Machinery and Appliances.

IMPROVED SCUTCHIE.

MILLS, LORD BROTHERS, TOLLROOD.

Continuing our notice of Mills, Lord Brothers' recent improvements, the next machine calling for description is the scutchie.

The first improvement we note here is in the construction of the feed rollers, which are now made with easier fits and changing than formerly. This gives them a firmer grip upon the material, preventing the latter from being torn or jammed. The rollers are all made from cast steel, and the feed roller steps are fixed with ferrules, so that steel and brass work in contact.

The second point calling for remark is an improved construction of the feeder. Formerly, the series of levers forming what is called the "piano feed" or "piano motion" of the cotton roller, consisted of a substitution of an open bearing for a fixed one.

The cylindrical one formerly in use. This gives greatly increased facility in lifting out any single lever for cleaning or any other purpose, as it obviates the necessity of driving out the shaft, which was necessary before.

Experience has shown that the size of the lever, acting on the roller, should be gradually increased from the top of the roller to the bottom, if so intended to be used. Accordingly, Mills, Lord Bros., have given this point careful attention and consideration, and have experimented various modifications, which are applied according to their suitability for the requirements of the purchaser.

The present bars of levers hanging from the cotton roller have been furnished with two solid iron bars or pulleys, 4 inch diameter, instead of the larger one formerly in use. This change has been introduced because it increases the liberty of movement of the levers. Previously, when the levers were resting on the cotton roller, they were impeded, because of the effort to overcome the motion of the levers. For example, when two levers were raised, it was impossible to drive them forward, and there was an apparent slowing down. Now, it is possible to drive them forward, and they move freely and easily.

The pulleys are made of the best quality of iron, and are furnished with a guard to prevent injury to the hands or clothes of the operator. The guard is made of steel, and is fixed to the frame by screws, so that it can be easily removed for cleaning or other purposes.

It will be obvious, from what has been said, that Mills, Lord Brothers are determined to keep pace with the improvements of the times in making their machines as perfect for their various purposes as possible. Should our readers desire any additional information about this machine, they have only to write to the firm, who will supply them with all the require information.

CARDS IN FALL RIVER.—In a cutting from the Fall River Mercury News, supplied to us by a correspondent, and inserted in the ears of the Fall River News, the writer states that "Mills, Dobson and Forbes, of Boston, have a reputation for making the best card in the United States."

The writer in our Fall River News, in a cutting in the New England press of the United States, appears to be the only writer in the country who has visited our Fall River Mills, and he speaks highly of the work of these mills. The writer, in speaking of the Fall River Mills, says: "The work is done by hand, and the card is a beautiful one. The card is made from the finest wool, and the finished product is a fine, soft, and silky fabric."

A NEW SILK WINDING MACHINE.

An ingenious machine for winding silk was shown at the recent Paris Exhibitions, and attracted considerable attention among those interested in this branch of the trade. It is stated that Mr. John Kelly, of the firm of Kelly & Kelly, in Berlin (Alba), Paris, while at Fontaine, and watching the departure of coats loaded with spools of silk for the Peruvian capital, had his attention first directed to the disproportion in weight of silk to spools, the latter being 75 per cent. of the total weight. As the average load of coats on this journey is 10 per cent., it struck him that this burden could possibly reduce their value and effect a great economy in the use of silk, maintenance, and superintendence.

A brief period of thought enabled him to devise a plan by which silk could be wound without removing its spools to spools to spool, and the machine which he has used in the manufacture of threads of equal strength, suitable for hand or machine use.

The silk winding machine thus constructed was
NEW RAISE AND DROP SHED JACQUARD

This is an illustration of which is presented in the accompanying cut, on account of its simplicity of construction, effectiveness, and durability, having rapidly become almost universally recognized. Its makers claim that it possesses all the simplicity of the single lift machine, yet having most of the advantages of the double lift machines, as well as many other important features, which the latter does not possess.

In the first place, it possesses the same advantages over the single lift that are obtained for the double lift machine in raising and lowering the warp shed. It has a still greater advantage over both the single and double lift machines, in that the looms can be used at least 25 per cent. lighter than on either of them, and in some instances 30 per cent. lighter can be used. By the improved system of driving powers introduced, the hea will run more lightly and smoothly than with other Jacquards, being more evenly balanced. As it forms a very close shed, the throw of the web is uniform, giving a smooth and even surface.

The improved Jacquard combing and combing board and perfect varnish used in connection with this machine are deserving of mention. There is less tendency to break the harness, and that below the neck bands, which are endless. In this the twist of the twist in the neck bands and belts is formed as in the harnesses of other Jacquards, and their absence is greater durability and easier process. The machine makes little work for years; in fact, they are almost indestructible, and, by their peculiar formation, cannot cause the warp. Another point to which attention is called is the ease with which these machines can be put in operation, and the arrangement is so simple that the various parts of light and heavy goods can be worked without difficulty.

There are other minor improvements, which, combined with the advantages already mentioned, make this the best in its class, and will soon become the paramount of goods requiring a smooth finish. There is a, i.e., more than thousand of these machines in operation.

THE TEXTILE MERCURY.

BLEACHING, DYEING, PRINTING, Etc.

PRODUCTION OF INSOLUBLE AZO DYES DIRECT EFFECT OF THE COTTON FIBRE

(Continued from page 33.)

---THE PREPARATION---

If the acid present in the dyes solution be neutralized by a sufficient amount of caustic soda, the dye solution will form a precipitate, and the amount of acid present in the dye solution may be determined by titration. If the dyes solution is to be used in a dyeing process, it is essential to have a sufficient amount of acid present to ensure the formation of the precipitate.

In order to prepare the precipitate, two or more solutions of sodium bisulfate and sodium sulfate are required, each containing an equal amount of sodium sulfate and sodium bisulfate. The solutions are then mixed and allowed to stand for a sufficient time to ensure the formation of the precipitate.