power to a large pipe, which conveys it to the distilling rooms.

The works cover eleven acres of ground; the distilling rooms are large one-storied buildings, with roofs of corrugated galvanized iron; no furnaces are used; no offensive smell is noticed, and all things look neat and clean, and very different from the filthy fetid candle works that formerly existed. Throughout the factory, steam, either at the common temperature or superheated, is employed as the source of heat in all operations connected with the separation and purification of candle material. The steam is conveyed to the different rooms by suitable pipes, and the smoke, dust and danger of the furnaces are thus kept at a respectful distance.

When the stearic candle manufacture was in its infancy the fat acids were separated from the glycerine by the process called lime saponification. The tallow was first boiled up with thin cream of lime, which seized upon the fat acids and caused them to forsake the glycerine; the soap of lime thus formed was then treated with sulphuric acid, which, by uniting with the lime, set free the fat acids. This was an expensive process, as to each cwt. of tallow 14 to 16 lbs. of lime, and 28 to 32 lbs. of sulphuric acid were employed; moreover, in the candle material, stearic acid, when obtained, was only in the proportion of two parts to five of the tallow employed, and the other product, oleic acid, had little commercial value.

The process of sulphuric acid purification, introduced into the manufacture about twenty years ago, was an immense improvement upon the lime process. It is still employed in these works, though to a comparatively small extent. The quantity of sulpuric acid now employed to decompose 1 cwt. of fat, in some cases is reduced to 4 lbs. and even 3 lbs. Six tons of the raw material, usually palm oil, are exposed to the combined action of concentrated sulphuric acid and a temperature of 350° Fah. The result of this action is very striking. The glycerine is decomposed, and the fat is changed into a mixture of fat acids of a very dark color, with a very high melting point. This is washed to free it from charred matter and adhering sulpuric acid, and is then transferred to a still. When it is exposed to the action of steam the palm oil passes over from the still in a limpid stream, and the product is collected in clean cans, from which it is transferred to tubs. The acid action and the distilling operations separate a dark, bituminous-looking residuum from the pure fatty acids. The sulphuric acid process involves the loss of glycerine and a waste of material, owing to the decomposition of part of the fat acids. These defects induced the chemists of this manufactory to seek for a still more perfect process, and in 1854 such was discovered. This consists in passing superheated steam directly into the neutral fat, by which means it is resolved into glycerine and fat acids; the glycerine distilling over in company, but no longer combined with them. Glycerine, which was formerly looked upon as a nuisance, as something to be got rid of at a great expense, is now valued, and sells at a higher rate than stearic acid. The presence of this body in the tallow candle gives rise to the offensive odor of the snuff when the flame is extinguished.

To obtain the pure stearic acid which forms the beautiful white adamantine candles, the distilled oil is cooled in tubs. When it congeals it is placed in bags of cocoa-nut fiber, and subjected to hydraulic pressure in a room at common atmospheric temperature. In another building is a long line of heated chambers, in which the process of heating is completed. To these the piles of solid acid which have undergone cold pressure are carried, and by a second squeezing, together with the action of heat, every trace of oleic acid is removed from the material. The hard cakes of stearic acid are now removed to large wooden vats, in which they are liquified by steam heat, and the candle material is ready to be run into the molds. Cocoa-nut oils and all solid fats receive the same treatment for making pure stearic acid candles. Common candles are made from the product of distillation before it is subjected to pressure.

Paraffine is obtained for making candles from Rangoon (East India) petroleum, which is similar to that of the oil well of America. This source of paraffine is much cheaper than the heavy oil obtained by distilling cannel coal. The Rangoon petroleum is a natural product of Burmah. It flows out from the ground like the Pennsylvania oil. It is treated to distillation in the Price Candle Works, and separated into different products, according to the temperature at which it is distilled. The most volatile liquid that passes over from the still at 160° Fah. is called Sherwood oil, and is really the benzine, so called, obtained in distilling American well oil. It is used for cleaning kid gloves, and for removing grease from silk and other fabrics. Oil for burning in lamps comes over, when distilled, at a higher temperature, then heavy oil for lubrication, at a temperature of about 550° Fah., and lastly paraffine, at 620° Fah. When cooled and solidified, by its temperature being reduced with ice, it forms the most beautiful known material for candles except white wax. In distilling this substance from petroleum, superheated steam is employed in order to elevate the retort to the proper temperature. Paraffine is subjected to pressure in the same manner as the solid fatty acid, obtained from palm oil and tallow. It is a beautiful white substance, and has a silvery luster. It is melted with steam heat, and run into molds in the usual way. In many cases great trouble has been experienced in removing stearic acid and paraffine candles, after they had become solidified, from their molds. In this manufactory a most convenient and ingenious method of removing them is employed. It is simply the force of compressed air. There are several large iron tanks, in which compressed air is forced by a steam engine; and these tanks connect with the machine in which the candles are molded. The candle molds are arranged in benches. Along the top of each bench there is a little railway, on which runs the "filler" —a car containing hot candle material. The wicks having been adjusted truly in the molds, the filler advances and drops in each mold the requisite amount of material. After a sufficient time has been allowed for solidifying and cooling, the boys who attend the machines proceed to remove the candles from the molds. It is in this operation that the compressed air is made use of. Each mold is connected with the reservoir, and on merely