CHAPTER V.

MACHINERY AND PROCESSES.

MACHINERY USED.

The muslin-underwear industry is, comparatively speaking, a new industry in this country. The oldest firms were established about 45 years ago. It would, however, be correct to state that the industry began to assume its present aspects about 20 years ago. In the early days handwork was employed extensively, but at the present time, with very few exceptions, it is wholly a machine-sewing industry. The hand-sewn muslin underwear is mostly imported from European markets, where labor is much cheaper than in the United States.

The increase in the amount of production in the lingerie industry is due chiefly to the invention of new devices and automatic attachments to sewing machines. The machine companies are producing machines capable of turning out work much more quickly and perfectly than formerly, thereby lessening the cost of production. The machines in the main are simple and are easily managed by trained female operators, whose earnings have also increased materially through this progress. The effect of this progress can be observed in every department and process of manufacture. Many of these inventions and betterments can be traced to the operators and machinists in clothing factories.

In establishments that make a large number of certain styles the laying-up machine has been adopted. This machine is a platform on wheels, and the cloth is placed on the platform, which is pushed from one end of the cutting table to the other and which at the same time lays out the cloth until the desired thickness of the lay is obtained.

Formerly cloth was cut by shears or knife, but now is nearly all cut by electric machines, the machine having either a rotary knife or a straight knife moving up and down. The straight-knife machine will cut a lay of 42 dozen or 504 thicknesses of cloth, which is about the maximum thickness of a lay. On very fine materials or on very small lays a short-handled knife is used instead of a machine.

The sewing machines employed in the early days of this industry made a maximum of 1,600 or 1,800 stitches per minute. To-day there are machines making anywhere from 2,800 to 4,000 stitches per minute. The machines at the same time pare or retrim the cut edges of the cloth. Electricity has aided in this development. Formerly the machines were run by foot power, a much slower process and a more taxing one on the operator. At present they are run wholly by electric power. The operator starts the power by pressing the foot rest and then gives her attention entirely to the material under the needle.

The development of the sewing machine has been along lines of low upkeep cost, high sustained speed, greater amount of production,