

Machinery and Appliances.

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

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Our previous descriptions and illustrations of Mr. McMurdo's machinery have been those of a

600s single lift and a 400s 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 more 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 pur-

poses 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 lace 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

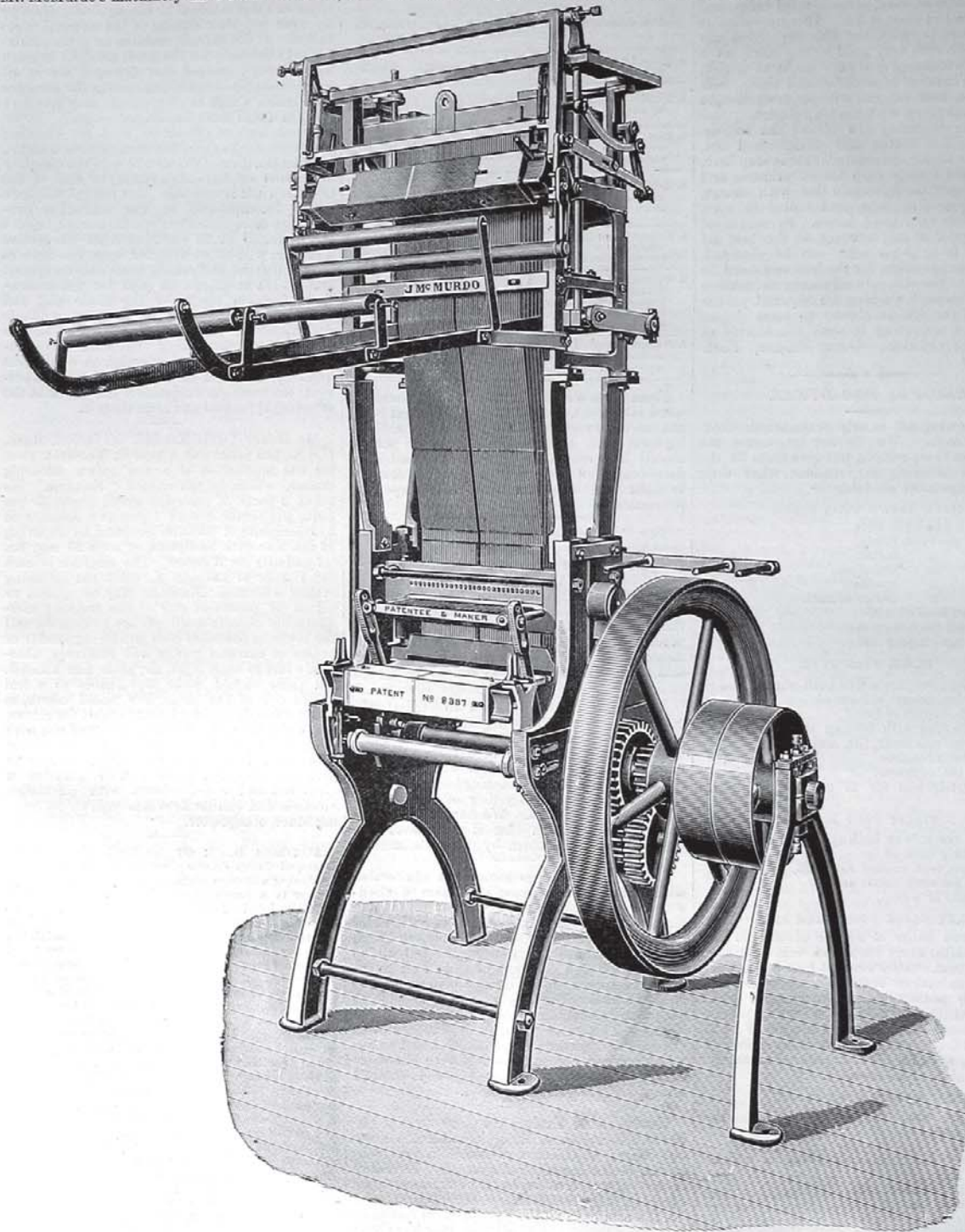


FIG. 1.—IMPROVED JACQUARD REPEATING MACHINE.—MR. J. Mc MURDO, MILES PLATTING, MANCHESTER.

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 there is upon the production of fancy fabrics. In order to keep down this element of cost various methods of making cards repeat their action have been devised with good results. Beyond these, however, something more was wanted to secure a diminution

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 herewith 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

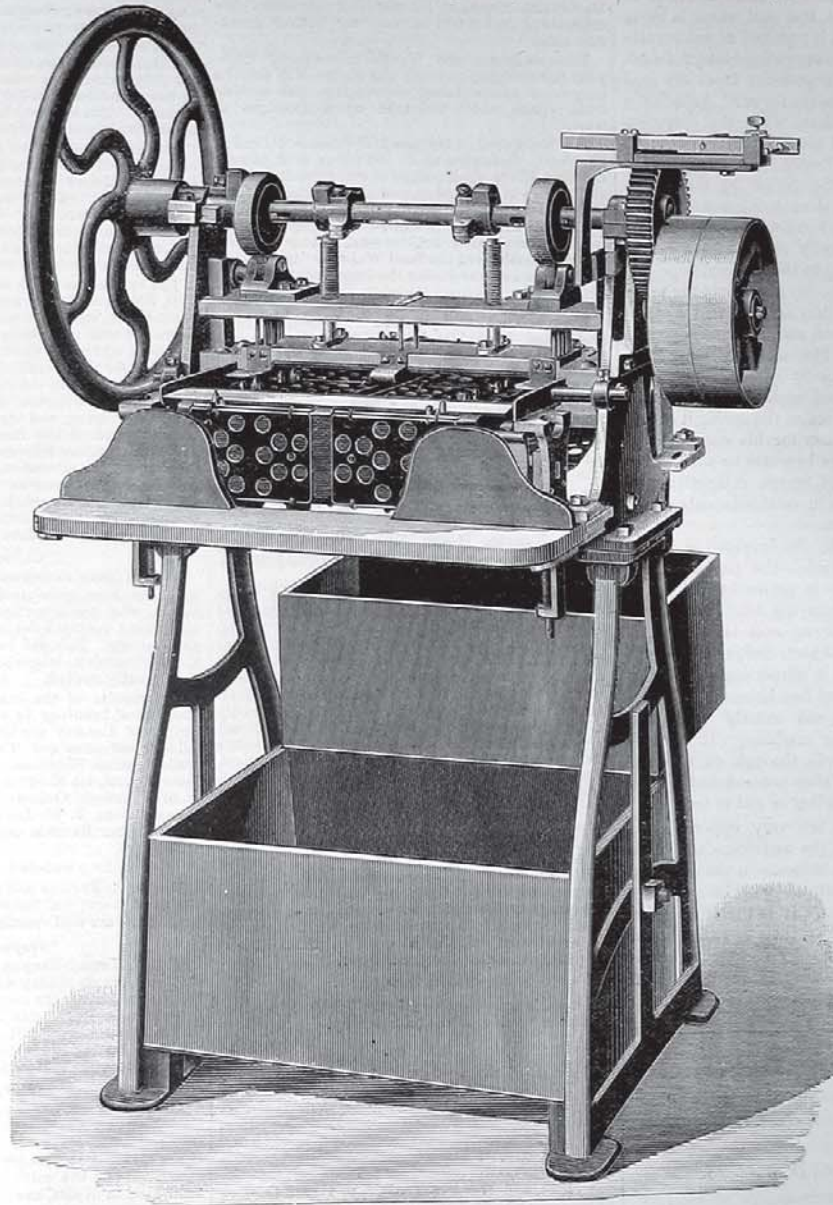


FIG. 2.—PEG AND LACE HOLE CUTTING MACHINE.—MR. J. M^cMURDO, MILES PLATTING, MANCHESTER.

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 designed, 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

which is mounted a sliding frame carrying the punches. A comb locks these up or down as may be required. This sliding frame is lowered by means of eccentrics upon one of the shafts when the punches are required to cut the card, and is raised again to its former position when the operation has been performed, where it waits ready for the next card to be brought upon the plate. The cards pass over the cylinders of the punching machine on their passage through the

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 rods 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-cranked and are operated from the cams on the shaft before mentioned.

