

THE SEWING MACHINE—NO. III.

It is curious to follow out the effects of a change in the fashions of the fair sex on manufacturers. Douglas, the hoop-skirt manufacturer, states that two years ago about three-fourths of all the work on hoop-skirts was done on the sewing machine. But owing to the fact that steel hoops are now used instead of whalebone and cane and cord, &c., not more than one-fourth of the work is done on the machine. The steel hoops can be put in the skirt better by hand. But we predict that machinery will soon come to the aid of human labor in this branch also, for inventors are already contriving to introduce the steel hoop into the fabric at the time it is woven on the loom. We hope the ladies will not deprive our inventors of the chance of adding to their laurels in conquering this difficulty in the skirt manufacture, by any fatal change of fashion. When we consider that the skirt business of this city alone, in 1858, was about \$3,000,000, we will be aided in estimating how desirable it must be to many operatives, and merchants, and capitalists that the present fashion be maintained.

The business of making shirts has grown to vast dimensions. One establishment in New Haven employs 400 Wheeler & Wilson machines and about 850 hands, 800 of whom are girls. The production is 800 dozen a week. The wages of the girls average \$4 a week in this factory, which is about one dollar above the average of their wages at hand-sewing.

The bag manufacture is now carried on by machinery solely. Who can count the numbers in this branch, or the uses to which these bags are applied. The farmer, the grocer, the shipper, the housekeeper, use them in their operations.

It is calculated that the demand is barely satisfied with 120,000 machine-made bags a day—36,000,000 a year. The annual value of the business in New York and vicinity is \$2,000,000.

The sewing machine was introduced into the cloak and mantilla manufacture in 1853. The ladies will be able to inform our readers whether or not these articles have been cheapened thereby, whether or not the patterns have been greatly beautified and improved in form and finish, and workmanship, and whether it would be possible for a hand-sewer at two shillings a day to furnish the stuff and do the work now done on them for any sum like the present prices. The elegant mantilla, which was once worn by the rich alone, now graces the form of the artizan's wife, and she wears it as becomingly as do the wealthy, for it is not any longer beyond her means. Moreover, the effect upon herself and upon her husband is good, for they are able to gratify that virtuous and natural desire of every right-minded and independent citizen to make a decent appearance before the public. The rich can do this without counting the cost, but those who labor are able to make the necessary provision only out of what remains over the rent and the price of daily bread, and if this remnant, so small and uncertain, will enable them to present themselves before the world in decent garb, the benefit they derive from this invention is large, for it secures to them their own self-respect, and stimulates their just pride and independence, and so promotes virtue and industry.

That these articles have been brought within the reach of the masses would be clear even without the evidence of our eyes, for the trade in this city in this line is \$3,000,000 per annum. One of the dealers, Mr. Benson, states that the machines have created a demand for these goods that could not be supplied without them—that two-thirds of the work is still done by hand—that more hand-sewers are employed in it than before the machine was introduced—that the wages are increased—that the buyer pays less and gets more work—that the weakly girls are employed on the machines, and that their health is thereby improved.

Among those who gave testimony in the extension case which we have mentioned, was a needle-woman, who stated that she did not always at hand-sewing earn enough to feed her children. She used to earn at fine sewing about \$2 a week, often beginning at 5 o'clock in the morning and working till past midnight. That she now works 10 hours a day on a machine, and makes \$5 a week. The vast difference between the old and new system is illustrated by the fact that a dozen of ordinary shirt fronts, containing two plaits each, require 42 yards

of stitching. The machine tosses them off in 30 minutes and less. We dare not guess how many hours the nimblest and prettiest fingers would require to accomplish this task; the testimony says twenty hours at least. Who is prepared to read that the trade of this city and vicinity in shirt fronts, is estimated at \$10,000,000 of these useful articles.

Satchels and pocket-books of foreign manufacture are not any longer able to compete with the American article, since the latter have been turned out by this invention. The leather of which these are made is now manufactured here, owing to the demand caused by this turn in the trade. 500 dozen satchels are made every week in this city alone.

One of the most interesting allies of this invention is the "hemmer." We believe the country is indebted to Chapin for this improvement. It is proved that a sewing machine (Wheeler & Wilson's) fitted with one of these little magicians will do the work of 50 girls. There are many variations in it since Chapin's patent, but all are believed to be subsidiary to him, and to Blodgett and Boynton, who each invented a cording apparatus. With the aid of these toy-like implements, all the parasols and umbrellas, and other articles which require to be hemmed or corded are prepared by the machine, at a greatly reduced expense.

Such are a few of the items which suggest themselves to us in this unlabored essay at a description of the sewing machine and its doings. Wherever sewing is to be done, there it is, or soon will be found, assisting with its tireless fingers. Who can deny that it has lessened the hardships of the poor. We had intended to use the data we had collected as the premises of an argument which should go to show that not only hand-sewers and other laborers, but the entire community had been benefited by this wonderful machine. But it seems idle to argue when contention herself has left the field. We utter only the general consent of civilized communities, when we demand for the art of machine sewing a place beside the most illustrious inventions of modern times, even now while it is in its infancy. It has decreased toil, made sickly employments to become healthy, increased the wages of labor, lessened the hours of confinement, increased the comforts of the laboring classes, cheapened every article it has touched with its Midas-like hand, opened new sources of national wealth, created new manufactures, enlarged many branches of trade, and notwithstanding all it has done in the past, the auspices are fair that its future triumphs will be more brilliant, and on a vaster scale.

[Concluded.]

UTILITY OF LIGHTNING RODS.

We have received a very able communication from a Philadelphia correspondent, on the subject of lightning rods, and partly in reply to previous letters from others. We regret that our limited space, and our duty to give all kinds of scientific news, prevent us from printing the entire communication. We make only the following extracts, bearing on the utility of lightning rods:—

We have first the testimony of a host of scientific men from Dr. Franklin's time to the present day, such as Faraday, Lardner, Harris, Hare, Henry, Bache, Maury, and others, the greatest electricians the world has produced. We next adduce the facts (which are "stubborn things"), or, I should say, a few of them; it is now a little over one hundred years (107) since Dr. Franklin's discovery of the lightning rod, or, rather, its invention, previous to which many church spires in Europe were repeatedly struck with lightning and severely damaged, one, St. Mark's, at Venice, as many as nine times; but since the application of rods to these spires—one hundred years ago—they have stood unharmed! Why do we not hear of church spires being destroyed now-a-days? there is just as much lightning as ever, and many more churches.

The next fact we offer is this: From 1799 to 1815—16 years—there were 150 vessels in the British navy struck by lightning, upwards of 70 men killed and 133 wounded. The loss (of material only) amounted to over one-half a million. In 1821, Sir W. Snow Harris, F.R.S., proposed a system of copper conductors, which were applied to the vessels of the navy; and now (after nearly 40 years' trial) it is found that losses and damage by lightning in the navy have ceased almost entirely, although the number of vessels has been increased very material-

ly. But how is it on the land? Mr. E. Merriam, of Brooklyn, N. Y., says, "in 1859 there were 76 deaths and 41 injured by lightning. No death by lightning is reported, in the field of our research, in a building or vessel furnished with metallic conductors reared for the purpose of protection."

Within the past 15 years, over 800 deaths are reported, only one of which occurred in a building furnished with lightning rods. How do these results and observations compare with those of your correspondent? Do they not prove conclusively the usefulness and importance of lightning rods?

Messrs. Editors, I think it somewhat surprising that any intelligent person should, at the present day, attack the utility of lightning rods; they little think how much harm they may do, how great may be the loss of life and property, by promulgating erroneous views upon this subject. I hope that your readers, at least, will not be led astray by them. "A word to the wise is sufficient."

J. D. R.

THE CYANURET OF POTASSIUM ONCE MORE.

MESSRS. EDITORS:—I saw mentioned, on page 206, Vol. III. of the SCIENTIFIC AMERICAN, that there was no known antidote for cyanuret of potass. The sesquioxide of iron readily combines with the cyanuret, forming Prussian blue, which is comparatively harmless. A solution of proto-sulphate of iron, or the common sulphate, will also unite with the cyanuret, but not so perfectly. Electroplaters have informed me that green tea was also an antidote; I have never tried this, and do not know anything about it. Photographers generally use cyanuret of potass to remove silver stains from their hands, and it frequently causes bad sores. When experimenting, I have used these solutions of iron to wash my hands after using the cyanide, and found them successful. Chloride of zinc will also remove the silver stains, and is, I think, much safer.

L. F. M.

Albion, N. Y., Oct. 10, 1860.

[The difficulty of administering an antidote for cyanide of potassium results from the instantaneous suddenness of its action. We knew a German photographer in this city who, one day meeting with some unexpected difficulty in cleaning a glass plate, became suddenly transported with passion, and, in his madness, dashed the plate to the floor, and seizing a vessel of cyanide of potassium, poured it down his throat. He dropped as if he was shot, and died in half a minute. The best way for persons to manage who have occasion to use this swift and deadly poison is to keep it out of the reach of children.—Eds.]

DIPHTHERIA AND ITS CURE.—This singular disease which has thus far seemed to baffle the skill of our best physicians, has become so prevalent and has been so generally fatal, that any suggestion in regard to its cure will hardly prove uninteresting. Its causes are not known, and therefore all treatment has heretofore been merely experimental; but its pathognomonic symptoms are so diversified and dissimilar, that in many instances the throat of the patient closes, and he dies before his disease has been discovered. The diagnostic by which it is known from other complaints of the throat is the formation of a membrane which increases gradually until the patient is literally strangled to death. It is sometimes accompanied by ulceration, and extreme prostration of the entire system, and at others by neither of these symptoms, yet in either case it is equally fatal. To arrest the formation of this membrane would therefore seem equivalent to curing the disease, and this in most instances may be done in the following manner:—In the early stages of the complaint, which is always accompanied by a soreness and swelling of the throat, let the patient use a simple solution of salt and water as a gargle every fifteen minutes. At the same time moisten a piece of flannel with a solution of the same kind, made warm as the patient can bear it, and bind it around his throat, renewing it as often as the gargle is administered, and in the meanwhile sprinkling fine salt between the flannel and the neck. Use inwardly some tonic or stimulant, either separately, or if the prostration be great, use both together. The treatment, as may be seen, is extremely simple, and, if used in the earlier stages of the disease, will effect a complete cure.—Cincinnati Daily Press.