

not extensive, the manufacture being confined to one firm alone.

In sympathy with the brisk demand for carpets, worsted yarns are in great request, and spinners of these yarns are experiencing some difficulty in keeping pace with the requirements of manufacturers. Although no quotable alteration in late prices can be reported, there seems to be a tendency in an upward direction, and this feeling has led to a few orders being placed, but there is still a lack of confidence in the future of the wool market, and until a healthier tone is manifested in transactions in this market, yarn purchases must be limited.

Cotton yarns continue high in price, and spinners say there is no likelihood of a change in a downward direction for a long time to come.

## Joint Stock and Financial News.

### COTTON COMPANIES.

**BROOKBOTTOM (Mossley).**—The half-yearly report states that after paying £596 9s. 10d. for bank commission and interest upon loans and overpaid share capital, and £90 8s. for repairs, and £400 for depreciation, there is a profit of £992 11s. 1d. The disposable balance of £884 4s. 9d., the directors suggest, may be applied as follows: A dividend of 1s. per share, which will absorb £587 19s., and £117 10s. in settlement of law charges, which will leave a balance of £296 5s. 9d. to be carried forward. The share capital is £26,565 10s. 4½d., and the loan capital £7,706 2s. 7d.

**CROMPTON.**—Profit, three months, £1,250 9s. 7d. Dividend, 10½ per cent., which will absorb £1,250. The reserve fund stands at £4,968 12s. 9d. Share capital, £46,250. Loans, £7,690. Spindles, 63,600 (18,900 T. and 44,700 W.) Plant, three months ago, £49,947. Company formed 1874. Shares, £4 12s. 6d. paid; sellers, 20s. 6d. p.

**BELGIAN.**—Profit, three months, £1,253 7s. 10d.; leaving an adverse balance of £779. Share capital, £53,411. Loans, £39,262. Spindles, 56,556 (34,764 T. and 21,792 W.); plant, three months ago, £71,250. Mill fireproof. Company formed 1873. Shares, £3 10s. paid; sellers, 30s. 6d., d.

**ASTLEY.** The erection of another spinning mill is being considered by this company.

**OLDHAM COTTON BUYING COMPANY.**—The balance sheet for eleven weeks, ending 31st ult., has just been issued. Profit, £1,622 16s. 5d.; share capital, £1,996 10s.; reserve fund, £687 10s., including £300 invested in the Manchester Ship Canal Company. Total expenses (salaries, rent, rates, and office expenses, &c.), £988 6s. 9d.; brokerage charged on purchases, £2,654 3s. 2d. Bonus of 7s. per £100 to shareholders, and 3s. 6d. per £100 to non-shareholders.

## Gazette News.

### ADJUDICATIONS.

Charles Weatherhead and Francis E. Weatherhead, Brook-street, Bradford, worsted coating manufacturers.

John Catley, Little Shelford, Cambridgeshire, rope maker.

James Ashton and Edward P. Williams (trading as Wehner, Ashton, and Williams), late George-street, Manchester, merchants.

Jonathan B. Pears, Bramwell-street, Monkwearmouth, rope maker.

### PARTNERSHIPS DISSOLVED.

Slater Brothers and Co., Wood-street, London, silk manufacturers.

Wardle and Brown, Hacken Mills, Darcy Lever, near Bolton, cotton manufacturers.

### NOTICES OF DIVIDENDS.

John Burn (trading as John Burn and Co.), Beehive Mills, Thornton-road and Booth-street, Bradford, manufacturer; 9½d., second and final.

Henry Crossley, 115, Accrington-road, and Albion Mills, Whittlefield, both in Burnley, cotton manufacturer; 6s. 8d., first and final.

Peter Horobin, Chester-road Dyeworks, Macclesfield, and Crompton-road, Macclesfield, silk dyer; 3s. 5d., first and final.

John Calvert, Park Lodge, Halifax, Yorkshire, W. F. Calvert, 14, Church-street, Halifax, H. Calvert, Ovenden-road, Halifax, and F. Calvert, Iona-street, Boothtown, Halifax (trading as Calvert Bros.), Ladyship and Boothtown Mills, both in Halifax, worsted spinners; 1½d., third and final.

### RECEIVING ORDERS.

Allan Broadley, Ripon-street, Bradford, commission wool comb; Bradford.

John Catley, Little Shelford, rope maker; Cambridge.

Arthur Tinker, Holmfirth, woollen manufacturer; Huddersfield.

Charles Williamson, Percy-street, Preston, rope manufacturer; Preston.

## 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.

#### 8TH APRIL.

5,289. T. ADAIR, 26, Walnut-street, Donegal Pass, Belfast. Scutching and rippling flax and like fibre bearing plants.

5,301. J. BARRON BLACK, Raceview House, Ballymena, Antrim. Holder for the material being treated in scutching or hacking machines.

5,308. J. NELSON and S. SHAW, 8, Quality-court, London. Self-acting mules.

5,339. H. GROSSELINE, 55, Chancery-lane, London. Pulling machines.

5,366. O. IMRAY, 28, Southampton-buildings, London. Production of guaiacol ether. (*The Farbwerke vormals Meister, Lucius and Bruning, Germany.*)

#### 9TH APRIL.

5,381. A. F. ST. GEORGE, Redhill, Surrey. Colouring and inlaying coloured designs upon and through transparent oxidised oil fabrics.

5,385. W. E. HEYS, 70, Market-street, Manchester. Apparatus for steeping, dyeing, and otherwise treating yarn, etc., in cops and bobbins. (*E. Chatel, France.*)

5,413. W. P. THOMPSON, 6, Lord-street, Liverpool. Drying, cleaning, or otherwise treating wool. (*H. Orval, France.*)

#### 10TH APRIL.

5,449. J. TASKER and L. HARGREAVES, Central Chambers, Halifax. Opening, cleaning, and scutching cotton, etc.

5,450. S. TWEDDALE, Central Chambers, Halifax. Lifting "pokkers" and ring rails of spinning machines.

5,482. G. W. ARNOTT, P. A. OLIVIER, and G. SEAGRAVE, 166, Fleet-street, London. Process for washing and scouring wool, etc.

#### 11TH APRIL.

5,497. W. KENYON, senr., W. KENYON, junr., G. H. KENYON, and E. KENYON, 1, St. James-square, Manchester. Friction clutches.

5,504. F. BARKER, 8, Quality-court, London. Jacquards.

5,508. G. HADDEN, 96, Buchanan-street, Glasgow. Knitting of seamless stockings, socks, leggings, gloves, and such like articles, and mechanism therefor.

5,532. C. L. FIELD, 28, Southampton-buildings, London. Decorticating ramie and other fibrous stems.

5,541. S. H. COLE, W. S. DOBSON, D. DE MOUZILLY, and J. T. H. RICHARDSON, 20, High Holborn, London. Regulating the delivery of the warp threads of weaving and knitting machines.

#### 12TH APRIL.

5,547. B. HAIGH, 2, East Parade, Leeds. Dyeing and apparatus therefor.

5,551. W. WALTON, 17, St. Ann's-square, Manchester. Flats for carding engines.

5,553. J. DENBY, 4, Swinton-row, Edinburgh. Electrotypes for embossing leather and tapestry, stamping velvet, etc.

#### 14TH APRIL.

5,605. J. F. LIVESSEY, 4, St. Ann's-square, Manchester. Shuttles.

5,625. J. SUTCLIFFE, 96, Buchanan-street, Glasgow. Picking mechanism of looms.

#### 15TH APRIL.

5,675. A. BREARLEY, 8, Quality Court, London. Doffing indicators for spinning mules.

5,706. JAMES HALL, S. WHITTAKER, and T. H. FALLOWS, 323, High Holborn, Middlesex. Production of jacquard cards or pattern plates therefor.

5,709. J. LONGMORE and W. L. WATSON, 323, High Holborn, Middlesex. Spinning.

5,711. J. LONGMORE and W. L. WATSON, 323, High Holborn, Middlesex. Spinning.

5,712. J. LONGMORE and W. L. WATSON, 323, High Holborn, Middlesex. Spinning.

5,714. J. MEBURN, 55, Chancery-lane, Middlesex. Pickers for looms. (*H. Campion, France.*)

5,721. JOHN HALL, 47, Lincoln's Inn Fields, London. Colouring matters.

5,722. B. WILLCOX, 47, Lincoln's Inn Fields, London. Diquinolyline derivatives. (*The Farbwerke vormals F. Bayer and Co., Germany.*)

5,723. B. WILLCOX, 47, Lincoln's Inn Fields, London. Phenacetine derivatives. (*The Farbwerke vormals F. Bayer and Co., Germany.*)

5,736. J. IMRAY, 28, Southampton Buildings, London. Azo colouring matters derived from azoxyamines. (*La Societe Anonyme des Matieres Colorantes de St. Denis, A. F. Potrier, and D. A. Rosenstiehl, France.*)

5,737. J. IMRAY, 28, Southampton Buildings, London. Colouring matters derived from fluoresceine. (*La Societe Anonyme des Matieres Colorantes de St. Denis, France.*)

#### 16TH APRIL.

5,749. C. WHALLEY, Central Chambers, Halifax. Selvege motions of looms.

5,762. W. ROCKE and W. PROSSER, 206, Ordsall-lane, Salford. Shuttles.

5,774. A. MELLOR and F. F. MELLOR, 45, Southampton Buildings, London. Straight-bar knitting machines.

5,777. O. IMRAY, 28, Southampton Buildings, London. Production of grey basic colouring matters by the action of hydrochlorate of nitrosodimethylaniline, or hydrochlorate of nitrosodiethylaniline upon 1-5 dioxynaphthalin, and upon 1-2 tetroxydianaphthyl. (*The Farbwerke vormals Meister, Lucius and Bruning, Germany.*)

5,780. O. IMRAY, 28, Southampton Buildings, London. Black colouring matters from amidoflavopurpurin and amidanthrapurpurin. (*The Farbwerke vormals Meister, Lucius, and Bruning, Germany.*)

5,784. H. MARLEY, 4, South-street, Finsbury, London. Winding, carding, or folding ribbons, trimmings, lace, and the like.

#### 17TH APRIL.

5,828. C. WOMACK, 15, Regent-street, Barnsley. Machines for extracting carbonised burr from woollen cloth.

5,867. S. G. PACKER, 166, Fleet-street, London. Combining lace figurings or spottings with veil and millinery net for ornamental purposes.

#### 19TH APRIL.

5,869. G. WRIGHT, 20, Charles-street, Bradford. Harness and head wires for looms.

5,871. B. WADSWORTH and D. FAIRBANK, Commercial-street, Halifax. Winding cotton and silk yarns upon bobbins in gassing frames, and an improved bobbin.

5,879. J. H. RILEY, 70, Deansgate, Manchester. Doubling, finishing, and folding textile fabrics.

5,886. J. THOMPSON and B. THOMPSON, 4, St. Ann's-square, Manchester. Shuttles.

5,887. W. GOLDING, 4, Portman-street, Moss Side, Manchester. Spinning, doubling, twisting, and winding yarns or threads of cotton, silk, wool, flax, and other fibres.

5,908. W. TURNBULL, W. STOCKDALE, and J. CARR, 6, Bank-street, Manchester. Calico printing machines: to render them applicable for printing tapes for venetian blinds and similar articles.

5,729. E. G. S. CARBONNIER and F. F. MOLIE, 28, Southampton Buildings, London. Covering of drawing and other rollers employed in spinning machines.

5,930. F. J. PERRY, 23, Southampton Buildings, Middlesex. Embroidery machines.

### SPECIFICATIONS PUBLISHED.

#### 1889.

5,560 BARON VON SEYDLITZ. Turkey carpets, &c. 11d.

6,365 VON STEIN. Looms. 8d.

7,058 WEATHERDON (*Compere*). Treating hemp, flax, etc. 6d.

7,074 FELL (*Friedenwald and anr.*). Trimming embroidery. 8d.

8,106 SCHEVELIN and MINDOVSKY. Treating vegetable fibres. 6d.

8,127 THOMPSON and BARKER. Carding engines. 8d.

8,688 BROOKE and BEAUMONT. Looms. 6d.

8,930 HETHERINGTON. Carding engines. 11d.

9,235 STEBLE. Spinning mills. 6d.

9,337 RUSSELL. Knitted jackets. 4d.

12,549 SHILLITO (*Fear*). Colouring matters. 4d.

#### 1890.

446 FISHER. Carpets. 6d.

1,518 GRIFFITH. Carpets, &c. 6d.

2,714 HOTTERSALL. Looms. 6d.

3,149 THOMPSON and HAMPSHIRE. Looms. 63. 3,182 MIDDLETON and JONES. Cotton pile goods. 4d.

AMENDED SPECIFICATION. 1884.

9,162 EASKINE. (Farbenfabriken vormals. Fr. Bayer and Co.). Yellow colouring matters. 4d.

ABSTRACTS OF SPECIFICATIONS.

14,700. Oct. 12, 1888. Union yarn. W. C. WHITEHEAD, Frizinghall, and J. MADDOCKS, 26, Booth-street, both in Bradford.

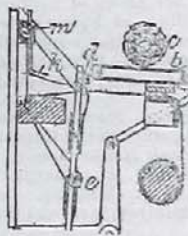
The covering yarn or roving is fed positively to the yarn or eye to be covered, the core taking over an auxiliary roller h, the speed of which can be varied as desired, and the covering yarn after passing through the drawing rollers taking over a grooved roller i, which guides it vertically to the spindles. Preferably a twisted yarn is employed for the core, and the covering yarn is wound upon it in the reverse direction to that in which the core is twisted, so that the tendency of the core to re-twist itself, untwists the covering yarn, which thus lies loosely, yet tenaciously, upon the core. [84d.]

14,705. Oct. 12, 1888. Finishing yarn. E. P. KLUO, Cfimmschan, Germany.

In lieu of sizing warp or other threads, they are subjected in a bobbin or other form in a steam-tight receptacle to the action of dry steam, the effect being to form a hard smooth coating on the threads. For special effects the steam may be first led through colouring or other substances. [4d. No drawings.]

14,733. Oct. 13, 1888. Weaving pile fabrics. H. LISTEN, Ashbury Mills, Huddersfield.

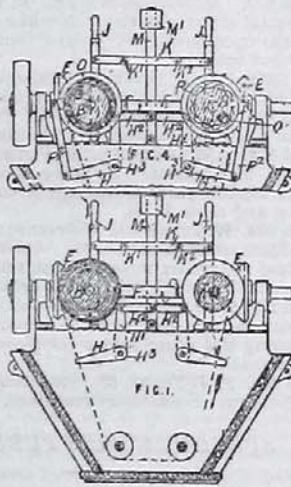
Fabrics—Imitation velvet, fur, and seal, chinilla, or other skin, and fabrics for travelling rugs, hear-rugs, carpets, etc., are produced with pile on one or both faces formed by interlocking, during weaving, tufts which are drawn from a sheet of fibre. Stripes, diagonals, or other designs may be produced.



Looms.—In the loom an endless travelling apron b carries a roll of fibre c. The end of the latter hangs down and is forced between the warp threads by a rotary brush d, a web being then inserted and beaten up to bind it in. A plate or comb h, carried by the hand-rail m, severs the fibre on the beat-up. The process is repeated for reversible fabrics, but if the fur is required on one face only a second brush e, revolving oppositely to d, is lifted and made to brush the lower end of the fur up through the warp. Arrangements for operating the brushes and apron are described. The parts of the apparatus may be modified. The fur may be arranged on the apron so as to produce designs. [84d.]

14,779. Oct. 15, 1888. Dyeing, etc. R. MIDDLETON, Sheepscar Foundry, Leeds.

Relates to burling and similar machines for dyeing or washing fabrics, in which the fabrics are passed backward and forward.



Automatic reversing gear.—To each roller B (Fig. 1) on and off which the material is wound is fixed a bevel-wheel gearing with bevel gear running loosely upon the driving-shaft F, and connected alternately there with by sliding clutches feathered on the shaft. The clutch-levers J, J are connected by bar K through a slot in which passes a lever M carrying a weight Mr, and connected by links H2 with levers H, H1 on shafts H3. This system of levers is operated by projections or knockers-off B2 on the canvases by which the ends of the fabric are connected with the rollers. The lever M is thus lifted from pressing against one of the pins K1, K2 and falling against the other pin, by virtue of its weight causes the clutches to reverse their gear without stoppage of the machine. In Fig. 4 the knock-off is dispensed with, and a spring-pressed finger O is sunk in each roller B. As the last coil of canvas winds it liberates the finger, which then passes into gear with an internally-toothed disc P, and causes this to revolve with the roller, and operate the levers P2, H, H1, H2, and M. To prevent the fabric unwinding too rapidly a brake is fixed on each roller B consisting of a ratchet wheel loose on the roller axle but held between leather washers by an adjustable fly-nut and engaging a weight-d Pawl. [84d.]

14,799. Oct. 15, 1888. Cop tubes, etc. W. PINKINGTON 79, Green Lanes, Small Heath, C. T. BISHOP 31, Wincley's-road, and A. BROWNWOOD, Mapperley-road, Nottingham. Metal tubes closed at one end are made in one piece by first moulding the metal into a suitable form, preferably by means of a mould and a hydraulic ram, and afterwards drawing it through suitable dies until the tube attains its proper length and thickness. [84d. No drawings.]

14,822. Oct. 16, 1888. Dyes. O. IMRAY, 28, Southampton-buildings, London.—The Farbu ruz vorm. Meister, Lucius and Brunning; Hochstim-Malz, Germany.

Relates to the preparation of green and bluish-green colouring matters. Consists in sulphonating directly the meta-amido-tetra-kyl-diamid-tri-phenylmethane obtained as described in Specification No. 12,793, A. D. 1888, or the methylated or ethylated derivatives thereof, and subsequently oxidizing these into sulphonic acids. The same colouring matters are obtained when the lenco bases are first oxidized and then sulphonated. The sulphonic acid of meta-amido-tetra-ethyl-diamid-tri-phenylmethane, for example, is obtained by dissolving the lenco bases in forming sulphuric acid containing 20 per cent. of anhydride and heating to 90° or 100° C., until a sample dissolves in cold ammonia of 3 per cent. C., until a sample dissolves in cold ammonia of 3 per cent. C. The calcium salts of the sulphonic acids are oxidized by means of superoxides and mineral acids. When the lenco bases are first oxidized the resulting carbonols, for example, m-tamido-tetraethyl-diamid-tri-phenylmethane, is sulphonated by dissolving in monohydrated sulphuric acid and heating to 70° or 80° C., until a sample gives a clear blue solution with dilute ammonia. [84d.]

14,835. October 16, 1888. Looms. A. SOWDEN, Baildon, Yorkshire.

Dobbies.—The card cylinder rotates only, and is driven through bevel-reversing gear and nogging-wheel mechanism from the crank shaft. The cards act through spring pins on tumbler levers, which are lifted and then lowered on to the pins for selection by the action of a rising and falling cross-bar. The tumbler levers are formed with guide pieces and recesses for the needles. The upper ends of the latter and the catches or draw hooks are supported by a grating or notched bar. The shaft of the lever which operates the knives is placed at the centre of the dobbie, adjustable and removable arms connecting the lever with the knives. When lags or pegs are employed in place of cards the cylinder is mounted in special bearings admitting of easy removal, and is driven through worm gearing, arranged to be disconnected automatically if the pattern mechanism should foul. [14d Drawings.]

14,836. Oct. 16, 1888. Dyes. W. G. THOMPSON, 5, Cooper Street, Manchester, and W. H. CLAPS, Tonge Villa, Middleton.

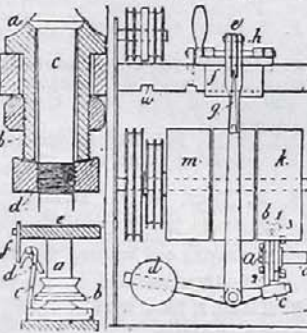
Relates to the preparation of yellow, orange, red, violet, and blue colouring matters by the reaction of diazo and tetrazo compounds with the active principles of cutch logwood, querciton bark, and fustic. These dyes are of three classes. Firstly, those obtained by reacting with diazobenzol and its homologues, amidoazobenzol, alpha and beta-naphthylamine, the sulpho acids of these compounds, and phenylene diamine, upon cutch, logwood, or querciton bark. Secondly, those obtained by the reaction of the tetrazo compounds of bezidine and its homologues, and the sulpho acid thereof upon cutch, querciton bark, logwood, and fustic. Thirdly, those obtained by the reaction of the intermediate compound formed from one molecule of a tetrazo compound, and one molecule of a dye-wood principle upon phenol, naphthol, or amino, or the sulpho acids thereof, or upon salicylic acid. In the Provisional Specification a fourth class is described in which the known colouring matters obtained from tetrazo compounds are again diazotized, and then combined with the dye-wood principles. [84d.]

14,898. Oct. 16, 1888. Measuring cloth. B. R. BOND, 21 Junction Road, London, N.

The cloth is taken from a box, having a slanting side and an adjustable end, and is passed over a rectangular drum. The axis of the drum carries a thin blade, a polygonal peg, or two or more pins, over which passes an endless chain with the links marked in yards, etc., as required. The links may have projections to prevent the chain from slipping. [84d. Drawings.]

14,906. Oct. 17, 1888. Ring Spinning, etc. J. SEED, 4, Avenue Terrace, Pre-ton.

Driving arrangements.—The frame is driven at two different speeds according to the position at which the winding takes place on the chase of the cop. On the driving shaft is mounted an additional low-speed pulley m (Fig. 2), and the strap is moved from this pulley on to the high-speed pulley k, and vice versa, by means of a weighted bell crank lever c, which is operated by a cam b on the heart shaft a, the strap being raised slowly by the high-speed pulley to effect a gradual acceleration of the speed, and quickly on the low-speed pulley. The cam b is adjustable, the two parts 2, 3 being bolted to a fixed central part 1. When the machine is required to be driven at the low-speed only, the strap is held



In the required position by means of a catch, which takes into the notch w; normally the catch is withheld by another catch h and spring g. When winding at or near the nose of the cop, the strap may be moved from the fast pulley k to the loose pulley m, allowing the machine to run by its momentum only. The pulley m may be connected to the shaft by a clutch arrangement operated by a lever or screw; or both of the clutches m, k may be connected to the shaft by a clutch arrangement operated by a lever or screw; or both of the pulleys m, k may be connected to the shaft by a clutch operated by a lever connected to the lever c, the clutches in their extreme positions connecting one or other of the pulleys m, k with the shaft, and in their mid-position being disengaged from both. Other modifications are described.

Spindle bearings.—Several arrangements are described whereby the bolsters of self-contained spindles may be set in a vertical position. The bolster is supported loosely in an outer case c, and in Fig. 6, is provided with a spherical flange resting on a corresponding part of the casing, the lower part of the bolster being secured to the case by a nut d, which is concave on its upper surface; the case a is secured to the rail by a screwed nut. In one modification the footstep bearing of the spindle is vertically adjustable, and in another the step support for the bolster.

Step apparatus (non-automatic).—Pins, secured to the sleeve of the spindle engage, when the latter is raised with a bent projection, which is secured to the flange of the bolster, and

supports the spindle until the latter is forcibly pressed into its original position. In a modification, in disc b (Fig. 11), upon the spindle is wedged against an inclined part e, when the spindle is raised.

Holding-down arrangements.—Several forms of hocks d are described, which are pivoted in such a manner that they normally fall out of engagement with the warper, but are engaged by a projection f on the rail e, when the latter is lowered for doffing so as to bring them into position, and prevent the spindles from being withdrawn. The improved travellers described in the specification No. 11,475, A. D. 1887, may be used in connection with this invention. [84d.]

14,884. Oct. 18, 1888. Dyes. G. PITT, Sutton, Surrey.—(L. Casella and Co., Frankfurt-on-Main.)

Thionates.—Relates to the preparation of alkylated or benzylated derivatives of thionated primary bases. The known methods of alkylating are employed, and the thionated bases treated are those obtained by heating sulphur with para-toluidine, xylydine, or mixtures of these bases with other aromatic amines. For example, the thio base from para-toluidine is heated in an autoclave with methyl alcohol and hydrochloric acid, or benzyl chloride. The product is separated into two constituents by boiling with water, the soluble portion being afterwards precipitated with common salt. The colouring matter thus obtained dyes mordanted cotton yellow, and is called thionated T. The portion insoluble in water is dissolved in monohydrated sulphuric acid, fuming sulphuric acid is added, and the mixture heated to 70° or 80° C. The sulpho acid is precipitated on pouring into water, and is then converted into its soda salt. The dyes unmordanted cotton of thionated yellow, and is called thionated S. The sulpho acids of thionated bases may also be alkylated. For example, the sulpho acid of the thionated base from para-toluidine is heated with ethyl bromide, sodium hydrate, and alcohol, and the product precipitated by pouring into water. [64d.]

14,903. Oct. 17, 1888. Finishing pile fabrics. H. A. FOSTER, Black Dyke Mills, Queensbury, Yorkshire.

To facilitate the batting, cropping, and brushing processes employed in the manufacture of imitation skins, plushes, velvets, etc., and to secure a higher degree of finish and lustre, a current of air is forced through the fabric from the back. The air is preferably supplied through perforations in a cylinder from an air vessel, charged by an ordinary compressor. [64d. Drawings.]

14,930. Oct. 17, 1888. Spinning, &c. C. H. PROH, Whitworth Works, Birmingham.

Under clearer springs.—Are each made of a single piece of wire, preferably cylindrical, which is bent into a special form and flattened in parts when necessary; or the two arms are made of independent pieces of wire, and secured to a forked fixing plate used in place of the other wise flattened part. [84d. Drawings.]

14,942. Oct. 17, 1888. Loom. G. K. GORDON, 3, Ormrod Terrace, Primrose Hill, Middlesex.

The loom is applicable for weaving various small articles such as braids, ribbons, etc., and also for darning table cloths, stockings, and other fabrics. The warp is held between hook-carried by frames, which may be fastened by pins at the back in a pad or block. The hooks carry tappets for turning them either to the right or left, and so changing the position of the warp threads. The web is inserted by a needle. When used for darning, the fabric is held in a stretched condition by an endless elastic band or spring entering a groove in the edges of the block. Stitches are taken in the fabric at either side, the material being picked up between the threads of the warp for two or three rows. [84d. Drawings.]

14,961. Oct. 18, 1888. Knitting machines. J. CLEGG, 227, Havelock Road, Leeds.

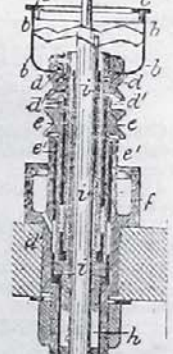
Heel-combs.—The teeth have holes at the end to fit over the hooks of the needles in order to facilitate the transfer of the loops. [64d. Drawings.]

15,000. Oct. 18, 1888. Drying wool "tops." F. RHODES Westfield, Gomersal, Leeds.

Cylindrical cans, with perforated bottoms, such as are used in the dyeing operation, are placed in apertures in a plate, and the substances in them are dried by a current of air drawn or forced through them by a fan or other means. [84d. Drawings.]

15,018. Oct. 19, 1888. Spinning, etc. S. HALLAM and E. TILSTON, both of Clitheroe-street, Longsight, Manchester.

Spindles and their support arrangements.—In order to regulate amount of drag on the traveller of ring and traveller spindles, the ring is rotated independently of the spindle, and at a variable rate according to the diameter of the chase of the cop, etc. The ring c is mounted on the upper edge of a cup or cylinder b, the lower end of which is secured to a sleeve d, which carries a wharve e, and can be lifted out of its bearing. The sleeve d revolves in another sleeve e, carrying at the top a wharve f, and connected below by suitable bearings to the spindle; f is an oil reservoir, and is a tube fixed to the sleeve e to check the escape of lubricant. The ring carriers b are driven by bands from a drum, which is driven from the ordinary tin roller by means of bands through a system of expanding pulleys or other suitable mechanism operated by a hand wheel or automatically. [84d.]



15,019. Oct. 19, 1888. Damping Fabrics. J. DOWNHAM, Parker-street Iron Works, Bury, Lancashire.

The sprinkling brush of damping and conditioning machines, used in bleaching, calendaring, finishing, and other analogous processes, is made of copper, brass, or other non-corrodible wire. [4d. No drawings.]

15,030. Oct. 20, 1888. Carding-engines. T. H. ACKROYD, A. BROADLEY, and S. RAISTRICK, Birkenshaw Mills, near Leeds.

Feed Apparatus.—In place of the usual leather apron between the lagged apron and the take-up, endless sheets of wire cards are used. [84d. Drawings.]

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