of wood are planed down, beveling toward the bottom, so that their cross section becomes wedge-like. Nails, of course, are not necessary, and a perfectly level surface may be given to the flooring by planing after the laying down. The advantages of this flooring, which only requires an even bed on which to rest, are said to be the following:

1. Damp from below and its consequence, rot, are prevented.
2. Floors may be cleaned quickly and with the least amount of water, insuring rapid drying.
3. Vermin cannot accumulate in the joints.
4. Unhealthy exhalations from the soil cannot penetrate into living rooms. Asphalt being impermeable to damp, rooms become perfectly healthy, even if they are not vaulted underneath. In buildings with several stories, as in hospitals, the vitiated air of the lower rooms cannot ascend, an

object which it has hitherto not been possible to attain by any other means.

5. The layer of asphalt will also prevent the spreading of fire from one floor to another in case of conflagration.

## The Interlocking of Homes.

The *Springfield Republican* remarks that the houses in American cities are fast coming to be, in a sense, like the rooms of a big hotel, having a call bell in every room to reach the office, and a way in the office to reach every room. The telephone puts people in such easy communication that it is easier to talk to a neighbor through it than to go to him; as men having offices in the same building find it more convenient to talk to each other from their desks, by way of the telephone office, than to cross a hall. And this is only the beginning of the means by which the homes in a city are to be interlocked.

The *Chicago Times*, eighteen months ago, announced with a great flourish that it had connected its office by pneumatic tubes with the Western Union office at an expense of \$20,000, so as to save ten minutes' time in receiving its messages. Now the streets are torn up around the City Hall Park in New York to connect every newspaper office there in the same way. The packages travel about a mile in three minutes, and announce their arrival by an automatic arrangement. If the plan works well for this special purpose, it will not be long before a pneumatic express tube for all the lighter articles of daily marketing and convenience will come to be as frequent in well-appointed houses as the telephone.

## IMPROVED STOCK AND DIES FOR PIPES AND BOLTS.

The tool which we illustrate is intended to meet the requirements of those who have been annoyed with the numerous inconveniences arising from the use of the common stocks and dies. In its construction the inventor has aimed to retain all the advantages of the old methods, while at the same time gaining many others in addition.

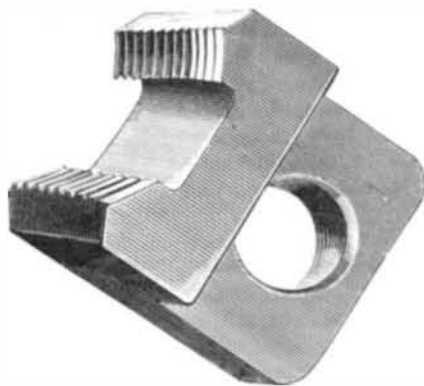


Fig. 2.—DIE FULL SIZE.

The tool belongs to the class of divided dies, and by means of the adjusting screws, as shown in Fig. 1, the dies can be moved to and from a common center, within the variations of a given size of fittings. The dies have a double taper, that is, the taper at the entrance for the first few threads is greater in degree than the standard taper, which forms a lead to the dies, causing them to start on the pipe without filing, even when there is a swell or burr, and requiring no pressure whatever to start the dies on the pipe. In Fig. 2 one of the dies is shown separately. It will be seen that the threads can be reached readily, and that the dies, when dull, may be sharpened by grinding. This obviates the necessity of sending them to the manufacturer—a saving both in time and expense. These dies are interchangeable in the stock, and do not need adjusting to cut the standard size of thread for which they are made. They are made adjustable for variations from the standard size. Both stock and dies are marked to show when the dies are set for cutting standard

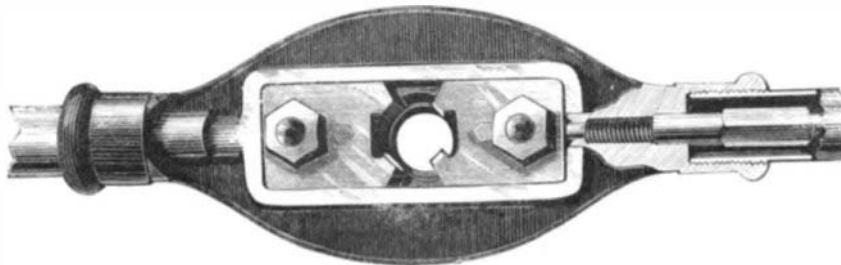


Fig. 1.—ARMSTRONG'S IMPROVED STOCK AND DIES

sizes. Altogether, the new tool seems to be a very useful and desirable one. Any mechanic who has had experience with ordinary solid dies will readily appreciate the advantages possessed by this improved tool. Mr. F. Armstrong, Bridgeport, Conn., and 347 Broadway, New York, Room 15, is the manufacturer.

## Scented Crematory Urns.

An interesting archaeological observation has recently been made quite accidentally. It is well known that the urns found in Roman burial grounds, and containing the bone remains of cremated bodies, are often covered with clay cups or dishes. The object of these dishes was supposed to have been to contain spices, which sent forth agreeable odors dur-

ing the progress of the cremation. Herr Dahlem, a well known German archæologist, was able to verify this view in the following manner: He had obtained a dish of this kind which was broken, and, after cementing it, had placed it upon a stove for the purpose of drying the cement. Shortly afterwards he noticed a strong and by no means unpleasant odor proceeding from the heated dish. It seems, therefore, that the ingredients burned in the dish some fifteen centuries ago had left traces behind, which announced their presence upon becoming heated. Herr Dahlem remarks that the odor was not unlike that of storax.—*The Nation*.

## A New Iron Firm.

Mr. Richard Pancoast, for several years the New York manager of the well known Philadelphia house of Morris Tasker & Co., has formed a copartnership with Mr. H. G. H. Tarr for the transaction of business in pig and manufactured iron. The new firm, in addition to a general commission business in iron and piping, have been appointed agents for the Reading Iron Works. The office of Messrs. Pancoast & Tarr is at 28 Pratt street.

## Underground Telegraph Wires.

The favor with which underground telegraph wires are viewed in Europe does not prevail in England. In a recent lecture before the Society of Arts the Electrician of the English Postal Telegraph Department, Mr. W. H. Prece, said that there are 10,000 miles of underground wires in Great Britain, but the system does not prove economical.

There is an increase of three or four times in the cost of the underground lines. Their capacity for carrying currents is reduced three or four times. The gutta-percha coating is attacked not only by rats and mice, but very largely by an insect called the *Tempellonia crystallina*, and is also influenced by a fungus.

## RECENT AMERICAN PATENTS.

Mr. Albert Whiting, of Rochester, N. Y., has devised an improved machine for raising and floating hides in tan vats. This is an improvement on patent 205,596.

A lantern, combined with a hood to be worn by a horse, has been patented by Mr. L. C. Macauley, of Augusta, Wis. The inventor claims that both driver and horse can see the condition of the track to better advantage than when the lantern is placed on the carriage.

Messrs. P. J. Clark and Joseph Kintz, of West Meriden, Conn., have patented an improved drip-dish for lamps. It consists of a dish to be screwed on the lamp bracket or stand, and provided with a metal fount holder, which securely holds the lamp.

An improvement in boot and shoe heel burnishers has been patented by Mr. James Murray, of East Orange, N. J. It is especially adapted to work on concave French heels.

An improvement in breast-yoke connections, patented by Mr. J. W. Vineyard, of Gallatin, Tenn., consists in a socket piece for attachment to the neck yoke, in which is fitted a ball on the end of a metal loop or eye for supporting the tongue. The ball and socket give perfect freedom to the movement of the tongue; and the connection is said to be neater and more durable than leather.

An improvement in steels for long corsets has been patented by Mr. Joseph Beckel, of New York city. The lower ends of the steels are bent inward and provided with pads, which prevent them from hurting when the wearer sits down.

An improved device for preventing the sand and dust from working in at the inner end of the hub of a carriage wheel and cutting and wearing the axle and axle box, has been patented by Mr. Robert Schnell, of St. Paul, Minn.

A knife board, which consists of a box provided with an inclined bottom having a concave upper surface, forming a bearing for the edge of the knife while it is being polished, has been patented by Mr. A. M. Ward, of New Haven, Conn.

Mr. David C. Carleton, of 121st street and 3d avenue, New York, has patented, both in this country and in Canada, an improved bridle bit, which is calculated to give perfect control of the horse. The arrangement of the bit and bridle cannot be clearly described without an engraving. The bit is supported by a nose band and a strap passing to the crown piece of the bridle, which prevents it from dropping from the horse's mouth when the check rein is unfastened.

An improved carpet stretcher, consisting of two arms connected together by a pivot and having T-shaped heads, one being provided with hooks for engaging the carpet, the other being adapted to a jointed extension piece, has been patented by Mr. J. D. Whitney, of Plover, Wis. The stretching of the carpet is effected by straightening out the toggle formed by the two pivoted pieces.

An improved coat, supplied with an extra lining which may be readily detached and replaced by another one, has been patented by Mr. Nils Malmar, of Brooklyn, N. Y.

Mr. Cornelius Barnhart, of Walker Valley, N. Y., has patented an improved heating stove, which may be used for heating several rooms, and is so constructed that the parts most liable to be burned out may be easily removed and replaced.

An improved machine for filling and corking bottles has been patented by Maria E. B. Miller, of Omaha, Neb. This machine is designed to fill the desired number of bottles simultaneously, and with exactly the same quantity of liquor.