of these mills have, by the introduction of a system of transportation, reduced the cost of handling the materials used to a minimum; in fact, notwithstanding the defects of construction, the item of cost of handling is less than in the average mill built within ten years, and no one would think of calling these mills antiquated even if they are more than forty years old. With their system of overhead tracks on which beef is run in and out of refrigerators, every dressed beef establishment in the country is an example of economy in internal transportation, a cheap method that is suggestive to people engaged in other occupations.

In both cotton and woollen mills many men are employed in handling material for transportation to different parts of the plant that could be handled and transported more expeditiously and economically by a modified form of the system in use in dressed beef establishments, and this, too, in mills that are called modern, and which are modern in everything except their methods of internal transportation. As an example the method of carrying filling from the spinning room to the weave room and warp beams from the slashing room to the drawing-in room and then to the weave room is practically the same to-day in nearly every mill as was in vogue forty years ago. In small mills a boy or young man wheels the boxes of filling on a truck from point to point, and in the case of large mills the filling is loaded on a team and drawn through the yard to the weave room by a horse. This is more economical than to wheel the filling on a truck propelled by man power, but far from economical when the time and energy wasted by the workman under that system are compared with the time and energy that are consumed in transporting an equal bulk by an overhead track system. The same may be said of handling warps, which are first sent to the drawing-in room, and after drawing-in are generally piled in tiers in the drawing-in room or on the spare floor of the weave room. Some mills employ a man to wheel the beams on a hand truck. Whether it be filling or beams that are being transported, a man using the overhead track system can handle more of them in a given time than he can by the truck system, and it is the amount of work performed in a given time that decides the value of a machine, system or laborer. In a mill having on an average a hundred or more beams to be placed in the looms every day the difference in the amount of labor performed under the two systems means a saving to the mill using the overhead track system. In the matter of transporting heavy, bulky material from point to point in the yard it can be as profitably utilized in the yard as in the mill buildings for less weighty packages.

The overhead track system is not the only way by which the cost of internal transportation may be reduced to the minimum. One mill has a trunk system through which all the cotton used is blown from the opening room to the picker room, a distance of about 800 feet. This system saves the labor of several men and a horse that would be necessary if the system of transportation in use in the majority of mills was followed. Another mill uses the trunk system to convey the wool from the scouring house to the bins in the picker room. Both of these mills were built many years ago, yet both are using a system by which a great saving in the cost of handling material is effected, and which could be profitably adopted by nearly all the large cotton and woolen mills in the country.—Wool and Cotton Reporter.

## HOSIERY DYEING.

The sulphur dyes give by far the best results hitherto obtained in stocking dyeing. It is true that their use requires care, but the results achieved show it is only a question of time for every stocking dyer to use the new dyes, or rather to use them in the manner which has now been worked out, and which is much newer than the dyes themselves.

Every form of cotton has a remarkable affinity for sulphur black, and when dyed with it at the bolt, with the proper adjuncts, takes a black which is very fast indeed. Bleeding and rubbing of the color will only happen if the rinsing has been badly done, and the dye properly applied will last as long as the stocking. Many sulphur blacks are substantive, but others have to be fixed, and the mordanting is almost always done in practice with bichromate or with sulphate of copper. These two oxidizing agents give not only the cheapest but the best results. Some of the sulphur dyes need especial precautions against the action of the atmosphere, so that the goods must be kept constantly immersed. Others, again, require the addition of sodium sulphide to the bath, and others do not. A few require the co-operation of caustic soda in the dyebath. Whatever the particular method of working may be in the case of individual dyes, the results are exactly the same, provided it is adhered to. The only important point with all sulphur blacks, without reference to the peculiarities of the different baths, is that they must be dyed at the boil. If this is neglected the color will be inferior in all its qualities.

Stockings dyed with sulphur blacks are left in a very suitable state for finishing, and wear quite as well as stockings dyed with aniline black, and there is no fear of the fibre being injured, whereas it is frequently damaged by aniline black. The cost of dye is also less than with aniline black, especially as the apparatus required is very much simpler. The process is also more rapid, so that more goods can be dyed with a sulphur black in a given time than with aniline black. It is advisable to dye the cotton in the yarn, as that gives better results than dyeing the finished stockings.—Textile Excelsior.

## FABRIC ITEMS.

The United States now takes half the world's crop of rubber.

The 12,500,000 sheep in Montana yielded this year 37,500,000 pounds of wool, which at 16 cents a pound proved a good investment.

Colin Fraser, a northern trader, arrived recently at Edmonton with a pack of furs which is said to be the largest individual pack ever received at that point. Its value was between $40,000 and $50,000.

Prices of domestic cotton goods are very firm in Canada, owing to the high price of raw cotton. The mills refuse to make concessions, nor have they any occasion to, as they have no surplus stocks on hand.

Andrew Carnegie has offered to give $2,500,000 in United States Steel Corporation bonds to Dunfermline, Scotland, his birthplace, to encourage horticulture among the working classes, and the advancement of technical education in the district, which is the centre of the linen industry.

Spring goods are showing a strong tendency towards plain lines. The colors that are most popular are shades of blue, greens, browns, drab and greys. The worsted open weaves, such as etamines, burlaps, honeycombs and hop sack weaves, promise to be much in evidence during the next twelve months in the costume trade.