

## ABSTRACTS OF SPECIFICATIONS.

**17,874.** November 9th, 1889. **Folding and Measuring Fabrics.** J. COOPER, 90, Rochdale-road, Hurly, Lancashire.

The grippers at each side of the folding table are carried by bell-crank levers engaging with slots in levers, which are pivoted to adjustable radial arms and are actuated by a bowl on the knife-carrying lever and by springs attached to brackets on the table. The other end of the springs is attached to a chain passing around a bowl on the pivot stud and secured at its end to a lever. The table is mounted on uprights, sustained by a balance weight. It is adjusted by set screws, working in cross-bars, and is fixed in position by other bolts. Springs also assist in actuating the folding knives. 84d. *Drawings.*

**17,901.** November 9th, 1889. **Knitting.** T. J. and J. W. KIDDIE, all of Bell-street Works, Arkwright-street, Nottingham.

**FIG. 1.** *Straight-bar machines.—Fashioning.*—For widening rib fabrics, the points *s* for shifting loops on the machine needles *Y* are put out of action by the lever *st*, and the filling-up points *a* are moved up and down, and rocked independently of the ordinary cover points *bc* for the frame needles *Z*. In the construction shown, the shaft *a* is moved up and down, to enter the loops at the back of the frame needles *Z*, by a rocking shaft *d*, and is rocked on a block *g*, pivoted to the cover point brass *h*, by another lever *et* and rocking shaft *e*, both shafts *d* and *e* being operated by levers from the cam-shaft. Instead of rocking the points *a* in this manner, to cause them to pass their loops from the back to the front, the frame needle bar may be rocked from the cam-shaft. In each case the filling-up points descend after the cover-points have taken loops from some of the frame needles, and the frame needles have been brought into a position to allow the cover points to be shifted sidewise. 84d.

**17,957.** November 14th, 1889. **Dyes.** O. IMRAY, 28, Southampton Buildings, Chancery-lane, London.—(*The Actien Gesellschaft Fur Anilin-Fabrikation, Berlin*)

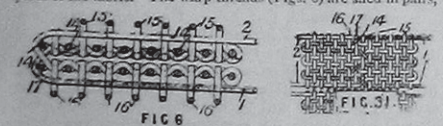
*Aso dyes.*—Relates to the orange yellow dye-stuffs described in Specifications No. 15,256, A.D. 1885, and No. 2,213, A.D. 1886, which are combinations of benzidine and toluidine with beta-naphthylamine disulpho acid *R* and phenols. Consists in alkylating the phenol residue in these dye-stuffs for the purpose of preventing or diminishing the effect of alkalies thereon in dyeing. For example, the dye-stuff dissolved in hot water is treated with rather more than sufficient caustic soda to form a neutral salt, and after addition of an excess of ethyl bromide, or methyl iodide, and alcohol, the mixture is heated on a water bath with a reflux condenser for 5-6 hours. The alcohol is then distilled off, and the dye-stuff is precipitated by common salt. 44d.

**17,971.** November 14th, 1889. **Dyes.** H. H. LAKE, 45, Southampton Buildings, Middlesex.—(*A. Leonhardt and Co., Mulheim, near Frankfurt-on-the-Main, Germany, through Messrs. Wirth and Co., Frankfurt-on-the-Main, Germany*)

Relates to the production of a yellow dye-stuff derived from acridine. Consists in first preparing tetraimidodidymethane by adding a solution of formaldehyde to a solution of metatolylendiamine and metatolylendiamine-sulphate. The product of condensation, which separates out, is converted into the leuco compound of the dye-stuff by heating it with hydrochloric or sulphuric acid to a high temperature. The solution containing the leuco compound is next mixed with ferric chloride and gradually heated to 90° C., the colouring matter thus produced, separating as a yellow crystalline powder. Other suitable oxidising agents may be used instead of ferric chloride. The Provisional Specification refers also to the similar treatment of aromatic metadiamines generally, and to the use of other aldehydes than formaldehyde. 44d.

**18,023.** November 12, 1889. **Weaving.** A. D. EMERY, Taunton, Massachusetts, U.S.A.

Wide fabrics are produced in narrow looms by weaving them in two parts or folds, the two selvages on one side of the loom and the centre of the fabric on the other side being formed by the use of two weft threads passed simultaneously through different parts of the fabric. The warp threads (Figs. 6) are shed in pairs,



two paths being formed between threads 14, 15, 16, and 17 respectively. The adjoining edge chain threads 14, 17, at the centre of the fabric are shed to be both on the face or both on the back of the fabric at each shedding. The two weft threads 1 and 2 pass from stationary boxes at one side of the loom to reversible shuttle boxes at the other, 1 passing through the lower shed and 2 through the upper. The boxes are then rotated or reversed so that the weft threads cross; thread 1 then passes through the new upper shed, and thread 2 through the lower. At the third shedding the threads are picked without changing, and at the fourth the reversal takes place and the wefts return to their initial positions, and so on. Fig. 31 represents the fabric when opened out flat. By varying the motions of the shuttle boxes different crossings of the weft threads at the centre of the fabric may be produced. Two heads only need be employed, the leashes being formed with two eyes for an upper and lower weft thread; the edge threads 14 are operated by single-eyed leashes. 15.

**18,073.** November 12, 1889. **Dyeing.** B. WILLCOX, 47, Lincoln's Inn Fields, Middlesex.—(*The Farbenfabriken Form. F. Bayer and Co., Elberfeld, Germany*)

Relates to the fixing of dinaphthyl-diquinhydrone upon animal or vegetable fibres. The shades obtained resemble those produced with antrazollin. For printing on cotton, a preparation consisting of starch thickening, the diquinhydrone as a paste, and acetate of chromium is employed, the treatment being the same

as in fixing aniline colouring matters. The dyeing of animal and vegetable fibres is conducted in the same way as with antrazollin, wool mordanted with chromum being placed in cold bath containing about 2 per cent. of acetic acid, and then boiled for half an-hour. Instead of the diquinhydrone, beta-naphthoquinone or tetrahydroxy-dinaphthyl may be employed, these substances being converted during the process into dinaphthyl-diquinhydrone. 44d.

**18,034.** November 12, 1889. **Weaving.** A. D. EMERY, Taunton, Massachusetts, U.S.A.

Wide two-ply or double weight fabrics are woven in a double loom, in two parts or folds, the two selvages on one side of the loom and the centre of the fabric on the other being formed by the use of two wefts passed simultaneously through each part. The weft threads 3, 4, pass from fixed shuttle boxes at one side of the loom to reversible boxes at the other, passing under and over the warp threads 1, 2, 3 of the upper and lower sheds, as indicated. The boxes being reversed, the threads exchange positions, thread 5 then passing through the new shed of the upper part and 4 through the one of the lower. At the third double shedding the wefts return to the centre of the fabric and again change places, and so on for a sequence of twelve picks (when the warps are worked in sets of three). The application of the invention to figured fabrics is described. When the two halves of the figured fabrics are alike a single harness cord may operate the warp threads in each part. 15, 2d.

**18,035.** November 12, 1889. **Weaving bags, etc.** A. D. EMERY, Taunton, Massachusetts, U.S.A.

Seamless bags, pockets, and the like, are woven by the use of two weft threads which pass simultaneously through different parts of the warp, one forming one side of the bag, while the other forms the other, and both being interlaced with all the warp threads to form the closed ends, top and bottom. The wefts may be transferred at each pick or at each second pick, at one or both sides of the loom, to opposite sides of the bag, etc., according to the way in which the articles are woven. Reversible shuttle boxes are employed at one or both sides of the loom as required. When the wefts are reversed at both sides, the bags are produced by cutting across the warp midway between the ends. The weaving is continuous, cutting across the warp threads at the closed ends being necessary to completely separate the bags. In some cases the bottom of the bag may be strengthened by binding the two sides together for a certain distance from the bottom by shedding the warp threads to form a single fabric. The application of the invention to the weaving of hip pockets with flaps, and to side pockets, is described. 15, 2d.

**18,115.** November 13, 1889. **Dyeing.** J. GRAEMIGER, Bent-street, Cheetham, Manchester.

Relates to machines for dyeing, bleaching, or otherwise treating fibres in a raw, spun, woven, or intermediate state of manufacture. Consists in an open topped cylinder, mounted on a frame in a liquor tank, and containing a hollow perforated piston, which forms a receptacle for the material to be treated. On the descent of the piston the liquid is forced out of the cylinder through the material, and on its ascent the cylinder is filled again by liquid forced through the piston from above. A tap and valves are provided for putting the cylinder in communication, when desired, with the tank beneath. Modifications are described in which the cylinder is closed above and provided with a readily removable cover. In some forms the material, packed between perforated plates, forms the piston. 84d. *Drawings.*

**18,145.** November 13, 1889. **Printing.** J. ARCHER, 100, Cross-lane, Radcliffe, Lancashire.

The doctor blades used in printing textile fabrics are made thicker at the front edge, which bears upon the roller, than at the back part. 64d. *Drawing to Specification.*

**18,221.** November 14, 1889. **Spinning.** J. V. EVERS, The Forth River Mills, Falls-road, Belfast.

*Flyers.*—In order to reduce the vibration, etc., of flyers used in machines for spinning flax, etc., the legs for the greater part of their length are only sufficiently wide to clear the empty pin, and are splayed outwards at the ends as shown. The hub *b* is made of the same diameter as the spindle so that the pin *C* may take over it and the spindle be made so much shorter. 64d.

**18,229.** November 15, 1889. **Knitting.** C. TERROT, Moltkestrasse, Cannstatt, Germany.

*Circular Machines.*—Instead of the sinking wheel employed in certain machines, sinkers *B*, of the form shown, are arranged to slide on a ring *F* at the same rate as the needles *N*, and are operated in guide rings *g, g'* by fixed cams *O, P, Q, R, S*. Thickening plates of distance pieces *ct* are secured at the angle of each sinker, or the sinkers may be made in two pivoted parts. 64d.

**18,239.** November 15, 1889. **Spinning.** J. McFERRAN, Barnagulla, Fort William Park, Belfast, and J. B. PIRRIE, Green Edge, Carrickfergus.

The yarn is wound on to sockets or bobbins, which are made of brass, copper, etc., and are slit longitudinally, to enable the tubes to be removed therefrom before drying, and so accelerate the latter operation. 64d. *Drawings to Specification.*

**18,249.** November 15, 1889. **Spinning.** H. M. SMITH, Royal Insurance-buildings, Crossley-street, Halifax.

*Carding-engine flats.*—The card clothing is secured to the flats by means of clips *a*, one edge of which is provided with teeth which take into the foundation of the card clothing, and the other takes on a rib *c* on the under side, or on a side, or into a notch in the edge of the flat and is locked in position by a longitudinal bar *K*. To facilitate the insertion of the bar *K*, the lower edge of the clip and the bar itself may be notched at intervals, so that it is only necessary to move the bar longitudinally a distance equal to the width of the notches. Seven modifications are described, in one of which the upper edge of the clip is bent over at intervals, the bent over portions being wedge-shaped and engaging with similar wedge-shaped pieces on a separate strip of metal provided with teeth and engaging with the card clothing. 84d.

**18,311.** November 16, 1889. **Embroidery machines.** G. CORDIER, 59, Rue Neuve, Calais.

*Jacquard mechanism* is provided in a hand or other machine, having shuttles or traversing needles, for working groups of designs. A frame, reciprocated horizontally by connection with a cam on the driving-shaft, has vertical guides containing two

slides, which are reciprocated vertically by connection with another cam; the slides carry the pivots of a box over which cards perforated according to a specified system pass. The box has studs engaging a notched bar, pivoted and held by a spring on the frame, by which it is turned through a right angle in each downward movement. Above the box, the frame carries several rows of vertically-sliding droppers, those in each row having heads of graduated thicknesses; the heads of those which are lifted by a card intervene between a part of the frame and projections on horizontally-sliding boxes, each of which corresponds to a row of the droppers and is acted on by a spring-driven horizontally-sliding roll, so that, as the frame moves forward, each box is moved a definite distance. These

**18,312.** November 16, 1889. **Looms.** F. C. WHEELWRIGHT, Carr House, Shipley, and T. R. WHITEHEAD, Fison's Shed, Bradford, both in Yorkshire.

*Stop-motion.*—In order to stop the loom just before the weft in the shuttle is exhausted, the weft fork *S* is depressed at the required moment by a part *Oa* of a lever *O* worked by a rod *M* which is lifted by a tappet *L* on the shaft *K*. The latter is driven through change gearing from a shaft *D*, turned by worm gearing from the tappet shaft. The Provisional Specification states that the loom may be re-started automatically when the parts resume their original positions. 84d.

**18,327.** November 16, 1889. **Spinning.** T. and J. W. KOTTEWILL, Rose Cottage, Edge Lane-road, Oldham.

*Carding-engines.*—Spiked bars or knives *c* are provided below the take-in. 64d.

**18,346.** November 16, 1889. **Gloves.** H. A. and K. M. HAINES, Castle Mills, Melbourne, Derbyshire.

Making gloves from an open-work fabric technically known as "truss net" made of silk, cotton, or woollen yarn or thread on a warp knitting machine. 44d.

**18,354.** November 16, 1889. **Dyes.** B. WILLCOX, 47, Lincoln's Inn Fields, Middlesex.—(*Farbenfabriken vormals Friedrich Bayer and Co., Elberfeld, Germany*)

*Aso dyes.*—Relates to the production of direct dyeing yellow colouring matters. Consists in combining the diazo compounds of this bases (produced by the action of sulphur upon para-toluidine, meta-xylidine, or pseudo-xylidine) or their sulpho acids, with the same or other thio bases or the sulpho acids thereof. For example, the sulphate of the thio-*o*-toluidine which melts at 191° C. is diazotised and added to an acetic acid solution of the sulpho acid of the same thio-*o*-toluidine. The dirty greyish black product is heated to 22°–25° C. for two days, and then further to 50°–60° C. until it changes to an orange colour, and is soluble to a yellow colour in soda. It is then boiled, neutralised, and precipitated with salt. The products dye un-mordanted cotton yellow with a greyish tinge. 64d.

**18,395.** November 18, 1889. **Toothed gearing.** W. E. MARCHINGTON, Albert Place, Dickenson-road, Longsight, Manchester.

Differential motion for the bobbins of roving frames, etc. The bevel "sun" wheel is secured upon the driving shaft, and gears with a bevel "planet" wheel of a larger diameter mounted by means of gimbal or a universal joint on the sleeve, and having a flange which bears against a cam face formed on a box at the end of the sleeve, which is driven by the cones. The "planet" wheel may be the smaller and be mounted on an inclined eccentric boss on the end of the bush. Two pairs of wheels may be combined in one train. 84d.

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