September 22, 1882 – Delaware County Republican

EDDYSTONE

THE Great Print Works – A Description of the Different Departments – Growth and Improvements of Eddystone

In the year 1875, no houses or manufactories of any kind, existed on what was then the Effinger Estate. It was at that time bought by the Eddystone Manufacturing Company to locate their business, which was formerly carried on upon the banks of the Schuylkill near Philadelphia. In the course of eight years the enormous Print Works have steadily gained ground under the general management of Mr. Thomas Simpson, and the superintendence of Mr. F. W. Thomas. Around them have risen a public hall such as any village might be proud of, a school, a number of dwelling houses and many local industries such as Rowland Cochran's grocery, Mrs. Theodore Sykes and Mrs. Edward Kaynes dry goods stores.

The low and marshy ground has gradually been filled and the torturous course of Ridley Creek, where it empties into the Delaware, straightened up. In connection with the Print Works shops of various kinds, which will later be mentioned, have been erected and the great prosperity of the enterprise may to an extent be attributed to the practical sense of the owners in having their own shops and furnishing as far as possible all their own machinery and building material.

The colossal enterprise, embodied in a cluster of buildings, so vast and extensive that the visitor is seized with dizziness when he is piloted through an apparently endless procession of halls, all with roaring and puffing machinery and hosts of laboring humanity; is an object necessarily difficult of description by a newspaper man. And perhaps this is best. An expert in the cotton-printing business might meet with some difficulties in gaining admittance, while our reporter received the most courteous attentions, and every possible assistance, in his explorations of this vast establishment and in his attempt to give a faithful pen sketch of the most astonishing and prominent features he saw.

THE PRINT WORKS,

proper, that is not including the accessory shops, cover five acres of ground, with two hundred and seventy thousand square feet of flooring. Within the precincts are 48 steam boilers and 100 steam engines, the latter of an aggregate of 2500 to 3000 horse power, and the weekly production amounts to 700 cases or about one million three hundred thousand yards per week. The buildings all are one story high, with the exception of the Printing House which is three, and the Finishing House, which is two stories high. In all the rooms are fire plugs and hose, and the combined power of all the pumps in the water-works can flood the buildings with 5000 gallons of water every minute. The whole complex building is connected with subterranean sewers, and all steam and water pipes are also kept under ground to have them out of the way.

About 800 hands of both sexes are employed and considering that a large number of them are boys, the bi-weekly pay roll gives an average which shows that the work is remunerative, and it does not take the visitor long to perceive that an unusually intelligent working population is engaged in its departments. In the finishing room where the fair sex is prevalent, the appearance is very pretty, so pretty indeed that the visitor, gazing admiringly at the well dressed and handsome girls runs the risk of being punched in the back by the belligerent folding machines.

Passing through the gate we are first ushered into

THE ENGRAVING DEPARTMENT,

a spacious building 203 feet long and 82 feet wide, where the dies are made, which, in combinations of many colors produce the dainty designs on fabrics, whose destiny is to add additional charms to the fair sex in their morning or summer dresses, or to serve as a cover for our furniture.

In the first room we find 25 engravers busily engaged in carving the patterns from the designs of the artists upon little cylinders of soft steel. Several processes are employed in transferring these designs to the copper rollers, which are used finally in the printing process. The principal one is the transferring of the design from the steel cylinder to what is technically termed an "iron mill." This is an iron cylinder of large diameter, say about two and a half inches, and the pattern is pressed into it by being rolled in a machine against the first engraved cylinder. The mill is then hardened and the pattern transferred by the same process to large copper rollers of from thirty to forty inches in length, and six inches in diameter. This is but one of several processes employed to finish the cylinders.

In some cases these are being thus imprinted with the pattern, are etched with acid, after being covered with a protective paint on the places desired to be untouched in other cases, and this process is to the uninitiated one of the most interesting, the design of the pattern is greatly enlarged on a zinc plate and by the aid of a pantograph machine, the design on the intended scale, which of course is vastly smaller, is engraved on the revolving copper cylinder by a series of diamond points all moved by the hand of one employee who follows the tracings on the zinc plate. From twenty to thirty diminutive etchings of, for instance, the same rose in a pattern, are thus made simultaneously. This room contains seven engraving machines, of which four are of the improved French pattern, and the only ones in use in this country. Adjoining this is a storeroom for about 3000
copper rollers and an uncounted number of iron mills. The stored up treasures here amount to a fortune. An iron mill, according to pattern, averages from $3 to $100 a piece, and yet they cover the shelves in this spacious department from top to bottom and it is stated that no similar factory in the United States has an equal amount of mills. Outside the room, in a little frame house the etching of the copper rollers by acid takes place in granite troughs, and the fumes are carried out by a strong blast.

The adjoining department which we now enter, is the

COLOR HOUSE.

The floor here is slippery and the visitor has to look out lest he himself become printed with the different shades of colors being mixed in numerous pans, in which steam churns grind the materials to a homogenous mass. In the first room, the store room for raw paints, we are comparatively safe; but in the next, where the pans are, we are careful and feel a little relieved when we enter the chemists laboratory, where all the sketchy imprints are brought and an expert decides as to what will be the most economical way in which to produce the desired tints. Ushered out of this building we enter another 243 by 173 feet and plunge into the

BALE ROOM.

In this we find the raw material, which is common white, or as they there call it, "gray cloth," and by the imprint of artistic designs is transformed into fashionable goods. The size of the room it is not necessary to give, when it is stated that 4000 bales can be conveniently stored in

it, and about 800 bales are used per week. Adjoining is a sewing room, where eight girls are employed in sewing the pieces together upon sewing machines run by steam. This material, which is partially purchased and partly manufactured in other mills belonging to the firm, passes from this room to

THE BLEACHERY,

where first comes the Singeing Room, where the cotton cloth is passed over red hot copper rollers at such a rate of speed that the "nap" is scorched off, and the cloth-otherwise, of course, uninjured-gets a smooth surface, after which it is rolled up on machines designed for this purpose.

The machinery of the whole Bleachery, is driven by a Corliss engine of 250 horse power, which is placed in the room, through which we pass to enter

THE BLEACHING ROOM,

in which the cloth through various processes in which the cloth through various processes attains the snowy whiteness necessary to set off the superimprinted colors properly. Piloted through a bewildering maze of belting moved by innumerable pulleys, we learn that there are here thirteen "kiers," or large vats, each capable of soaking 800 pieces of cloth at a time. One of them can hold still more and is generally called "Romeo" by the employee, a name whose justification is not very clear, as at least Shakespeare's "Romeo" is not credited in our edition, with being able to "hold" an unusual amount of liquor. Well, in these vats the cloth is bottled and the foreman tells us, that "5,000 pieces a day pass through this process."

Having now made almost a circuit in this complex building, we enter the

CYLINDER BOILER ROOM,

which adjoins the Bale Room, from which we started. In this we find twenty boilers, each forty feet long supplying power for the employee in this part of the factory. A smoke stack, through which the smoke from all the fireplaces is carried away, rises to 170 feet above the ground and is 14 feet at the top. The interior at the base is wide enough to allow a horse and cart to turn inside of it a feat that
was actually performed when it was built.

One more room remains in this building to be visited, namely,

THE WHITE DRY ROOM,

where the fabrics, after bleaching, are dried. This drying is effected by passing the pieces of wet cotton goods over a series of iron cylinders, heated by steam, from which they emerge in a state of dry snowy whiteness.

This department contains two rooms. In one, as above stated, the fabrics are dried. Two machines, each with twenty-three cylinders about two and a half feet in diameter and placed in two horizontal rows are each capable of running four widths of cloth over at a time, and in the other a thirty-five horse power engine runs the machinery in the

SHEAR ROOM,

where the rough edges are cut off on six machines. Crossing narrow thoroughfare we enter the largest building on the premises,

THE PRINT HOUSE.

This is an extensive structure 300 feet long and 84 feet wide, and is 3 stories high. In the first story we find what is not alone locally, but principally the central point of the mills the printing machines. Ceaselessly and thunderingly the fabrics pass over the rollers, receive the patter on

the surface and passing upward toward the ceiling disappear to descend again in the adjoining room to pass over steam heated rollers of five feet diameter and be dried, each machine being driven by its own engine.

To this process there is one exception. A part of the fabrics called "acid," or rather "black and white," receive their first imprint – almost invisible – by acids, and it is then later developed, not unlike the invisible image of a photographic negative in the dark room. These prints are hung up in a department which runs through part of the two upper stories of the Print House, and is called the

HANGING ROOM.

This looks very much like the stage of some grand opera, the calico hanging from stretchers far up under the ceiling as close as the wings on the stage. In the northern end of the building is located one of the most conspicuous objects in the premises,

THE CONTINUOUS STEAMER.

This is an immense brick structure within the Print House. It is 40 feet high, 50 feet long, and 10 ½ feet wide at the base. On the solid stone foundation is a floor two feet thick of solid brick, which alone took 20,000 bricks in its construction. The whole structure is a huge steam-box, and within its walls the printed cloth is subjected to a heat of about 212 degrees Fahrenheit. The pieces are hanging over rollers, and by an ingenious contrivance, too difficult to full describe here, they are moved from one to another of the 205 rollers, taking one hour and fifteen minutes to pass over all of them. After this space of time the colors have "sheen" or in general household parlance they will "wash" and have besides gained in brilliancy. The charge of the steamer in 180 pieces of 47 yards each. Coming out the cloth passes over drying rollers and is piled up in regular heaps ready to progress to other departments. It is very hot in this top room close to the steamer, considerably more so than it is agreeable to the average journalist, notwithstanding the fact that a steam gun is continually blowing the hot air into the adjoining Hanging Room already mentioned.

Adjoining the Steamer Room we find another operation going on. Four so-called "aging machines" are in a few moments attaining the same result as is reached by the "hanging" to wit; improvement in the finish of the goods. The pieces are rolling out and piling up in regular heaps from the machines after passing through numerous cylinders, requiring from 50 seconds to 1 minute and 15 seconds to get through. In this room we also find a forcing jack on which the engraved copper cylinders are forced on or taken off the iron shafts as required for use. This finishes our trip through the Printing House; but before leaving, it is still worth taking a glimpse into the cavernous recesses of the cellars where a network of pipes and several sewers connect with other buildings, and four powerful fans force currents of air up through the structure. From the tower over the center of the building a panoramic view can be had of the whole of Eddystone.

THE NEW DRY HOUSE,

in which we now emerge is a one-story brick building 223 feet long and 90 feet wide, divided into several rooms. A most interesting process is viewed in

THE PADDING ROOM,

where the cloth is prepared before going to the Hanging Room. The bleached and sheared cloths pass through a liquid which "pads" it and is then squeezed through steam heated rollers emerging dry and tinted with certain shades, then to be printed with acid and bought to the

ganging room. Seven machines are at work and belching forth interminable strings of cotton cloth. In the next room we find a long open soaker, where the pieces subsequently passing over a number of rollers are soaked in soap and water-this washing liquid being supplied by two vertical tubular boilers placed near the soaker-and then pass through a wash of plain water and are finally squeezed through a system of eighteen steam cylinders to get dry. We have now passed through one half part of the Dye House, and entering into the other, are encountered by a large boiler looking object, which is the Stenter and Heater, from which hot air is fanned under the cloth when it, right over one's hand, passes through the stretching and straightening machine, in which two endless chains, whose links are clips, pull and stretch the piece into right shape.

Close by are four large tubular tanks, in which the padding liquids are stored. They are filled from copper tubes leading to the Retort House, of which we shall later make mention.

In a mysterious machine called the "Chrome" in the same room, the cloth is dyed black, and then passed through an underground passage to

THE OLD DYE HOUSE.

Where we see the black goods again emerge to daylight from the tunnel in which we saw them disappear in another building, and then being washed in machines, where the water splashes down on the fabric like miniature Niagaras. After the washing, the goods pass to the soaping machine in the next room, then to another washing machine, and are then ready to go to the Finishing Department, where they are stretched and ironed.

Carefully balancing our way through this wet department, we pass by the large tubs, through which all the goods except the plain black are passed, for the purpose of setting the colors. The machinery in this place is run by a 55-horse power engine. Through another washing room we reach

THE DYE ROOM,

with 12 machines and pass out through an apartment with so-called "orange tubs," for brightening black and orange, which are, however, much used. From this we pass to

THE MAIN BOILER HOUSE,

in which are placed 4 upright, 2 horizontal tubular, 4 cylinder and 4 Galloway boilers, these latter being of the latest and most approved pattern and weighing 32,000 pounds each. A part of the Boiler House was formerly used as a Steaming Room, but is at present not utilized.

We have now passed through the buildings in which the different processes of preparing, dyeing, printing, steaming, &c., are carried on and enter the large

FINISHING HOUSE,

300 feet long and 60 feet wide. On the first floor the cloth passes first through a set of "drying cans" of which there are six in the room, each consisting of a number of rollers, and ingenious contrivances for straightening out creases or folds.

In other machines the goods are blued and starched, and the glossy appearance now so much admired is achieved, by two embossing machines, while in the "calendars," of which there are two, the goods that do not require a glossy surface are ironed. Near the center of the vast hall are two massive brick piers, which are the supporters of two hydraulic jacks on the upper floor, and in the rear are two pasting machines by which the ends of the pieces are joined.

A new addition of 80 feet has been erected, the building being formerly only 220 feet long, but the interior is not quite finished, and the new machinery has not been placed in position.

On the second floor the goods now ready for shipment are folded either by hand or on machines whose arms, at each rotation, are thrust forward a yard and are very disagreeable to get in too close proximity to. Twelve of these, one for extra widths are in position. When folded the goods are piled up under one of the powerful hydraulic jacks and compressed so as to take up the smallest room in the boxes, which a number of employees are constantly filling. In the rear of the room samples are cut, either by hand, or on a steam roller. Before leaving we enter the cellar, where, besides a network of pipes, we find water tanks in which the wooden rollers or "bowls" are soaked to prevent their warping from dryness.

The buildings of which it has been attempted to give the reader an idea from the main part of the works; but a pilgrimage to the surrounding grounds reveals a number of accessory buildings and processes. At a little distance from the Finishing House is the

RETORT HOUSE,

where the "padding liquid is stored up in sixteen tanks, each capable of holding 6000 gallons and pumped from there to the Dye House when needed. Other solutions are kept in open tanks and the soap used in the washing of the cloths is boiled in a pan here. Close to the retort house are four stills in which the oak wood is transformed to charcoal in large iron cylinders, and the escaping vapors distilled and condensed.

Along the shore of the creek are piled in regular 8 feet high stacks, a vast supply of oak, 1600 cords being at this time in stock. Not less stupendous is the mountain of coal, which at some distance towers on the river side. An estimate of the present contents of the pile was not possible; but the annual consumption is 30,000 tons. On our road toward the water-works we pass a smaller circular pump house with a capacity of 100 gallons per minute.

THE WATER WORKS,

contain two Worthington duplex, one Wilbrabam, three rotary and one donkey pumps for the boiler of an aggregate capacity of 5000 gallons per minute. Although many other points of interest might be mentioned, we hasten back towards the gate at which we entered and opposite this pass

THE OFFICE BUIDINGS,

a two-story frame structure. From the office of the Superintendent special telegraph and telephone wires connect with Philadelphia and other places.

THE MACHINE SHOP

close by with which is connected a blacksmith shop is an establishment of respectable size employing about 32 men, notwithstanding the fact that it supplies the Works only with the material in its line.

THE PLANING AND SAWING MILL,

in the rear of the former, employs 20 men, and among the most important manufacturers, are the boxes in which the goods are shipped, and of which as formerly stated about 700 per week are used.

Another illustration of the extent of the business of the firm is the fine brick stable capable of accommodating 36 horses. At present 27 horses and mules are in use, the patriarch among which is undoubtedly a venerable old white mule, which our reporter was assured by an elderly gentleman in the stable was an old mule, when "his (the elderly gentleman's) father was a boy."

Near the mills are a number of plain but neat brick houses, all built and owned by the Messrs. Simpson, and on a lovely lawn, dotted with shrubbery stands.

THE LIGHTHOUSE BUILDING,

built by the Messrs. Simpson, at a cost of more than $12,000. It is a beautiful two-story building, constructed of brick and trimmed with granite. Its architecture is Gothic and in the lower story we find a library containing about 800 volumes, while on the oaken tables are the leading illustrated periodicals and a number of daily papers. The wainscoting, cornices, doors and windows are all of varnished oak and the walls white. The upper light in each window is of stained glass and a large ornamental mantelpiece gives the room an air of snug comfort. In the center is the register, which is heated from an improved furnace in the basement. The library connects with the reading room, where checkers boards and dominoes are found on the tables, and a comfortable and convenient gathering place is thus established for their employees by the judicious munificence of the Messrs. Simpson. Thomas Simpson is the President and Messrs. William Simpson, Sr., and William Simpson, Jr., the Directors. An exceedingly laudable and wise regulation is that the library is open on Sundays and holidays also, thus giving the men an opportunity to pursue the books, which otherwise would be denied to them.

In the second story running through the whole building is

THE LIGHTHOUSE HALL,

which is designed to be used as well for religious as secular gatherings. It is beautifully finished in varnished wood and with its snug carpeted platform and fine stained windows presents an attractive appearance.

To the many improvements due to Messrs. Simpson, the school building has a just claim to be mentioned. It is a neat building standing at some distance opposite the depot, which in its turn, in its little garden with well- kept flower beds, adds to the attractive appearance of Eddystone.

On the farm with 523 acres of ground, belonging to the Eddystone Manufacturing Company, sufficient crops are raised for their own use. The grounds which were very swampy, have been materially improved by draining, and recently a 30-inch egg-shaped sewer, 1157 feet long has been laid on Seventh Street.

At the corner of Eddystone Avenue and Ninth Street are four brick kilns, each of a capacity of 25,000 bricks, from which all the brick used in the erection of the buildings have been furnished, and a store house for the great quantity of logwood used in the dyeing houses.

In the course of time it is reasonably safe to prophecy that the space between Chester and Eddystone will be entirely occupied by streets lined with houses and business establishments, but judging from what has been done in Eddystone since 1875, it may come to pass that our city will be met before it reaches half way out.