CLOTH. In commerce, in its general sense, includes all kinds of stuffs woven or manufactured on the loom, whether their threads be of wool, hemp, or flax.

CLOTH is more peculiarly applied to a web, or tinsel of wooden threads interwoven; whereof some called the warp, are extended lengthwise, from one end of the piece to the other; the rest, called the woof, are disposed across the flit, or breadthwise of the piece.

CLOTHS, Superfine; the best of these are made entirely of Spanish wool; the finest sorts of which are the Leonora and Segovia.

Of English woolls, those of Hereford and Sufolk approach the nearest in tinsels to the Spanish, and from the choice of these are manufactured superfine of an inferior sort. From the rest of the English woolls are made the coarsest, liveries, and coarser cloths, varying in price according to their qualities.

The goodness of cloth consists, 1st. In the tinsels of the wool, 2d. In the cleanness, richness, and beauty of the colour, 3d. In its being evenly spun, always observing that the thread of the warp be closer twilled, and one-fourth part smaller than that of the woof. 4th. In the cloth's being well wrought and beaten on the loom, so as to be in every part equally close and compact. 5th. In being milled or fulled evenly, clean scour'd, and of a proper thickness or substance. 6th. In being well drost, so that the hair or knap of the wool be fully and evenly drawn out and ranged on the surface, and in being there clothed, yet without laying the ground or threads bare. 7th. In its not being over stretched in the rack, or pulled further than is necessary to let it smooth, and bring it to its full length and breadth. Lastly, In the cloth itself appearing smooth and neat on the face, free from small knobs, spots, and other imperfections; in being firm yet pliable, and feeling soft and fine to the touch.

CLOTH, manufacture of. A detail of the manner in which superfine cloths are manufactured in Wilshire, may serve for the whole; the inferior sorts differing little, but in the coarser and less delicate modes of performing the same operations.

It is previously to be observed, that all the cloths which are designed for scarlets, greens, and blacks, as well as many of the most lively and delicate colours, are manufactured white, and dyed in the piece after they are finished.

The wool, being taken out of the bale, must first be pick'd, to clear it from the pitch which adheres to it, and from the other extraneous substances with which it abounds. It must then be scoured, by putting it into a furnace containing a liquor composed of three parts of water, and one of urine. After it has been well stirred about therein, and the grease it contains dissolved, it must be taken out, drained, and washed in running water, and in that state it is fit to be committed to the dye-furnace.

After dyeing it must be again washed and well dried, when it must be beaten with rods on wooden hurdles, to free it from the dye-fluff, which will hang about it; or else the same effect is produced by putting it into a wool mill, formed of a four-flapped vane or fan thinly fet with iron spikes, and firmly revolving within a hollow cylinder, composed of small wooden rods or flaves, sufficiently wide apart to suffer the dust to fall through, as the wool becomes slightly separated by the motion of the fans. It is then once more carefully picked, in order to take out the locks which are unevenly dyed, and also the lint, and other filth with which wool in this state generally abounds.

In making mixed cloths, wool of the different colours, being weighed out in their requisite proportions, are first taken well together; they are then further mixed by being well turned in the wool mill, and by being afterwards twice passed through the scribbling engine instead of once, they are generally found to be sufficiently intermixed.

The wool, thus prepared, must now be spread abroad on a floor, and oil of olives (in the proportion of 3 lb. to 20 lb. of wool), evenly sprinkled over it, and beat into it with heavy rods, when it is in a proper state to be carried to the scribbling engine.

This is a machine composed of ten or more wooden cylinders, of various sizes, covered with cards, the teeth or wire of which are of different degrees of fineness, and bent or hooked in opposite directions. These are combined in a strong wooden frame, and jogged against each other, as they twistily revolve on being fast in motion by a common handle, adapted to be turned either by men's labour, or any fort of mill work. By passing through this engine, the locks of wool, which before were close and matted together, are drawn abroad, the fibres are separated, and it is formed into light flakes; it is then taken to the carder, which is a smaller engine of the same kind, only covered with finer cards, and with the addition of a fluted roller revolving in a trough at the tail of the machine; by which the wool, after being still finer and better mixed and carded, is formed, as it drops out, into separate and smooth rolls of 28 inches long, and half an inch in thickness, which are immediately taken by boys, and joined or attached to the spindles of the roving or fluffing machine.

This is a contrivance, by which 50 or more iron spindles, being set upright in a wooden frame, are twirled by one motion, yielding their threads to a common stopper, at every motion of which the 50 rolls of wool are drawn out and form into as many large slightly twitted threads, and at the same time wound off into balls of a size and shape adapted to the next operation, or spinning.

This is performed by a machine called the spinning Jenny, which also is a frame containing 50 or more upright spindles, twirled like the former by a common motion, and yielding their threads to one and the same spinner; by this the large hollow threads are further twitted and drawn out to the degrees of smallness and strength requisite for the different purposes for which they are designed. The threads, being thus spun, are reeled into skeins and prepared for the loom.

The larger fort, destined for the woof, is wound on spools, which are small tubes, so formed as to be easily placed in the eye or hollow of the shuttle. That for the warp is wound on large wooden bobbins, from which, by the warping bar, it is conveniently formed into the proper lengths and divisions, and so arranged and disposed as to form the chain or warp of the piece.

The chain, thus prepared, must be stiffened by a size, which is made by dissolving 3 lb. of glue (the best sort of which is made from threads of parchment) in a quantity of water sufficient to moisten and saturate the whole, and when dried it is ready to be turned on the loom.
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In weaving broad-cloth, there are two weavers in a loom, one on each side, who at the same time tread alternately on the same treadle or treadles, i.e., now on the right side and now on the left, which raises and lowers the threads of the warp equally, between which they throw, interweave, the threads from the one to the other. At each time that the shuttle is thrown (and so a thread of the woof is interwoven in the warp), they strike it conjointly with a moving frame, whereon is fastened the flay, which is a kind of comb, composed of thick pieces of cane, between whose teeth the threads of the warp are passed, repeating the strokes six or seven times with the warp open, and again as many times after it has crossed and closed on the woof. The whole warp being filled with woof, the cloth is finished.

Being next taken to the fulling-mill, it is there soaked with urine or hog's dung, and afterwards scour'd with clean water; it is thus freed from the oil and fat contracted in dyeing, and delivered perfectly clean, in a flate fit for the next operation, which is burling.

By this process (performed by women with little iron nippers) the cloth is cleared from all the knots, lint, small drawn, and other filth; and if, by the carefulness of the fuller, it contains any large uneven threads, they must now be gently taken out; and if any small hole or rent is made, it must be carefully drawn up, and mended with some of the warp-yarn of the same cloth.

But that compactness and density which distinguishes woolen cloth from all other manufactures, and renders it so peculiarly adapted to our weather, is derived from the next operation, which is fulling, or milling, by which a cloth of 40 yards long, and 100 inches wide, being first sprinkled over with a liquor prepared from 2 lbs. of fine soap (made from the oil of olives) dissolved in hot water, is laid in the mill-trough, and there pounded or flammed on by two heavy wooden hammers, alternately raised and depressed by the legs of the mill-wheel. By this process it becomes by degrees (generally in about 8 hours) so thickened and shrunk up, as to be reduced to 30 yards long and 60 inches wide, which renders it of the proper substance and thickness of common superfine cloth. During this operation, it must be taken out from the trough from time to time, to have more soap added, and to be smoothed from the wrinkles and creases which it would otherwise contract.

The density of being rendered thicker by compression, is peculiar to woolen substances. In vain may fabrics of silk or cotton be subjected to the same process; they would not, in any length of time, be rendered thicker by it, or more compact in the smallest degree. To account for this, it has been observed, that the single hairs of wool, when viewed in a microscope, are discovered to be thickly set with rough and jagged protuberances, adapted to catch and entangle with each other. Whence it seems probable, that during the violent agitation the cloth undergoes in the mill-trough, the fibres being, at every stroke of the mill hammer, strongly impelled together, and driven into the cloths' possible contact, at length hook into each other, drawing closer and closer as the processes continues, till they become thus firmly and inextricably united, each thread, both of the warp and woof, being so joined and compacted with those that are contiguous to it, that the whole seems formed into one substance, not being liable, like other fabrics, when cut with scissors, to unravel and become ragged at the edges.

The cloth, thus milled to its proper thickness, must be scour'd with clean water till it be perfectly free from the soap. In this part of the process, a preparation of fuller's earth and bullock's gall is found very serviceable, rendering the cloth at the same time soft and mellow.

The cloth must now be taken to the cloth-worker, in order to be dried, which is performed by fire properly drawing out, and arranging in one direction, all the hairs or fibres of the wool that can possibly be brought to the surface, and then shearing it as close as it will admit, without discovering the ground of the cloth, or laying the threads bare.

The instruments employed in this operation, are the wire cards, and teazels, to raise and draw out the hair, and the scissors to cut off what is too long and superfluous. (The teazel is a large kind of thistle, with the points growing very strong and hooked; to use them the heads are cut off, and set close together in small wooden frames called bundles.) These instruments, although hitherto worked by men's hands, with great labour and expense, have of late been so ingeniously adapted to machinery turned by mill-wheels, as to perform the same operations with much more precifeness and effect, as well as great saving in point of expense; and the machines for this purpose are various, and continually improving. The method hitherto employed is generally as follows.

The cloth being drawn over a frame, constructed of boards laid flatting, and covered with hair-cloth, is, during its passage, in order to raise the wool, regularly scraped, or rubbed from one end to the other, with the cards or teazels, being all the time kept as wet as possible by continually pouring water upon it. It is then laid on the hearers boards, which are made of wooden planks covered with coarse cloth, and forming a kind of hard cushion, where the cloth is, thus raised on, and smoothed on with two long or short, and which are pressed close to the cloth with leaden weights, and gradually slide forward at every motion or cut, till they have proceeded from one end to the other. The cloth is then returned to be again scraped or rubbed; these operations are repeated three times, every time with finer cards, or teazels, when the wool becomes sufficiently raised. It must now be taken to the dressers, on which being elevated by the hills with small hooks or tenters, it must be drawn or shrained thereon, until it be of an even breadth throughout; when dry it is returned to the hearers boards, on which the cutting is repeated three times more on the right side, and once on the other or back side. After this it is given to the cloth-drawers, who, having first, with small picking iron, made very sharp at the points, drawn out all the small twa or hairs of lint which have before escaped notice, carefully fine-draw or med the small holes or rents, if any such have been made in it.

Nothing now remains to be done but preffing; preparatory to which, the cloth being doubled and laid in even folds, a leaf, or sheet of glazed pale-board, is interwoven between each fold or plait of the cloth; it is then laid in the press, and covered with thin wooden boards or fences, on which are laid iron plates properly heated, and on the whole (by means of a lever turning a screw) the top of the press is brought down, with the degree of force judged necessary to give it the proper glos. When cold, it may be taken out of the press, in order to be folded and packed, ready for sale.

The statute book contains a variety of laws relating to the woolen manufacture; the principal of which will be recited under this article: we shall here subjoin an account of the most important laws pertaining to cloth and clothiers. Every fuller of cloth shall use tayfels, or teazels, and no cards, deceitfully impairing the said cloth, on pain of double damage, to be determined by a justice of the peace, mayor, maister, warden, basil, portreeve, constable of hundred, and reward of feet, who may commit the offender to the next goal till payment; information may be made by any person not grieve to any of the above magistrates or officers; and the offender shall
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shall forfeit to the king, or to such persons as shall be intitled to fines or amercements within their jurisdiction, 36 d. 4 Edw. IV. c. 1. No cloth, not full, shall be exported, on pain of forfeiting the same, half to the king and half to him that will sue. 7 Edw. VI. c. 3. For the measuring of cloth, the statutes generally provide that the yard shall consist of a standard yard, and the breadth of a man's thumb; or 37 inches in the whole. In every parish or hamlet where cloths are made, two justices shall appoint overseers for taking care that the statutes relating to the regulation of cloth be observed. 3 and 4 Edw. VI. c. 2. 39 Eliz. c. 20. 43 Eliz. c. 10. These overseers are empowered to search or try the cloth, and persons refusing or refusing search shall, on conviction at the sessions, forfeit for the first offence 10 l. for the second 20 l. and for the third, stand upon the pillory in the next market town; of the forfeitures one third shall belong to the overseers, one third to the king, and one third to the poor. 39 Eliz. c. 20. The length, breadth, and weight of the several sorts of cloth are settled; allowance in weight, for dyeing, dressing, roving, and chafing, in broad cloth 4 lbs. in long cloth 5 lbs. and so in proportion, is adjudged, and an increase of weight by any liquid is forbidden on pain of 30 l. half to the king, and half to the buyer that shall sue, by 4 Jac. t. c. 1. c. 2. Before the maker shall fix his seal of lead to the fame, containing the length and weight, to be tried by the water, and the overseer shall fix such seal to the cloth, with the word "measured." 39 Eliz. c. 20. On the penalty of his recognizance he shall set his chrism and signature upon the seal, and no other shall be good. 21 Jac. c. 18. Any person setting any seal to cloth, or taking any seal away, without warrant, shall on conviction at the sessions, for the first offence forfeit 10 l. for the second 20 l. and the pillory; one third of the forfeitures to the overseers, one third to the king, and one third to the poor. Cloth not to be folded sealed shall be let to the overseer. 39 Eliz. c. 20. For each of the cloths under the sealed measure in length, 6 l. 8 d. per yard shall be forfeited, besides abatement of the price for what is wanting; for every yard of the said cloth above the lengths, 10 s. shall be forfeited; and for the fame wanting breadth throughout, shall be forfeited 20 s. wanting for half the length 10 s. under half 5 s. and for every pound wanting above the weight shall be forfeited 10 s. 2 Jac. c. 20. For the encouragement of dressing and dyeing of cloth, no person shall export any white woolen broad cloth, until he have paid duty of 5 s. for every such cloth, on pain of forfeiting the same, or value half to the king, and half to him that shall sue, inform, or sue. 6 Ann. c. 5. The legislature has enacted other laws with regard to dyeing of cloth, for which see DYEING. No person shall have or use any dyes, with a lower bar, &c. for stretching any rough and unwrought woolen cloth, on pain of 20 l. half to the king, and half to him that shall sue. No person shall stretch (or fell the fame stretched) any wrought woolen broad cloth above one yard in length, and half a quarter in breadth; or half cloth, above half a yard in length, and half a quarter in breadth, &c. upon a 3 d. or forfeiting the same, half to the overseer or informer, and half to the poor. 43 Eliz. c. 10. If any cloth remaining on the tenter be stained in the night, and the same is found on any person, on a justice's warrant to search, such offender shall forfeit to the owner treble value, leviable by dimes and foles, or he committed to gaol for three months, or till the fine be paid; but for a second offence he shall suffer fix months imprisonment; and for the third offence, he shall be guilty of felony, and transported for seven years. 25 Geo. II. c. 27. No woolen cloth shall be exported, till it be barred, rowed, and furred, on pain of forfeiting the same, half to the king, and