disposable balance is £972. The capital employed here is £48,542 shares and £35,760 loan, the plant value standing at £69,254, and the number of spindles 27,648 twist and 56,940 weft. The shares are £4 10s. in amount, with £3 10s. per share paid, and in the latest official list are quoted "32s. 6d. discount."

SHAW SPINNING COMPANY, SHAW.—Stock was taken on Saturday, and a profit of £1,244 is officially announced. It is proposed to pay a dividend of 1s. 6d. per share, or 8½ per cent To reserve fund £750 will be added, making it £2,020. The capital employed here is £49,000 share and £22,181 loan, the value of the plant standing at £56,599, and the number of spindles 30,670 twist and 39,330 weft. The shares are £5 in amount, with £3 16s. per share paid, and are quoted officially—"Sellers 8s. dis."

CENTRAL MILL COMPANY, OLDHAM.—The profit will allow of a dividend of 1s. 6d. per share or 10 per cent., and also enable the directors to take out of trade £800 towards the cost of the new Witter sprinklers, which have been erected at the above mill for the prevention of fires. The capital employed here is £30,000 shares and £13,901 loan, the plant value standing at £30,854, and there are 24,108 twist and 31,688 weft spindles. The shares are £5 in amount with £3 per share paid, and are quoted, "sellers, 16s. 6d. premium."

EMPIRE SPINNING COMPANY, ROYTON.—The statutory meeting was held on Saturday, about 40 of the shareholders being present. Mr. James Chadwick presided. The report showed a profit of £732 2s. 10d. on the past three months' working, which, after paying a dividend of 1s. per share or 10 per cent., would also enable the directors to carry forward as a credit balance, £232 2s. 10d. On fixed stock account, £5,668 11s. 4d. had been expended in alterations to machinery and furnishings, new economisers, new blowing room, and driving arrangements. The fixed stock now stands at £40,332 2s. 8d.

LIVINGSTONE SPINNING COMPANY, LEES.—The quarterly meeting was held on Saturday. Mr. Thomas H. Smethurst presided, and said that since their last meeting one of their mills, the Lydgate mill, had been burnt down, and they had only issued on this occasion a cash statement. To do otherwise under the circumstances he said was impossible with any degree of accuracy. He was able, however, to say they had settled with the insurance companies, and had obtained £8,081, and all the salvage. The mill stood in their books at £11,500. After some discussion, during which both directors and shareholders expressed a unanimous opinion not to rebuild the Lydgate Mill, the report and statement was passed.

NEW COMPANIES.

LINCOLN INCORPORATED CHAMBER OF COMMERCE.

Registered by Charles Doubble, 14, Serjeants'-inn. Object, to promote and protect the home colonial and foreign trade and commerce and the manufactures of the United Kingdom, and in particular the trade commerce and manufactures of the city of Lincoln and neighbourhood. The liability of members is limited to £2.

THE REAL INDIA MADRAS HANDKERCHIEF COMPANY, LIMITED.

Registered by Williamson, Hill and Co., 13, Sherborne-lane, E.C., with a capital of £6 000 in £10 shares. Object, to acquire the stock-in-trade of the business carried on by A. C. Ashby, and to conduct the business of shipping and general commission agents. There shall not be less than three nor more than five directors. The first are M. Ashby, R. Ashby, and A. C. Ashby.

G. AND G. W. SKELTON, LIMITED.

Registered by Chester and Co., 30, Bedford-row, W.C., with a capital of £10,000 in £10 shares. Object, to acquire the business of oil manufacturers, merchants, tallow-melters and refiners, carried on at 15, Quay-street, Manchester, by G. and G. W. Skelton. The number of directors shall not be less than three nor more than five. The first to be appointed by the subscribers to the memorandum of association. Qualification, one share. Remuneration to be determined in general meeting.

THE OXFORD DOWN SHEEP BREEDERS' ASSOCIATION.

Registered by R. Jordan, 120, Chancery-lane, W.C. Object, the encouragement of the breeding of Oxford down sheep at home and abroad, and the maintenance of the purity of the breed.

THE SABDEN MILL COMPANY, LIMITED.

Registered by R. Jordan, 120, Chancery-lane, W.C., with a capital of £2,000 in £10 shares. Object, to acquire the business carried on by the Sabden Weaving Company, Limited, at Sabden, near Whalley, Lancashire. The regulations of Table A in the first schedule of the Companies' Act, 1862, with slight modifications, apply.

WOOTON, MOSLEY AND CLIFTON, LIMITED.

Registered by R. Jordan, 120, Chancery-lane, W.C., with a capital of £50,000, in £10 shares. Object, to acquire the lace-making and auxiliary businesses carried on by A. T. Wootton and Co., in Nottingham, and by A. Mosley and Co., at Kimberley, Nottinghamshire. First Subscribers:—

	Shares.
A. T. Wootton, Nuttall	1
R. Dikin, The Park, Nottingham	1
A. Mosley, Kimberley, Nottingham	1
W. Clifton, Nottingham	1
G. Clifton, Nottingham	1
H. Chambers, Kimberley, Nottingham	1
J. McCraith, Nottingham	1

There shall not be less than three nor more than seven directors. The first are A. T. Wootton, A. Mosley and W. Clifton. Qualification £250 stock. Remuneration to be determined in general meeting.

Gazette News.

PARTNERSHIPS DISSOLVED.

W. Briggs and C. Cronshaw, Marsden-square and Cannon-street, Manchester, manufacturers of transferring design for embroidery and merchants.

H. Lightbown, E. Leech, and J. Catlow, Darwen, cotton manufacturers; as regards J. Catlow.

W. D. Lawbon, J. Kerr, and G. Kerr, silk manufacturers, Macclesfield.

RECEIVING ORDERS.

D. Padgett, Huddersfield, roller coverer.

T. Bingley, Leeds, cloth merchant.

J. T. Harris, and T. H. Turnpenny, trimming warehousemen, Watling-street, London.

G. and C. J. Webster, woollen manufacturers, Morley and Leeds.

J. Woollatt, lace manufacturer, Nottingham.

ADJUDICATIONS.

J. T. Harris and T. H. Turnpenny, Watling-street, London, trimming warehousemen.

H. Pickles, Bradford, reed manufacturer.

Patents.

APPLICATION FOR PATENTS.

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

Where Complete Specification accompanies Application an asterisk is suffixed.

27TH MAY.

8726. WILLIAM GOULDEN THOMPSON, Tonge Villa, Middleton, near Manchester. The production of new azo-tetrazo-nitro and nitroso compounds.

8732. WILLIAM GOULDEN THOMPSON, Tonge, Villa, Middleton, near Manchester. The production of compounds produced by the action of oxidising agents on phenols, naphthylamine, and on sulphoacids.

8739. ARTHUR GARNER, 323, High Holborn, Middlesex. Improvements in or relating to machines for winding yarns on to bobbins.

8741. WILLIAM PHILLIPS THOMPSON, 6, Lord-st., Liverpool. Improvements in the manufacture of picric acid and certain alkaline or alkaline-earthy picrates. (*Paul Magnier*, France.)

8750. BENJAMIN WILLCOX, 47, Lincoln's Inn Fields, London. Improvements in the manufacture of basic colouring matter. (*The Farbenfabriken vormals Friedrich Bayer and Company*, Germany.)

8758. CHARLES ARTHUR COX and FREDERIC GEORGE SISON HAM, 26, St. Helen's-road, Swansea. Driving belts and hose pipes.

8768. ISRAEL GOLDSTEIN, 8, Quality Court, London. Improvements in the manufacture of waterproof garments.

8788. WILLIAM TERTIUS ROWLETT, 24, Southampton Buildings, London. Improvements in hosiery fabrics and in machinery used in their manufacture.

8791. JOHN BRADBURNE DODDS and JOHN REED FOTHERGILL, 46, Lincoln's Inn Fields, London. The manufacture and application of a certain fluid preparation for preventing or lessening corrosion and pitting in steam boilers.

28TH MAY.

8826. SAMUEL DRACUP ROBINSON, CHARLES HENRY DRACUP, and THORNTON DRACUP, 20, Charles-st., Bradford, Yorkshire. Improvements in or appertaining to the harness of jacquards.

8881. ARTHUR FREDERICK LONGDON, 24, Southampton Buildings, London. Improvement in knitting machines in surgical elastic work.

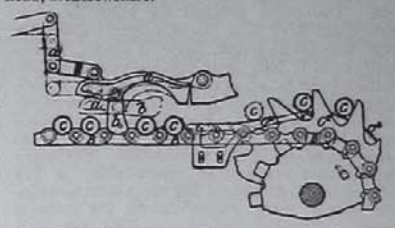
ABSTRACT OF SPECIFICATIONS.

801. January 18, 1888. **Twist Lace Fabrics.** J. and J. SMITH, De Ligne Works, Radford, Nottingham.

846. January 19, 1888. **"Lamb" Knitting Machines.** L. A. GROTH, 3, Tokenhouse Buildings, London.—(*G. F. Grosser, Markersdorf, near Burgstadt, Germany.*)

The cam has one corner detachable, so that it operates upon the needles when moving in one direction only. When it is moving in the opposite direction, the needles act upon the surface and lift the cam against the action of a spring. [6½d.]

859. January 19, 1888. **Cloth Steaming Machines.** A. STRUTHERS, South Arthurlie Print Works, Barrhead, Renfrewshire.

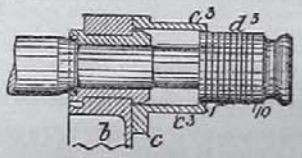


Consists of (1) a stop-motion, operated on misplacement of the bars used for traversing the folds of fabric through the steaming chamber, and (2) an alarm to indicate when the folds are made too long.

(1.) *Stop-motion.*—The bars or tubes C are fed over plates or brackets C^{11}, C^{111} to the travelling chain B by a star wheel C^{2}. When one is misplaced, the catch *b* drops and moves the system of levers *a* from the position shown in dotted lines to that in full lines. This releases two catches to shut off the supply of steam to the engine and to operate the brake or stopping mechanism respectively.

(2.) *Alarm.*—The alarm is operated on the completion of an electric circuit, which is effected by a fold of the fabric falling upon a plate or tray and lifting a lever into contact with the terminals. [8½d.]

877. January 20, 1888. **Carding Engines.** G. and E. ASHWORTH, Moss Brook Works, Collyhurst, Manchester.



Cylinders, adjusting.—Relates particularly to the main cylinders of carding-engines provided with endless chains of flats. The pedestals of the cylinder shaft are provided with projections, rings, or parts, which are bored, turned, or faced, and prepared to serve as fixed testing points. In conjunction with these is employed a gauge prepared to correctly fit on or against the shaft or a collar or part thereon, and formed with testing surfaces which may vary in diameter to a known extent, so that the degree of variation of the shaft from its true position can be estimated. The figure shows a fixed testing ring or shell c^3 formed on a plate c^4 bolted to the pedestal *b*. The gauge d^3 consists of ten rings, increasing regularly in diameter from 1 to 10 and is moved on the shaft until stopped by the ring c^3. If the rings 1 and 10 differ in diameter by one-fiftieth of an inch, the gauge would measure a variation of one-thousandth of an inch. Several modifications are described. Suitable means are provided whereby the required adjustment of the shaft can be accurately made. [8½d.]

892. January 20, 1888. **Flyer Spindles.** A. H. BRIGGS, Briggella Mills, Bradford Yorkshire.

To give steadiness to the spindle, it is made shorter than is usual, and is supported in a socket enclosed in another socket secured to the spindle rail. The inner socket is perforated to admit the oil from the outer socket, which serves as a reservoir, and it is connected to the latter by feather and groove arrangements. [8½d.]

902. January 20, 1888. **Carpets, and Looms therefor.** W. C. GRAY and W. TANNAHILL, both of Newton Carpet Works, Ayrshire.

Carpets.—Imitation "Brussels" carpets are made with a ribbed or corded effect across the web by employing a fine catch warp alternating with a thick plied coloured warp, the latter partly lying in the body of the web and partly forming pattern with two, three, or more plied cords of coloured weft.

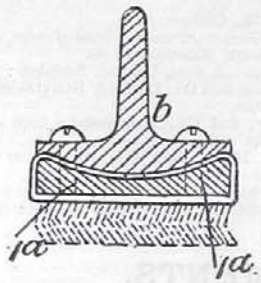
Looms.—The two warps are let off from separate beams, operated through worm gearing and shafts from ratchets. The pawl levers are worked by levers and rods from a lever connected by an arm with the lay sword. The warps pass over tightening bars mounted on weighted levers, acted on through rods by the levers. The warps are operated by a single-eyed harness jacquard one half of each card and of the pattern needles and lifting wires actuating the fine catch warp to make cloth, and the other half the thick plied warp to make pattern with the weft across the carpet. The pattern half of each card is punched with every colour except the one being thrown. [8½d.]

908. January 20, 1888. **Jacquard card punching machines, and draught plates therefor.** P. AMJORN, COMPTE DE SPARRE, 1, Boulevard St. Denis, Paris.

Card punching machine.—In the machine described in Specification No. 1,344, A.D. 1883, the power for effecting the impression of the design upon the check paper is obtained from the main shaft through worm and bevel gearing, and an eccentric carrying a holder for the style frame. The matrix into which the punches pass is worked up and down from two eccentrics made fast with the main shaft by clutches.

Preparing draught plates.—The coated zinc plate is carried on a table bearing a sliding frame on which a keyboard is mounted. The keys are mounted on two pawl-spindles, and arranged so that each may be depressed more than the next of the set. The apparatus is thus advanced along two racks, and is held in position by the pawls. A style is arranged to slide on the straight part of a graduated sector. The places where a certain type of draughting is required in the fabric being indicated by circumference lines on the plate, the sector is inclined to suit the line of points required. A diagonal line is then drawn, a key is pressed, and the frame displaced a certain distance, and a second line is drawn, and so on until the space is filled up. When all the other places are thus filled up, the plate is removed and etched or mordanted, and then placed in the punching machine. In some cases draught plates composed of type may be employed. [11½d.]

952. January 21, 1888. **Carding-engines.** R. TATHAM, Moss-lane Iron Works, Rochdale.



Flats.—The clothing is folded partially or entirely round the flat and secured by stitching, by clamps or rivets, or by being forced by wedges into grooves formed in the flat, the wedges being inserted either from the front or the back thereof. To prevent the clothing from slipping the flat may be provided with teeth, hooks or serrations, its face may be covered with india-rubber, leather, paper, &c., and any suitable glue or cement may also be used for this purpose. The flat may be formed in two parts as shown in the drawing, the parts 1^a having a concave or grooved side and being entirely enveloped by the clothing, which is then stretched by forcing upon it the part *b* and securing the two parts of the flat together by rivets. The clothing may also be made in the form of an endless band which is sprung on to the flat and further secured or not, as desired. [8½d.]

955. January 21, 1888. **Sewing Machines.** C. RAINEY, 67, Grove Hill-road, Camberwell, S.E.

Relates to the bobbin-winder.

960. January 21, 1888. **Thread-spooling machines.** W. and D. MCGEE, Albion Works, Paisley.

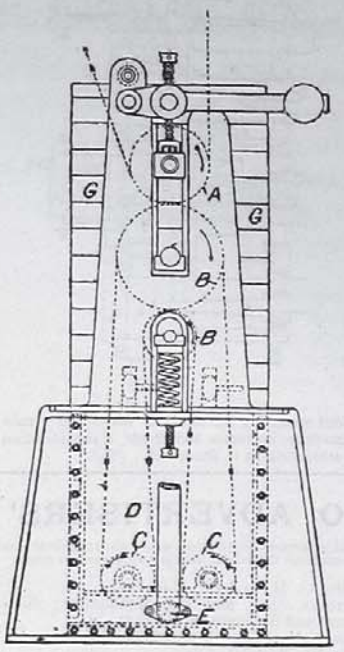
Traverse Mechanism.—The traverse is regulated by two coaxial intermittently rotating pinions which are gradually separated to increase the traverse.

Stop-motions.—An arrangement for stopping the operation of the shaper when the spool becomes filled is described in the Provisional Specification. [8½d.]

967. January 21, 1888. **India-rubber composition.** A. M. WOOD, 13, Delahay-street, Westminster.

Consisting of a composition of whalebone, asbestos fibre and powder, earth, wax, carbon, sulphur and para rubber for preparing rubber sheet or goods such as "glands or packing for steam engines, pumps and the like," and for making vulcanite, ebonite, etc. Various "sponge" compositions contain some or all of the following ingredients: alum, tunstate of soda, camphor, borax, lamp-black, ammonium chloride and carbonate, para rubber and sulphur. The sponge is adapted for boats, canoes, and the like to resist the impact of shot. [4½d.]

988. January 23, 1888. **Bleaching and washing.** A. MCNAB, Midtownfield Bleach Works, Renfrewshire.



Relates to a method of and appartus for effecting at one operation the boiling and bleaching or washing of fabrics. The fabric, after the usual preliminary washing with water and steaming or boiling in a kier, is led, as shown, in rope form between the rollers A, B, and then round one of the rollers C immersed in the liquor in the trough D which is heated by steam pipes E. From the roller C the fabric passes between the expressing rollers B, B, thence down under the other roller C, and up again between the expressing rollers, and so on, from one end of the machine to the other, finally leaving the machine as shown. The rollers are enclosed by a casing G, provided with passages for the entrance and exit of the material, and with an exhaust apparatus for withdrawing the steam produced. Subsequently the fabric is steamed and drained in a kier, washed in an ordinary machine, and is then ready for the usual chloring and scouring processes. [8½d.]

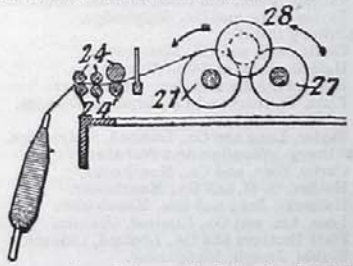
989. January 23, 1888. **Rolling-boards for piece-goods.** C. H. PRIESTLEY, Laisterdyke, Yorkshire.

Hollow foundations with rounded edges are made of papier-mache, and the ends may be filled in with blocks of wood having projecting portions of the thickness of ordinary rolling-boards. [8½d.]

1019. January 23, 1888. **Sewing machines.** J. J. ROBINSON and E. HANFF, 16, Norman's Buildings, Old Street, Middlesex.

Relates to chain stitching.

1022. January 23, 1888. **Spinning, &c.** R. TATHAM, Moss Lane Iron Works, Rochdale.



In cases where it is required to spin direct from the condenser carding engine, the condenser slivers, instead of being received on long "condenser bobbins," are wound on bobbins, spindles, spools, or tubes, or into cops, &c., either singly or two or several together. Arrangements are described and illustrated for winding the sliver as described, said slivers being consolidated if desired by means of rubbing leathers, twist straps or pressers, and a false twist may be put into them by means of a flyer or cap, a revolving tube or a revolving tube and flyer, and to facilitate unwinding a crossing motion may be employed for guiding the sliver while being wound. The drawing represents the bobbins 28 so produced supported upon drums 27 behind the drawing rollers 24 of a mule. By this invention a broken sliver may be "pieced" or an empty bobbin, &c. replaced without stopping the spinning machine. [8½d.]

1040. January 24, 1888. **Looms.** J. IRVING, 5, York-street, Barnsley, Yorkshire,

Suitably placed mirrors are arranged for examining the underside of the cloth. [4½d. *No Drawings.*]

1043. January 24, 1888. **Loom dobbies.** J. IRVING, 5, York-street, Barnsley, Yorkshire.

The heal levers carry notched rods which are set, to be operated or not by a vertically moving knife, by the action of pattern cards and spring needles. [6½d.]

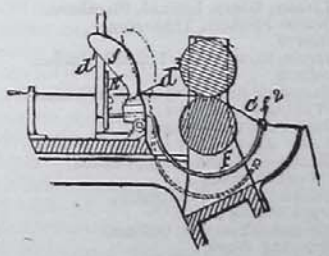
1074. January 24, 1888. **Warp knitting machines.** B. J. B. MILLS, 23, Southampton Buildings, London.—(*Messrs. Beer and Co.; Liegnitz, Germany.*)

In double rib machines the needle bars are made to approach and recede from each other during the working of the machine to give a wavy effect to the fabric. If points are substituted for one set of needles, a fabric will be produced with ribs on one face and a terry pile on the other face of varying length. These points may be provided with small cutters to form a cut pile surface. [11½d.]

1075. January 24, 1888. **Felt hats.** W. MORGAN, 2, Foster-lane, Cheapside, London.

Finishing felt hoods and hats so as to obtain a better surface and lustre and to render the same less liable to injury by rain. The hat bodies in the undyed state are moistened on one side on which a nap is then formed; the bodies are then gradually dried and the nap cut to the required length. The hat bodies are next mounted on a block and veloured, sponged, ironed, and (or) hot pressed. The hat bodies are then turned inside out, folded in half and pressed in a screw-press, and while so compressed are immersed in a hot-water bath which after some time is allowed to cool and is then reheated, the hats in the meantime being removed and refolded to prevent creasing. The hat bodies are next dyed, dried, brushed, veloured hot, sponged, ironed, turned inside out, steamed in a suitable chamber (two forms of which are described), blocked, dried, veloured hot and pressed in a warm dish. When a very high lustre is required, the ironing and pressing before steaming are dispensed with. To stain the crowns and fix and compress the brims when on their own block, two hats with their finished surfaces together are placed on a block and covered with a perforated metal cap having a rim which may be fastened down on the brims. The hats are then immersed in the bath and treated as before described. [8½d.]

1080. January 24, 1888. **Spinning, &c.** H. H. LAKE, Southampton Buildings, London.—(*W. C. Sanford; Amsterdam, New York, U.S.A.*)



On breakage of the yarn in front of the feed rollers the part behind is nipped to prevent further feeding. A light curved lever F, supported normally by the yarn C passing under a hooked part f^2, is carried by a nearly vertical tumbler arm *f*; the rear end *f*¹ of the lever entering a slot in a disc E pivoted at d^2 to a plate d^1 slotted for the passage of the yarn. The latter, on breakage, is nipped between the overlapping blunt edges of the slot in the plate d^1 and a wide notch formed in the disc E; the tumbler *f* assisting, after passing the vertical in turning the disc into the nipping position. [8½d.]

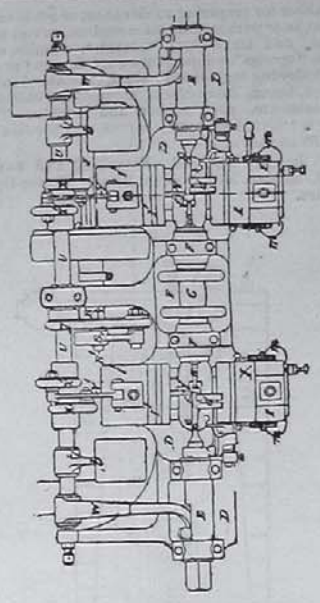
1110. January 25, 1888. **Ring spindles.** E. LEAK, Trenton, New Jersey, U.S.A., and J. B. WIL-

son, 4, Hope View, Derby-road, Fallowfield, Manchester.

Travellers.—These are made of horn, bone, ivory, celluloid, xylonite, vulcanized fibre, cat-gut, or other similar materials, or of aluminium or its alloys. The travellers may be used in conjunction with ordinary metal rings of porcelain or glass. [8½d. *Drawings to Specification.*]

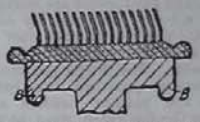
1111. January 25, 1888. **Spool finishing machine.** M. H. White, Paisley.

On the horizontal bed D are mounted the fixed poppet heads E with longitudinal sliding spindles, and a head stock F with a revolving spindle having a double flanged pulley G at its centre and a fluted mandrel at each end. Two spools can thus be operated on at once. The cutting tools are of the usual kind and are carried on four slides I, I_1, moveable at right angles to the bed D. The sliding spindles are worked from a rock shaft U by levers W in the usual manner. The four slides I, I^1, are for the major portion of their travel, also worked from the shaft U by the ordinary levers and rods X, Y, and X^1, Y^1. The cutters of the front slides I begin to act before those of the back ones, and the cutting is continued through the action of the rod Y until such action is stopped by a device which releases the rod from the slide, thereupon allowing the latter to return by the action of hanging weights *m*. The finishing cuts are performed by the back cutters, weighted levers *b* ensuring that such cutters shall always come to a dead stop at the same point. The rough blocks are fed to the centre points *e* and mandrels H by hoppers *d* operated from sliding spindles, the finished spools being knocked off by drop levers *f* also operated from the spindles. The shaft U is worked from a belt pulley shaft J through the crank disc R, connecting rod S, and lever T, a clutch or equivalent for starting and stopping the machine being provided. The rod S is provided with a slot in which the crank pin R^1 may rotate



without operating the shaft U when the strain on the machine becomes too great; a modification of this arrangement is described. [8½d.]

1121. January 25, 1888. **Carding engines.** E. Tweedale, Globe Works, Accrington.



Flats.—The edges of the foundation and of the flat are gripped by strips of metal, which are suitably bent, and may have serrated edges and be perforated to assist their gripping and holding power. The drawing shows the card fillet held by metal strips B, which at their lower edges, are bent over ribs formed on the under surface of the flat. Various arrangements of jaws and dies are described whereby all the fillets may be cut to the same width, and the metal strips may be suitably bent, secured to the edges of the fillet, and applied to the flat. [11½d.]

1122. January 25, 1888. **Gloves.** W. A. Campbell and G. G. Pomphrey, 137, Ingram-street, Glasgow.

The gloves are made with the tips of the fingers and thumbs of thicker or heavier material than the rest of the gloves. The gloves may be woven or knitted in a hosiery frame, the thickening of the tips being produced by the introduction of "splicing" at those parts. When weaving gloves in looms, the glove-shaped portions are cut out from fabric formed with thickened portions in a loom, such portions being sewn together to form the glove. [6½d. *No Drawings.*]

1136. January 25, 1888. **Belt fastener.** T. C. Sargent, Cattle Market-road, Northampton.

The ends of the belt are gripped between the side of a frame and a serrated cam journalled therein. [6½d.]

INDEX TO ADVERTISERS' NAMES.

The Roman numerals after the names refer to the pages of the Advertisement Supplement, unless when the cover is mentioned. In the case of Advertisements not appearing in the current issue, the date of their last appearance is given.

CLASSIFIED INDEX TO ADVERTISEMENTS.

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