

AN

ILLUSTRATED ITINERARY

OF THE

COUNTY OF LANCASTER.

TIME HONOURED LANCASTER,
SHAKESPEARE.

LONDON:

HOW AND PARSONS, 132, FLEET STREET.

MDCCCLII.

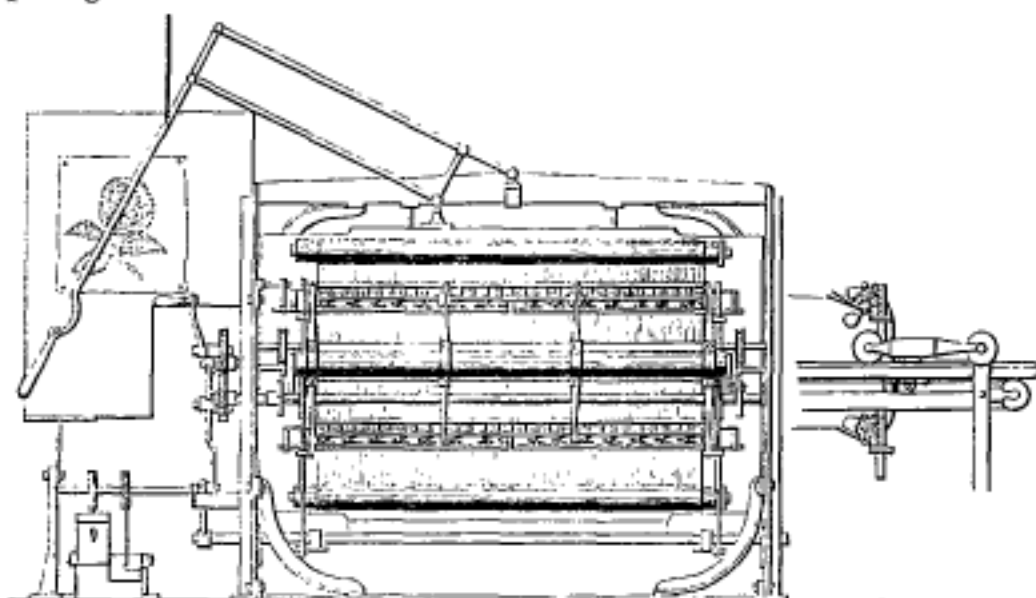
ories and scientific libraries attached to most of the printing factories are fully equal to those of our best public institutions, and among the chemists they employ are to be found names that have shed the brightest lustre on the annals of modern science.

We have given merely a general outline of calico printing; it is a business which to be well and successfully carried out, requires a combination of the highest mechanical attainments, the most extensive chemical knowledge, and no small acquaintance with the art of design. Some of the print works employ more than a thousand operatives; they are all conducted with extreme order, cleanliness, and punctuality; they exhibit at once the greatest triumphs of mechanical art and chemical science, both kept under the control of human agency, and working for the advancement of human comfort.

The silk trade is a modern branch of industry in Manchester, but it has extended itself so rapidly that it is now second only to the cotton manufacture. The town of Middleton, near Manchester, is indeed principally inhabited by silk-weavers. As we shall have to describe the silk trade in connexion with other localities, we shall here only notice a few of those branches which are peculiar, or nearly so, to the Lancastrian districts.

It is in the weaving, rather than the spinning or throwing, that the silk manufacture becomes deeply interesting, and in some of the weaving branches Manchester is unrivalled. No one who has visited the establishment of Mr. Lewis **Schwalbe**, can ever forget the extraordinary beauty of the fabrics wrought in his jacquard looms. The richness and beauty of the patterns surpass all that the imagination could previously have conceived: the flowers wrought into the silks and satins appear more like the work of the best painter than of the weaver. He has also some of the finest specimens yet produced, of the interweaving of glass thread with textile fabrics. But nothing in this establishment is more likely to engage the attention of a scientific visitor, than the application of the Pantagraph to the art of embroidery. The embroidery loom is an upright frame, on the top of which is a moveable rod attached to one arm of the pantagraph. The material to be embroidered passes over this rod to a roller beneath. On each side are carriages having a horizontal motion backwards and forwards, supplied with a system of clippers, and also of needles having the eye in the middle; these needles are threaded with the various coloured silks that are to be embroidered on the suspended piece. The tenter, sitting at one end, moves the long arm of the pantagraph to a point marked in a copy of the pattern, and the other arm of the pantagraph gives a corresponding motion to the rod from which the piece is suspended; one of the carriages moving forward drives its needles into the suspended cloth; they are then caught and drawn through by the clippers in the carriage at the other side; this process is repeated at every change of the pantagraph, and thus several copies are embroidered with mathematical accuracy on the piece at the same time. So

simple is this very ingenious contrivance, that the frame may be worked by a woman and two girls; the woman guiding the pantagraph to the points marked on the pattern, and the girls directing the motion of the carriages. The figure at the side of the machine represents, on an enlarged scale, the apparatus for passing the needles.



Mr. Schwabe has several jacquard looms at work, and in these are produced some varieties of figured satin, such as we have not seen in any other establishment. Among these, a pattern differing from the ground-work only by a shade of tint is particularly remarkable; the effect produced is that of the finest penciling, and both in beauty of design and accuracy of execution not unworthy of the first artist.

The manufacture of engines and machinery is necessarily a very important branch of industry in Manchester, but as the subject must elsewhere engage our attention we shall not dwell upon it here, further than to remark that this is a business which requires not only mechanical skill but also great intelligence and science in those by whom it is conducted. Modern trade and commerce daily increase in their demands on mental acquirements, and this is particularly the case in Manchester, where a very slight improvement in manipulation confers an immense advantage, on account of the vast amount of production over which it spreads, and where for the same reason a slight error or miscalculation must produce incalculable injury.

The merchants and manufacturers, aware that their own interests are intimately connected with the general diffusion of intelligence, have not only aided in securing primary instruction for the young in their schools, but have encouraged the establishment of several institutions where adults can on very moderate terms obtain a knowledge of science, and at the same time enjoy the advantages of literary relaxation. Of these institutions, the Athenæum in Bond-street holds the first rank. It is a splendid building, erected from the

on board packet boats and other vessels.—Dated January 15, 1831.—(*Six months.*)

WILLIAM PARKER, of Albany Street, Regent's Park, in the County of Middlesex, Gentleman, for certain improvements in preparing animal charcoal.—Dated January 15, 1831.—(*Four months.*)

JOHN and GEORGE RODGERS, of Sheffield, in the County of York, Cutlers; and THOMAS FELLOWS, Jun., of New Cross, Deptford, in the County of Kent, Gentleman, for an improved skate.—Dated January 18, 1831.—(*Two months.*)

ANDREW SMITH, of Princes Street, Leicester Square, in the Parish of St. Martin's in the Fields, and County of Middlesex, Engineer, for certain improvements in machinery for propelling boats and other vessels on water, and in the manner of constructing boats or vessels for carrying such machinery.—Dated January 22, 1831.—(*Six months.*)

JOHN GOTTLIEB ÜLRICH, of Nicholas Lane, in the City of London, Chronometer Maker, for certain improvements in chronometers.—Dated January 22, 1831.—(*Eighteen months.*)

CHARLES MEPHAM HANNINGTON, of Nelson Square, in the County of Surrey, Gentleman, for an improved apparatus for impressing, stamping, or printing, for certain purposes.—Dated January 22, 1831.—(*Six months.*)

LOUIS SCHWABE, of Manchester, Manufacturer, for certain processes and apparatus for preparing, beaming, printing, and weaving yarns of cotton, linen, silk, woollen, and other fibrous substances, so that any design, device, or figure, printed on such yarn may be preserved when such yarn is woven into cloth or other fabric.—Dated January 22, 1831.—(*Six months.*)

surmountable character ; and he well merits the compliments which he has received.

It is not necessary that we should enlarge upon the national advantages which must result from this invention, because, they will appear obvious to every reflecting mind. We would remark, however, that it is calculated to supply us with beautiful embroideries, for home consumption, at least, and render us independent of foreigners in this delightful branch of industry, saving millions of dollars annually to the country.

Mulhausen, August 5th. 1843.

Dear friend,

Your favour of the 29th June last has just reached me, enclosing a Copy of "Ure's Dictionary of Arts, Manufactures and Mines;" in which publication, at page 437 of vol. 1, a catch-penny description of my Embroidering Machine is given : but as all the movements and mechanical arrangements contained in plate 2, of your drawings, with many essential parts of plate 1, are omitted, I have come to the conclusion that the Doctor's description is not intended to benefit the manufacturer or mechanic, in a *practical point of view*, but only for the amusement of children.

I am glad to hear that you have embarked in the publication of a treatise on the art of weaving, which will include all its various branches. Such a work, I am persuaded, will prove of immense benefit, not only to individual manufacturers and weavers, but also to your own country and the world at large ; for in this age of charlatanism, when effrontery usurps the place of genius, a real practical work like that you name, will be quite a god-send ; and you have my best wishes, with those of your friends here, in the undertaking.

"Facts truly stated are the best applauses, or the most lasting reproaches."

I have not made any improvement on the Embroidering Machine for some time past ; nor has there been any material alteration made in its principles, so far as I am aware, either here or in England, since its first introduction.

The patents obtained in France and England, have expired but a short time since, so that this invention, which has really procured me many compliments (among which is the decoration of the "*Légion d' Honneur*") is at present public property.

During the course of last year, I several times visited the factory of Mr. Louis Schwabe, of Manchester, containing 15 of my Embroidering Machines. This manufacturer has received compliments at least sufficient to drive a man crazy, (*Ce manufacturier a recuilli des compliments, à faire tourner la tête,*) from a multitude of persons, who were in Manchester last year, at the meeting of the British Association.*

Although this invention has filled the mechanical world with wonder, I do not think that it has turned much to the pecuniary advantage of those who have hitherto adopted the use of it; but my opinion is, that it will be more serviceable when within the reach of every one.

When your work on the "manufacture of textile fabrics" is ready, you would do well to send a copy of it to our *Société Industrielle* here. It would certainly be received with much favour; and, perhaps, might prove greatly to your advantage.

Je vous présente mes salutations cordial

JOSUÉ HEILMANN,

Membre de la Legion d' Honneur.

MONS. C. G. GILROY,

à New York,

Etats Unis d' Amerique.

The price of a machine containing 130 needles, and of course, 260 pincers or fingers to lay hold of them, is 5000 francs (nearly 1000 dollars.) Each machine, as before observed, is calculated to perform daily the work of 20 expert hand embroiderers; and it requires merely the labour of one adult, and two assistant children.

The operator must be well instructed in the use of the machine, for he has many things to attend to at the same time: with one hand, he follows the drawings with the point of the pantograph; with the other, he turns a handle, to prick and draw all the needles, which are held fast in pincers, and carried by carriages, approaching to and receding from the web, rolling all the time along an iron railway; and lastly, by means of two pedals or treadles, on which he bears alternately, with one foot and then the other, he opens the 130 pincers of the first carriage, which must give up the needles after having pricked them into the stuff, and he shuts at the same

* We think these compliments have been altogether misplaced. Would it not have been more becoming in these gentlemen, to have sent Mr. Heilmann, the inventor of the machine, a handsome gold medal, in token of their admiration of his ingenuity?