BALDERSTONE MILL COMPANY, LIMITED.

Registered by R. Jordan, 120, Chancery-lane, W.C., with a capital of £20,000 in £5 shares. Object, to acquire the Balderstone Mill, Rochdale; to carry on business as cotton spinners, &c. The first subscribers are:—

	Shares.
J. Henthorn, Fir Bank, Shaw	1
J. Clegg, High Crompton	1
J. W. Clegg, High Crompton	1
E. Collings, Woodfield, Oldham	1
A. T. Mayall, 6 Bath-street, Oldham	1
J. Clegg, Sandy-lane Mill, Shaw	1
T Henkhorn, Holmleigh, Shaw	1

Registered without articles of association.

WELLINGTON MILLS COMPANY, HUDDERSFIELD.

Registered by Learoyd, James, and Mellor, 12, Coleman-street, E.C., with a capital of £400,000. Object, to carry on business as woollen manufacturers and merchants, and to deal in flax, hemp, jute, cotton, silk, and other fibrous substances. The first subscribers are:—

	Shares.
H. A. Martin, Huddersfield	227,900
J. W. Martin, Huddersfield	60,000
F. Martin, Lindors, Coleford	50,000
W. H. Armitage, Huddersfield	100
E. Martin, The Ravine, Filey	50,000
H. Martin, Huddersfield	1,000
A. M. Blackburne, Huddersfield	10,000

There shall not be less than three nor more than seven directors; the first to be appointed by the subscribers to the memorandum of association. Remuneration to be determined in general meeting.

Gazette News.

ADJUDICATIONS.

Hilton Birtwistle, Railway Terrace, Padiham, machine and commission agent.

Abraham Ambler (trading as Abraham Ambler and Co.), Sunbridge-road and Fulton-street, Bradford, machine wool comber.

Samuel B. Freeman, Victoria Mills, Bowling, Bradford, worsted spinner.

RECEIVING ORDERS.

Alfred Whiteley, Leamington-street, Manningham, worsted spinner; Bradford.

Abraham Ambler, Sunbridge-road, Bradford, machine wool-comber, Bradford.

John Corrigan, Rodney-street, Manchester, machinist; Manchester.

PARTNERSHIPS DISSOLVED.

Jubb and Company, Barnsley, down quilt manufacturers; as regards James D. Walker.

Illingworth and Hollas, Phœnix Works, Tumbling Hill-street, Bradford, wool-staplers, etc.

R. and J. Hurdy, Long Eaton, Derby, lace manufacturers.

NOTICES OF DIVIDENDS.

M. Scott, Cote Farm and New Mills, both in Idle, near Bradford, commission weaver; 11¾d., first and final.

J. Clough, Pike Hill and Brownside, both near Burnley, farmer; 2s. 8 5/16d., first and final.

J. Ramsden, Bridgefield Terrace, and Larchfield Mills, Accommodation-road, Leeds, worsted coating manufacturer; 4¼d., first and final.

WINDING-UP NOTICE.

The New Broadfield Spinning and Manufacturing Company, Limited, Rochdale.

Patents.

APPLICATIONS FOR PATENTS.

The names in italics within parentheses are those of Communicators of Inventions.

Where Complete Specification accompanies Application an asterisk is suffixed.

16TH JUNE.

9,262. S. W. Wilkinson, 17, St. Ann's-square, Manchester. Scutching machines.

9,264. Geo. Thomas, 17, St. Ann's-square, Manchester. Balance apparatus for ascertaining counts or numbers and weight of yarn.

9,278. T. Barcroft, Senr., T. Barcroft, Junr., W. Pickup, and W. Knowles, 8, Quality-court, London. Friction clutches.

9,281. A. Flather, W. Flather, and D. Wright, 71, Ashgrove, Bradford. Jacquard machines.

9,296. E. de Pass, 78, Fleet-street, London. Spinning or twisting spindles. (*J. Imbs*, France.)*

9,308. W. Hothersall, 20, High Holborn, London. Retaining or fixing in shuttles the bobbins or spools.

9,309. E. Huschke, 20, High Holborn, London. Power loom for weaving wire cloth.*

9,318. H. Rembert, 323, High Holborn, London. Compressing and baling cotton.*

17TH JUNE.

9,322. Read Holliday and Sons, Limited, and T. Holliday, 55, Chancery-lane, London. Formation of new colouring matters in or upon cotton, etc

9,323. E. E. Sibley, 55, Chancery-lane, London. Circular knitting machinery.

9,342. R. Wilkinson, Sunbridge Chambers, Bradford. Connections between the uprights and harness of double-lift open-shed jacquard machines.

9,348. H. W. Rice and C. Smith, Player-street, Nottingham. Improved Jacquard.

9,380. A. J. Boult 323, High Holborn, London. Spools for spinning, weaving, and other similar purposes. (*W. Schneider*, Germany.)

9,388. J. S. Cochran, 45, Southampton Buildings, London. Machines for delinting cotton seed.*

18TH JUNE.

9,417. G. B. Behrens, of the Firm of Daniel Lee and Co., and J. C. Watson, 1, St. James'-square, Manchester. "Wash-greys" or back cloths used in printing woven fabrics.

9,430. T. Mellor, Commercial-street, Halifax Steaming, boiling, and disinfecting fabrics, or fibres.

9,453. A. Mellor and F. F. Mellor, 45, Southampton Buildings, London. Straight bar knitting machines.

9,473. G. G. M. Hardingham, 191, Fleet-street, London. Shearing wool or hair. (*Silver's Sheep-shearing machine Co., Ld.*, Australia.)*

19TH JUNE.

9,486. R. S. Burn, Oak Lea, Edgeley-road, near Stockport. "Ginning" fibres.

9,495. J. L. Halliday and L. Shore, 58, Low-street, Keighley. Preventing fibres from wrapping the drawing-off rollers of combing machines.

9,505. A. J. Vandenberg and C. Thompson, 8, Quality-court, London. Improvements in the method of making-up silk velvets, plushes, and other pile fabrics, and in means and appliances for effecting the same.

9,530 O. Imray, 28, Southampton Buildings, London. Blue-green colouring matters. (*Farbwerke vorm. Meister, Lucius, and Brüning*, Germany.)

9,537. J. Y Johnson, 47, Lincoln's Inn Fields, London. Substantive dyestuffs and new materials therefor. (*Badishche Anilin and Soda Fabrik*, Germany.)

20TH JUNE.

9,557. J. Warburton and H. Stuthard, 4, St. Ann's square, Manchester. Presser flyers.

9,576. Thomas Guest and Thomas Brookes, 5, John Dalton-street, Manchester. Winding frames.

9,585. S. Walker and G. Leek, 72, Victoria-street, Radcliffe, Lancs. Positive shuttling motion for all looms.

9,598. A. Bruce, 2, Newcastle-street, Strand London. Printing lines and figures on shirt-fronts, cuffs, collars, and ladies' setts.

21ST JUNE.

9,627. M. Smith, 70, Market-street, Manchester. Printing and folding textile fabrics.

9,630. H. A. Rendall, Allington House, Bridport. Weaving rectangular mesh netting.

9,636. J. Cowburn and C. Peck, 18, St. Ann's-street, Manchester. Operating the rising and falling, revolving, or other moveable shuttle boxes of looms.

9,643. A. Hodge, 96, Buchanan-street, Glasgow. Treatment of ramie or rheea fibre, etc., and appliances or mechanism connected therewith.

9,644. C. Clark, 87, St. Vincent-street, Glasgow. Knitting mechanism.

9,656. C. R. Bonne, 41, Eastcheap, London. Apparatus for producing tambour stitching on gloves.

9,676. J. Y. Johnson, 47, Lincoln's Inn Fields, London. Substantive dyestuffs. (*Badische Anilin and Soda Fabrik*, Germany.)

SPECIFICATIONS PUBLISHED.

1889.

10,360. Maertens, Dyeing yarn, &c. 1s. 5d.

10,434. Greeves and Lucas. Hackling flax, &c. 8d.

11,124. Klein. Decorating crêpes, silks, &c. 8d.

* 11,583. Wootton. Domestic weaving. 8d.

11,666. Imray. (*Farbwerke vormals Meister, Lucius, & Bruning.*) Colouring matters. 6d.

12,327. Burges and ors. Looms. 8d.

1890.

2,989. Hare. Copper, &c., printing rollers. 4d.

4,885. Ohlsson. Bobbins. 6d.

5,009. Unger. Unwinding skeins of yarn, &c. 6d.

6,344. Singer and Judell. Pressing fleeces of wool, &c. 6d.

Reprints (with alterations).

1888.

18,614 Illingworth. Drying fabrics, &c. 8d.

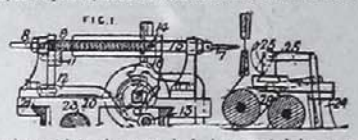
1889.

7,588. Bang (*Dahl and Co.*) Colouring matters. 4d.

SPECIFICATIONS PUBLISHED.

814. Jan. 16, 1889. **Pile Fabrics.** J. Edmondson, 36, Sunbridge-road, Bradford.

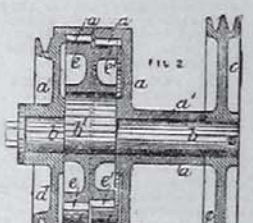
Apparatus is described for inserting pile threads in a backing of canvas by means of a needle, a hook or finger being employed to catch and hold the loops and to cut them, if desired. The needle 7 is fixed eccentrically in a spindle carried by a slide which reciprocates on rods. The rods are mounted on a carriage, which is traversed across the machine. A curved arm attached to the carriage carries the hook or loop holder, which is worked from a cam on the main shaft. If the loops are to be cut a knife edge is formed on the hook, or a separate cutter may be used; or, by using a holder inserted on the same side as the needle, a cutter only is required on the opposite side. In instruments such as are described in Specification No. 11,232, A.D., 1888, the frame acting as needle and holder guide is made in two parts, that which guides the holder having its face parallel to the same; the other part is fixed on a centre so that in adjusting it to vary the stitch it moves radially and thereby always has its guiding face parallel to the needle when the latter is entering the cloth. The Provisional Specification states that a specially worked cutter may be attached to this apparatus. It also describes arrangements for selecting and bringing into action, as required, needles with different coloured threads.



Gearing ratchet.—A screw shaft is operated by a ratchet wheel the two pawls for which are carried by arms loose on the shaft, and are operated continually by a cam between them. The pawls are put into gear alternately, to drive the shaft one way or the other, by a cam operated at the required times by a moving part of the machine. [11d. *Drawings.*]

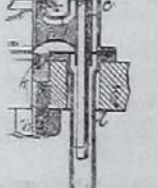
817. Jan. 16, 1889. **Carding-Engines.** J. W. Queen, J. Hetherington and Sons, Pollard-street, Manchester.

Cylinders and doffers.—The cylinder or the doffer is driven slowly for grinding purposes through the gearing shewn in the figure. The grooved pulley *c* driven from the loose pulley is mounted upon a shaft *b* provided with an eccentric *b1*, which carries a double spur wheel, the two parts *e1*, *e*, of which have slightly different diameters and gear respectively, with internal teeth *a1* on the casing *a*, and with internal teeth *d2* on a loose pulley *d*, which is connected by a band with a pulley on the cylinder shaft; the apparatus may be permanently fixed to the floor or be detachably secured to the casing by means of a tubular boss *f* or by other suitable means. [8¼d.]



786. Jan. 16, 1889. **Spinning, etc.** E. Dummer, Ashburndale, Newton, Massachussets, U.S.A.

Spindles and their appurtenances.—The object is to preserve the axial coincidence of the ring and spindle, thereby preventing the unequal strain upon the thread owing to the spindle and its load being not properly balanced, and also to the pull of the thread upon it. The bolster *a*, by means of arms *b*, carries bearings *c* for rods E connected at their upper ends to the ring D, which is flexibly secured to the ring rail H by means of springs *h* and studs *i* on the ring *j* in the rail. The bolster is suspended or flexibly supported through the packing *g* by means of a frame F fixed to the spindle rail and fitted with a step bearing for the spindle. In order that the bearings for the spindle and for the rods E may be effectually lubricated, they are surrounded by an oil chamber, the lower part of which is formed by tubular extensions *e* of the frame F, and the upper part by a cover I having a central tubular part *p* surrounding the bolster, and also tubular parts *o* which form extensions of the tubes *f* in which take the rods E. In one modification the footstep for the spindle is formed in one piece with the bolster, and the latter is connected by a concentric tube and arms to the bearings *c*. To prevent the vibrations of the spindle from being communicated to the supporting rail elastic or flexible material may

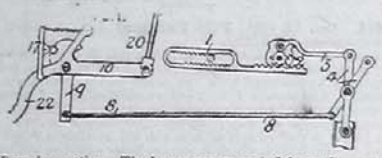


be placed between it and the spindle support or bolster to which the arms *b* are in this case directly attached. Or the rail H may be placed below the rail G, the bolster being supported by a ball and socket arrangement and extended downwards by means of a rod, to which the downward extensions of the rods **E** are connected by arms which are provided with a socket for sliding on said rod, and are connected to the rail by a spring. The rings or the sliding rods E may be variously connected to the rail H. [8½d.]

822. Jan. 16th, 1889. **Straight bar knitting machines.** J. H. M. Horsley, Oxford-street, Leicester.

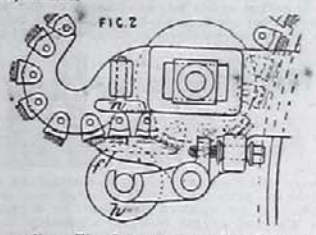
Narrowing.—To the ordinary narrowing screw box at each end of the machine, is secured a bracket, which is clipped by the flanges of a nut engaging with a screw at the end of the ordinary narrowing rod. The outer flange of the nut is formed with a ratchet wheel, operated by a pawl as the narrowing machine rises. When the pawl is in action, the narrowing rod is racked outwards to the extent of one needle, before the usual racking inwards to the extent of one or two needles for narrowing. The number of narrowing points in action is thus reduced by one at each motion of the ratchet wheel. 1s. 2d. *Drawings.*]

867. Jan. 17, 1889. **Looms.** G. H. Hodgson, Bee Hive Works, Bradford.



Drop-box motion.—The boxes are operated from the pattern mechanism through draw-racks 1, disc wheels 2, links 3, specially mounted compound levers 4, a rod 8, broken backed lever 9, 10, and a rod 20 connected to the box-rod. A spring bowl 17, taking into a notch, holds the part 9 and 10 in position, unless any obstruction arises, in which case the bowl is forced from its notch and thus prevents breakage. The bowl may also be forced out by an arm or treadle 22 employed at times for operating the boxes. [6½d.]

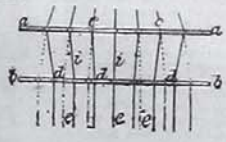
871. Jan. 17, 1889. **Carding-engines.** J. Seel, Brunswick Mills, Halifax.



Flats, grinding.—The flats are ground while passing face downwards over suitable guides above the taker-in. They may be pressed upwards by springs, etc. against the guide, in which case that part of the flat which engages with the guide is made at such an inclination to the working surface as will give the necessary "set" to the flat; or they may be pressed downwards by a weight *a* against a guide *f*, which, to give the required "set," is made with two parallel portions separated by a step. The grinding roller *h* is carried in adjustable brackets beneath. [8½d.]

922 Jan. 18, 1889. **Looms.** W. and H. A. Fielding, 462, Oldham-road, Manchester.

Jacquard harness is described adapted for use in weaving cloths of different degrees of fineness in the reed. Two comberboard frames *a*, *b* are employed, containing numerous slips or pieces of wood, etc., perforated for the harness threads to pass through.

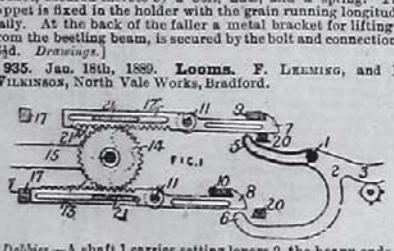


By altering the position of the "slips" *c*, *d* in a horizontal direction, by interposing blank slips, etc., in one or both frames, the harness may be altered without the necessity of "casting out," the level of the mails *e* being maintained. In the drawing are shewn, in full and dotted lines, the position of the cords *i*, from one jacquard hook, for two degrees of fineness in the reed, the slips of the upper frame not requiring to be moved. Sliding bars or rods may be employed in place of perforated slips. Instead of having two frames *a* and *b*, long mails having a number of eyes, one above the other, may be employed, the warp threads being drawn through the eyes, which are at the required level. [6½d.]

933. Jan. 18, 1889. **Beetling fabrics.** E. Simpson, 42, Britannia Terrace, Pendleton, Lancashire.

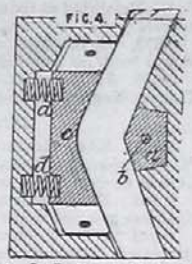
The tappet holder for the faller consists of a tapered metal pocket, secured thereto by a bolt, nuts, and a spring. The tappet is fixed in the holder with the grain running longitudinally. At the back of the faller a metal bracket for lifting it from the beetling beam, is secured by the bolt and connections. [6½d. *Drawings.*]

935. Jan. 18th, 1889. **Looms.** F. Leeming, and R. Wilkinson, North Vale Works, Bradford.



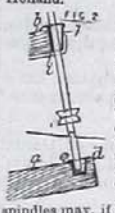
Dobbies.—A shaft 1 carries setting levers 2, the heavy ends 3 of which rest on and are operated by the pattern pegs, whilst the fingers 5, 6, act respectively on the draw hooks 7 and 8. The latter are operated by the usual knives 9, 10 and are specially jointed at 11 to racks 12, 13, engaging with toothed wheels 14 on bars 15 which are connected with the jack levers. The parts 21A and bars 21 and 20 serve to guide the racks, the motion of the latter being limited by stop pieces 17. When the hooks are not caught by the knives they fall and engage in the bars 20 and are thus prevented from moving. In positive dobbies the racks 11 are formed with extensions against which the knives act to return them positively, and separate levers 2 are employed for the top and bottom draw-hooks. [8½d.]

988. Jan. 19, 1889. **Winding Machines.** H. Wees, London-road Iron Works, Manchester.



Traverse mechanism.—In quick traverse frames the part *a* and the part *c* opposite to it and the traverse cam are made of separate pieces of hardened steel, or other suitable material, which can be renewed when desired. The piece *c* is loose, and is pressed forwards by springs *d*, and the piece *a* is preferably fixed by screws *b*, but it may be provided with springs if desired. [6½d.]

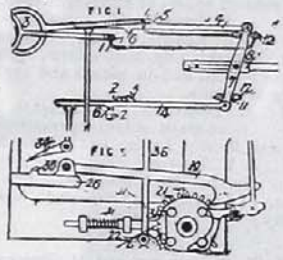
989. Jan. 19, 1889. **Spinning.** G. P. Leigh, 147, Great Ancoats-street, Manchester, and A. H. Bellringer, Enschede Holland.



Spindles and their appurtenances.—The spindles, which are of uniform thickness between the spindle rail *a* and the bolster rail *b* are supported by longitudinal troughs *d*, *h* which are filled with lubricant, and provided with covers which are perforated to admit the spindles. The trough *d* is fitted with an angular bearing plate *e*, and *h* with a plain plate *i*, both of which may be moved longitudinally in order to present fresh bearing surfaces for the spindles. These plates may, however, be notched if desired at the parts which are in contact with the spindles. The perforations in the bottom of the trough *h*, which admit the spindles may, if liquid lubricant be used, be fitted with split or perforated metal bushes or bearings. The fronts of the troughs are preferably removable to facilitate cleaning, etc. In a modification each spindle is supported in a separate lubricating box fixed to the front of the spindle rail, the back of the box forming the plate against which the spindle revolves. [8½d.]

1,008. Jan. 19, 1889. **Looms.** A. Sowden, Spring Field House, Baildon.

Dobbies.—The draw-hooks 4 (Fig. 1) are formed with two sets of catches 5, 6, so that they may be operated either way by the knives 1, 2. The latter are worked by eccentrics 3. The baulk levers 7 are attached to slide pieces 8 connected with the jack levers, extra levers for equalising the shed being sometimes interposed. The ends of the levers 7 are formed, as shewn, for working on cross bars 12, which may be movable, by connecting with the knives, for open shedding. The rocking levers of dobbies may be operated from a crank wheel driven by spaced toothed gearing from the tappet shaft, a dwell being thus provided for.



Under-shedding mechanism.—The Provisional Specification describes a method of attaching the straps of the springs of Kenyon's levers to such levers.

Change box motions.—In motions in which the box-rod 36 (Fig. 5) is operated from compound eccentrics, worked through toothed gearing 21, 22 from a pin wheel turned by draw-hooks 19, the said hooks are operated through a link 26 from a pendent broken-backed lever rocked by a cam and a spring. Spring hammers 31 serve to lock the parts. A catch 34, in connection with the knocking-off apparatus, engages with a stop piece 33 when the loom is stopped, and puts the box motion out of action. The motion proceeds when the loom is restarted. In some cases the hooks 19 may be vertical, and may be set by pattern mechanism. The wheels 21, 22 may be spaced wheels, one of them having a turned locking rim with which curved pieces on the other engage. The Provisional Specification describes a double draw-hook arrangement, by means of which the motion may be reversed when required. [8½d.]

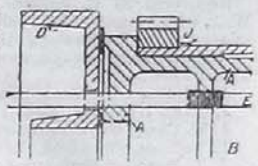
1046. Jan. 19, 1889. **Dyes.** B. Willcox, 47, Lincoln's Inn Fields, London.—(*Farbenfabriken Vorm. F. Bayer and Co.; Elberfeld, Germany.*)

Relates to the production of unsymmetrical acid green. Consists in preparing unsymmetrical substituted derivatives of diamidotriphenylmethane, the most important of which are trimethyl-benzyl-diamidotriphenylmethane and unsymmetrical dimethyl-dibenzyl-diamidotriphenylmethane; converting these into their sulpho acids, and then oxidising to produce the green colouring matters. For example, to a mixture of dimethylaniline and methylbenzylaniline is added sulphuric acid of 66 per cent. and then benzaldehyde, after which the whole is heated to 120°–130° C. for some hours. The product is dissolved in water, some symmetrical dimethyl-dibenzyl derivative and some tetramethyl derivative produced are separated, and the trimethylbenzyl product is dried and converted into the sulpho acids of the leuco base by heating with fuming sulphuric acid containing 20 per cent. of anhydride. This product is converted by oxidising agents, such as peroxide of lead and sulphuric acid, into a blue-green colouring matter. In a similar manner the unsymmetrical dimethyl-dibenzyl derivative is prepared from dibenzylaniline, and dimethylaniline. Similarly, also, other ethyl, methyl and benzyl derivatives of diamido-triphenylmethane are produced and converted into the corresponding sulpho acids and colouring matters. Instead of benzaldehyde, metanitro-benzaldehyde may be employed. Instead of sulphuric acid, other condensing agents may be used, such as oxalic acid, or chloride of tin. [6½d.]

1052. Jan. 21, 1889. **Looms.** J. T. Thornton, Paddock, Huddersfield.

Lays.—The shuttle race carries a number of fine wires placed parallel with the warp threads. The threads in the lower shed pass between the wires, and are thus protected from being damaged by the shuttle. In place of the wires, a grate, a corrugated or grooved plate, or a plain sheet of india-rubber may be employed. [6½d. *Drawings.*]

1094. Jan. 23, 1889. **Drying.** H. W. and J. H. Whitehead (Taylor, Wordsworth, and Co.), Leeds.

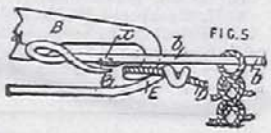


To dispense with the use of glanns or packing in apparatus for drying fibres, yarn, and fabrics, such as the drying portion of back-washing machines, the cylinder A, with a steam-tight compartment B, is fixed to the framework D, and the ordinary geared drying cylinder J is rotated upon it. Steam is admitted by the pipe E, and the water of condensation passes off by a similar pipe at the bottom of the cylinder A. [6½d.]

1,119. Jan. 22, 1889. **Looms.** J. Fairbury, the younger, 88, Every-street, Burnley.

Shedding mechanism.—For weaving slit-ups or lenos upper and lower pairs of shedding needles are employed, each carried by pieces which have elastic connections with guide pulleys above, as well as strap connections with an oscillating crank disc or eccentric beneath. The straps pass between a pair of guide pulleys, and are carried from one to the other as the needles are worked up and down by the motion of the crank, whereby the necessary crossing of the warp threads is effected. In a modification the upper needles are moved up and down by a rod and crank, whilst the lower needles are rocked about a centre by a forked bar acted on by a cam. [8½d. *Drawings.*]

1,171. Jan. 22, 1889. **Knitting machines.** H. Wildt, Well-street, Bradford, and F. W. Rawstron, Ox Heys, Shelf, near Halifax.



Needles.—Bearded needles *b* are formed with the beards *a* partially or wholly twisted around the stem to give a half, or whole, twist to the loop. When the beards are twisted half way round, the needles are arranged with the points downwards, and the yarn D is fed from the thread guide E, and drawn into the beards by the hooked plates or sinkers B. [8½d.]

1,224. Jan. 22, 1889. **Screw Gill boxes.** J. Farrar, Globe Works, Halifax.

To facilitate the removal of the endless belt passing between the delivery rollers, it is made to take through an aperture in the top rail instead of to enclose the same as is usual. [6½d. *Drawings.*]

1,128. Jan. 22, 1889. **Packing yarns.** G. Hailo, 100, Portland-street, Manchester.

The bundles, covered with paper and labelled as usual, are wrapped in calico, etc. (which may also be labelled), before being made into bales. In this way the paper covers are preserved. [4½d. *No Drawings.*]

1,172. Jan. 22, 1889. **Treating textile materials with liquids, gases, or vapours.** W. Mather, Salford Iron Works, Manchester.

In kiers for soaking, steaming, bleaching, dyeing, washing and similarly treating textile materials, of the class described in Specification No. 1912, No. 3,098, No. 8,793, A.D. 1885, and No. 10,033, No. 15,343, A.D. 1886, the sluice door at one end is opened by a weighted cylinder at the other end, which is connected to the door by a chain passing over pulleys, and works on a hollow fixed hydraulic plunger communicating with a steam pressure vessel. The door closes against a thin iron ring, which presses upon a caoutchouc ring in a recess in the end face of the kier, and it is forced to its lowest position by a cam and ratchet brace arrangement. A rotary pump is provided, and pipes and valves are arranged for supplying and discharging liquids, and circulating them through the materials in different directions. [11½d. *Drawings to Specification.*]

1,207. Jan. 23, 1889. **Knitting.** J. Cunningham, 31, Causeyside-street, Paisley.

Circular machines.—The posts between the needle grooves of the ribbing dial, are made to project beyond the periphery to enable a longer and fuller ribbing stitch to be made by adjacent ribbing needles, and any combination of cylinder and dial needles to be used without change in the form or position of the ribbing cam. [6½d. *Drawings.*]

1,212. Jan. 24, 1889. **Combing machines.** F. Illingworth, Caledonian Works, Bradford.

Drawing-off.—To prevent the drawing-off rollers from becoming grooved they are traversed longitudinally as well as rotated in the usual manner. The axle of the driven roller is connected through worm and spur gearing with a wheel, carrying upon its face a stud, which takes into a slot in a saddle, which embraces the spindle on each side of a worm thereon. The axle of the other roller is connected to the saddle by a clip. [6½d. *Drawings.*]

1,226. Jan. 23, 1889. **Damping fabrics.** A. and R. Berkeley, and R. Clarke, all of Queen-street Mills, Batley, Yorkshire.

A spray of water is discharged upon the fabric from a nozzle by means of compressed air from a reservoir, supplied by a rotary blower through a valve or regulator. The pipe from the reservoir is branched, so that a part of the air acts upon the surface of the water in the tank and forces it up the inner pipe, and the remainder acts inductively at the nozzle. [6½d. *Drawings.*]

1,239. Jan. 24, 1889. **Knitting.** W. and J. T. Laing, and T. A. Bonson, Wilton Mills, Hawick, Roxburgshire.

Straight-bar machines.—The knocking-over bits in Cotton's or other hosiery frames, having sinkers moving horizontally for the manufacture of all classes of under-wear, such as hose, half-hose, pants, shirts, vests, and combinations, are formed as shewn, to enable a heavier yarn to be used. [8½d.]