

SINGER'S GREAT SEWING MACHINE MANUFACTORY AFTER THE FIRE.

We chronicled last month the destruction by fire of the great establishment at Elizabeth, N. J., of the Singer Sewing Machine Company. The ruins presented a remarkable spectacle, that of a great field covered over with a mass of cog wheels, band pulleys, and shafts, bent and distorted into all manner of confused shapes. Our artist has attempted to convey an idea of the scene. It is a difficult subject for the engraver.

Some notion of the large extent of the establishment will be gained when we say that the grounds occupied by the works are 32 acres in extent. The main factory building had a frontage of 230 feet on First Street, with a width of 60 feet. The Trumbull Street annex to this building was 800 feet long and 50 feet wide, the whole being four stories in height. Below this building, on Trumbull Street, were the cabinet and box factories, each 200 feet long and three stories high. On the north side of the grounds, adjoining the Central Railroad, were the forging and foundry buildings, together making one continuous building 1,430 feet in length. The

The Increase of Special Tools.

The fact that machinery specially designed for performing the work required of it can be used to a far greater extent in railroad shops than formerly supposed is now being recognized by progressive men who are superintending the maintenance of rolling stock. The advantages of special machinery in manufacturing establishments where the products turned out are uniform in quantity, size, and design, have long been acknowledged. In such cases the work can be outlined with great exactness, and when it is decided that a certain step in the process of manufacture requires a special tool, one can be supplied which will do the work with economy, while the magnitude of the business will generally keep a machine of this kind continually employed on the work it was intended to perform. In recent years it is, therefore, not uncommon to see shops in which two-thirds of the machinery is either special or fitted with special attachments.

The nature of the work done in the average railway repair shop is in such sharp contrast with that just outlined that it is no matter of surprise to find compara-

forward to their present state of perfection the excellent tools now found in many railroad shops in this country, it must be acknowledged that they do not always act as though they realized the importance of the present tendency toward special machinery in railroad work. We know of cases where they would not undertake the building of a new tool of special character without charging the cost of all drawings and patterns to the company desiring the first tool of that kind, even though, as in one case, the possibility of selling more machines from the same patterns was evidenced by the fact that a second and independent request was presented for prices on a tool for the same work. To be compelled to pay two prices for a machine worth say \$2,000, simply because it was the first one, is rather discouraging to the mechanical department of a progressive road, especially when they can see opportunities for selling quite a number of them, provided the first is a success. It makes them think that the tool builders have in such cases little faith in their own designs, do not realize the importance of the tool, or are not disposed to take any chances whatever.



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foundry alone has an area of $2\frac{1}{2}$ acres in one open floor, and the total floor area of the works is 18 acres.

All the works were rapidly rebuilt and are already again in full operation.

Previous to the fire about 3,300 persons were employed.

One thousand five hundred sewing machines per day are turned out. They consume a very large amount of raw material, the daily melt of pig iron alone varying from 75 to 80 tons.

About \$40,000 in wages is weekly distributed among the employes, the most of whom live in Elizabeth.

The Singer Company have thoroughly systematized the manufacture of sewing machines, introducing and successfully using automatic machinery in every department, and with their large corps of well trained employes, the work in their immense factory goes on with the precision and regularity of clockwork. In the factory everything is scrupulously neat, and every provision is made for the safety, health, and comfort of those who spend their time within its walls.

Through the open portions of the premises are scattered trees, which overshadow well kept lawns, thickly dotted with flowers, and, indeed, the grounds, on which a force of men is kept continually employed, have more the appearance of a park than a factory yard.

tively little special machinery in them; for while it is quite evident that the manner in which certain work is performed can be improved upon, one may not be justified in obtaining the tool required because it cannot be employed steadily enough to make it pay for the first cost and the floor space which it occupies. This condition of affairs is fast being changed, however, partly from the fact that there is a decided increase in the number of tools which, while deserving the name special, have a sufficient range to permit of their constant employment to good advantage. Another thing which has its influence in bringing about a change is the tendency to do a large amount of heavy repairs and new building at one or two points on a system and have the smaller shops take care of light repairs, these calling upon the main shops for many finished articles. This makes no small portion of the work of the main shops sufficient, both in quantity and quality, to warrant the employment of special tools.

For this special machinery the railroads must generally look to the machine tool builders. The idea may originate with the railroad and the complete design may come from the same source or be the result of the combined efforts of the road and the tool builder, but the road must finally depend upon the builder for the work of construction. With all due credit to the enterprising builders who have done so much to bring

The tool builders, however, are generally fully alive to their opportunities, and there can be little doubt but that there will be a more extensive adoption of special machinery in the near future, and to the list of those now in use we may expect to find added a number in which much of the work now done by planing will be accomplished by milling operations. At least one of the leading roads of the country is beginning to use special milling tools quite extensively, buying them in large numbers for the equipment of new shops, and introducing them in their older plants. This has been done after a trial which has demonstrated their value. —*The Railway Review.*

One Thousand Sheep Killed in a Railroad Accident.

One of the most disastrous wrecks to the Atlantic and Pacific Railroad occurred Friday evening, May 30, two miles west of its junction with the Santa Fe Railroad. A train of double-decked cars, loaded with some five thousand fine merino mutton sheep, on the way from California to the Chicago market, was wrecked by the breaking of a truck. Every car but two was destroyed and about one thousand sheep killed outright. The Indians of the neighborhood worked all night skinning carcasses. They will have mutton for months to come.