Fancy Weaving.

(*Concluded from our last.*)

Gauze, veining, purles, spidering, &c., are also variously combined with several of the other branches of fancy weaving, and produce some of the most beautiful and delicate patterns in the *silk and cotton* manufactures. To obtain a knowledge of gauze, veining, spidering, &c., the reader must consult another article.

It must be observed, however, that when gauze and plain are woven in alternate stripes those parts of the reed which are occupied by the plains will be full; but in the gauze spaces a dentful of the warp passes through every second interval only; consequently, the set of reed in the former, will, in general, be double of that in the latter. And hence, when additional weft is thrown in, the plain texture will make a pretty bold contrast to the light transparent fabric of the gauze.

As the warp of gauze, when converted into plain texture, produces a very thin or flimsy fabric, it is necessary to introduce additional warp as well as weft into those parts which are woven plain, which, one being flushed above, and the other below, the gauze spaces, are afterwards cut away. A dentful of this additional warp is taken into the reed alternately, with a dentful of the gauze; so that the former, as noticed above, is exactly double the set of the other.

This method of forming patterns with gauze and cambric, like some of the other branches of fancy weaving, may be extended to all the varieties of a diaper mounting for any draught of the latter may be adapted to the former, merely by substituting one set of gauze, and one of plain leaves, for each set of the tweel, and varying the succession of the draught and treading accordingly.

It is not customary for the manufacturer to annex the plans of cording to these compound draughts; neither is it always necessary; particularly in extensive business, to represent in the draught every leaf which is requisite in the mounting. All that is commonly required in the draught is, to point out to the headle maker, the quantity and arrangement of each kind of the warp in one set of the pattern, with the number of times the pattern is to be repeated; and to the weaver, the order of succession in which these several warps are to be drawn into their respective mountings; each being supposed to understand his own department of the business.

The first loom to which we shall turn our attention in this Section, is the invention of Mr. Charles Fletcher, an ingenious mechanic of Stroud county, Gloucester, and for which he obtained a patent in March, 1828. This loom being of vertical construction, and although it is not, in some respects, calculated for weaving fancy textures, we think it may, without impropriety, be explained here.

The invention consists, firstly, in a peculiar arrangement or disposition of mechanism, for the purpose of weaving woolen goods: and secondly, in the introduction of certain new parts or pieces of mechanism into looms in general, by means of which considerable advantage, as to speed and uniformity of work, is obtained, especially as regards the weaving of woolen cloths.

By these improvements, Mr. Fletcher assures us that he is enabled to weave better cloth by power, than has hitherto been accomplished by hand, the cloth being much firmer, and the mechanism affording the capability of making more "picks" per minute, and causing less breaking of the warp threads thereby producing a fabric of better quality, and in greater quantity in a given time.

In this loom the yarn beam is situated at the bottom of the framing, and the cloth roller is placed at the top. The warp threads proceed through the headles in vertical positions, while the headles are moved to and fro horizontally. The lay is made to rise and fall vertically, by the action of suitable cams and levers, and is impelled upwards by the momentum of a falling weight, or weights, which can be so regulated and adjusted as to increase or diminish the blow, as may, under circumstances, be found desirable. This part of the mechanism is also furnished with suitable elastic regulating stops for the rising lay to strike against at the moment that the reed is beating up the weft, and by the elasticity of these regulating stops, the sudden concussion of the lay, and consequent strain upon the warp threads, is immediately relieved whilst the blow being caused by a descending weight, mounted upon the end of a lever attached to the cam shaft any degree of impulse can be given to the lay without causing an undue strain upon the warp threads, and with much greater effect upon the cloth than can be obtained by the best hand weaving.—GILROY.

For the Scientific American.

Argument for and against the use of the Lickerin upon Cotton Cards.

The article under the above caption which appeared in No. 36 of the Scientific American, contained in my judgment some sound practical views upon the principle of carding cotton.

The utility of the lickerin upon breaker cards cannot be disputed when its speed in relation to the main cylinder is correctly adjusted. Here manufacturers have generally been working in the dark.

There is no branch of the cotton manufacture where more scope is afforded for the display of practical skill, than in the adjustment of the relative speed of the machinery. It therefore gives me pleasure to learn from your correspondent E. B. M., that the Manchester manufacturers are on the right track in this matter.

E. B. M. requests me to state whether lickerins are used for *single carding* in England and Scotland. I can say they are. A friend of mine visited nearly all the principal manufacturing establishments in both countries a few years ago, and found them *invariably used for single carding*

Most of the mills he visited, did not use them on either breakers or finishers for *double carding*. The cards generally used in England were the same as those described by Dr. Ure in his work on the Cotton Manufacture Thecards working without the lickerin were only from 18 to 24 inches wide, with feed rollers one inch in diameter, hence the "bite" of the latter would not be more than 5-8 of an inch from the card teeth.

When cards from 30 to 36 inches wide are used the feed rollers must (in order to prevent them from springing in the middle) be 1 1-4 or 1 3-8 inches diameter. This throws the the bite 6-8 or 7-8 from the teeth—a distance too great to ensure perfect work from cotton no longer in the staple than is generally used for spinning any Nos. below 60's. The cotton should be held by the feed roller when the card teeth first act upon it, so that it may be disentangled *gradually in single filaments.* This cannot be perfectly accomplished when the distance from the bite to the card teeth is greater than the average length of the staple. This is an imperfection in wide cards which is remedied *in part* by the intervention of the lickerin between the feed rollers and main cylinder. The surface velocity of the latter being so great and the teeth so sharp and close set, when no lickerin is used the cotton is tugged away from the roller in large tufts, which choke up the working parts of the card, bruise the teeth and make a very imperfect "clouded" fleece when delivered from the doffer. The lickerin having a slower motion and coarser teeth, detaches the fibres with less violence and more uniformity—a fact which has probably developed itself in the personal experience of every one who has had occasion to use coarse and fine hair combs.

Your correspondent is correct regarding the proportion of the speed between the main cylinder and lickerin. The rule with English carders is to regulate it so that the lickerin shall be to the main cylinder as 2 is to 3. I find a good proportion to be as 1 is to 2. Anything between these extremes will be a safe adjustmeut in the relative speed of these cylinders. A great advantage of the lickerin results from its striking the cotton with a downward beat, and thereby detaching much of the sand and foul matter which the most perfect picking always leaves amongst the cotton.

I am not *fully* prepared to say with E. B. M. that it would be an object as a matter of actual economy to use lickerins for finishers on double carding. When finishers are used at all it ought to be for the purpose of polishing, not rough-hewing the work. If there be much dirt and "topsy-turvy" left when the stuff passes through the breakers, it is more difficult to make perfect work from it than if left in its original state. Many manufacturers entertain the idea, that the cotton may be hurried much faster through the breaker when there are finishers to complete what the former have *partly* done, but this is a most fallacious idea. And I would advise every manufacturer spinning Nos. below 60's or 50's, to use single cards with a lickerin properly adjusted, and if any are willing to incur the extra expense of breaking and finishing, let the breaker cards be kept in the best order, without any reference to what *touches* the finishers may put on.

I am glad E. B. M. has published his views on the use of the lickerin; and I hope to see the time when cotton manufactures will adopt means for establishing a more free interchange of opinion upon the principles of this beautiful art. WM. MONTGOMERY.

Craigville, Orange Co. N. Y. June 3.

Peat and Peat Mosses.

(*Concluded from our last.*)

There is a peat moss about seven miles in circumference, on the western confines of England and Scotland, called the Solway Moss, whose surface presents a dry crust and fair appearance, being covered with grass and rushes; but it shakes with the least pressure, the bottom being in a semifluid state. Gilpin, in his Observations, says, "At the battle of Solway, in the time of Henry VII. (1542,) when the Scotch army, commanded by Oliver Sinclair, was routed, an unfortunate troop of horse, driven by their fears, plunged into this morass, which instantly closed over them.—The tale was traditional, but now is authenticated; a man and horse in complete armor, having been found by peat diggers, in the place where it was always supposed the affair had happened. The skeleton of each was well preserved, and the different parts of the armor well preserved."

There are a great number of peat mosses in America, and particularly in Northern Canada and Newfoundland. They are remarkable for preserving animal substances and also trees.

In June 1747, the body of a woman was found six feet deep, in peat, in Lincolnshire It is said that her nails, hair and skin showed scarcely a mark of decay; yet the "antique sandals on her feet afforded evidence of her having been buried there for many ages." In Ireland, a human body was disinterred a foot deep in gravel, covered with eleven feet of peat moss. The body was perfectly preserved, and clothed with garments of hair.—History informs us, that before the use of wool in that country, the clothing was made of hair so that we must infer that this body was buried at that early period. It is quite common to dig up black walnut logs in the Irish mosses or bogs, in a perfect state of preservation. These must have been buried there at an early period and at a time when the climate was much warmer than at present, for walnuts are not now considered natives of that country.

Peat mosses have some remarkable antiseptic powers The reason of this is not yet clearly known, but the fact is. It is thought by some that it is due to the carbon, present in the lowest part of many peat beds, and that the gums and resins also assist in the same way. From the same cause, it is known that the stagnant water of peat grounds does not become putrid; and that peat marshes are less unhealthy than marshes that do not contain peat.

The greatest use of peat, is for fuel. In Norway, Ireland and Scotland, it is extensively used for this purpose, and makes when perfectly dry, a beautiful fire. The charcoal made from peat is superior for making iron to that of wood. When it is intended for fuel it is cut and taken from its bed by instruments prepared for the purpose. Sometimes a long narrow spade, from one side of which near the bottom a sharp knife projects, is employed. The peat is thus cut in two directions at once, and is taken out in solid masses, and often moulded into the form of large bricks. In all cases, however, it is of the utmost importance to render the peat perfectly dry; which is done by piling it up in long rows, somewhat after the manner of piling the bricks in the brickyard, and letting it be exposed to the sun and air. In wet seasons, when the weather is too damp for the peat to get perfectly dried, it is the frequent cause of much suffering in the winter both among the Irish and Scotch peasantry. Peat in burning gives out a singular odor, which is very disagreeable to some, but which banishes that pest to mankind from houses, the bedbug.

All the varieties of peat, or peaty soils, may be converted into valuable manure for uplands by treating it in one of the following ways:—

1st. For a cord of fresh peat mix 92 pounds of potash, or 61 pounds of soda ash, or 16 bushels of commonashes. 2d. Form composts of peat and animal matter, as the bodies of dead animals, fish, &c. 3d. Mix three cords of peat with one of green barnyard manure.

In each of these composts the prepared manure is equal to the same amount of good barn yard manure.

This is an interesting piece of information to many farmers who have pieces of swampy soils that are now useless, but can be easily made highly beneficial.

Science and Art.

Art is the application of science to useful purposes. Science is the head to conceive, art the arm to execute. They are together in emblems, as sisters, Science is the elder, and it is her province to lead art, the younger. Science assumes that she is less liable to stumble, and claims that art should follow. But it must be confessed, that the great romp often gets ahead, and frequently finds shorter and more eligible routes in which her elder sister is glad to travel. Yet they love each other, and their path is the same, and their journey is ever onward. Around them the forest falls, and the rays of the sun come in upon the bosom of the earth. Cottages spring up, and flowers blossom. The neighboring woods echo to the ring of the anvil and the noise of the saw mill for the wild wood stream is dammed, and throbs like a great artery with a flutter-wheel for a heart. Together, they have done wonders. They have timed the arrows of light, and have split the sunbeam into rainbows. They have marked out paths on the restless ocean, and measured its tide. They have stolen from the moon the secret of its motion, and betrayed the mystery of her eclipses. It is thought they had hung a pendulum to the clock-work of the universe, and registered its motions upon a dial.

Wooden Bridges.

The most celebrated wooden bridge at one time, we believe—was that over the Rhine, at Schaffhausen. This was 364 feet in length and only 18 feet broad. The plan of the architect, was, that the bridge should consist of a single arch. The Magistrates of the place, however, required that he should make it of two, and use the middle pier of a stone bridge, which had previously stood there. He did so, but ingeniously contrived to leave it doubtful, whether the bridge was at all supported by the middle pier. It was destroyed by the French in 1799. Aaron Burr erected a wooden bridge over the Delaware in 1804, it was the segment of a circle, 345 feet in diameter. Its chord measures 200 feet. The span of the wooden bridge over the Schuylkill, at Philadelphia, is 340 feet. The bridge built by Palmer, over the Piscataqua, near Portsmouth, N. H. in 1794 is the segment of a circle six hundred feet in diameter. It is put together with wooden keys.

Rural Architecture.

The rage for Gothic structures appears to be a perfect mania in some parts of the country. It would be well if fashion and taste always went hand in hand, but this not always the case. Gothic cottages look best on the banks of rivers shaded with trees, or in the seclusion of "some lone mossy dingle." The wild and solemn for the gothic, the bright and gay for the style of Greece.

James Sheridan Knowles, the dramatist, has received the appointment of Keeper of Shakspeare's house, in Stratford-on-Avon, at a salary of £250 per annum.