

Machinery and Appliances.

"THE STOCKING-KNITTER."

Our readers will remember that about a month ago we drew the attention of the hosiery trades of Leicestershire, Derbyshire, and Nottinghamshire to the fact that there was some prospect of their trade being undermined to a considerable extent by the introduction of a branch of industry which was making its appearance in almost every centre of our population. This was that of "The Stocking-knitter." As then observed, it was an innovation upon the ordinary hosiery industry which is spreading rapidly, and that though described in the manner named, it meant not only stocking knitters, but knitters of every description of knitted articles that can be produced upon the improved knitting machines now being so extensively advertised and pushed amongst drapers and other retail dealers all over the country. We further drew attention to the fact that in the large Lancashire and Yorkshire manufacturing towns establishments were rising of very considerable magnitude in which this industry was carried on. We have reason to believe that our article opened the eyes of many engaged in the manufacture on a large scale in the counties named, to the magnitude of the danger that was threatening them, and that it may possibly result in steps being taken which may, to a certain extent, obviate the mischief. Still, it is a movement which is destined to go on, as the knitting machines, to which we refer, enable small shopkeepers and others to utilise a considerable amount of time that has hitherto been wasted. The processes of distribution of manufactured goods in this country are conducted in such a manner as to leave half the time of the people engaged in them unoccupied. Any means of reducing this loss will therefore be gladly welcomed and are bound to prove acceptable. The sewing machine was one of the earliest and most successful inventions which was utilised for this purpose. The gradual improvement of the knitting machine has rendered it so perfect that it bids fair to become a second adjunct to the industry of shop-keeping of equal value. Since publishing the article named, we have had several enquiries as to the machine or machines employed for this purpose. By way of a general answer to our correspondents, and for the information of others, we describe and illustrate one or two machines that have been most extensively adopted for the purpose.

These machines are made by the Harrison Knitting Machine Company, Portland-street, Manchester, which makes machines of various other types as well as those illustrated herewith. Our first illustration, Fig. 1, shows a new patent knitting machine, which works by steam power or hand. It has four cams parallel with each other, thus enabling two rows of knitting to be made by one turn of the crank, and so producing double the quantity of work that can be obtained from an ordinary single cam machine; it is made with a self-acting stop motion for stopping automatically at the fashionings. The machine is also fitted with an automatic racking arrangement, whereby the whole range of the fancy designs that the machine produces can be made without repeatedly stopping it. It can be fitted with an electric knot stop motion. It makes about 80 courses of knitting per minute, thus saving both time and labour, whilst assuring greater correctness than if entirely dependent upon the skill and care of the worker. The yarn guides are so fitted that a fabric with a cotton back and with a wool front can be made; this also works automatically. This part of the invention will be found a valuable improvement, enabling garments to be made, combining all the warmth of pure woollens with the softness of cottons, which are specially useful in cases of super sensitivity of the skin. This machine is especially adapted for under vests, pants, and for knitting cardigan jackets, the body being made in one piece, obviating the necessity of seams down the sides. As it is desirable to have as little

"finishing off" to do as possible after the garment leaves the machine, because of its always having to be done by hand, this will be appreciated.

Our next illustration, Fig. 2, gives another type, the "Grape" B New Patent Knitter, having 116 needles, 8½ in. needle room, seven needles to the inch. This machine knits all sizes of stockings with single or double yarns for heels and toes, plain or ribbed, in wool, silk, or cotton, without any changing of the needles. Petticoats, jerseys, caps, shawls, gloves, and cardigans in fancy and artistic patterns can be produced upon it, as it makes five entirely distinct webs. It is durable and simple in construction, and has a high rate of speed, knitting 16 pairs of full

spotted over in a uniform manner with different colours, making a very striking effect. These different coloured spots can be arranged in different shapes, so as to form squares, diamonds, stripes, and other beautiful patterns.

The machines made by the Harrison Knitting Machine Company run swiftly and lightly and produce a perfect fabric in silk, wool, or cotton. The various machines, taking them in the aggregate, are capable of knitting and fashioning every conceivable article, and as they run light, easy, and are almost noiseless, they are equally well adapted for the domestic circle as for the use of the manufacturer. Mr. Harrison guarantees for each of his machines the perfect fulfilment of all its capacity or returns the purchase

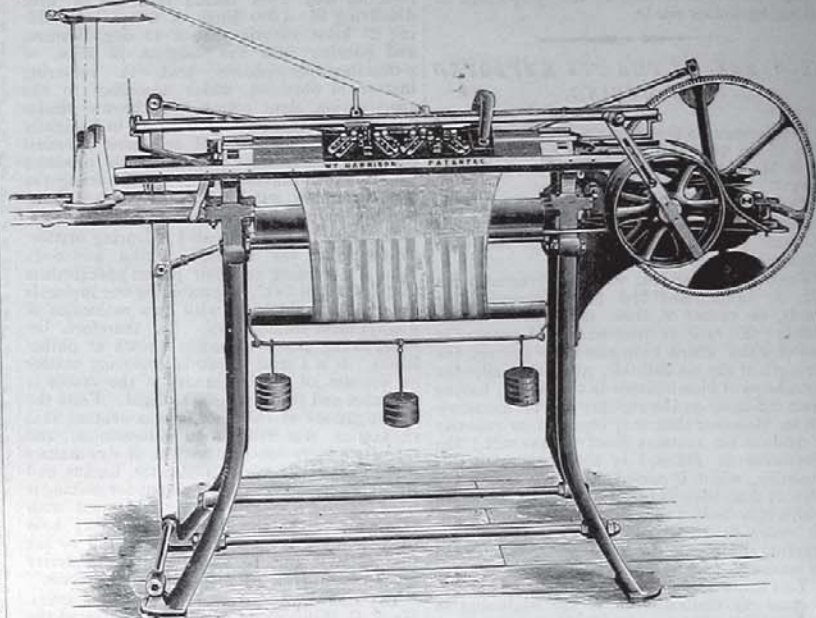


FIG. 1.

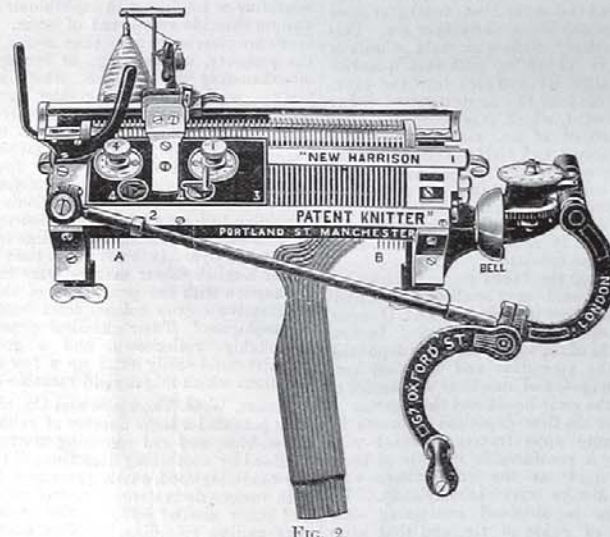


FIG. 2.

fashioned ladies' stockings per day. One of the most successful manufacturers in England is using about 250 of these machines after having tried many others which he has discarded.

The Harrison Knitting Company are exhibiting at the Paris Exhibition, at their stand, in addition to the above machines, a new patented knitting machine for producing fancy vestings, various patterns being produced in a very ingenious manner, the different coloured yarns only knitting on certain needles at the will of the operator, thus producing a fabric

money. They have been in competition with other machines, and the new Harrison has never been defeated. One machine can knit five distinct webs—the flat webs, cardigan, rib, circular, double and fancy single webs; and all these changes are produced by simply pushing in and out certain slides and screws. No extra attachments are needed for all this varied production.

We have on several occasions during the past few years had the pleasure of inspecting these machines and testing their working capacity, and have always been pleased with the result.

On a recent visit we were shown knitted fabrics, both plain and fancy, that proved very demonstratively the great advance that has been made in the construction and improvement of the knitting machine, and in its increased adaptability for domestic use and for use by manufacturers with a class of labour that can only fitly be denominated unskilled. We refer to that of children and girls.

Those of our readers who desire further information will, no doubt, be able to obtain the same on application to the address given above.

IMPROVEMENT OF THE BOLETTE CONDENSER.

AN ARRANGEMENT FOR INCREASING THE RUBBING.

The sectional cut herewith given illustrates an improvement that has just been introduced to the rubbing motion of the well-known Bolette condenser, it is said with the effect of largely increasing its efficiency, improving the quality of the work produced, and permitting the manipulation of a wider variety of material.

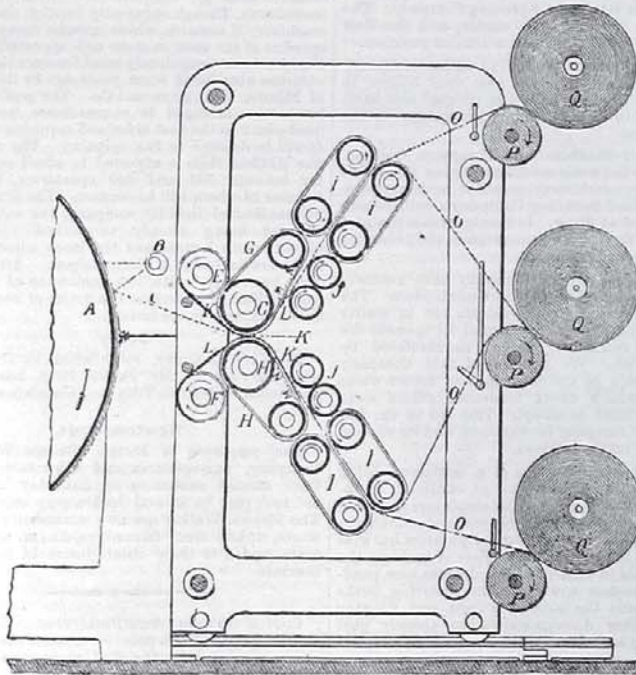
It has been alleged that the original single-apron machine, on account of having only two vibrating or rubbing aprons, does not give the amount of rubbing that is desirable. To overcome this objection, four rubbing aprons are now introduced to the improved machine, in place of two. This permits of the performance of a greater quantity of work, and produces work of a much more even character than was possible before.

The success which the Bolette condenser has met with in this country and in America is remarkable. But now that its efficiency has been so much increased, it may be expected that it will take another step up in the estimation of manufacturers.

Messrs. Henry Livesey, Limited, loom makers, Blackburn, have just issued the third and improved edition of their trade catalogue. It is octavo size, and contains over 100 pages, is abundantly illustrated, and is replete with useful information on all the machinery and processes of cotton manufacturing. It really constitutes a handy work of reference on many of the minutiae of cotton manufacturing. Messrs. Livesey inform us that *bona-fide* teachers in Technical Schools will be supplied with this catalogue *gratis* on application.

Mr. Thompson, in charge of the carding department in one of the Willimantic Linen Company's mills, Willimantic, Connecticut, U.S.A., has invented an attachment to the English revolving top flat card, called a "stripper roll." It is said to be of great value to the card; in fact so much so that no one after seeing one working on the card would do without it. It costs but little to attach it and when in use the brush for cleaning the stripper is dispensed with.

The textile machinery exhibits of American manufacture, at the Paris exposition, are very few. A machine for dyeing yarn in the skein is to be seen, but it stands as the only representative of American ingenuity, unless a model of



The exact nature of the change will be readily perceived in the illustration by those who are familiar with the details of the machine. The aprons revolving around the rolls *G* and *H* have been divided so that there are now four where formerly only two were employed.

It is stated that the improvement is so great that the builders guarantee to give in this manner as much rubbing as can be obtained on an ordinary fifteen-roll rub-motion and more than is required on all the finer grades of yarn. The improved machine is confidently recommended for every class of work, but especially for medium and fine grades of yarns and for cotton mixtures.

Another improvement introduced into the Bolette condenser is their new eccentric motion, which enables it to run at much greater speed than was possible in the old form, thus giving all the rubbing demanded for any grade of stock.

a wool-washing apparatus can be counted. And yet good Americans expect to go to Paris when they die.

NEW EXHIBITION OF RAMIE FIBRE IN PARIS.—The programme of the competition of machines for the preparation of rhea fibre may be seen on application at the Commercial Department, Board of Trade. It is the same as that for the exhibition last year.

UNITED STATES GOVERNMENT FORMULA FOR MIXING WHITEWASH.—The remarkable whiteness of the lighthouses, beacons and keepers' dwellings in the United States is thus explained: The material used is simply whitewash, and here is the Government formula for mixing a whitewash that when properly made and applied gives a white that does not easily wash or rub off: To ten parts of best freshly slaked lime add one part of the best hydraulic cement. Mix well with salt water and apply quite thin. It is quite possible this might be found very suitable for our mills and weaving sheds.

News in Brief,

FROM LOCAL CORRESPONDENTS AND
CONTEMPORARIES.

ENGLAND.

Ashton-under-Lyne.

The main spur wheel and pinion belonging to the engines at Good Hope Mill are faulty, and are being replaced at Wakes the third week in August.

Bacup.

The Rossendale Industrial Mill Co., Limited, (Irwell Mill,) are putting in some new ring frames, which are being supplied by Messrs. Howard and Bullough, of Accrington.

Bolton.

Two or three firms have been prosecuted this week for smoke nuisances.

The Sanitary Committee are taking full advantage of the powers conferred on them to prevent a continuance of the pollution of the atmosphere by smoke.

Messrs. Horrocks, Crewdson and Co. (of Preston, Bolton, &c.), have given notice of short time in accordance with the resolution of manufacturers at a meeting held in Manchester last week. No other mills in this district have given notice, as yet.

The dispute still continues at Messrs. Crook's. Several of the new hands have left during the last two or three weeks, but there seems no prospect of a settlement, all negotiations being suspended between the parties concerned. Twenty-two pairs of mules are at work.

Bury.

The New Victoria Spinning Company have placed their order for ring frames with Messrs. Lord Bros., of Todmorden.

Clltheroe.

It is proposed to form a "Self-help" Society to run Hope Shed, lately worked by Messrs. Ainsworth Bros. and Co., Limited.

Farnworth.

A presentation of several articles as tokens of esteem was made on Wednesday evening to Mr. James Dawson, weavers' overlooker, who is this week leaving the employ of Messrs. S. F. Armitage and Co. at their No. 2 mill. He goes to a situation at Harpurhey.

More mills here are commencing to run short time this week. As an outcome of the meeting of masters held in Manchester last week, Messrs. Horrocks, Crewdson and Co. have given notice to run only three days per week. About 700 hands are employed at their Farnworth mill.

Halifax.

A meeting of the cotton doublers of Halifax and district, was held on Saturday last, at the White Swan Hotel, Halifax, with a view to combine to improve the present very unsatisfactory condition of their trade.

Heywood.

The project for building a 100,000-spindle mill is being pushed forward very earnestly and the company is very likely to be soon formed.

Shares are being taken up moderately well in the Dawson Hill Manufacturing Co. They are advertising for a manager.

The Albert New Mill Co. are about to replace their openers by exhaust openers. We learn that Messrs. Lord Bros., Todmorden, are entrusted with the order.

We understand that the New Spinning Company at Heywood, which is being formed to erect a mill on the site of the old Britannia Mills, is receiving substantial support. Prospectuses will be shortly issued.

Mr. A. Mayall has decided not to re-start his mill, at which the serious accident happened to the engine a few weeks ago. He has sold out all the mixings of cotton in process and the machinery is being catalogued for sale.

Ilkerton.

An amendment to the Merchandise Marks' Act was considered at the annual meeting of the Midland Counties Framework Knitters' Federation, when it was resolved that an endeavour be made to get a clause inserted in the Bill to the effect that machine made goods be marked as such, and that Mr. Broadhurst be written to, as it was necessary the public should be protected from fraud and the workers from injustice.

Kidderminster.

Mr. Edward Smith (R. Smith and Sons) is expected home from New York next week.