Mill Company) and Mr. Richard Percival (Greenacres Spinning Company), whose terms as directors expire next quarter, were again nominated, while Mr. J. W. Greaves was reappointed an auditor. The meeting approved of the action of the directors in taking up shares in the Liverpool Importers' Association.

NEW COMPANY.

T. F. FIRTH AND SONS, LIMITED.

Registered by Waterlow Brothers and Layton, Limited, 24, Birchin-lane, E.C., with a capital of £225,000, in £10 shares. Object, to acquire the goodwill, machinery, plant, apparatus, goods, and the raw and other materials and stock-in-trade in or of the business now or lately carried on by T. F. Firth, A. F. Firth, and W. E. Firth, as manufacturers of carpets, rugs, mantle cloths and blankets, and otherwise, at Flush Mills, Heckmondwike, and Clifton Mills, Bayliffe Bridge, near Brighouse. The first subscribers are:—

	Shares.
T. F. Firth, The Flush, Heckmondwike	1
A. F. Firth, Bayliffe, near Brighouse	1
W. E. Firth, Castle House, Gomersal	1
J. E. Willans, Ashleigh, Huddersfield	1
T. Ormerod, Elen Royd, Brighouse	1
G. Goldthorp, Spen House, Cleckheaton.....	1
W. Findlay, Spring-place, Brighouse	1

The number of directors shall not be less than three nor more than seven. The first are T. F. Firth, A. F. Firth, W. E. Firth, and W. Findlay. Remuneration and qualification to be determined from time to time in general meeting, but meanwhile 100 shares to be qualification with the exception of W. Findlay.

Gazette News.

PARTNERSHIPS DISSOLVED.

H. E. and N. Bradley, trading as N. Bradley and Sons, at New Cannon-street, Manchester, grey cloth merchants; H. E. Bradley retires.

J. Whitehead and J. Butterworth, trading as Whitehead and Butterworth, at Rochdale, eyelet manufacturers; J. Whitehead retires.

Mason and Homer, Hinckley, Leicester, hosiery manufacturers.

Hartley Bros. and Holdsworth, Cotton Tree, near Colne, worsted manufacturers.

Smallwood and Gould, The Dams, Macclesfield, dyers.

Redgate and Allen, Long Eaton, Darbyshire, lace manufacturers.

ADJUDICATIONS.

J. H. F. Clegg, Rhodes-street, Halifax, formerly flannel merchant, now commission agent.

NOTICES OF DIVIDENDS.

W. D. Fleming and J. W. Fraser (trading as Fleming, Fraser, and Co.), Hall Ings, Bradford, stuff merchants; final 1¾d.; May 9th, office of James C. Wright, the trustee, Market-street Chambers, Bradford.

APPLICATIONS FOR DEBTORS' DISCHARGE.

W. Goodwin, Eccles New-road, Salford, grocer, wine and spirit merchant, late cotton band manufacturer; Salford Court, June 3rd, 1-30 p.m.

APPOINTMENTS OF TRUSTEES.

H. Franckel (trading as H. Franckel and Co.), Mornington Villas, Manningham, and Vicar-lane, Bradford, stuff and woollen merchant; trustee, B. Musgrave, chartered accountant, Bank-street, Bradford.

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.

29TH APRIL.

7086. WILLIAM MAYO, Denmark House, Linton Crescent, Hastings. Washing clothing and household linens without boiling, &c., thus saving a great amount of labour.

7090. CHARLES DREYFUS and JAMES ROBINSON, 17, St. Ann's Square, Manchester. Improvements in and relating to the manufacture of india-rubber or waterproof textile fibres and fabrics.

7091. FREDERICK SIMMONS, 39, Marshall Street, London Road. Improvements in button-hole sewing machines.

7100. FREDERICK BENOIR GONTY, 19, Bowling Green St., Leicester. Improvements in apparatus for the use of dyers, bleachers, and others for boiling, dyeing, fastening, and finishing colours upon textile materials.

7103. JOHN HOWARTH and WILLIAM THOMAS HOWARD, 18, Fulham Place, Paddington. Improvements in apparatus for cutting or severing cloth specially woven for dividing down the centre and the like.

7121. RUSSELL EDWARDS, 24, Southampton Buildings, Chancery Lane. Improvements in apparatus for sewing straw into mats, suitable for being used for covering corn-ricks and for other purposes.

7122. WILLIAM BOWKER and ROBERT WILLIAMS, 46, Lincoln's Inn Fields, London. Improvements in looms for weaving.

7123. JOHN DODD, 18, St. Ann's St., Manchester. Improvements in mechanism for "driving" the spindles of "self-acting mules" for spinning cotton, wool, and other fibrous materials.

30TH APRIL.

7167. BENJAMIN BERRY and DANIEL BATEMAN BRIGGS, 218, College Road, Bradford, Yorkshire. Improvements in looms for weaving.

7185. ALFRED JULIUS BOULT, 323, High Holborn, Middlesex. Improvements in machines for sizing and painting cloths or fabrics. (*Dustan Amos Page, Richard Christopher Bird*, and *Margery E. Bird*, United States.)*

7187. MICHAEL BARKER NAIRN and THOMAS SUMMERS, 191, Fleet St., London. Improvements in printing patterns on floorcloths, linoleum, and similar materials, and in apparatus therefor.

7221. JAMES BRIGGS, 102, Trafalgar Road, Old Kent Road. Facilitating the threading of sewing machine needles.

1ST MAY.

7225. JOHN THOMPSON of the Firm of CURTIS SONS, and Co., and THOMAS BARKER, 4, St. Ann's Square, Manchester. Improvements in clothing the "flats" of carding engines, and in apparatus employed therefor.

7238. ALFRED JULIUS BOULT, 323, High Holborn, Middlesex. Improvements in machines for breaking, stripping, and decorticating China grass, flax, hemp, and other fibrous material. (*Félicien Michotte*, France.)

7259. CHARLES FREDERICK WOOD, 35, Hanby Terrace, Ordnance Road, Enfield Lock, Middlesex. Improvements in or relating to hosiery or stockings.

7269. ALFRED MARSDEN, ALFRED LAYCOCK, and ALFRED STEPHENSON, 2, New Street, Huddersfield. Improvements in woollen condensing machinery.

7277. BENJAMIN DRINKWATER, 24, Southampton Buildings, London. Improvements in sewing machines.

7282. THEODORE JENNY, 45, Southampton Buildings, London. Improvements relating to spinning machines.*

2ND MAY.

7290. WILLIAM EDWIN HAYES, 70, Market Street, Manchester. Improvements in the method of and apparatus for cutting the float threads in tulles, nets, laces, embroideries, and similar fabrics, (*Arthur Sauve*, France.)

7297. FREDERICK HUNGERFORD BOWMAN, Sunbridge Chambers, Bradford, Yorkshire. Improvements in the manufacture of lace and other reticulated and woven fabrics.*

7299. JOHN PICUP, New Bridge Street, Manchester. Improved self-acting shuttle guard.

7312. ROBINSON FOULDS, 8, Quality Court, London, Improvements in or applicable to circular shuttle-box looms.

7314. BENJAMIN WILLCOX, 47, Lincoln's Inn Fields, London. The manufacture of diamido diphenylene oxide, and of direct-acting dyestuffs therefrom. (*The Farbenfabriken vorm. Friedrich Bayer & Co.*, Germany.)

7326. JOHN CLAYTON MEWBURN, 55 and 56, Chancery Lane, Middlesex. Improvements in looms for weaving. (*Alexandre Joseph Laval-Charlet*, France.)

7328. JOSEPH JAGGER, 53, Chancery Lane, London. Improvements in looms.

7333. ENOCH OPENSHAW TAYLOR and GEORGE MARSDEN, 45, Southampton Buildings, London. Improvements in pattern lags and pegs for looms.

7334. SAMUEL HERBERT BROOKS and FRANK BARLOW, 5, Market Street, Manchester. Improvements in ring spinning and doubling machinery.

7342. ARCHIBALD THOMSON, 96, Buchanan St., Glasgow. Improvements in driving ropes.

3RD MAY.

7386. RALPH CLEGG, 62, Wellington Place, Longsight, Manchester. Improvements in connection with calenders.

4TH MAY.

7439. FERDINAND ROSSKOTHEN, 18, St. Ann's Street, Manchester. Improvements in machinery or apparatus for winding yarns or threads into "cops" or "pirns."

7446. ADAM ASHWORTH, 8, Quality Court, London. Improvements in the manufacture of felt hats.

7447. DAVID HENRY WILKINSON, 8, Quality Court, London. Improvements in and apparatus for moistening and damping heavy sized warps during the weaving process.*

7455. ALOIS STEINHAUSER, 46, Lincoln's Inn Fields, London. Improvements in shuttle guards for looms.

7460. ELIZA ALLAIN BRAMBLE, York Villa, 110, Manor Road, Stamford Hill, Middlesex. Aiding the threading of sewing-machine needles.

7469. CARL HAASE, Mittweida, Saxony, Germany. Improvements in shuttle guards.

SPECIFICATIONS PUBLISHED.

1888.

5190 BECK (*Carbonnelle*). Jacquard cards, 1s. 3d.
5701 EDWARDS (*Sanz and anr.*). Weaving bags. 8d.
6209 COWBURN AND PECKIE. Looms. 1s. 1d.
7969 JOHNSON. Rotary knitting machines. 11d.
8308 WARRINGTON. Dobbies. 8d.
8395 STOTT (*Whitehead*). Warping and beaming machines. 11d.
8459 CORRIGAN. Winding yarns. 11d.
8615 COCHRANE. Chenille carpets, &c. 6d.
8856 KIDDIER. Knitting machines. 8d.
9135 KERR AND HANDLEY. Calico printing machines. 8d.
10,811 HOLDSWORTH. Jacquard apparatus. 8d.
15,349 HALEY. Carding machines. 6d.
16,713 HEYS. Removing burrs and thistles from wool, &c. 8d.
18,773 FRIST. Linings for bleaching kiers. 6d.

1889.

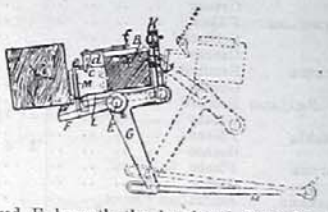
4232 DUERDEN AND CHEETHAM. Loom shuttles. 6d.
4292 BOOCOCK AND BOOCOCK. Spinning and twisting frames. 6d.
4317 HEBDEN. Looms. 8d.

ABSTRACTS OF SPECIFICATIONS.

17,182. December 14, 1887. **Doubling or twisting machines.** C. W. LANCASTER, Willow Iron Works, Accrington.

The cap-bars for the top rollers are supported by screws to adjust the position of the axis when the threads are intact, so that it shall be just out of the vertical plane containing the axis of the lower roller to prevent undue strain being put upon the threads and yet to ensure the immediate descent of the roller along the inclines of the cap-bars on the breakage of one of the component threads. The top roller is grooved near the ends to prevent the threads from slipping off when the frame is not running. [6½d.]

17,185. December 14, 1887. **Loom weft stop-motion.** C. BEDFORD, Wood View Terrace, Carlinghow, Batley, Yorkshire.

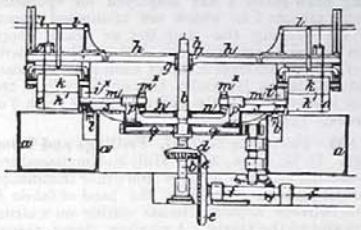


A rod E beneath the lay board B carries projections or bangers F and is rocked on the motion of the lay by means of a bellcrank lever G and rod H hinged at I. The lever G is connected by a rod J with a bellcrank lever K attached to a cranked spring rod L which is in turn fastened to a sliding cam plate M. The latter carries two cams or horns *d*, *e*, the larger *d* serving to raise the weft feelers for the passage of the weft *f*. If the weft fails the feelers fall into a slot in the lay, their tail piece *c* then engaging with the smaller horn *e* and stopping the return of the spring plate M. The rod E is thus made to hold the bangers F in position to operate the stopping mechanism P on the beat-up. [8¼d.]

17,234. December 14, 1887. **Apparatus for making frilling.** C. G. HILL, Arnot Hill, Nottinghamshire.

The apparatus is designed to produce a scolloped frilling with deep indentations by gathering the fabric inward at intervals towards its centre line. A revolving heated drum is formed with a series of grooves each containing two blades or formers which are made by cam action to approach each other and rise and to squeeze the fabric together between them. The fabric is fed in and passes between the drum and a cover plate. A narrow heated roller presses down a cementing thread from a bobbin on to the fabric. [8½d.]

17,254. December 15, 1887. **Dyeing, soaping, washing, and finishing apparatus.** G. W. LIDDIARD, Thornsett, Birch Vale, Derbyshire.



Relates to apparatus for treating hanks of yarn. A series of tanks *a* is arranged in a circle incomplete at one side. A central shaft *b* driven from the shaft *f* by bevels *d* and *e* operates rollers k^1 on shafts *m* though bevels *n* and m^x. Loose upon the shaft *b* is a spur wheel *q* driven slowly from the main shaft *f* by a pinion *r*. To this spur wheel are fixed supports *p* for the shafts *m*, and a circular plate *s* running on rollers *t* in the tanks and supporting the brackets i^x of the radial frames *h*. The latter frame is fixed to a boss *g*, also loose on the central shaft *b*, and carries weighted levers *l*, which press the upper rollers *k* upon the lower rollers k^1. The hanks depend from the lower rollers k^1 and are prevented from moving off by guides *o*. In operation the hanks are rolled by the rollers k^1 and are simultaneously slowly carried round from vat to vat. At the open space in the circle the hanks are removed and replaced by others. [8½d.]

17,260. December 15, 1887. **Ornamenting india-rubber, &c.** J. F. KELLY, 148, Monier Road, Old Ford, Middlesex.

Colouring or ornamenting india-rubber, india-rubber compositions, farina, starch or French chalk, and fabrics for producing a bronzed appearance. The substances or fabrics are treated with a solution of an aniline dye in a mixture of alcohol spirits, nitric acid, wood naphtha, and spirits of turpentine. Rubber is coloured by treating the unvulcanised rubber with the colouring solution. Rubber-coated fabrics may be first coloured and then receive a second coat of rubber before vulcanisation. [6½d. *No Drawings.*]

17,274. December 15, 1887. **Making cotton, &c. bags for seeds, &c.** W. P. THOMPSON, 6, Lord Street, Liverpool.—(*W. H. Kerr; Ilion, New York, U.S.A.*).

The material is fed from a reel between folders or guides which turn it in at the edges. The turned-in edge or hem is sewn by a pair of sewing machines, one of which is left handed, so that the material is fed along the same direction by both. The sewing machines are actuated from the driving-shaft through the counter-shaft, having pinions in gear with pinions on the sewing mechanism shafts. The feeding dogs of the sewing machines are aided by two pairs of feed rollers. One of these upper rollers is operated by an eccentric on the hook-shaft of a sewing machine through the connecting-rod and ratchet gearing, the lower roller, which is covered with soft leather, being operated by the intervening material. The roller of the second pair is operated by a double ratchet, by which in a given time it is rotated twice as fast as the former roller. This becomes necessary as the preceding roller is at rest at intervals, *i.e.*, while a cutter placed immediately behind it is at working cutting off a piece of the material a size to make one bag; the slack of the material meanwhile is taken up by a roller on spring arms. The cutter is actuated by a cam on a shaft, and in connection with it is a presser-plate by which the bag blank is pressed while being cut. A folding-plate operated from the cam on the shaft, doubles the blank and thrusts it up between another pair of sewing machines with heads and needle bars arranged horizontally to feed the material vertically, and seam or sew together the side edges thus completing the bag, the mouth of which is formed by the part first hemmed. The several bags are connected together by chain stitches. The driving-shaft is thrown in and out of gear through a spring sleeve or clutch, having serrations engaging with corresponding ones on the driving-pulley, and provided with a hand-lever, which, while the shaft is in gear, is secured to a spindle by the spring catch. By this arrangement also, the shaft is thrown out of gear in case of undue strain. [1s. 2d.]

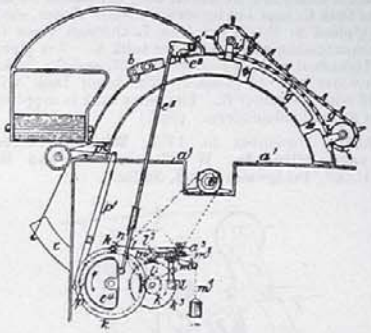
17,291. December 15, 1887. **Gloves.** W. VAUGHAN, Torrington, Devonshire.

Silk, etc., gloves are provided with rows of stitching at the tips of the fingers for the purpose of strengthening the latter. These rows may be straight or curved, and may or may not cross. [6½d.]

17,295. December 16, 1887. **Rollers for drawing-frames, &c.** J. WILCOCK and F. PEARSON, both of Falls of Schuylkill, Philadelphia, U.S.A.

The pressing rollers of the front or drawing-off rollers, are formed each of a shell of paper or other hard substance surrounding a ring of india-rubber placed on the boss of a circular plate, and secured between the latter plate and another plate by screws. The shell is slotted for the passage of the screws, the slots being large enough to give the necessary amount of freedom to the shell. The plate is finally secured to the shaft.

17,322 December 16, 1887. **Willows for cleaning and opening cotton, &c.** J., R., and J. GREENHALGH, Vulcan Iron Works, Oldham.



The cylinder shaft c^1 is mounted below the level of the top edges a^1 of the side frames in order to obtain a larger working surface of the flake or grid. Inclines or guides are formed upon the side frames of the machine, to prevent the fibres from taking between the cylinder and the frame and to direct them towards the middle of the apparatus. To facilitate cleaning, etc., the usual fixed toothed bars above the cylinder are replaced by an endless chain of toothed bars *g*, the ends of which slide on segment plates adjustably fixed to the bends of the frame, and which are operated intermittently by means of an eccentric on the cylinder shaft, which is connected by a rod with a pawl and ratchet arrangements on the axle of the roller *i*. In order that the delivery roller may be lowered towards the cylinder when the delivery door is opened, and *vice versa*, it is mounted on the end of a lever b_1, the other end of which is engaged when the door is closed by a projection or lever c^5 upon the axle of the door, The flake *c* and the delivery door are operated automatically from an intermittently rotating spur wheel *k*, the former by means of a stud *p*, lever p^1, and a cord or chain p^2, or other suitable means, and the latter by means of a cam c^4 and rod c^5. When the apparatus is working the wheel *k* is normally held stationary by means of a stud n_2 upon the end of the weighted lever *l*, which takes into a notch in its edge. The length of time the materials under treatment is regulated by a worm and worm-wheel arrangement *m*, m^3, the worm being driven continuously from the axle of the cylinder and the worm-wheel carrying a stud which takes into a slot in a plate a^3 in which is an adjustable stop. The worm-wheel is carried by one end of the lever *l* and the worm is also intermittently connected by gearing l^2, k^3, k^1, when the spur wheel *k*, k_3, and k^1, being carried by the lever *l*. When the apparatus is working, the wheels *k*, k_1 are disengaged as shown, and the worm and worm-wheel are in gear. When, however, the stud upon the worm-wheel engages with the stop upon the plate a^3 the worm and worm-wheel are partially disengaged and the wheels *k* and k^1 are brought into gear, the rotation of which, forcing the stud n^3 out of the notch in the wheel *k* completes the disengagement of the worm and worm-wheel; m^3, m^4 is a pulley and weighted cord arrangement by which the worm-wheel is rotated into its original position when disengaged from the worm. To facilitate setting, the worm-wheel or the frame a^3 may be provided with a pointer and index plate. [8½d.]

17,466. December 19, 1887. **Azo dyes.** R. WORMS, Leipzig, Saxony.

Relates to the preparation of azo dyes isomeric with those of the Congo red series, and of azo dyes, containing four azo groups, derived from the above isomers of the Congo red series. Dyes of the first kind are prepared by acting on a diamine such as benzidine, tolidine, diamidodiphenols, and their ethers, diamidostilbene, diamidofluorene, naphthylenediamine, etc., or the sulpho acids of these bodies, with one or two molecules of the diazo compounds of numerous monamines and diamines, or their nitro, chloro, or sulpho derivatives. Double tetrazo dyes are obtained by diazotising one molecule of the above azo products, and combining the product with two molecules of amines or phenols, their sulpho or carbo acids. Mixed azo dyes are also obtained when two molecules of different amines, phenols, etc., are employed instead of two molecules of the same amine or phenol, etc. [6½d.]

17,486. December 20, 1887. **Gossamer waterproof fabrics.** A. J. BOULT, 323, High Holborn, London.—(*L. W. Sinsabaugh; Washington, U.S.A.*)

The manufacture of gossamer waterproof fabrics in which the rubber is applied to the fabric in stripes. A length of the fabric to be coated is made into an endless band and passed, by rollers, under a straight edge spreading knife to receive one or more coats as a foundation. The straight edge knife is then removed and a trough knife is arranged in its place. The trough is divided by one or more partitions so as to contain two or more colouring matters, and the bottom of each part is perforated by a series of holes corresponding in size, number and position with the required stripes. The exterior knife edge of the trough is slotted correspondingly to each hole so as to allow a portion of the colouring matter to pass on to the fabric. Where stripes of only one colour are required they may be applied by a serrated straight edge. After the stripes have been applied the fabric is treated with dry farinaceous material and is cleaned with a solution of paraffin in naphtha to render it non-adhesive. The fabric is finally rolled and cured or vulcanised. [8½d.]

17,524. December 20, 1887. **Belt gearing.** S. PITT, Sutton, Surrey.—*J. F. and B. F. Mellor; Adelaide, South Australia.*

The belt is provided with a series of projections and is used in connection with pulleys coated with India-rubber or some similar substance, which will readily take the shape of the projections. When the belt has also to run over a plain pulley it is twisted. [6½d.]

17,533. December 20, 1887. **Sewing machines.** H. H. LAKE, 45, Southampton Buildings, London.—(*H. B. Metcalf; Pawtucket, Rhode Island, U.S.A.*)

The improvements are principally applicable in wax-thread machines such as are described to Specifications No. 1795, A.D. 1878, and No. 262, A.D. 1882, but a take up mechanism is described for use on any sewing machine.

17,583. December 21, 1887. **Azo dyes.** O. IMRAY, 28, Southampton Buildings, London.—(*R. Nietzki; Basle, Switzerland.*)

Relates to the preparation of yellow and brown colouring matters, that can be fixed on metallic mordants, by the action of the diazo compounds of the nitroamines or their sulpho acids upon oxycarbonic acids or their sulpho acids. Salicylic acid and α-oxynaphthoic acid are most suitable, the former yielding yellow to orange and the latter dark brown colouring matters. For example metanitraniline dissolved in hydrochloric acid is diazotised by addition of sodium nitrite. The product is then added to a solution of salicylic acid and calcined soda. The colouring matter precipitates and is completely separated by addition of common salt. [6½d.]

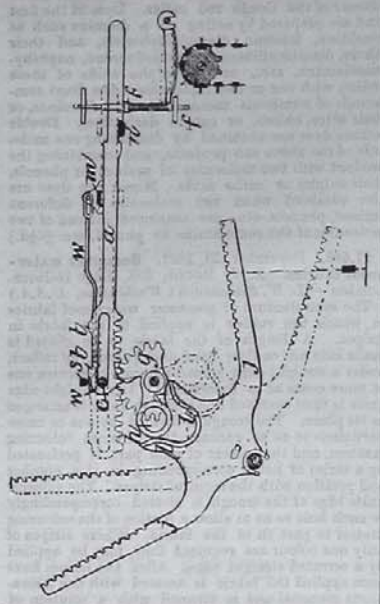
17,586. December 21, 1887. **Mordants.** C. D. ABEL, 28, Southampton Buildings, London.—(*R. Hoepp and Co., Oestrich, Rheinigen, Germany.*)

Consists in the use in dyeing and printing of chromium fluoride, chromium oxyfluoride—that is combinations of chromium fluoride with chromium oxide—and the double salts of chromium fluoride with alkaline fluorides, nitrates, chlorides or sulphites, such as:—chromium fluoride with potassium, sodium or ammodium fluoride, or with the chloride, or nitrate or sulphite of potassium, sodium or ammonium. The method of using these compounds is the same as that generally employed for chromium mordants, chromium oxide easily separating on heating. [6½d.]

17,591. December 22, 1887. **Loom dobby.** C. BEDFORD, Wood View Terrace, Carlinghow, Batley, Yorkshire.

The slotted draw hooks *a* are mounted on a stud *c*, and pass through slotted needles *f* which are acted on in the ordinary manner. The hooks are thus set to be moved by one or other of the knives

m, n, and operate the heald levers j through racks and toothed segments g, the latter being formed with tail pieces h, working between claws l on the levers. The parts are shaped to effect a locking action, which is further ensured by a retaining bar s forced



down by a spring and engaging with projections t, the bar being raised at intervals by a wedge end bar w operated from the sliding block of the knife m. The bar w is forced on the top of the bar a when not under the retaining bar. The dobby may be made double acting by employing two hooks a to each rack, such hooks being set by separate needles and operated by three knives. [8½d.]

17,611. December 22, 1887, **Carding machines.** W. H. Beck, 115, Cannon-street, London.—*(A. Rivret and H. Honoré-Colson; both of Tourcoing, France.)*

Apparatus for use in carding machines for removing the thistles from wool, &c., previous to the carding operation. The wool is fed by an apron and rollers to a revolving toothed roller by which it is carried round beneath blades. Between the latter it is acted on by a beater-roller revolving at great speed in the opposite direction to the roller C, the thistles being driven against the blade E^1 and thence into a box. The various parts are made adjustable, the beater and blades being also arranged to be turned over to allow of access to the roller C. In some cases the blade E is dispensed with. [11½d.]

17,620. December 22, 1887. **Twist lace.** H. S. Chopper and T. G. Dexter, both of Nottingham.

In order to prevent the lace from shrinking between the point bars and the porcupine rollers, means are provided for guiding the selvages. An endless wire passing over guide-rollers and the porcupine roller is woven as a selvage thread into the fabric and is held laterally by a guide. A knife cuts the fabric off the wire before it reaches the roller. As a modification, a piece of wire, gut, thread, or other convenient substance, terminating above the guide, is held stationary in the groove, or an ordinary selvage thread is used and wound up with the lace. [8½d.]

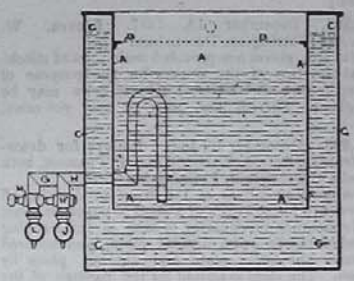
17,640. December 22, 1887. **Stands or holders and transit-frames for plush, &c.** S. C. Lister and J. Reixach, Manningham Mills, Bradford, Yorkshire.

The transit-frame, formed with one end fixed and the other adjustable longitudinally by a tension screw, is pivoted between supporting screws carried by the uprights of a light tubular stand. [8½d.]

17,652. December 22, 1887. **Preparing boxes or frames for flax.** J. R. Garratt, Rialto, Hollywood, Down, and W. Scott, 76, Agnes-street, Belfast.

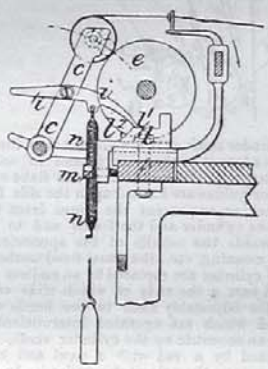
In place of the usual rubbers, the drawing rollers are cleared by means of metal scrapers pressed against them by spiral springs, and the dust from the upper roller is collected in a pan, that from the lower roller and from the gills being collected in a pan placed beneath, which may contain a little water. In case flannel rubbers are used, they are formed of strips of flannel secured at one end to a block and carrying at the other a weight by which they are kept stretched upon the rollers. [8½d.]

17,653. December 23, 1887. **Oiling and moistening rags.** J. W. Vine, Queen's Square, W. Fox, Cardigan Villas, Headingley, and B. Smith, Basinghall-street, all of Leeds.



Rags are oiled and moistened previous to being fed into the rag-tearing machine by oil, or a mixture of oil and water or other liquid, issuing from a number of nozzles in a horizontal tube J; or by water, etc., from nozzles in a tube L. Oil is supplied to the tube J through pipes H communicating with a tank A immersed in water, etc., contained in an outer tank C, kept hot by steam, etc. Water, etc., is supplied to the tubes J or L through pipes G communicating with the outer tank C. The pipes are furnished with stop-cocks H^1, M, and the tanks with water and oil guages. The inner tank A is fitted with a strainer B. The outer tank is supplied from a small side cistern. [9½d.]

17,661. December 23, 1887. **Winding-frames for yarn, wire, &c.** W. T. Glover, and E. Whalley, Bridgwater-street, Salford.



The pivoted frame c carrying the bobbin, carries also a pivoted lever i which is drawn downwards by an adjustable spring n, or a weight and rests at the end upon an adjustable block l. When the winding takes place the end of the lever i rests upon the horizontal part l^1 of the block l which is adjusted by means of the screw and nut arrangement m so that when the desired amount of yarn, etc., has been wound upon the bobbin, the end of the lever i reaches the top of the incline l^2 and is forced down the same by the spring or weight, thereby raising the frame c and disengaging the bobbin from the driving drum c. Instead of the driving drum c two discs engaging with the collars which hold the bobbin may be used. The bobbin may be mounted between two centres, one of which is rotated and the other is acted upon by a spring and is movable longitudinally to facilitate the fixing and removal of the bobbin. [8½d.]

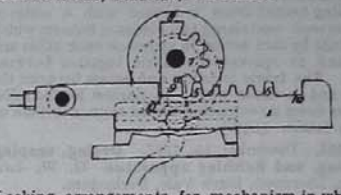
17,683. December 23, 1887. **Sewing Needle.** T. Harper, Phœnix Needle Works, Webheath, Redditch.

The head of the needle is made much longer than usual to enable the needle to be pushed instead of pulled past its point of greatest resistance. Along each side of this elongated head a groove is formed to receive the thread and thus decrease the resistance offered by the material being sown. [6½d.]

17,732. December 24, 1887. **Substitute for india-rubber.** H. M. Steinthal, Scarborough, Yorkshire.

Linseed oil is maintained at a temperature of about 600 degs. F. for about six weeks, it is then cooled and re-heated up to about 200 degs. F. and is then incorporated with a mixture of caoutchine, flowers of sulphur, and finely powdered amber. In the Provisional Specification it is stated that the substitute is formed by the mixture of oxidized vegetable oils with a non-metallic substance. [4½d.]

17,782. December 27, 1887. **Drop-box and shedding mechanism of looms.** G. H. Hodgson, Bee Hive Works, Bradford, Yorkshire.



Locking arrangements for mechanism in which sliding draw-racks 1 are employed for operating segment pinions 7 to which are connected eccentrics for working the drop-box or heald levers. When the racks arrive at one end of their travel one of the flat surfaces 9, 9a, of each pinion 7 bears on its rack-bar at 10, whilst the outer tooth of the pinion rests on one of the outer enlarged teeth 5 of the rack. [8½d.]

17,805. December 27, 1887. **Frillings and Trimmings.** C. G. Hill, Arnot Hill, Nottinghamshire.

Attaching beads to frillings and other trimmings. A thread laid zig-zag across the band of fabric is passed between adjacent beads strung on a string lengthwise of the fabric. A rotating sleeve carries a bobbin, and an axle rotating in unison ends in a spiral, through which passes a thread. The beads on their string are fed through a tube. A thread from the bobbin laps around the lower trough-like end of the tube, and passes between the beads, which are carried forward by the spiral to heated pressing rollers. By means of a cementing thread the beads and threads are secured to the fabric. In some cases the fabric may be dispensed with. [8½d.]

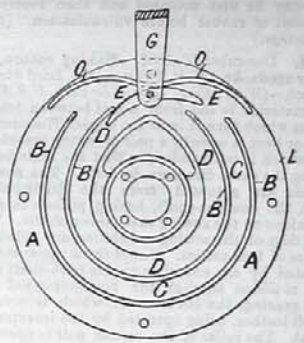
17,819. December 28, 1887. **Hoist-well door mechanism.** J., J., and T. Barker, all of Park-street Iron Works, Oldham, Lancashire.

Relates to the class of doors which are opened by the attendant within the cage, and consists in providing them with locking mechanism which is only released when the cage is at the floor and in means for keeping the doors open while the cage is standing. [1s. 4d.]

17,853. December 28, 1887. **Gloves and fabrics therefor.** J. Upsdale, 4, Falcon Avenue, Falcon-street, London.

The part of the fabric to form the tips of the fingers is thickened during the process of manufacture by laying the threads over or under, or over and under, more needles than is done when forming the remainder of the fingers and the body of the glove. [8½d.]

17,874. December 29, 1887. **Loom Shedding tappets.** S. F. Armitage, Farnworth, near Bolton, Lancashire.



Scroll tappets for operating matting motions for producing matting or spotted effects on a twill or other ground, and for weaving the same number of picks to the round as the ordinary tappets are laid for. On the tappet shaft and on the side of each ordinary tappet is mounted a scroll tappet L, consisting of a face-plate A, formed with projections B. In the spaces C and D slides a half-moon piece E attached to the treadle-lever G. An undulated projection O guides the piece E alternately into the spaces C and D to raise and lower the lever G. [8½d.]

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