Second Lecture on Discoveries and Inventions [1]

[February 11, 1859]

We have all heard of Young America. He is the most *current* youth of the age. Some think him conceited, and arrogant; but has he not reason to entertain a rather extensive opinion of himself? Is he not the inventor and owner of the *present*, and sole hope of the *future*? Men, and things, everywhere, are ministering unto him. Look at his apparel, and you shall see cotten fabrics from Manchester and Lowell; flax-linen from Ireland; wool-cloth from [Spain;] [2] silk from France; furs from the Arctic regions, with a

buffalo-robe from the Rocky Mountains, as a general out-sider. At his table, besides plain bread and meat made at home, are sugar from Louisiana; coffee and fruits from the tropics; salt from Turk's Island; fish from New-foundland; tea from China, and spices from the Indies. The whale of the Pacific furnishes his candle-light; he has a diamond-ring from Brazil; a gold-watch from California, and a spanish cigar from Havanna. He not only has a present supply of all these, and much more; but thousands of hands are engaged in producing fresh supplies, and other thousands, in bringing them to him. The iron horse is panting, and impatient, to carry him everywhere, in no time; and the lightening stands ready harnessed to take and bring his tidings in a trifle less than no time. He owns a large part of the world, by right of possessing it; and all the rest by right of *wanting* it, and *intending* to have it. As Plato had for the immortality of the soul, so Young America has ``a pleasing hope---a fond desire---a longing after" teritory. He has a great passion---a perfect rage---for the ``*new*"; particularly new

men for office, and the new earth mentioned in the revelations more sea, there must be about three times as much land as in t great friend of humanity; and his desire for land is not selfish, impulse to extend the area of freedom. He is very anxious to f liberation of enslaved nations and colonies, provided, always, have *not* any liking for his interference. As to those who have be glad of help from any quarter, he considers *they* can afford hundred years longer. In knowledge he is particularly rich. He possibly be known; inclines to believe in spiritual rappings, an unquestioned inventor of ``*Manifest Destiny*." His horror is fc particularly ``Old Fogy"; and if there be any thing old which h only old whiskey and old tobacco.

If the said Young America really is, as he claims to be, the ov present, it must be admitted that he has considerable advanta Fogy. Take, for instance, the first of all fogies, father Adam. stood, a very perfect physical man, as poets and painters infor must have been very ignorant, and simple in his habits. He ha sufficient time to learn much by observation; and he had no n neighbors to teach him anything. No part of his breakfast had brought from the other side of the world; and it is quite proba no conception of the world having any other side. In all of th is very plain, he was no equal of Young America; the most th said is, that *according to his chance* he may have been quite

man as his very self-complaisant descendant. Little as was wl Youngster discard all he has learned from others, and then sh advantage on his side. In the way of *land*, and *live stock*, Ad ascendant. He had dominion over all the earth, and all the liv round about it. The land has been sadly divided out since; bu America will *re-annex* it.

The great difference between Young America and Old Fogy, of *Discoveries, Inventions*, and *Improvements*. These, in turn result of *observation, reflection* and *experiment*. For instanc certain that ever since water has been boiled in covered vess seen the lids of the vessels rise and fall a little, with a sort of

pot-lid, will lift any thing else, which is no heavier than the pot-lid." ``And, as man has much hard lifting to do, can not this hot-water power be made to help him?" He has become a little excited on the subject, and he fancies he hears a voice answering ``Try me" He does try it; and the *observation, reflection*, and *trial* gives to the world the control of that tremendous, and now well known agent, called steam-power. This is not the actual history in detail, but the general principle.

But was this first inventor of the application of steam, wiser or more ingenious than those who had gone before him? Not at all. Had he not learned much of them, he never would have succeeded---probably, never would have thought of making the attempt. To be fruitful in invention, it is indispensable to have a *habit* of observation and reflection; and this *habit*, our steam friend acquired, no doubt, from those who, to him, were old fogies. But for the difference in *habit* of observation, why did yankees, almost instantly, discover gold in California, which had been trodden upon, and over-looked by indians and Mexican greasers, for centuries? Gold-mines are not the only mines overlooked in the same way. There are more mines above the Earth's surface than below it. All nature---the whole world, material, moral, and intellectual,---is a mine; and, in Adam's day, it was a wholly unexplored mine. Now, it was the destined work of Adam's race to develope, by discoveries, inventions, and improvements, the hidden treasures of this mine. But Adam had nothing to turn his attention to the work. If he

should do anything in the way of invention, he had first to invent the art of invention---the *instance* at least, if not the *habit* of observation and reflection. As might be expected he seems not to have been a very observing man at first; for it appears he went about naked a considerable length of time, before he even noticed that obvious fact. But when he did observe it, the observation was not lost upon him; for it immediately led to the first of all inventions, of which we have any direct account---*the fig-leaf apron*.

The inclination to exchange thoughts with one another is probably an original impulse of our nature. If I be in pain I wish to let you know it, and to ask your sympathy and assistance; and my pleasurable emotions also, I wish to communicate to, and share with you. But to carry on such communication, some *instrumentality* is indispensable. Accordingly speech---articulate sounds rattled off from the tongue---was used by our first parents, and even by Adam, before the creation of Eve. He gave names to the animals while she was still a bone in his side; and he broke out quite volubly when she first stood before him, the best present of his

maker. From this it would appear that speech was not an invention of man, but rather the direct gift of his Creator. But whether Divine gift, or invention, it is still plain that if a mode of communication had been left to invention, *speech* must have been the first, from the superior adaptation to the end, of the organs of speech, over every other means within the whole range of nature. Of the organs of speech the tongue is the principal; and if we shall test it, we shall find the capacities of the tongue, in the utterance of articulate sounds, absolutely wonderful. You can count from one to one hundred, quite distinctly in about forty seconds. In doing this two hundred and eighty three distinct sounds or syllables are uttered, being seven to each second; and yet there shall be enough difference between every two, to be easily recognized by the ear of the hearer. What other *signs* to represent *things* could possibly be produced so rapidly? or, even, if ready made, could be *arranged* so rapidly to express the sense? *Motions* with the hands, are no adequate substitute. *Marks* for the recognition of the eye---*writing*---although a wonderful auxiliary for speech, is no worthy substitute for it. In addition to the more slow and laborious process of getting up a communication in writing, the materials---pen, ink, and paper---are not always at hand. But one always has his tongue with him, and the breath of his life is the ever-ready material with which it works. Speech, then, by enabling different individuals to interchange thoughts, and thereby to combine their powers of observation and reflection, greatly facilitates useful discoveries and

inventions. What one observes, and would himself infer nothing from, he tells to another, and that other at once sees a valuable hint in it. A result is thus reached which neither *alone* would have arrived at.

And this reminds me of what I passed unnoticed before, that the very first invention was a joint operation, Eve having shared with Adam in the getting up of the apron. And, indeed, judging from the fact that sewing has come down to our times as ``woman's work" it is very probable she took the leading part; he, perhaps, doing no more than to stand by and thread the needle. That proceeding may be reckoned as the mother of all ``Sewing societies"; and the first and most perfect ``world's fair" all inventions and all inventors then in the world, being on the spot.

But speech alone, valuable as it ever has been, and is, has not advanced the condition of the world much. This is abundantly evident when we look at the degraded condition of all those tribes of human creatures who have no considerable additional means of communicating thoughts. *Writing*---the art of communicating thoughts to the mind, through the

eye---is the great invention of the world. Great in the astonishing range of analysis and combination which necessarily underlies the most crude and general conception of it---great, very great in enabling us to converse with the dead, the absent, and the unborn, at all distances of time and of space; and great, not only in its direct benefits, but greatest help, to all other inventions. Suppose the art, with all conception of it, were this day lost to the world, how long, think you, would it be, before even Young America could get up the letter A. with any adequate notion of using it to advantage? The precise period at which writing was invented, is not known; but it certainly was as early as the time of Moses; from which we may safely infer that it's inventors were very old fogies.

Webster, at the time of writing his Dictionary, speaks of the English Language as then consisting of seventy or eighty thousand words. If so, the language in which the five books of Moses were written must, at that time, now thirtythree or four hundred years ago, have consisted of at least one quarter as many, or, twenty thousand. When we remember that words are *sounds* merely, we shall conclude that the idea of representing those sounds by *marks*, so that whoever should at any time after see the marks, would understand what sounds they meant, was a bold and ingenius conception, not likely to occur to one man of a million, in the run of a thousand years. And, when it did occur, a distinct mark for each word, giving twenty thousand different marks first

to be learned, and afterwards remembered, would follow as the second thought, and would present such a difficulty as would lead to the conclusion that the whole thing was impracticable. But the *necessity* still would exist; and we may readily suppose that the idea was conceived, and lost, and reproduced, and dropped, and taken up again and again, until at last, the thought of dividing sounds into parts, and making a mark, not to represent a whole sound, but only a part of one, and then of combining these marks, not very many in number, upon the principles of permutation, so as to represent any and all of the whole twenty thousand words, and even any additional number was somehow conceived and pushed into practice. This was the invention of *phoenetic* writing, as distinguished from the clumsy picture writing of some of the nations. That it was difficult of conception and execution, is apparant, as well by the foregoing reflections, as by the fact that so many tribes of men have come down from Adam's time to ours without ever having possessed it. It's utility may be conceived, by the reflection that, to *it* we owe everything which distinguishes us from savages. Take it from us, and the Bible, all history, all science, all government, all commerce, and nearly all social intercourse go with it.

The great activity of the tongue, in articulating sounds, has already been mentioned; and it may be of some passing interest to notice the wonderful powers of the *eye*, in conveying ideas to the mind from writing. Take the same example of the numbers from *one* to *one hundred*, written down, and you can run your eye over the list, and be assured that every number is in it, in about one half the time it would require to pronounce the words with the voice; and not only so, but you can, in the same short time, determine whether every word is spelled correctly, by which it is evident that every separate letter, amounting to eight hundred and sixty four, has been recognized, and reported to the mind, within the incredibly short space of twenty seconds, or one third of a minute.

I have already intimated my opinion that in the world's history, certain inventions and discoveries occurred, of peculiar value, on account of their great efficiency in facilitating all other inventions and discoveries. Of these were the arts of writing and of printing---the discovery of America, and the introduction of Patent-laws. The date of the first, as already stated, is unknown; but it certainly was as much as fifteen hundred years before the Christian era; the second---printing---came in 1436, or nearly three thousand years after the first. The others followed more rapidly---the discovery of

America in 1492, and the first patent laws in 1624. Though not apposite to my present purpose, it is but justice to the fruitfulness of that period, to mention two other important events---the Lutheran Reformation in 1517, and, still earlier, the invention of negroes, or, of the present mode of using them, in 1434. But, to return to the consideration of printing, it is plain that it is but the *other* half---and in real utility, the *better* half---of writing; and that both together are but the assistants of speech in the communication of thoughts between man and man. When man was possessed of speech alone, the chances of invention, discovery, and improvement, were very limited; but by the introduction of each of these, they were greatly multiplied. When writing was invented, any important observation, likely to lead to a discovery, had at least a chance of being written down, and consequently, a better chance of never being forgotten; and of being seen, and reflected upon, by a much greater number of persons; and thereby the chances of a valuable hint being caught, proportionably augmented. By this means the observation of a single individual might lead to an important invention, years, and even centuries after he was dead. In one word, by means of writing, the seeds of invention were more permanently preserved, and more widely sown. And yet, for the three thousand years during which printing remained undiscovered after writing was in use, it was only a small portion of the people who could write, or read writing; and consequently the field of invention, though much extended, still

continued very limited. At length printing came. It gave ten thousand copies of any written matter, quite as cheaply as ten were given before; and consequently a thousand minds were brought into the field where there was but one before. This was a great *gain*; and history shows a great *change* corresponding to it, in point of time. I will venture to consider *it*, the true termination of that period called ``the dark ages." Discoveries, inventions, and improvements followed rapidly, and have been increasing their rapidity ever since. The effects could not come, all at once. It required time to bring them out; and they are still coming. The *capacity* to read, could not be multiplied as fast as the *means* of reading. Spelling-books just began to go into the hands of the children; but the teachers were not very numerous, or very competent; so that it is safe to infer they did not advance so speedily as they do now-a-days. It is very probable---almost certain---that the great mass of men, at that time, were utterly unconscious, that their *conditions*, or their *minds* were capable of improvement. They not only looked upon the educated few as superior beings; but they supposed themselves to be naturally incapable

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of rising to equality. To immancipate the mind from this false and under estimate of itself, is the great task which printing came into the world to perform. It is difficult for us, *now* and *here*, to conceive how strong this slavery of the mind was; and how long it did, of necessity, take, to break it's shackles, and to get a habit of freedom of thought, established. It is, in this connection, a curious fact that a new country is most favorable---almost necessary---to the immancipation of thought, and the consequent advancement of civilization and the arts. The human family originated as is thought, somewhere in Asia, and have worked their way princip[al]ly Westward. Just now, in civilization, and the arts, the people of Asia are entirely behind those of Europe; those of the East of Europe behind those of the West of it; while we, here in America, *think* we discover, and invent, and improve, faster than any of them. *They* may think this is arrogance; but they can not deny that Russia has called on us to show her how to build steam-boats and railroads---while in the older parts of Asia, they scarcely know that such things as S.Bs & RR.s. exist. In anciently inhabited countries, the dust of ages---a real downright old-fogyism---seems to settle upon, and smother the intellects and energies of man. It is in this view that I have mentioned the discovery of America as an event greatly favoring and facilitating useful discoveries and inventions.

Next came the Patent laws. These began in England in 1624; and, in this country, with the adoption of our constitution. Before then [these?], any man might instantly use what another had invented; so that the inventor had no special advantage from his own invention. The patent system changed this; secured to the inventor, for a limited time, the exclusive use of his invention; and thereby added the fuel → of *interest* to the

← *fire* → of ← genius, in the discovery and production of n useful things.

Annotation

[1] AD, SIU $$$ Lincoln's first lecture on Discoveries and was written at least by April 6, 1858 (*vide supra*), on which delivered it before the Young Men's Association of Bloomir Illinois. Completely rewritten for delivery before the Phi Alp of Illinois College at Jacksonville on February 11, 1859 (*Illi Journal*, February 14, 1859), the lecture was repeated a few in Decatur, and again in Springfield on February 21, before Springfield Library Association at Concert Hall (*ibid.*, Febru Further invitations to lecture were turned down because of business (letters to W.M. Morris, March 28, and T.J. Picket *infra*). The second manuscript, like the first, was preserved satchel of documents which Lincoln left with Elizabeth Tod a few days before leaving for Washington in 1861. It later p the Gunther Collection and then into the Barrett Collection.

[2] Lincoln left a blank space in which ``Spain" has been p another hand.

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