

INFLUENCE OF INVENTION ON INDUSTRY.

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BY CHAUNCEY SMITH. (37.)

Influence of Invention on Industry

"Recollect all that men of the humbler classes have done for England in the way of invention only, and see where she would have been, but for them."

One of the most strongly marked features of the English speaking people is their spirit of industry, standing out prominent and distinct in her past history and as strikingly characteristic of them now, as at any former period. It is this spirit which has laid the foundation, and built up the industrial greatness of this country. The career of industry which the nation has pursued has also proved its best education. There is no bread eaten by man so sweet, as that earned by his own labor. By labor, the earth has been subdued and man redeemed from barbarism, nor has a single step in civilization been made, without it.

Perhaps no other thing has advanced civilization, or has had so much influence on the business or daily life, as invention. Invention is the lever that moves the world.

and the very power that moves the wheels of industry. Notable inventors have marked the march of civilization in all stages of the world. Already nearly all other interests have begun to cluster around invention. It is a matter of common remark that the most of the capital of this country is bound up in patents or is drifting that way. The rise or fall of the value of land, great railroad arteries pulsate under them, from end to end, the manufacturer who ignores it invites speedy ruin. The farmer, the mechanic and the miner all work under them or by their authority. Vast sums of money are continually changing hands over them. They have probably made and lost more fortunes than all other agencies combined.

"Nothing is more remarkable than that man should have remained so long without the arts, except that they should have had them at all. That a naked savage placed upon the earth should cover himself with furs, build comfortable homes, become a merchant, manufacturer, author or artist, read the stars and weigh the

sun, seems miraculous, even to himself, yet, when he surveys the slow steps of progress, he wonders that he could have remained so long in barbarism."

In a single generation it is agreed among statesmen, the inventor has promoted the efficiency of human labor, and has diverted all to the use of man, such enormous amounts of nature's energies, that production has been increased fifty to seventy per cent more rapidly than the population, and wealth has correspondingly augmented.

We do not often stop to think how little man has or enjoys, that is not the fruit of invention. The air we breathe and the water we drink are provided by nature. But we drink but very little water except from a cup or vessel of some kind which is a human invention. Desolate indeed would this world be, if all the inventions were suddenly forever blotted out. We would be, as the naked savage. What would be our western country if it were not for invention? Where indeed would be proud old Kansas with its fields

of wheat, reaching to the horizon, and when the crop is harvested, by great machines, drawn by teams of many horses. It is by the fruits of invention that all this has become a possibility.

Let us now consider this force that has led to invention. A little thought will show that invention has its origin, either in a desire to get something new, or a desire to get something more cheaply. Primitive man was influenced by the former. He felt at first the instinctive impulse to increase his power. But as we draw nearer to our own time, we find the cheapening devices gaining ground more and more in number and importance.

In brilliant succession we meet the steam engine, the steamboat, the telegraph, vulcanized rubber, the ice machine, Bessemer's steel, the telephone and the sand blast. The labor saving machine is entering every field and its entrance is to the working man, a command to go. Thus we are brought face to face with this momentous problem—What will we do with the working man? To

there no hope for him? The country swarms with the unemployed, wandering from place to place. The answer is "let him have free recourse to the unused land." There is abundant space for settlement and cultivation all over this broad land, beyond the reach of machinery. In determined hands, the laborer would soon prosper and get conveniences beside what his own soil would afford. The working man would once more be in league with the inventor, the labor saving device would become his friend.

Can we estimate the comforts of our homes in this country due to the inventor? Can we estimate the greater value of the evening hours for work, study or reading which invention has did for us? It is a curious and interesting exercise to take any common article of daily use and inquire how much invention has been involved in its production. I buy the New York Tribune for two cents. I read it on my way to business, riding on an electric car.

What do I pay for? I buy a sheet of paper with printer's ink impressed upon its surface. The question comes "How is this paper made? It is pulp or fibre spread out into a uniform sheet. It is all due to invention. In this paper may be there is a list of inventions or an account of Edison's latest invention or yet again, it may contain the horrors of a railroad accident that has taken place one thousand miles away. It is all due to invention that the railroad disaster could have become a possibility. I reach the end of my journey, I do not have to clamber up the long steps of a thirty story building, but am rapidly whirled upward by the aid of electricity. How solate indeed would this world be, if it were not for the comforts and luxuries that invention has afforded. What if by some strange means this broad land of plenty was deprived of all the fruits of invention? What would be the result? Instead of a land of plenty of refined and cultured homes, supplied with every convenience that human skill

could design. Instead of a country with miles of steel track, with countless factories that belch forth flame and smoke at waving grain. It would be a land of forests and rugged mountains over which roamed the mighty Yeldskin. It would be a land of desolation. Look at all this, and you will perceive what invention has done for this country.

Invention and civilization go hand in hand. Notable inventions have marked the march of civilization in all ages of the world, and the epochs of history are marked by great discoveries none the less important. They go hand in hand. On the other hand the world would not have arrived at the high zenith to which it has attained, had it not been for the inventive genius, who bestowed these wonderful gifts upon it. The United States has endowed the world in the last eighty years, with the lightning rod, the steam boat, the photograph, the electric telegraph, the discovery of the use of inhaled ether, the sewing machine, the best and cheapest farming implements, the best carpenter's tools, the best

locks, firearms, nails, spikes, screws and axes, the best fireengines, the cheapest clocks the fastest steamers and sailing vessels, the cheapest railroad and bridges, the lightest wagons and the most useful labor saving machines, in all most every department of industry. If any other nation has done more, or as much, the fact is not generally known.

We may ask ourselves the question? Is this country so well equipped in production as others? Is there any other country where the laboring man is so efficient and his labor therefore as cheap as our own? Does he not receive more for his labor and yet do more for what he receives. This large number of inventions implies a high degree of intelligence and mental activity in a great body of the people. It indicates trained habits of observation and trained powers of applying knowledge which has been acquired by the American people.

And inventors now have entered a new field and given us a light for our homes and streets almost as brilliant as the

day itself "from that agent which, since the world began, has lighted up the heavens with angry flashes, only to alarm timid and superstitious man." Compare, if you will, our brilliant lighted homes and streets, with the Tallow candle of fifty years ago, and see what you have gained. I venture to say that any of you would consider it an intolerable hardship to be compelled to use the candle and nothing else.

Can we estimate the benefits of such men as Hargreaves, Arkwright and Crompton. It is all due to these three leading inventors of an early date that the great cotton industry has become a possibility. We must Eli Whitney be left out, for it was by his invention of the cotton-gin that the production of cotton was a success. How has invention influenced farming? It has undergone a revolution with the rise of the manufacturing interests, it has become a field of speculation, or a medium of supplying the multitudes. The labor saving device has here also stepped in and interposes at every turn. The reaper

has been driven from the harvest field, the thrasher from the threshing floor. The cult-wator is one half a dozen of hoies in one, while the horse-rake, a dozen rakes, and the binder takes the place of one half a dozen of laborers. Improvements in farm implements crowd fast upon one another. It is due to the mechanical inventor that the great cereal crop has become a possibility.

Our architectural triumphs are yet to come, we build for today, while rivals build for all times. But we will challenge the world in one class of constructions and that is bridges. For lightness, elegance and strength, the American bridge cannot be surpassed.

The world has always paid homage to its distinguished warriors, statesmen and orators, all of whom have left the impress of their work upon the history of mankind. It is not until recently however, that inventors have received a large share of these honors. The inventors have best deserved the gratitude of mankind. They have enlarged the resources of this

country and have increased the power of man. They have made greater changes in the face of society and the relations of civilized man than all the warriors and statesmen who have flourished since the commencement of the Christian Era.

There are many people who believe that man will soon exhaust the field of invention. They base their belief on the supposition, that as the inventions of the last century have been so numerous and wonderful, that it seems that man will soon exhaust nature. But there is little reason to fear that this will ever be reached for ages, if ever? The horizon of the inventor's world is widening, open and free to all, with as large possibilities for the future as the past has shown. There is no sign that the work of the inventor is near its close. It has been the chief agent in the progress of the world, and the world will continue to be indebted to it as the centuries go by. Where the progress of modern life will end, it is hard to see.