

SIR JOSHUA REYNOLDS.

THIS distinguished painter having heard of a young artist who had become embarrassed by an injudicious matrimonial connection, and was on the point of being arrested, immediately hurried to his residence to inquire into the truth of it. The unfortunate man told him the particulars of his situation, adding that forty pounds would enable him to compound with his creditors. After some further conversation Sir Joshua took leave, telling the distressed painter he would do something for him, and when he was bidding him adieu at the door he took him by the hand, and after squeezing it in a friendly manner hurried off with that kind of triumph in his heart which the generous can alone experience, while the astonished artist found that he had left in his hand a check for one hundred pounds.

A SURFEIT.—A surfeit in man is called founder in a horse, and is over-eating, eating more than the stomach can possibly convert into healthful blood. Wise men and careful men will sometimes inadvertently eat too much, known by a feeling of fullness, of unrest, of a discomfort which pervades the whole man. Under such circumstances, we want to do something for relief; some eat a pickle, others swallow a little vinegar, a large number drink brandy. We have swallowed too much, the system is oppressed, and nature rebels, instinct comes to the rescue and takes away all appetite, to prevent our adding to the burden by a morsel or a drop. The very safest, surest, and least hurtful remedy, is to walk briskly in the open air, rain or shine, sun, hail, or hurricane, until there is a very slight moisture on the skin, then regulate the gait, so as to keep the perspiration at that point until entire relief is afforded, indicated by a general abatement of the discomfort; but as a violence has been offered to the stomach, and it has been wearied with the extra burden imposed upon it, the next regular meal should be omitted altogether. Such a course will prevent many a sick hour, many a cramp, colic, many a fatal diarrhea.—*Hall's Journal.*

NEW PROCESS FOR PRESERVING IRON FROM RUST.—Professor Barff, of England, has lately established the fact that if iron be subjected to the action of superheated steam, a black oxide forms on its surface which is an effectual preventive of rust, is much harder than the iron itself, and its adhesion to the iron is even greater than that of the iron particles for each other. He found that iron when placed for 5 hours in a closed space with superheated steam having a temperature of 500° Fah., a film of oxide is formed on the surface which is so hard as to withstand the action of emery paper; while with the temperature of the steam as great as 1200°, and the time of action from 6 to 7 hours, the oxide is so hard as to even withstand filing, as well as any degree of moisture without rusting. With exception of the change of color referred to, the oxide has no other effect on the iron; the character of the surface is not altered, and polish is perfectly maintained.

For the want of proper steam space, Prof. Barff has not as yet treated large surfaces, but is thoroughly convinced of success in case of experiment.

At a meeting of the Society of Arts of London, specimens treated, comprising gun barrels, pipes, bolts, pans, etc., were exhibited and experimented upon. The articles, after being exposed for 6 weeks to the action of the weather, showed no traces of rust, only in such places where either purposely or by accident the black oxide was not formed. A bolt which was covered with oxide for but one half its length had the other half entirely covered with a thick layer of rust on a similar exposure, but without the slightest encroachment on the treated half. As a further experiment, an iron spout head was treated and then crushed with a hammer; on being exposed to all changes of moisture, even to weak acids in the laboratory of the Professor, the broken edges were only attacked, the surfaces were unchanged.

It is anticipated that this process will be admirably adapted for treating steam boilers and the iron plates used in marine construction, as well as for innumerable other purposes; the copper vessels used for culinary operation can be dispensed with as well as the lead pipe for water supply.

A Greenwich society is about instituting a course of experiments in order to establish the durability of the iron prepared by Prof. Barff's process, in order to report on the advisability of its application to the iron used in architectural construction.—*Journal Officiel, per Gewerbeblatt aus Württemberg.*

THE British iron trade is in a worse condition than that of the United States. There are heavy failures constantly occurring, there is a rapid decline in wages, and the works advertised for sale are found occupying considerable space in many papers of the Kingdom.—*Iron World.*

CHISEL - TOOTH SAWS.

(See page 229.)

The cut shows an improved mode of inserting saw teeth, as recently brought out by a well-known firm. *B* represents the saw plate, from which are cut circular sockets whose edges are beveled to a V form.

The teeth are composed of holders, *C*, corresponding in diameter, thickness, and bevel, with the sockets. There is on each holder a projection locking into a recess in the bit or tooth proper, *D*, the back of which is curved and beveled to correspond with the socket, and which has a shoulder to correspond with an abutment on the plate. The bit is matched with the holder and the two locked together and in the socket by wrenching the latter round until the shoulder on the bit strikes the abutment on the plate.

The tool or lever for thus inserting the teeth is shown in operation. The bits are drop-forged from best steel; each one should bear about three sharpenings. There is no necessity for swaging, as the spread is given to the bit when struck out. The advantages which should accrue from the use of such inserted teeth are the saving of time and plates, in case of accident to one tooth, over the ordinary plan of bringing the whole plate down to the longest radius permissible; and the high temper of teeth attainable.

THE VAPART DISINTEGRATOR.

(See page 229.)

We annex an illustration of a disintegrating machine largely used in France. It consists of a cast-iron case provided with two doors, which can be opened as shown, for inspection or renewal of the various parts. Through the middle of the case runs a vertical shaft, with bearings at top and bottom, and carrying at the upper extremity a pulley by which the shaft is driven. Within the case, three discs are mounted on the shaft at equal intervals. On these discs are bolted a series of radial ribs as shown. Around the inner side of the case, as well as on the doors, are placed strong cast-iron toothed segments, and beneath each segment is placed an inclined and curved plate. The operation of the machine is as follows: The material to be disintegrated is fed in from the top and falls upon the upper disc, and the quick rotation of the latter drives the material forcibly against the corresponding toothed segments. From here it falls down the inclined plates, and is delivered on the middle portion of the second disc, where the same operation is repeated on it, as well as on the bottom disc, whence it is delivered into a hopper below. The disintegration can be carried to any desired extent, and judging from the samples we have seen of the work leaves nothing to be desired. The machine is now being introduced into this country by Messrs. Bird & Co. of Lawrence Pountney Lane, who have arranged for its manufacture with the Hydraulic Engineering Company, Chester.

MAKING MARBLE FROM SLATE.—A new industry that is steadily growing into importance, is the turning of slabs of slate into imitation marble. The process is thus described: The slabs of slate are first surfaced by a planer, and brought to the required thickness, and patterns are then laid upon the slabs, and mallet and chisel work out the desired forms and mouldings. The peculiar feature in the operation, however, is the marbleizing. The material for the latter is prepared in a vat, and the slate is laid down upon the composition, which adheres to the surface of the slate; the slab is next baked in an oven for one night, then coated with a varnish manufactured for this special purpose, and after six repetitions of these processes, it is finally removed and polished, the surface presenting, as is well known, a beautiful appearance; and so firmly united to the slate is this coating that it cannot be scaled or chipped off without taking the slaty particles with it.

PLASTER MOULDS.—The moulds are first made of plaster, and allowed to get quite dry; they are then oiled till the suction is stopped; then the plaster is mixed very thin with water, and poured round the mould till it reaches about one-sixteenth of an inch in thickness; wait then until that is set hard, and repeat the operation again and again, till you have achieved the required thickness. Then when it has stood for an hour, the mould previously made in pieces may be taken apart, and the seams taken off with a steel tool called the plasterer's tool, and smoothed while soft with a piece of flannel. The joints of the mould are best made on plain parts, where it can be taken off much better. The mould must be well oiled before filling in with plaster.