Designing.

INTRODUCTORY.

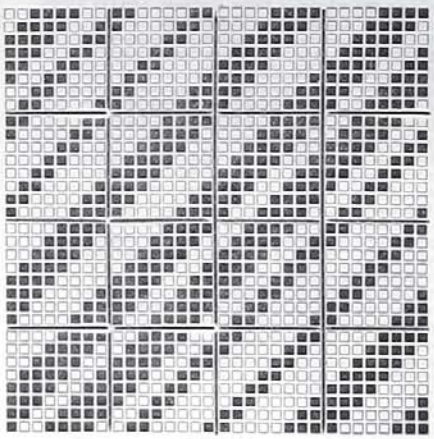
The commencement of a series of designs for textile fabrics naturally calls for a brief description of the system upon which they will be given, and since this journal is issued under very different circumstances from any other textile journal in circulation, we would ask all manufacturers, merchants, designers, &c., to carefully consider the plan upon which we are intending to base these articles, and when they have done so, we think they will agree with us that this is the only one which can be thoroughly useful to those engaged in any of the textile trades.

We hope to put before our readers the highest class of original designs ; whilst frequent opportunity will be given of denoting changes in style, colouring, &c., minutely and definitely, a great advantage in these changeable times. We shall also consult every textile journal issued, and denote in these columns any styles of design or colouring as we think will be serviceable to our subscribers.

Our designs will include the following classes of fabrics :—The various makes of woollen and worsted trouserings, coatings and overcoatings, woollen and worsted dress fabrics, cotton dress fabrics, cotton warp cloths, cotton and lustre yarn dress fabrics, silk dress fabrics, plushes, and any other styles of fabric which come into use.

With regard to the *system* upon which we shall base our articles :—

Designs given in textile journals, as a rule, cannot be utilised by individual firms direct ; they must be modified to a considerable extent in most cases before being put into the loom ; therefore we are right in saying that "textile journals are serviceable to individual firms, not through the designs they contain, but through the ideas they communicate."

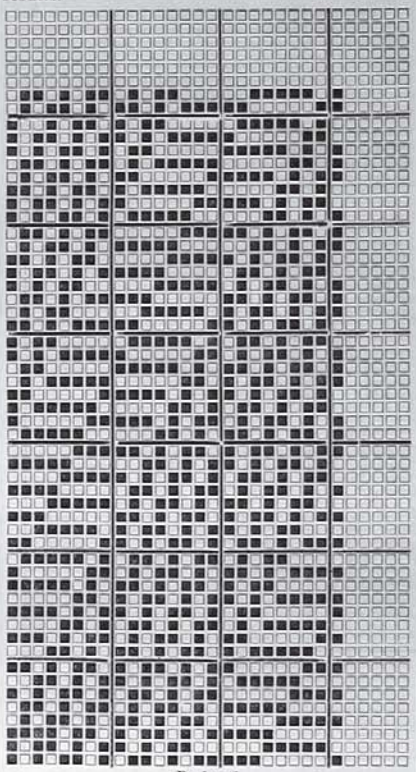


Design 1.

Recognising this fact, we intend giving ideas for new fabrics in preference to definite designs, thus though we shall give definite designs in the classes of fabrics previously enumerated, we shall also suggest various modifications in set, yarns, colour, finishing, &c., which individual firms can select from according to their requirements. In addition to this, we also intend, when the opportunity offers, to give a series of articles on the more intricate textiles, which may be serviceable to firms changing or extending their business. The greatest care will be taken to render all the articles trustworthy and useful, and the author will be glad, through the columns of this journal, to assist, if possible, any firms who experience any difficulty in obtaining desired effects.

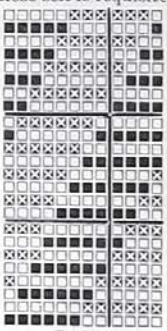
COATINGS.—Since coatings possessing more or less twill characteristics still remain in fashion, we furnish three examples of this class : Designs 1, 2, and 3. Design 1 is an ordinary regular twill on 32 threads and 32 picks. Designs like this example which are constructed of a series of twills, will generally yield the most satisfactory result if there is a decided twill which shows up more prominently than the other twills of which the design is composed, though of course care must be taken that the firmness of the cloth is not interfered with.

Design 2 is an excellent example of an upright twill, consisting of a five end sateen weave, and a weft rib effect. There is something about well defined upright twills which ordinary twills do not possess, it may perhaps be termed a boldness, tempered by delicacy, and if such examples as this be enhanced by the use of mixture yarns of suitable shade, say a solid coloured warp and mixture weft, with a good finish, few fabrics yield more pleasing results.



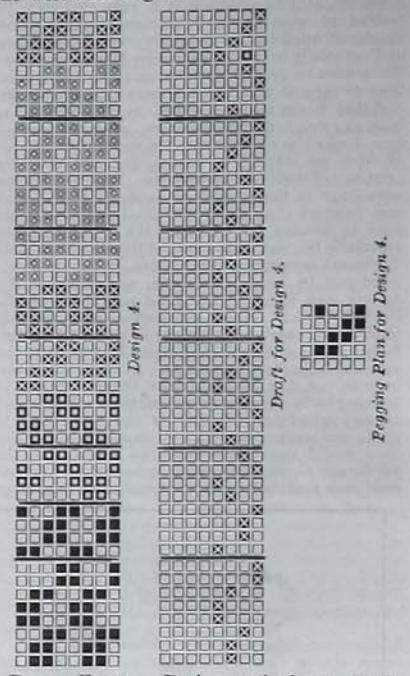
Design 2.

Various modifications of this design will yield good results, and various sizes of yarn may be used according to the class of fabric required. A close selt is requisite.



Design 3.

In Design 3 we give a twilled rib effect. The introduction of lustre yarns such as mohair into overcoatings and coatings is now prevalent. There are many ways of effecting this, and Design 3 is one of these. If we weft it one pick mohair and one pick wool we shall have a lustrous twill rib where the solid squares come and a non-lustrous rib where the crosses come. Either a cotton or woollen warp may used, in fact this design will yield a great variety of useful cloths according to the yarns &c., employed. To make a firmer fabric it would perhaps be well to tie the weft when it goes to the back of the fabric.



Design 4. *Draft for Design 4.* *Pegging Plan for Design 4.*

DRESS FABRIC.—Design 4 is for a rough striped fabric composed of yarns of a cheviot nature.

Warp.

12 threads 30 sk. black = ■■
8 ,, ,, dark grey = □□
8 ,, ,, medium grey = ⊠⊠
8 ,, ,, light grey } = ⊠⊠
8 ,, ,, white }
And a broad stripe of medium grey say
100 threads = ⊠⊠
12 dents per inch, 4 threads in a dent.

Weft.

All 30 sk. medium grey.
40 picks per inch.

Reference will be made to this next week.

Machinery.

IMPROVED PATENT DOUBLING WINDING MACHINE.

MR. JOSEPH STUBBS, MILL STREET WORKS, ANCOATS, MANCHESTER.

On a first glance the inventive ingenuity that has been devoted to the process of yarn winding —the simplest of all the processes of manufacture—would appear to have been in excess of the requirement. In ordinary single thread winding a very simple machine, with the commonest care on the part of the attendant, amply suffices for all requirement. In the more complex form of double winding, the winding of more than one thread at a time, the trade for a long period had to depend solely upon the skill and carefulness of the winders,—a dependence seldom justified by the results. About twenty years ago a well-known firm made the first attempt to obviate the difficulties arising from the condition of things then existing by the introduction of a stop-motion winding frame. This was only a qualified success, yet sufficiently good to encourage other inventors to attempt improvements. Amongst the earliest to score distinguished successes in this field was the firm of Mr. Joseph Stubbs, which has since occupied a prominent position in the front rank of makers of this class of machinery. It is to a recently patented improvement of this firm, that we now desire to draw the attention of our readers.

The frame is of the well-known type usually constructed by this firm. The improvement to which we refer consists mainly in improved arrangements for promptly arresting the movement of the bobbin when a thread breaks or becomes exhausted. As might naturally be expected from this statement the modification will mainly be found in the construction of the drop wire box and its intermediate connections with the bobbin upon which the yarn is to be wound, so that the latter may be more quicky stopped than before ; that greater facilities may be given for effecting the connection of the thread with the bobbin whether in supplying fresh material or re-connecting broken threads.

To a parallel rail of the machine frame a bracket is attached carrying a lever-frame, which in turn at one end carries the drop wire box swinging upon pivots, and at the other a bobbin cradle, which rises sufficiently high from its connection with the lever frame to bring the bobbin it is carrying into contact with the drum from which it will receive its motion. A projection from the bottom of the bobbin cradle extends downwards, and to the bottom of this a chain is attached, which passes over loose carrier pulleys, and is weighted at its extremity. It will be obvious that the action of this will be to constantly keep the periphery of the bobbin in the cradle in contact with that of its driving drum, and to maintain a uniform pressure between the two. This action is free, easy, and sensitive. Coming back to the drop wire box we may remark that beneath it is the usual wing or wiper shaft, which when a wire drops puts the train of mechanism into operation. To the front rail of the frame, and immediately in front of the drop wire box, is attached an angular plate, L form, the horizontal projection being uppermost, and in the direction of the drop wire box. The wire box is provided with a projection which retains in working position the setting-on handle. When a wire drops and the drop wire box is oscillated, the parts above mentioned are released, thus allowing the bobbin to come into contact with the break by which it is stopped. The use or function of these parts we will now describe. The drop wire box is hung upon pivots, its heavier side being the back one, or that away from the front rail. Pivoted thus there is a constant tendency for its lower part to swing forward towards the front rail in order to establish an equilibrium. These are the positions maintained during the winding process, the drop wires being held clear of the wing shaft by the tension of the yarn on its passage, on which they are suspended.

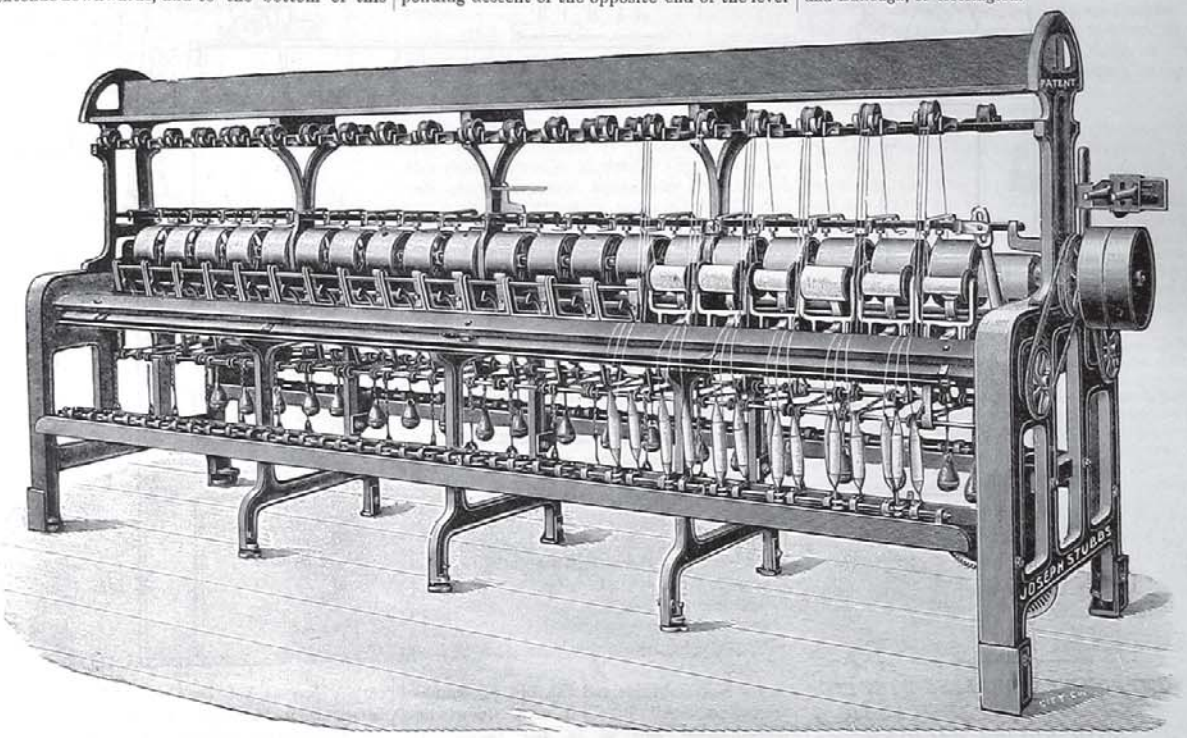
The breakage or the exhaustion of a thread drops the wire it carried so that its lower extremity falls into the path of the shaft, one of the wings of which instantly striking it releases the catching part : the drop wire box is then lifted out of the way of the wiper shaft, and so prevents the damage that is liable to arise when the wires are left to be struck every time a wing comes up. While this has been going on there has, of course, been a corresponding descent of the opposite end of the lever frame—that carrying the bobbin cradle—which at once brings the periphery of the bobbin into contact with a fixed brake, by which its further revolution is instantly arrested. As all these movements are almost perfectly simultaneous, it will be clear that they begin and end in an instant, and secure that the end of the broken or exhausted thread shall not have travelled many inches from the point at which the breakage occurred.

The frame in its entirety seems to be a combination of every good and desirable point in a machine of this kind, and these reduced to the ultimate of simplicity. The drop-wire box is of improved construction, the plates of which it is composed being first cast solid, after which the wire grooves are milled. This gives them a straight, clear and easy course through which to drop.

The firm has been making this improved form for twelve months past, and has now a considerable number at work, which are giving the greatest satisfaction. Counts from 4's to 200's are being worked, and the yarn is taken up at from 5,000 to 6,000 inches a minute. Notwithstanding this high speed the ends of the broken threads are in nearly all cases found between the overhead rollers and the traverse guide wires. A detail we have omitted to mention is that the overhead rollers are fixed beneath the cop board, thus leaving the latter entirely free for the storing of yarn.

In conclusion, we may mention that the growing demands of Mr. Stubbs' trade has necessitated a considerable extension of premises which has recently been opened, enabling them to execute orders with greater facility for both machines and the high class both of soft and of malleable iron which constitutes a considerable branch of their trade. Any further information that may be desired will be accorded on application to the firm as above.

We understand that Messrs. J. and P. Coats and Co., of Paisley, are erecting a new sewing cotton mill in Russia, and that the order for the largest portion of the machinery has been given to Messrs. Howard and Bullough, of Accrington.

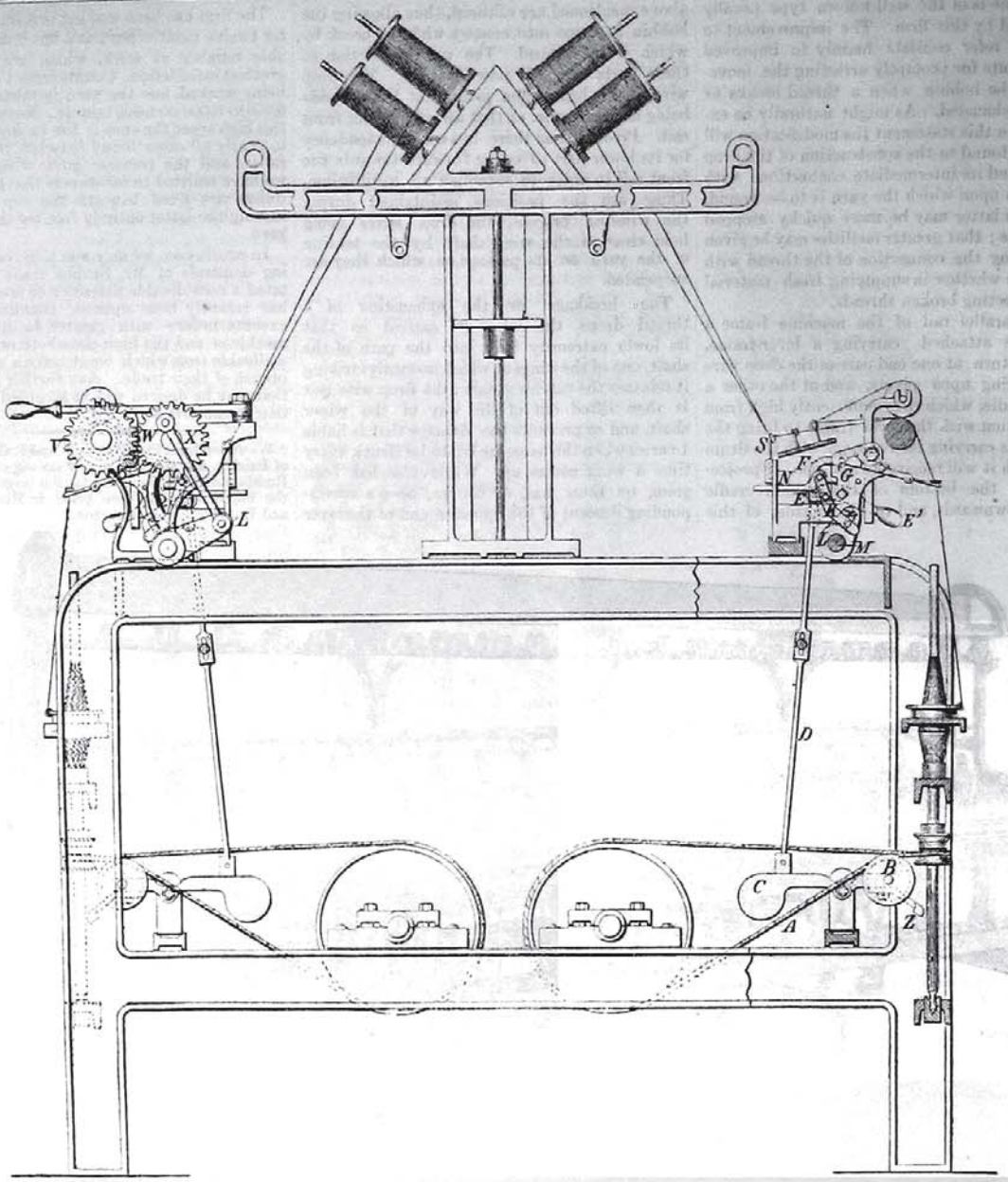


IMPROVED PATENT DOUBLING WINDING MACHINE.—MR. JOSEPH STUBBS, ANCOATS, MANCHESTER.

The well-known firm of Messrs. E. Jagger and Company, Werneth Metal factory, Oldham, are making additions to their premises in order to better meet the increasing demands made upon them, particularly of their portable cop-tubing apparatus, and also for the tubes. At present they have large orders in hand for abroad, one of which is for 3,500 gross of cop-tubes. Some two million spindles on the continent are fitted up with the apparatus, and about three million at home, of which 500,000 spindles are in the Oldham district.

Flax growers in Germany are agitating to have a tax put on flax imported into the country. The price is said to have fallen 30 to 40 per cent. during the last ten years, and the crop is unprofitable to the grower.

The export of cotton goods from Hamburg to the West Coast of Africa have increased from 3,110 cwts. in 1878 to 11,052 cwts. in 1888, according to a report just forwarded from Hamburg by Consul General Dundas.



IMPROVED DOUBLING-WINDING AND TWISTING AUTOMATIC STOP-MOTION MACHINE.

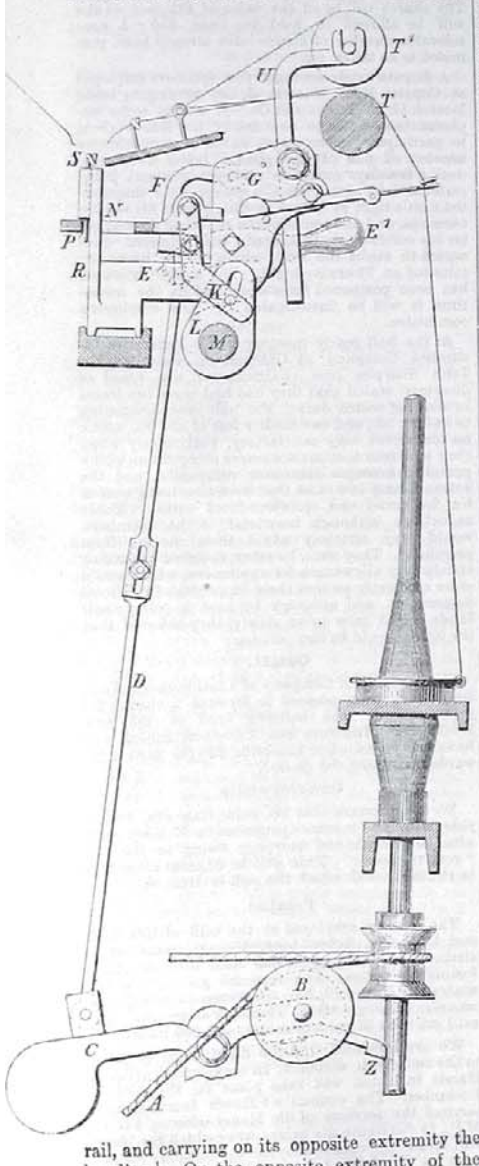
MESSRS. JOHN SYKES AND SONS, TURNBRIDGE WORKS, HUDDERSFIELD.

The winding of yarn is a process common to all the textile industries. It is, perhaps, the simplest of all the series, yet it varies considerably according to requirement, and is modified also by the differences of material. Single thread winding is its simplest form, this being for the purpose only of facilitating the attainment of a parallel arrangement of the threads, as seen in a warp. In doubling-winding much more care is required, and the process becomes more complex. This is for the purpose of obtaining a parallel arrangement of two or more threads, the tension being required to be perfectly alike in order to permit of their being twisted together in an even manner, that is, in which the threads shall be mutually twisted round each other; not "corkscrewed," as when one preserves a straight line and the other is wrapped around it. All practical men know how objectionable this is in the manufacture of any class of doubled yarns. Doubling-winding requires the nicest adjustment in the parts of the machine. It will be obvious, however, that in this class of winding, one thread may break or beccme exhausted, and the other continue to be wound. In single winding in such a case no harm is done; in doubling or manifold winding all the yarn wound after one thread has broken becomes waste, as it must be pulled off the bobbin, otherwise bad work will be the result. The prevention of both these defects was for a long period entirely dependent upon the skill and care of the operative in charge of the work, and as these qualities were mostly present in a minimum quantity, a large percentage of waste and much bad work were usually the outcome. These facts brought the inventors into the field, and there has since been a great race for the goal of absolute xcellence, nd this race it would be premature to say has as yet been won. Early adventurers keep improving upon their previous accomplishments, and new comers are frequently entering the field.

We have pleasure in bringing before our readers a new doubling-winding, automatic stop-motion twisting frame, just being placed upon the market by Messrs. John Sykes and Sons, Turnbridge Ironworks, Huddersfield. It is the invention of Mr. Edwin Hargreaves, of Huddersfield, and has been devised principally for stopping the rotation of the spindle when a thread breaks, before it passes within the influence of the twisting spindle and is wound upon the bobbin, and so to prevent the waste occurring when twisted yarn deficient in a component thread has to be drawn off. A second object the inventor had in view was to stop the spindle when the yarn has brcken after being twisted, and so to prevent the waste arising from this cause.

The following is the way in which the inventor accomplishes these results, and the means he

employs. The frame is the ordinary twisting frame, having spindles carrying combined fast and loose wharves, and driven in the usual manner. Fig. 1 is an end elevation of the machine, one side being sectioned. It will be seen that the driving band A is carried over a tension pulley B, mounted on a stud projecting from one end of the lever C, which is pivoted near the middle. The opposite end of this lever constitutes a balance weight, and a pin projecting from it affords means of attaching a connecting-rod D, the opposite end of which is attached to one end of a drop lever E pivoted to a bracket bolted to a



rail, and carrying on its opposite extremity the handle E'. On the opposite extremity of the drop lever to that carrying the handle is a small "sneck" or projection, which, when the yarn is being twisted and wound upon the spindle, rests upon and is supported by a catch projecting from the side of a weighted lever F hinged at its upper extremity to the pedestal at G. The latter lever carries a stud upon which is mounted the cranked lever K, the lower end of which carries a stud, which enters a slot formed in the arm of the lever L mounted upon the rocking shaft M. This shaft extends the length of the machine. The upper end of the cranked lever is connected to a plate N having a horizontal traverse forward and backward, entering and sliding to and fro in the opening P in the pedestal R. This plate constitutes a grid, having openings cut into it to correspond with the number of drop wires it is intended to employ. These wires S are arranged above, and loosely supported in the pedestal R. The draw rollers are arranged as shown T T1, the first of these being the driven roller, and driving the latter by frictional contact. The roller T1 is supported by the bracket U which is hinged to the pedestal R, and having its lower extremity resting against the curved end of the drop lever E. The rocking shaft M is actuated by a pinion E on the shaft of the driven drawing roller T, which gears into a pinion W carried on a stud projecting from the side of the machine. One end of a rod X is connected eccentrically to the face of this pinion, whilst the opposite end is attached to the loose end of the lever mounted upon the rocking shaft M. The revolution of this pinion rocks the shaft by the means we have described.

The above description will give the reader a fair idea of the structure of the machine, and the novelty of its chief parts. We may now describe its action.

The bobbins are mounted as shown in the creel, and the threads may be drawn over suitable guide rails if so desired. They are, however, shown as passing straight to and through the eyelets of the drop wires, S, through the fixed eyelets near the latter, between the draw rollers and back over the roller, T1, then through the second fixed eyelet, again between the rollers and down through the guide wire to the traveller of the spindle. The tension of the threads as they pass from the bobbins through the drop wires lifts the lower ends of the latter clear of the traversing plate, N. As long as the threads remain unbroken, and the supply continues unexhausted, the cranked lever, K, traverses the grid plate, N, the drop-lever being held in its working position by a catch on the lever, F, which sustains the knocking-off mechanism in the position shown in the sectional part of Fig. 1. When, however, a thread breaks or becomes exhausted, the drop wire falls and the grid plate in its traverse exposing a portion of its slots, the wire drops into it and prevents its return. The result is that the fulcrum of the cranked lever, owing to its connections, is changed from the stud near its middle to the stud by which it is attached to the traverse or grid plate N, so that on the return movement of the arm of the lever L upon the rocking shaft M, the cranked lever K and the weighted lever F are forced into a position where the catch is withdrawn from under the end of the drop lever, when the latter through its several connections is drawn into the position shown in Fig. 2, by which the driving band is transferred from the fast to the loose wharve upon the spindle, and the projection Z upon the tension pulley lever is brought into contact with and instantly stops the spindle. The rapidity with which the spindle is stopped, and the certainty of the action of the parts is remarkable, proving the arrangement to be an excellent one in every respect.

When the drop lever E moves upon its fulcrum owing to the weight of the knocking-off mechanism being brought to bear upon it the curved end ascending through its connections lifts the top drawing roller T1 out of contact with the lower one T, and so prevents the further draught of yarn and the waste which would occur if such took place.

As long as the position of the parts shown in fig. 2 is maintained the cranked lever K will continue to oscillate upon the stud, connecting it with the grid or traversing plate. When the threads have been pieced or restored the attendant presses down the handle E1, which restores the parts to the positions shown in fig 1, and work recommences.

A second part of the invention, which we have not space to describe in detail, consists in using the parts already named for the purpose of stopping any spindle when the twisted yarn between it and the drawing rollers has broken. The traverse plate is prevented completing its journey in the opposite direction, which has the same effect as before, stopping the several parts by bringing them into the position shown in fig. 2.

The machine is a very ingenious piece of mec hanism, and excellently designed to accomplish its object. It is suited for use in all the several textile industries, requiring only the special adaptation the different nature of the fibres necessitate. It is well worth the attention of practical men, who will, we are confident, find it to possess some special merits. The makers will be pleased to afford facilities for an inspection on application as a bove, where the machine can be seen at work.

At a meeting of the Dundee Chamber of Commerce for the election of representatives to the Gas Commission, Mr. W. Longair made a statement regarding the relative cost of electric and gas lighting. He had had two years' experience of electric lighting in his own factory, at Lawside, the installation being 500 lamps of 16-candle power, and he quoted figures to show that there was a difference of £233 per annum in favour of electric lighting, which he characterised as better, brighter, cheaper, and safer than the ordinary systems of gas lighting.

We have received the Journal of the Manchester Geographical Society, issued during the past week, which stills keeps up the general excellence that characterises the Society's publications. We leave our readers to judge for themselves from the more important contents of the number before us, which are as follows:—"Peking and the Pekingese," by the Rev. G. Owen, of the London Missionary Society, Peking (with map); "Fernando Po, West Africa," by the Rev. Theophilus Parr, M.A.; "The Sea and Shores of Azov," by the Rev. Alfred Colbeck; "Notes of Travel from Shanghai to St. Petersburg," by Mr. J. M. Molesworth, C.E. (with map); Correspondence; Proceedings of the Society; Geographical Notes, &c.

THE AMERICAN COTTON CROP.

An official telegram from Washington on Monday is as follows:—The Agricultural Bureau, in its monthly report, says: In North Carolina and Virginia the season has been very short and excessively wet, which has seriously injured the crop. Tennessee has experienced wet weather and an early frost, and in these States the crop is much worse than last year. Elsewhere the crop is late, especially from South Carolina to Alabama, with a large growth of weed. In the lowlands the early frosts have injured the crop east of Mississippi, while the uplands in the southern belt are still green west of Mississippi. In a large portion of the area there has been no frost. The weather for picking has been remarkably favourable, assuring a gathering without waste, as all opened in good condition. The fibre graded comparatively high, and the indications of the yield per acre is about 3 per cent. higher than last year. Much depends on killing frosts or sunny weather opening the bolls for gathering, so that the result cannot be known closely until after Christmas. There has not been any severe general loss from caterpillars or bollworms, though damage by them in some localities has been serious.

Several telegrams have been received giving summaries of the Washington Bureau report. The various estimates of probable yield range from 7,100,000 to 7,250,000 bales, or an average of 7,175,000, which is about the same as the yield indicated by last month's report, which was given by us as 7,177,000 in our issue of the 11th ult.