Machinery and Appliances.

IMPROVED JACQUARD-CARD REPEATING MACHINE, AND PEG AND LACE HOLE CUTTING MACHINE.

Mr. James McMurdo, New Street, Miles Platting, Manchester.

Our previous descriptions and illustrations of Mr. McMurdo's machinery have been those of a 2000 single lift and a 4000 double lift Jacquard, and very fine specimens of this class of machine they were on every hand admitted to be. The Jacquard machine, as we have previously remarked, is an important adjunct of the loom in every establishment making the most elaborate descriptions of fancy woven goods in all the textile industries. It was the invention of Joseph Marie Jacquard, in 1801, and was his chief work. It has been modified and improved in many ways by succeeding inventors, and has been adapted to numerous purposes never conceived of by its inventor. The finest silk fabrics and the heaviest carpets owe the quickest and most perfect embodiment of the artists' designs in their texture to this ingenious machine. That wonderful textile machine, the loom, would be as nothing without the aid of this ingenious invention. But it not only deals with the warp of textile fabrics, it is equally potent in manipulating the weft, controlling the insertion of the different colours through its government of both rising and revolving shuttle boxes. It goes

FIG. 1.—IMPROVED JACQUARD REPEATING MACHINE.—MR. J. McMURDO, MILES PLATTING, MANCHESTER.
even further than this, and makes its own cards in the card-repeating machine. As is well known in elaborate patterns in Jacquard weaving a large number of cards are required, and the provision of these is one of the greatest items of expenditure here. In the production of fancy fabrics. In order to keep down this element of cost, various methods of making cards are employed to preserve their action. Beyond these, however, something more was wanted to secure a diminution of the cost when duplicate sets of cards of one pattern were required in order to provide a number of looms with the same design. In this case there was for a long time only the original plan to resort to by which the first sets were produced. Repeating machines were next described, but the originals were of a very crude type, and only very inadequately answered the purpose for which they were designed. Familiarity with the wants of the trade in this respect induced Mr. McMurdo to investigate the problem, with the result that it was speedily solved in the most satisfactory manner by the invention of the fine machine illustrated here with which consists of a combination of an improved punching machine and the Jacquard, the latter being used to operate the punches automatically.

Of its general appearance, our illustration (Fig. 1) gives an excellent view. Its principal parts consist of a stationary punch plate above cylinders, being operated in a manner similar to those of the Jacquard attachment itself, and so readily change the cards after being punched.

The Jacquard machine is mounted immediately above the punches, to one of which each hook is connected by what we may term a compound connecting wire. These are formed of a pair of wires, each having an eyelet at one end. The end of each wire is put through the eyelet of the other whilst a spiral spring being placed upon them between the two eyelets keeps these apart and thus forms a spring connection between the Jacquard hook and the punch which does not become slack. The locking comb is constructed in the usual manner, but the rolls upon which it slides are held in position by spiral springs and are actuated by oscillating levers, which are provided with slots to permit the vertical movement of the frame which carries the punches. These levers are ball-craniated and are operated from the cam on the shaft before mentioned.

FIG. 2.—PUNCH AND LACKET HOLE CUTTING MACHINE.—MR. J. MCFARDO, MILL; PLATING, MANCHESTER.
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In working the jaccard looms are lifted by the "griffe" and raise their corresponding punches, which are then, along with the other punches left down, locked in their respective positions. This is in order to revolve the shaft carrying the eccentrics then draws down the punches to the card which is already upon the fixed punch-plate. The raised punches make no impression upon the card, but the other punches hole into them; and as there are as many rows of punches as there are rows of holes to be punched in the card which is being revolved, a whole card is punched at one revolution of the shaft. The operation being finished, the eccentrics raise the punches from the card which automatically moves forward, bringing a fresh card upon the plate, when the operation proceeds as before. Of course, it will be obvious that the first set of cards must be cut in the ordinary way from the design by the punch-machine. These are then laced together, and are used in the jaccard to actuate the repeater, which then automatically reproduces a set of cards exactly according to the pattern.

Practical men will readily appreciate the value of this machine when they are told that it easily cuts 40 cards per minute, and, if required, could be made to do more. The economy in a large establishment is really very considerable. As compared with the old plan of cutting, which it supersedes, the saving it effects very soon recoups the user for the outlay on it, while all that follows becomes an addition to profit. In these days of severe competition it is in fact indispensable in establishments using jaccards to any extent.

A new machine has been invented and constructed by Mr. McMurdo—the peg and lace hole cutting machine—is represented for the first time in the accompanying illustration. Fig. 2. Its purpose is to cut peg and lace holes in the blank cards. It has been designed to sear a very important point in connection with cards, namely, that the peg and lace holes shall be cut correctly, and correspond exactly with the punches in the repeating machine. It is self-acting and takes the cards through on a chain of plates, during which time are punched. This machine only requires a boy or girl to feed it.

These two machines are very important adjuncts of the jaccard, the usefulness of which they very considerably enhance in the accuracy and economy they effect, and they will be perfectly obvious to practical men. It is therefore quite unnecessary to dilate upon their merits. Should any of our readers require any further information the maker will be pleased to afford it on application to him as above.

News in Brief.

From Local Correspondents and Contemporaries.

England and Wales.

Ashston.

The directors of Harper Twist are having the mill covered with new glass, which is being applied with a view of keeping pace with the times. Messrs. Schofield of Pwllheli, are putting the improvements under the direction of Mr. George W. Talbot, who has the management of the concern.

Mr. Wilson and Son are having a goodly number of their looms fitted up with the Blackburn type of reed-rollers which are being supplied by the Waterside Ironworks Company (Ed. Ceyler and Sons, Drakenhall.) We hope that the rest of the order pending shall be delivered to a wider range of goods, and the Messrs. Mollor can be complimented on the alterations they are making at the Whitleashe sheds.

Bacup.

It is reported that a new weaving shed is about to be erected by Messrs. Taylor and Sons, the Olive Mill. The employees of the Albion Mill re-commenced work on Friday last, and after having been stopped a fortnight, owing to repairs to the engine.

Mr. Henry Marden's mills, the Thistle and Spring Holme, have commenced running these three days a week, which will be continued until further notice.

The Bacup Co-operative Society, who own Grove Mill, have sold it, and it is understood, that it is to be worked to Mr. Meinhuthal-Heyworth for the sum of £660. We understand that it will be used for cotton manufacturing.

The new Bacup and Warrilow Commercial Company have stopped running the Willow Mill for the purpose of compensating the engines and making other repairs, which will take up a fortnight at least.

The No. 4 shed of Holmes Mill (Messrs. G. and J. Shepherd containing about 300 looms, is at present standing idle in consequence of extensive alterations and repairs to the roof, and also for the purpose of clearing the main driving shaft. It is to be feared that the stoppage will be a lengthy one, extending over three years. Those weavers who are members of the local Weavers' Association will receive support during the stoppage.

The machinery and plant in and upon the Nova Scotia and Rockfield Mills, Blackburn, are announced for sale by Messrs. F. Rushton and Son, on Wednesday, Thursday, Friday next, and on Monday week. The disappearance from the ranks of cotton spinners of manufacturers of the firm recently owning these mills have been the cause of much regret.

A meeting of donors and subscribers of the Blackburn Technical School was held on Monday, at the Town Hall, when the following gentlemen were elected representatives of the Council: Messrs. W. Tyler, W. Walmsley, J. H. Thompson, James Kenyon, Henry Lewis, William Thorn, Henry Livesey, James Tye, E. T. Thompson, E. Hannen, P. A. Anderson, and W. T. Walshe.

The depression in the cotton trade was made further manifest on Monday, when another serious stoppage of spindles and looms, even more numerous than those recorded a week ago, took place at Blackburn. Messrs. Thomas Gedge Brothers (two mill) (one at Wotton and the other at Livesey) and the Primrose and Waterfall mills, run by Messrs. John Fish, Limited, all suspended work temporarily in consequence of the depression. The first-named firm have altogether 80,000 spindles and 1,600 looms idle, while Messes. John Fish, Limited, have 71,000 spindles and 1,519 looms stopped, making the total for these four mills alone of 150,900 spindles and 3,119 looms.

In addition to these many other firms have looms and spindles stopped, though to a much smaller degree, and in Blackburn alone there are at the present time more than 3,000 looms standing idle, and in the weaving branch of the trade, with the number of spindles being spun, there is the large number of 2,500 weavers out of employment. As regards the weaving branch of the trade, the number of spindles stopped in Blackburn is computed at not far short of 300,000.

Barrowdale.

Messrs. Brooks Brothers, Long Igg shed, received a number of new looms on Saturday.

Burnley.

A strike of the weavers employed by the Sandy Gate Company, who were on Monday the 19th inst., it is alleged through bad work. The company thought it had to pay wages on the following Saturday, as the weavers were considered to have left without notice. Negotiations for a settlement were entered into by the shop officials, but without effect, and the weavers had to return to work unproductively on Tuesday last, thus sustaining a loss of 3 days' work without accomplishing any result.

The results of the examinations held in spinning and weaving, by the City and Guilds' Institute, are to be seen in the report, published in spinning 22 passed, 4 of them gaining a 1st class in the honours grade. In weaving the results are anything but satisfactory; 68 were presented, and only 15 passed. This is about the same proportion as in some other large communities, such as Blackburn, etc. It is felt that some representation should be made on the subject to the manufacturer, and probably this will be done.

Bury.

It is rumoured that a new spinning mill is to be started in this district.