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A GREAT INVENTION IN WEAVING.

James H. Northrop, of Hopedale, Mass., is the author of a large number of new inventions relating to weaving machinery, for which patents have been granted within the past three or four years or more. Some of these improvements have been put into practical shape by Messrs. Draper, the assignees of Northrop, and the results are such as to justify the prediction of an impending revolution in the economics of the art of weaving.

One branch of the Northrop inventions consists in devices for the automatic filling of shuttles in single shuttle looms, whereby the frequent stopping of the machine for refilling, or in consequence of breakage, is avoided. The practical result is that one first class weaver, who is now capable of attending six looms, is enabled, by means of the Northrop improvements, to attend sixteen looms, all of them running at the usual speed, so that the quantity of cloth produced is more than doubled without any increase in the cost. The Industrial Record says: "The invention is in practice in a mill where 400 of these looms are in operation, running at the rate of 190 picks per minute, the usual speed of a print loom. It is said that more looms can be run by one operative, but we will be satisfied with sixteen. This is enough for the incredulous, and doubles the number of looms that a first class weaver is now capable of handling on print cloths. One-half the labor cost is saved in this particular alone. But in actual experience it has been found that more than this is saved on account of the greater production per loom due to non-stoppages for supplying fresh filling.

"The labor cost in one yard of print cloth is about one cent, and four-tenths of this is represented in the cost of weaving. In Fall River, weavers receive 18 cents a cut of 45 yards. The labor cost in two Lowell print cloth mills is 5.90 to 6.01 cents per pound, and that of weaving alone is 3.46 to 3.54 cents per pound. It is safe to say that about half the cost of manufacturing is in the weaving, hence any saving here is a matter of some moment, especially when it attains the proportion of fully one-half. Calling the annual production of print cloths by Fall River mills at 10,000,000 pieces and we have a saving in the cost of weaving of \$900,000, or nearly one-half the total dividends paid by all the mills of that city in the prosperous year of 1892, or nearly equal to all the dividends paid in 1891. In the manufacture of print cloths alone in this country a saving in the cost of labor can be made of \$2,500,000 by this new loom. This saving in the cost of manufacturing is not necessarily a loss to labor, for the latter can be but temporarily idle, as it will be wanted in some remunerative form in factory employment due to the increased demands on manufacturing that lower cost to the consumer always brings about.

"There are in the United States, as near as we can estimate, about 360,000 cotton looms, 75 per cent of which are on plain cloth, and running single filling boxes. At least one-half of this full number of looms (180,000) are under 36 inches wide; most of them under 32 inches wide. These 180,000 looms and those operating them come directly within the influence of this Northrop invention as it is to-day. Allowing six looms to a weaver, and we have 30,000 weavers directly affected and likely to be reduced one-half in number, at a very conservative estimate, should this loom come into general favor. One female in four over 16 years of age, employed in our cotton mills, assuming that cotton mill weavers are females over this age, is sure to feel the potency of this invention.

"It is not for us or any one else to say how far the ideas or principles of this invention can be carried. At present it seems to be limited to the use of one shuttle, and though in its present form it may not be able to get beyond this, it is not easy to say how suggestive it may be of devices that will adapt it to a number of shuttles. If it can be made applicable to drop box looms, then it will affect the manufacture of ginghams, upholstery goods, etc., where different kinds or colors of weft are required. As it is, it is confined to the cotton manufacturing industry, but it requires no great amount of credulity to apply its usefulness to the needs of the woolen industry. This is one of the curiosities of textile inventions, their first development and application in the manufacture of cotton fabrics. This was so during that great era of inventions in the latter half of the eighteenth century, notwithstanding the insignificance of the cotton industry and the relatively great importance of the woolen industry, and it has been so ever since.

"The woolen mule was a thing that was thought to be impossible for fully thirty years after the self-acting cotton mule came into being. The worsted spinning frame was a creation after the spinning frame for cotton had long been in common use. The woolen loom can lay some claims to being in advance of the cotton loom, where complication in design of the woven fabric is desired, but there is here a suggestion that may be found as applicable to the woolen as to the cotton loom, and give the latter the lead."

MANY acres of land in Gloucestershire are devoted to the raising of wood for walking sticks.

THE DESERTED VILLAGE.

The village life of old times has been the basis of many an idyl in prose or verse. A village represents the center of the isolated community, made isolated by difficulties of transportation both of freight and person. Before the days of MacAdam every mile of boulder-infested, sandy and muddy roads exhausted man and beast alike who were concerned in the transfer of wagons over it. In England where, owing to the very large proportional population, traveling was extensively indulged in, the matter had become very serious in the last century. The great lumbering stage coaches would be dragged over roads which in the contemporary literature are described as absolutely inspiring terror. But London was not then the absolute metropolis of the country. All through the land there were prosperous villages, whose inhabitants led cultured lives and very rarely journeyed to the large cities.

Then MacAdam evolved his plan of making roads with broken stone, formulating the curious precept that no stone must be used which was too large to go into the mouth. He would take a piece of road filled with boulders, and breaking them to fragments, would make the road supply all or a great part of the material required for its own construction. William Cobbett, at the beginning of this century, representing the agriculturist, inveighs against the use of broad tires imposed by the authorities upon those who traveled upon the new roads which then began to traverse England in all directions. These roads enabled stage coaches to make ten miles an hour, and the population began at once to centralize more than before, and we find Cobbett again lamenting the growth of the "Wenn," as he termed London.

When the railroad replaced the stage coach, the growth of London and of the other great cities began in earnest. Meanwhile, in this country, the New England States had become filled with villages. The white-painted gable houses with green blinds, the village green, with town hall, public school and church facing it, had become characteristic features of these settlements.

For the better intellectual development of the natives or inhabitants of the villages, lyceums were founded, which arranged for courses of lectures to be given on various subjects. The life seemed, to a certain extent, ideal. There is in humanity a theoretical desire for repose and absence of strife, a desire which in many cases is purely theoretical, and whose exponent was found in the New England villages and communities of the same type in other States. The intellectual element of these places was responsive to the life of the day, and it is surprising how many of our greatest men have come from villages.

To-day the change is complete. The villages are being rapidly deserted. When factories began to be built of the large scale, they were placed in villages, but centralization has affected them also. They have left the villages, and Lynn, Fall River and similar cities have become great manufacturing centers, each representing enough industry to maintain all the villages in a State.

Some years ago the deserted farms of New England were made the subject of investigation by the government. Farms, which long ago were the objects of careful cultivation, and which seemed to the owners to represent the acme of progress, have been thrown upon the market at ruinous prices. They are gradually being taken up in part by French Canadians, who seem to bring with them some of the frugal and industrious traits of the old country French farmer. Now the deserted village takes the place of the deserted farm as an object of interest and of solicitude. The young people used to want to leave the farm, and did it. Now they want to leave the village, and are doing it. Steam railroads, supplemented by the electric road, cause that which is really an immense area to be subsidiary to each large city.

Mechanical progress affects all classes, and the inventor touches the life of every class. The farmer and villager at first sight would seem relatively little affected by modern machinery. But improved tools made farming more effective; steam was applied to its processes, cheapening them greatly; the railroads took the crude or raw products to steam mills, ending the work of the country grist mills. And now the railroad and trolley have taken the personnel of the farm and village in hand and have transported them to the city, and village life, such as it was even thirty years ago, is ended by the progress of mechanical art. The story of Concord, in Massachusetts, with its authors, Hawthorne, Emerson, Thoreau and the Alcotts, will hardly ever be told of any future village. The mechanic and the inventor have settled the question forever.

It would be hard to find a better instance of the effect of mechanical progress upon the home life of a nation. It may even have an effect upon its literature, for the quality of books is certainly affected by environment, and the inventor, scientist and mechanic have determined a new environment for the active portion of humanity.