### Sugar Cane and Sugar.

The planting is performed about the end of February, by laying the cane lengthwise. The sprouts are ploughed in March, May and June. The cutting ot the cane for seed is commenced in October, and for grinding in November. It is brought into a shed, where the cane-carrier is situated, which leads to two iron rollers, driven by steam. The juice runs from thence into a reservoir, or boxes. The cane after being hard pressed, called the *begasse*, falls from the rollers into a large chimney, and is burnt to ashes. The juice now called *la plobe*, is put into the first kettle, holding from thirty to forty gallons, and boiled, with the addition of a small piece lime, in order to neutralize any excess of acid. When sufficiently concentrated, it is brought into the second kettle, called the *flambeau*, and added to a previous quantity of juice, where it is likewise boiled down for a short time, and from thence into the third kettle, and is called the *syrup*. This is the material containing both molasses and sugar. It is then finished in the fourth kettle, called the *battery* and from thence thrown into coolers, where it remains for five or six hours. The sugar is now altogether crystallized, and separated from the molasses, and put into boxes and carried to the purgery, a large building, in which the hhds. are placed on pedestals, and the molasses allowed to run and drop through the sugar and hhds. on the ground, which is perfectly clean and smooth, and is then put likewise in hogsheads and barrels.

---

For the Scientific American,

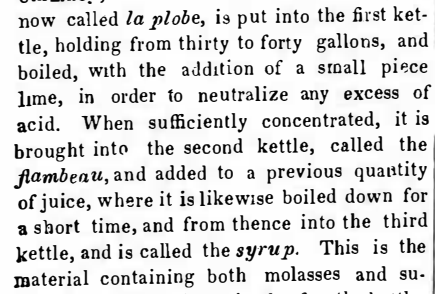
### Manufacture of Tapestry, Carpets, Rugs, Copying Paintings, &c., By Cementing a Nap or Pile, on Plain Cloth.

A method of manufacturing carpets, hearth rugs, &c., has lately been discovered, which differs so much from those we have already described, and at the same time possesses so much merit, that we think our series would be incomplete without giving an account of it. This method is, indeed, so unlike the ordinary modes, of manufacturing carpets, hearth-rugs, &c., that it cannot, properly speaking, be considered under the head of any branch of weaving at all: it will, however, be interesting to both weavers and manufacturers, to have a full explanation of it, as it is likely to supersede any of their present processes.

This remarkable invention attracted much notice at the time of its first introduction, in 1838; and several machines are now in operation, upon the principle ot it, in England and Belgium. We have made the annexed drawings and description from a machine, while at work in the latter country.

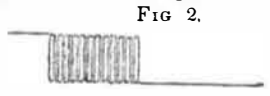
Fig. 1, represents a perspective view, of a machine suitable for carrying out the first part ofthe invention, *a a*, is a quadrangular frame, having the guides, *b b*, affixed by screws or other suitable means. allowing of their being readily removed to take out the goods.

Fig. 1.



The frame *a a*, is supported by the legs, or frame *c c*. On the under side of each of the guides is a groove or space between the guide and the frame *a*, the object of which will be hereafter fully explained. *d d*, is a roller, on which is warped a number of threads of worsted, wool, cotton, silk or other fibrous materials, or mixtures thereof, in like manner to beaming a warp for a loom, as if the same were to be woven into a fabric, in the ordinary way, with warp and weft, and the warp beam or roller *d d*, is weighted and has friction bands, as is practised in looms for weaving. The ends of the warp threads are made fast to the front rail of the frame *a*, in like manner to fastening a warp to the cloth roller of a loom. The workman then proceeds in the following manner: He has a number of strips of thin metal, such as copper, zinc, or other suitable materials, the strips being all of the same size; *and are to be in width what the depth of the desired nap is to be*, and of a length somewhat greater than the width of the fabric to be produced in the machine; the frame *a*, and guides *b b*, are to have a space between them equal to the width of the intended fabric to be produced. The operator first places one of the strips of metal under the warp, and drops it up to the end, and parallel with the front rail of the frame *a*, the two ends of the strip being placed under the guides *b b*, by which they are prevented rising up; he then places the next strip edgeways on the upper surface of the warp, and depresses the warp evenly between the first and second strip, and springs or bends the second strip in such a manner as to allow of the two ends thereof entering into the grooves formed between the guides *b b*, and the sides of the frame *a*. He then places another strip under the warp and raises the same up evenly between the second and third strips, and the strip in such a manner as to cause the ends to enter the grooves formed between the guides and the sides of the frame *a*, and then straightens the strip so as to lay the same parallel with the preceding ones: then he takes a fourth strip and places it on the upper surface, of the warp, and depresses the threads thereof evenly between the third and fourth strips, and causes the end of the fourth strip to enter the grooves formed between the guides *b b*, and the frame *a*, and with a straight edge presses the strips up evenly from time to time, so that they may be kept on their edges and in straight lines parallel to each other, and when the frame *a a*, is full, threads composing the warp will be so arranged between the strips of metal or other suitable material, as to pass first over, then under, each succeeding strip, as is shown in Fig. 2.

Fig 2.



The warp thus arranged should have a smooth surface of metal or other suitable material passed over and pressed on the upper side in order to lay and press the threads down evenly, and also to cause them to spread out in such a manner as to produce a touching of the fibres throughout, so that when a suitable cement shall be placed or spread thereon and dried, the whole will become one sheet of fabric when the strips are removed by cutting, as will be hereafter more fully explained. The cementing used by the inventor is India rubber, (caoutchouc;) but other materials, such as shellac, may be employed instead. One or more coats of India-rubber, or other cement is to be spread over the surface of the warp, arranged and prepared as above explained, and permitted to dry, and in this condition the frame *a a*, may be turned over, and then by a sharp knife or other suitable cutting instrument, the slips may be successively removed by cutting the yarn from side to side of the fabric, in like manner to cutting the warp when weaving velvet; but it is not necessary to have the strips grooved as is the case with the wires used in making velvet, but they may be grooved, if it is desired to be very correct in the cutting. The fabric thus prepared is then suitable to be applied to woven textures or other surfaces, by cementing it thereto, but it is preferable that the back of the woven fabric should be cemented on to the warp, immediately on the warp or pile having been heated with the cement, and before cutting out the strips of metal (as shown in Figs. 1 and 2) or other suitable material employed, and this may be performed by having first spread a layer of the cement on the warp, and another on to the fabric which is to constitute the back, and then bring the two cemented surfaces together and press them well, and if the surfaces be extensive the pressure may be conveniently performed by means of a smooth iron roller passed over the upper surface, such roller being made hollow. may be heated with an iron heater, In case it be required to make carpets or rugs, or other fabrics, with *patterns*, then it will be desirable to print the threads in the warp, but each pattern must be *so lengthened as to allow of the bending up of the threads*, and the colors used must well penetrate the warp.

Fig. 3.

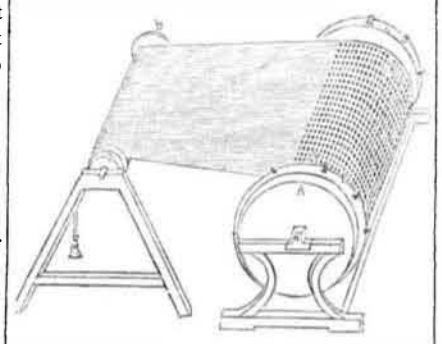
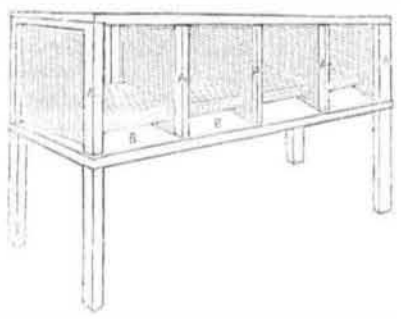


Fig. 4.

Fig. 5.



shows another arrangement of machinery for performing a like operation ot bending lengths of threads or yarns to that above described; the only difference being that the frame *a* and guides *b*, are formed into a cylinder, and this machine requires that the fabric when produced should be unwound before the cutting out of the strips; in other respects the description above given, aided by the drawings will be sufficient, the same letters indicating similar parts in this machine as were used in Fig 1. And it will be seen that the cylinder *a a*, has an axis with suitable bearings at each end, in order that it may be turned round by the workman as he proceeds. Another means of performing this operation of bending a number of threads (in such manner that each portion of thread or yarn when cut shall be cemented at a point or part intermediate of its length, and the two ends thereof rise to the surface and form the warp of the fabric,) may be employed in the following manner: in place of warping the threads on a roller, as above explained, and then bending the warp over and under a series of thin strips of metal, as in Figs. 1 and 2, the strips may have thread wound spirally around them as is shown at Fig. 4, and then a number of such covered strips are to be placed side by side in a frame *a a*, and the threads cemented together and to a suitable fabric, and the strips cut therefrom as above explained. We have stated that the looped up threads were to be cemented to a cloth, which would serve as a back, yet under some circumstances it will be preferable not to perform that operation, such as in making a suitable napped fabric for the covering of hats and bonnets in which case the napped fabric being made, as above explained, in place of cementing it to any fabric, *it is to be cemented directly on to the hat or bonnet*.—Gilroy.

---

### A Deep Pit.

A friend of ours, who keeps a boarding-house, says the pit of a certain boarder,s stomach at his house approximates nearer to the "bottomless pit," than anything he has ever seen. He never becomes satisfied, and is always hungry—is the reason he assigns for this opinion.

---

A mob of Journeymen brick makers was dispersed by the Baltimore police on Thursday, during an attempt to destroy some labor-saving machines introduced in certain brick-yards, under the insane pretence that with them they would dispense with hands.

### Terrestrial Magnetism.

(*Concluded from our last.*)

According to Mr. Evan Hopkins, who published a work about three years since "On the Connection of Geology with Terrestrial Magnetism," magnetic currents are continually crossing from the south to the north pole through and around the earth. He shows that the southern aurora, which observation has proved to be accompanied by a similar phenomenon in the north, differs from the latter in appearance, in consequence of the greater amount of vapor produced by the preponderence of ocean in the South. The form is alike in both cases, but the light of the southern aurora is white, while in the north it inclines to red and purple. We read that "the saturated or hydrogenous nature of the currents coming from the south pole towards the north, will account for the observed peculiarity of the southern hemisphere in its general temperature, moisture, rains, the growth of vegetation, &c., as compared with that of the northern." Magnetic and galvanic currents are shown to be identical, except that the action of the latter is in some degree restricted to liquids; and as all metals may exist in solution, their deposition, by means of the currents, admits of demonstration. In this case nature accomplishes on a large scale what experimentalists achieve with the galvanic battery; and, as Mr. Hopkins explains, "If we admit the existence of subterranean currents, and that these exert a slow decomposing power, like those of the voltaic battery, we have a sufficient power for our purpose. In the first place, we have a mechanical tension on the consolidated parts of the rocks, by the linear action of the currents passing through them; and should the intensity of the currents be very great, fractures would ensue more or less at right angles to the direction of the force. These fractures would admit of air and water, and thus produce intense heat, by the avidity with which the metallic nature of the basis, of the earths and alkalies combines with the oxygen. That nearly all the substances which constitute the crust of the globe are found *in solution* as well as solid saturated throughout the rocks, and to such a degree sometimes to issue out and form springs is well known, therefore, judging from the violent effects on a small scale which we are able to produce by experiments, a heat would be engendered quite adequate to occasion all that takes place in earthquakes and volcanic eruptions."

In this way may be explained the formation of veins that have long puzzled the geologist. That it is in obedience to some law, is evident from the general direction of metalliferous and crystalline deposits being the same in different parts of the world. The oblique direction apparent in some instances arises from the force of tension acting at right angles to the lines of structure, which is northerly and southerly. The parallelisms are, in fact, most remarkable. Humboldt found the primitive rocks in which metallic veins chiefly occur, in South America following the same line as those of Germany and England; the same parrelism has also been traced between the upheaved rocks of Russia and Africa. It is assumed that the intensity of electric action increases in proportion as we descend into the earth; and there are many striking effects witnessed in mines, which the existence of electric currents disturbed by local causes will alone explain. The heat in mines, particularly those of South America, is not constant; patches which at one time are at a very high temperature, become gradually cold, without any apparent cause, and after a time resume their warmth. The growth of minerals in old workings, as a mossy excrescence, is a fact well known to miners; and in some instance, as observed in Durham, Hanover, France, and in the gold mines of America, when a vein has been worked out, and the galleries left closed, they became filled with solutions of the rocks between which they are dug, and in course of time the deposits thrown down render them again worth the working—the mineral being solid, or in a powdery form, according to the intensiiy of the current. As is well known, crystals are hardly to be obtained by fusion, but may readily be produced from