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THOUGHTS

ON THE

NATURE OF INTELLECTUAL PROPERTY,

AND

ITS IMPORTANCE TO THE STATE.

By N. S. SHALER.

BOSTON:
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PRELIMINARY NOTE.

THE five brief essays that appear in the following pages were first printed for private distribution, under the conviction that it was worth while to do something, however little, to oppose the singular fallacies concerning intellectual property which have found a place among our people. The readiness with which a public opinion, often formed hastily and without anything like a fair discussion of the matter it concerns, finds its way into enactments, makes it the duty of all citizens, however far removed from political life, to speak boldly whenever they believe that momentous errors are taking possession of the public mind.

It has seemed to me, furthermore, that in these unhappy days when laborers appear necessarily to divide themselves into two hostile armies, according as their labor is purely physical or is intellectualized by training, well worth while to give time and care to the discussion of these problems which the wide extension of intellectual work have brought before us. There are few indeed so hopeful as to expect that this great struggle between brute force and educated force will speedily be brought

to an end. It is the necessary consequence of the difference of education which has given strength and prosperity to its possessors, while it each day widens the gap between them and those who have it not; and it cannot be stilled until that far-off day when, men being brought by education nearer together in character, will be more equally sharers of the world's goods, or at least of its contentments. In the long mean time the battle must rage, and those who fight in the minority, as the trained seem likely, for a time at least, to do, must look to all the ties that naturally bind them together.

It is my hope that these essays may in some way serve to bring men of training, however diverse, into closer sympathy with each other. That they may help to show that the man of organized business of any kind, quite as much as the man of science, invention, and letters, has an interest in this matter of intellectual property. If they in the least degree aid in this work, the author will feel that his reward is greater than his deserts.

CAMBRIDGE, MASS., July 24, 1877.

CONSIDERATIONS

ON THE

NATURE OF INTELLECTUAL PROPERTY.

Now that the national currency seems in a fair, because natural, way of speedy settlement, there is a prospect that the cheap thinkers, and those possessed of a fancy for short ways with complicated matters, will next turn their attention to the questions of property in the results of intellectual labor. The unorganized and unconfessed communism that has led to raids on the currency, on the claims of the government bondholders, and other forms of property not having the tangible nature of acres or herds, will find an abundant scope for loose thought and action in this field. In the last days of the late distracted session of Congress a stealthy effort was made to push through the legislative ways a bill that would have practically abolished the limited monopoly of inventions granted by our present patent laws. This measure passed unquestioned through the House, and was only arrested in the Senate by the vigorous resistance of a few men

from without its walls. As this scheme has the backing of several strong corporations as well as of the proletariat spirit of a large part of the agricultural communities of the West, it is sure to be revived in the next session of the national legislature. Once again it will be said in varied ways that there is no natural property in inventions; that they are evolved, like the German's camel, from the depths of the inventor's consciousness; and the cheap and miraculous product should therefore be at the disposition of all who might desire it for their own use. It will be suggested that inventors and book-makers are, as a class, something like prophets, — mere vehicles of a divine efflatus, which is naturally meant to fill all sails alike; the prophet himself being properly satisfied by the large share of honor which has, as is well known, always belonged to his ilk in his own land and time, making up for any deficiencies that might arise in this mode of payment by the inward satisfaction which does so fill those who have deserved well of their race. There will be various schemes for double-acting interconvertible patents and copyrights which are to give the inventor his full due, and still leave the world at large to do as it pleases with his inventions. Cheap patents, patents for the people, bloated patent-holders, will take the places of the old war-cries whenever the representatives of toil with fixed and limited rewards find themselves together.

Although the matter of property in the results of intel-

lectual labor, whether it be given in a book, a symphony, or a machine, is essentially the same, it will be that class of intellectual labor which is included in what are popularly called inventions that will first meet the shock of the coming assault. There the wealth is great, and the feeling that found expression in the words of Blucher, applied to the shops of London, "What a place to loot!" adds a vigor to the campaign it could not have if the copyrights were the expected plunder. Great as have been the rewards of the authors of certain books, the authors of certain machines have been paid tenfold as well. Great streams of wealth pour into the coffers of the winner of the rare prizes in this great lottery of invention. Goodyear, Colt, Bigelow, Howe, McCormack, and perhaps a score of others in this country and Europe, have been made millionnaires by their inventions, and thousands have had their reward in full though lesser share. They seem to the short-sighted to lay a tax upon every dweller in the land. He cannot realize that, so far from being taskmasters, they in truth are givers of a great dole. When he cannot wear a shoe or harvest a field without rendering them a due, it is not strange that he should consider them as tax-gatherers of doubtful title. The extensive literature of patent-law decisions shows that this view is not limited to those who are short-sighted through ignorance; there are many of some understanding that hold views with regard to this sort of property which, if applied to ordinary goods, would be regarded as rank communism.

All these propositions for a radical change in the law of patent and other author rights are based upon the most unwarranted assumption that the so-called natural right to this class of property is less strong than that to other property, such as lands or chattels; in a word, that this kind of property is in a peculiar fashion the gift of society to the possessor, and not something having property characteristics in itself. This view of the case will not stand a moment's consideration. It matters not that the acknowledgment of such possessions is a late result of the progress of law, nor that such rights can be traced back to a certain association with monopolies of salt and other flagrant abuses of olden days; the property of the individual in his own person is really a relatively recent acquisition, one that was not gained until a yesterday in our own legal system. We must ask the reader to dismiss this prejudice, arising from the relative newness of the law affecting this class of possessions. He will surely see, without argument, that rights are not reasonable nor just in proportion to their antiquity, and that the divinity that doth hedge acres or town lots is largely a prejudice arising from the fact that such property has only become established in custom. If he will now go a step farther and consider the essential nature of property, he will, we hope, see that the title to intellectual property rests upon an even higher level of right than can be assigned to any other material possession. It may be laid down as a general principle

that property is divisible into two distinct classes of possessions: 1st, that which is inherent in the nature of the world about us, and 2d, that which is the result of the individual powers of men. The savage picked his bits of flint where he could find them; they became his property through the skill and labor of their fashioning. He had no property in his game until it became, as it were, marked by his arrow lodged within it. As organization advanced, the growing crops in the commonly shared lands had the fence of right built round them, and as in time agriculture became the thing of years of labor, a part of the sowing remaining, as it were, always in the improved soil, these possessions extended to the fields. On the theory that held in other lands, the whole state was the king's, and these rights were given by some form of patent, such as we now give to the highest and most difficult forms of improvement alone. Out of these principles of right, which we can only indicate, and cannot trace even in outline, grew the possessions of a simple society, the more or less absolute right to chattels, and the more or less limited right to real estate.

While life was the relatively simple thing it was in all the earlier ages, when the tools of one generation were inherited, unchanged, by the succeeding, and not kept, as they are now, in museums to be wondered at, there was no need of other forms of possessions. The additions made by inventive individuals were very limited. Scarcely anything could, in the nature of the labor system then exist-

ing, start as a great whole from the brain of one man. As learning advanced, and physical science grew to be an element in human life, men began to scheme in various ways, as they had never done before, to gain on those elements of friction which made the ways of life so difficult. At first the plan of keeping every valuable discovery secret served indifferently well all the needs of the inventor; generally the new process was of a nature to be protected in this way, but the public profited imperfectly from this way of dealing with the advances in discovery. To be successfully hidden, few must know the secret, and its results must bear the tax of danger as well as of skill. At this stage the king steps in, and as he, in those days, granted away lands of which he knew not even the boundaries, so he gave the seal of a legal right to the product of the brains of his subjects. Public opinion, crystallized in law, already protected the right of the possessor in the fagots by his fireside, which were cut from the common wood, or to the game which fell to his skill or hardihood. But for this new-found sort of property in far lands, found beyond difficult seas, or in the hard-won, untravelled paths of nature, there was needed a formal sign for sanctification, which was best found in Royal Letters Patent. Inasmuch, however, as these privileges of the king were usually granted for a limited time, and from the fact that such ancient monopolies as the making of salt, etc., were limited in their duration, the right to these creations of the subjects' brain was also limited.

This limitation in time, though perhaps warranted by other considerations, seems to have been essentially due to the accidental association of monopolies of invention with those other and usually limited monopolies in the king's gift.

Whoever will consider the circumstances connected with the origin of this sort of title to intellectual property, and compare it with those other property rights which are commonly considered the more real, will become convinced that the element of newness is the most noticeable feature concerning its history, and that in its origin it is essentially like the other property rights. If a man finds a stone and shapes it to his needs, he acquires a property therein. A later and more skilled man gets the solution of a harder problem from the dark recesses of natural possibilities; it is but an extension of the same principles of property to give him the full fruits of the labor he has given to his work. And it is the finest extension of the sense of property that has led to the affirming of this right in the laws of most nations.

It must not be forgotten, however, that what we call the right of property rests on a utilitarian basis, that it is simply the affirmation of the well-known conveniences of ordinary life; it is correlative with the system of society and the needs of the generation that establish and support it. The savage could not be said to have the right to fence in his land before the system of agriculture grew up. We limit the use of all property in

such ways as it may be necessary to do in order to ease the ways of life from generation to generation. Should the good of humanity demand it, we would be justified, in the higher law of utility, in abolishing any or all rights of property. It is, so to say, conceivable that we may be driven to limit the rights in real estate, so that the world may not come to be held in the hands of the few. We will grant this freely to the advocates of confiscation, but we grant it with the almost infinite limitation that the need must be insuperable; it must have the gravity of great natural laws behind it, and must never be assumed for the purpose of spoiling one class of laborers to fatten another class. If we are right in considering intellectual property as a class of possessions acquired in ways essentially the same as those that have given good titles to other sorts of gains, it is clear that there is no possible argument for the subordination of the interests of this class of wealth-giving possessions to any other. Where a burden is to be laid on society, there is an evident fitness in requiring all classes of property to bear it alike. The argument for the equal rights of inventions may go further than this; it may reasonably be urged that, owing to the custom of limiting the property in intellectual acquisitions to a brief term of years, there should be a special exemption of it from such burdens which may fairly be borne by property where the possession is of indefinite duration. For but half of a generation — scarce one fourth of the reasonable expecta-

tion of life — is possession given to the inventor of that property which is the only absolute contribution to the store of human goods. Surely this should be an argument against making it bear the burden of special disabilities, such as our thoughtless marplots of society would put upon it.

When we come to weigh the rights of the several sorts of property which can be held by man, and in this judgment take only the absolute questions of justice, leaving out the limitations of expediency and of prejudice, it will be clearly seen that intellectual property is, after all, the only absolute possession in the world. The man who brings out of nothingness some child of his thought has rights therein which cannot belong to any other sort of property. Land or chattels are pre-existing in some form, and the rights therein are limited in many ways, and are held in the great service of the world, but the inventor of a book or other contrivance of thought holds his property, as a god holds it, by right of creation; with his silence or inaction the sustenance and advance of millions yet to be may vanish into the great darkness again. His brain has brought the seed out of the infinite, planted it in good soil, tended it with the care that only the sower can feel. Surely the world should not deny him a share of the increase he has brought about, and if he, giving the reversion of his property for all time to his race, is granted the product of his creation for half a score of years, he should surely be secured against being plundered by the law as well as by the lawless.

But it is not in the matter of absolute right alone that we can find the strongest defence of these intellectual monopolies. The position taken from the point of view of public policy is even more impregnable than it can be made on the side of the equities. If society has one interest which more than another should be held sacred, it is that element of eager foresightedness that keeps men exploring every dark place in the line of social advance for the means of good or the remedies of evil that may be found there. It is not too much to say that it is to these few larger souls that society owes its substantial gains, and that to the development of this spirit it must look for all future material advances on its difficult way. Whatever serves to increase this element in any society adds to the rate at which it gains on the difficulties which beset its advance; whatever retards the development of such a spirit is so much gain to the forms of inaction. The mass of men of any generation are born to an instinctive acceptance of things as they are; it is rare that men are awakened to a struggle with the evils of their environment. These changeful spirits are never found in some races; it is the great good fortune of our own to have developed this eagerness for striving against the darkness of the unknown. Whoever will trace the development of this spirit in this country and in England, the two regions where it has become most active, will be convinced that its activity is mainly due to the development of those faculties caused by their system of patent

and copyright laws. Each country offers instances of rewards, given to mechanical skill, as brilliant in appearance as the marshal's baton which waved in the air before the recruits of the grand army. To gain these rewards is the incentive that leads thousands to that determined struggle, which in invention, as in all other contests, is the condition of great victories. For the one invention that has proved successful there have always been the thousands that are utter failures, giving no reward but fruitless expectations. The patents which have been applied for in the United States alone exceed two hundred and fifty thousand; assuming that they have each cost an average of one year of labor in their conception and completion, we get an idea of the amount of labor which is devoted to this branch of human endeavor. The aggregate time employed in their preparation will probably equal that given to all the years of service given to the armies of this country during times of war. The work of this description now in the hands of inventors will probably exceed at the present time the labor which is applied to all the civil service of the country. When we consider the reward that this labor receives, we shall find that it is on the whole less paid than in any department of public service. The few get the gains of princes; the mass receive poverty, intensified by the disappointment of great expectations. It is the few great prizes this life has to offer that enlists so many venturous spirits in its work. Whatever should tend to take away the hope of

almost fabulous wealth would remove this provocation to enthusiasm, and this form of human effort would become a thing of the past. This consideration should make an end of the various plans for limiting the rewards of invention; nothing but the millions that await the one triumphant inventor will lead the rest of the ten thousand to take the chances of failure that must await them. It would be infinitely better for society to let the fortune of the Rothschilds reward the success of some genius who should deserve it by an invention that laid every man under contribution than to take the inevitable reduction of the advance in the subjugation of the world to our needs which the destruction of the inventive spirit would entail. Any scheme that threatens to lower the value of the rewards of any form of intellectual life is directed against the dearest interests of society. In all the accustomed pursuits of intellect this would be readily acknowledged. No reasonable man would for a moment think of suggesting that the most eminent men at the bar, or the great physicians, or the successful clergymen, should be fined for their success to reward the mediocrities of other occupations, nor are there many who would think that the honors, wealth, and fame showered on a great general were bad investments for a state; it may not need a savior once in a thousand years, yet such monumental prizes as those won by Wellington or Marlborough are in a certain way schools of greatness, breeding in their time other Wellesleys and Churchills. We must

come to recognize invention in all of its forms as a distinct class of human endeavor, one that cannot be spared from the standard labors of the world, entitled to its rewards, not only of honor, but of more substantial goods. We must see that whatever threatens to limit these in the case of inventors threatens the interests of society at least as much as if directed against the rewards of skill in medicine or statecraft.

The student of this question, namely, the relation of inventive powers to the development of a state, will have an interest in tracing the economic history of this country during the last sixteen years. There is little doubt that our American community carries the heaviest burdens ever borne by a state for the same length of time without breaking under the load. To the tax laid upon us by our attenuated population — the distance tax, as we may call it, in itself a dreadful burden on our development — we have added the direful burden of the costliest of internecine wars, and the costliest and most ineffective system of government ever devised within the limits of civilized states. To this great burden we must add for top load a currency which seems to be devised to make uncertain all those things that trade needs to have sure, and a system of protection that shackles the activity of every natural limb. When political economists consider the history of this singular period in our national life, they marvel at the fact that there is such an elasticity to our energy of production that our trade survives under all its burdens.

Some would attribute this to our great natural resources, but natural resources are nothing in themselves. States like Turkey or Russia, equally blest with all natural blessings, and scarcely worse burdened and accursed by governmental ills, show us peoples crushed under an ever-growing poverty. We must find this saving virtue that has kept us from this debasement in certain qualities of our people, and these qualities are all moods of that inventiveness which some of our wiseacres think a thing to spoil by legal enactment. If we have been able to feed and clothe the laborer in our mills twice as well as in Europe, to school them, and otherwise give them the possibilities of their life, it is because our machinery is, thanks to our inventors, so much ahead of that of other countries, that a day's labor is worth, measured by its products, far more than that of European lands. In every shop there are men endeavoring to secure here a little and there a little gain on the difficulties which environ all sorts of production. Their successes it is that makes it possible for manufacturers to bear up against the iniquitous burdens that rest upon them.

Besides the economic advantages to the natural life which have been already suggested, we have yet another gain from the inventive faculty in the activity of mind that comes from its exercise. There may seem at first sight a great difference in the intellectual result of labor done on books and that done on machines; the former seems to most persons the higher sort of labor. But in both we have that element of continuous thought which it is the great object

of all education to foster, in both the imagination is necessarily occupied in unwearied suggestion of new combinations of thought. Moreover, if we could determine the actual brain work done in the ways to lead to books and those which lead to machines, there is little doubt that one would find that in this country there is far more intellectual effort given to the invention of machines than is expended in the labor of making books. Now, while some few persons may be found to argue against any form of education by the state, it is doubtful if there is any one so impracticable as to ask the suppression of educational institutions by means of the machinery of the law, yet the proposition to destroy the intellectual impetus that is given by our patent-right system is equivalent to this. The intellectual exercise of invention is an element in our national education. Those who know its energy will be unwilling to class it low among the influences that lead to the increase of the capacities of our population. What would be said of the proposition to destroy the right of copyright or of its limitation, so that an author's works could be printed by any one who would give him a small sum for the privilege? This proposition would be held to be an utter absurdity, unworthy of serious discussion. Yet, as we have seen that there is an essential likeness between the property in both of these forms of intellectual monopolies, they must stand or fall together.

These arguments for the defence of the essential principles which underlie the rights to the products of intellec-

tual labor should not be taken as a vindication of our present system of according and protecting patents. There can be no doubt that legal forms which guard these newly acknowledged rights of intellectual property require to be accommodated to the needs of society in a variety of ways. Because a man owns a tract of land it does not follow that he can keep his neighbor from making a way across it; this has long been embodied in our law, but the right of way is never held to include a right to use the products of our neighbor's acres or to spoil him in any fashion. So the restrictions of a similar nature which we may cast around the property of intellect must be made with the confession of the rightfulness of that property. They must be made with the acceptance of the proposition that it has the same sanctities as other human interests, and that society is as much interested in maintaining its bounds as it is in protecting ancestral acres, or the other well-accepted forms of property.

To affirm this principle is to enlist continually more and more of the labor of the world in those endeavors which contribute to other than its momentary needs.

EFFECT OF INVENTION ON NATIONAL CULTURE.

WHAT constitutes a national life? How is it made? What destroys it? These are the questions that every reflective mind must ask whenever it seeks to compare peoples together with a view of determining the differences proper to them as aggregations of men. There is no doubt that each state expresses in its life the average of all the influences which have been applied to its individuals: daily experiences grown into years and shaped into lives; these lives interacting on each other in the manifold contacts of society; this society shaping in its customs and institutions the generations to come. In this way is a national life formed and propagated. We may figure to ourselves something of its course and consequences, but it is beyond the power of any one to do more than shape a formula for some parts of its forces; the entire system as much transcends the powers of intellect as the interworking of the atoms that make up our earth. Although it is well to begin any studies of the constitution of society with the frank confession of its essential incomprehensibility, as it is well to preface

our studies of any part of the physical universe by an acknowledgment of its essentially infinite and incomprehensible nature, nevertheless it is within our power in both realms to separate certain parts from the whole and view them away from the obscuring surroundings.

There is probably no other question concerning this assemblage of things we term national life so puzzling as the difference in direction taken by the productive energies of different peoples. In one case we find that the sense of beauty gets control, and the energy that can be spared from daily toil goes to plastic art. In another case it is the more abstract powers of the mind that are developed; the people become dialectic in their turn. Again, the vigor of mental action goes towards the ways of trade or of mechanic art. In any of these lines the surplus energy of a people — that remnant of force which is left over after the momentary needs of life are met — may find its occupation, and thereby make what we deem most characteristic in a national life.

To determine the causes which influence the direction taken by this higher work of a state should be the first object of the student of society; on these causes rest the whole machinery which make or unmake the greatness of nations. So far as these causes are brought within the understanding of men, so far they may come within the control of the deliberate acts of society, — so far, in a word, they may cease to be the result of fortuitous accident and come to be the result of deliberate will.

Hitherto nations have had their character determined by unforeseen forces; their education has been much the same that savages receive: the rough lessons of the world and the accidents of their environment have been their only sources of training. Gradually we may hope to have the education of a state made more and more like the education of one of its citizens, — not a matter of hazard, but deliberate purpose.

To give any value to a scheme of national education, we should at the outset endeavor to find the direction in which the surplusage of energy has made itself channels and determined its flow. With this the possibility of changing the course of the streams to the greater profit of the harvest may be inquired into. If this endeavor is made with the full recognition of the essential limits of the success that is attainable; if we keep before our minds the fact that, retaining the metaphor, the streams of human activity flow in an infinitude of channels, and that the reformation of one is at most the cultivation of a single river's margin in the great territories of human activity, we may hope to escape a danger which menaces all such inquiries, — the assumption that the one clearly seen element in the life of a nation is the only spring whence come all of its activities for good or evil.

Although the relentless desire of gain has always been a factor of importance in all civilized communities, nevertheless it is peculiarly the characteristic of our modern

society of all countries deriving their origin from Northern European stock, and among them has attained a prominence never given it in earlier ages of history. Religious zeal, patriotism, and art have at various times possessed communities, as they are now possessed by this greed of gain, but never before have men so given their bodies and souls to voluntary toil, if that toil can be termed voluntary that is compelled by such an intense and uncontrolled desire. Much as the student of his race may regret this exaggeration of one instinct grown until it swallows all the rest, or at least threatens to consume them, he must take the case as it is, and see what can be done to secure the greatest amount of good out of these evil conditions. National impulses must be taken at their actual condition, and the work of education must be directed to the modification of these impulses in the way best suited to lead them to the greatest profit of culture.

Whoever takes this view of national culture will be convinced that the only way to get strong educational holds upon the people of this country will be through these instincts of gain. Our culture, as far as it is not a thing of small minorities, must connect itself closely with this instinct. The true educators must go with this great tide in the affairs of men, and endeavor to make it lead to other things besides fortune. They must strive to make the preparation for and the conduct of those occupations that lead to fortune as educational in their effects

as possible. It is the great misfortune of modern society that our theory of education is framed on the needs of centuries gone by, when the only classes that could make use of education were those separated by occupation into the so-called professions. Within a hundred years the utilization of the forces of nature have made such advances that society is no longer controlled by the small class of clergymen, advocates, physicians, and gentlemen of leisure, as it once was. Trade has come to be a power that outweighs them all. The moralities, the æsthetics, the expectations, of society are rapidly becoming those that are made in the walks of trade and of manufacture. Our education remains in theory, and to a large extent in practice, a system which has not the least adaptation to those conditions that business industry brings to life. The advances that are making in it are constantly leading towards the making of broader-minded pastors, abler lawyers, and more skilled physicians, but little is done to touch those great masses of men who are to live by their brains, but are to use their brains in the counting-house, the shop, or the manufactory.

The peculiarity in the condition of this class that must be kept most particularly in mind is that its time for training is limited, and that there is little that can be put into the childhood schooling that will help to lift the level of its occupations. We may hope perhaps to gain time from the early years for culture, but at present there is little that can be expected from this source.

It will therefore not avail us to look at the possibilities of early education. The time now given to it, or that is likely to be given to it for a great while to come, cannot be more than is necessary for the ordinary preliminary training of the youth in the simple things that underlie all the work of the world. For the present the educator cannot do better than to examine the course of these occupations and see how we can help the education that comes in the work itself by aiding those things that are helpful of education, and combating those things that are hindrances thereto. This process will in time give results that cannot be hoped from efforts that are directed towards the turning of the whole course of commercial life into new channels of thought and action.

Within the limits of a brief essay it is obviously out of the question to undertake an inquiry into the whole of the wide field opened by these questions. I shall only endeavor to give a brief statement of two or three agencies at work in our society which can be made to serve the plans of the educator who seeks the possible lines of advancement that reach beyond the schools.

If we look at the work of productive industry in this country we cannot fail to be struck with the fact that the most prominent feature of this side of American life is its very great inventiveness. Circumstances but little understood, and which it is beyond my purpose to consider here, have given to our mechanical class and to a very large part of the classes not engaged in mechanical la-

bor a habit of continuous seeking in all sorts of ways for the untried possibilities of nature. We have developed a certain peculiar habit of inventiveness that leads tens of thousands of our little-trained people into the pursuit of researches often of a high and frequently of a difficult order. The result of this class of labor upon those who bear it is a matter of great interest from our present point of view. Whoever has been a teacher knows that the greatest difficulty to be overcome is to develop the capacity and appetite for continuous, thoroughly intent mental labor. This power, if formed at all, is formed with great difficulty in all processes of education. It is not too much to say that this quality of the mind is that which most profoundly affects all the capacities of the intellect. It may be said with equal truth, that the ordinary avocations of business-life all lead away from such a result. Considered from the point of view of training, the worst thing that can be said of an ordinary business-life is that it is almost necessarily desultory, and does not require, in fact scarcely admits, the least degree of intense connected thought. Its methods are foreign to the investigative spirit on which depends all the advances in human knowledge. But in this inventive habit of mind of a part, and a large part, of the business class of this country we have a very intense development of this element of an education which gives two of the most important results we should desire to attain by education, — the capacity for great fixedness of

attention, and the training in imagination or suggestiveness which is required in order to meet the continued difficulties of an advance into unknown paths. The history of some inventors is so well known to all that it is scarcely necessary to dwell at length on the continuousness of their labors, — it is a truism to say that almost all the great prizes that have been won have been gained by labors of very great intensity, inflexibly prosecuted over a long series of years, — but the other element of their work, the fertile imagination that has always been ready with a new plan whenever the old had failed of its object, this is less seen than the indefatigable labor. These qualities of patience, intensity, and fertility being the mental powers that are most exercised in the inventor's labor, it is by no means strange that those who have had their training in this work should show in their work in life the possession of those qualities which it is in good part the aim of the highest education to give. I have had rather unusual opportunities for personal acquaintance with inventors, and have been driven to consider the peculiar circumstances of their development, and to the adoption of the opinions above expressed as to the quality of the education given by their pursuits by the admirable training often exhibited by them in their lives. I have known several men of no other than the preliminary education of the common schools, who have extended the mental vigor attained in this vigorous grapple with natural laws over a wide field

of information. In perhaps a dozen of this class whose mental habits I have been enabled to learn, at least three had acquired a considerable knowledge of one or more dead languages, and nearly all had advanced far beyond the average of busy men of other occupations in general acquirement. Such other inquiries as I have been able to make concerning inventors I have not personally known, and the histories of men of this class in all ages, show that there can be little doubt that its pursuits are in some way necessarily connected with the highly desirable vigor of intelligence and capacity for labor which the world always greatly needs in all its avocations, and finds but seldom made to its hands.

There are those who will say that these powers lead to invention rather than the invention to the powers. It is doubtless true of all successful education that the intellect must have the bent towards certain activities, and that the training but shapes and affirms its character. There is no doubt that those who succeed in invention are those who are stamped by nature with the fitness therefor, but the same men put behind a counter would never have had the chance of developing these powers, and would have had them chafed away in the desultoriness which is the most hurtful element in nearly all business avocations. The well-wisher of the state must feel that this educational influence of inventiveness is one of the most hopeful elements in this great tide of trade-life that has swept into society.

As long as we can have this sort of training applied each

year in larger and larger share to our trade-life, we may feel the more hopeful of the educational influences at work in that part of society; we have therein something that gives in large part the character of results attained in scientific training of a high grade, as well as the general effects which are attained by all well-directed training, the habit of and desire for continuous absorbing mental labor.

The most hopeful feature of this element of our American trade-life is, that this sort of training is destined to claim year by year a larger and larger share of that life. Each considerable machine that is invented carries with it the seed of hosts that are yet to be. Each real invention has more or less of this seminal property, and we may fairly judge the greatness of inventions by the generation of inventions they breed. While everything points to the limitations of the purely commercial element of productive industry, the indications are equally favorable for the continued extension of those branches of endeavor which demand the capacities of the inventor. There is, doubtless, in time a certainty of the exhaustion of those hidden capacities of nature which the inventor seeks to disclose, but the time of its coming is very remote from us, and need not give us concern. By the time it is upon us we may expect men to take that training for its own sake which we now expect them to take but rarely, save when it is baited by a chance of gain.

It remains for us to consider the conditions that favor the development of this leaven of training in the great lump

of trade. It needs no argument to show us that this inventiveness, from which we may with good reason expect the best consequences to its possessors and their descendants, owes its stimulus to the great rewards that are held out to its devotees. Their aim is the dollar, as much as that of the shopkeeper, the mere craftsman, or the laborer. The training they get is but the accident of their pursuits. This is the essential and wide difference between the education of the schools and of the workshops, — the former education is for its own sake, or with only a remote view to use; the latter is as unconscious, as purely natural, as a bird's training in flying. The incentive to the inventor's work is the gain to be derived therefrom; society gives no other reward than this for such work. There is no doubt that the work of the inventor is very often rewarded by the prize of public esteem, but the social gain is a remote and impalpable consideration, weighing little in the determination of those that devote themselves to this sort of work.

Whoever agrees with me in the opinion that a powerful educational influence is brought into our commercial society through the spirit of invention must be desirous of keeping all the influences that have led to its creation in full operation, and encouraging the origination of all fit means of increasing the energy of the forces which tend to that result.

To retain this spirit of experiment and investigation which lies at the bottom of our American inventiveness, we must in the first place maintain the inducements that

lead men into this sort of life. These inducements are the monetary prizes that it affords. Next we must, if possible, increase the efficiency of these prizes, or rather make it more certain that the reward shall be more proportionate to the achievement than it is at present. This can only be secured by maintaining the present system of patents, with such improvements as may secure the greatest freedom from the frictions which now embarrass its operation. The remedying of the defects of our patent laws is a matter of details that cannot well be considered here. We only require that the changes in this system shall not diminish the intensity of the attractions that now lead men to this class of pursuits.

There is another class of influences which may be brought to bear upon the development of this element of our American life. These will be brought into action by the complete recognition of this element of inventiveness in our national character. About the only way to make this recognition effective will be through teaching in the schools where this class of men are educated those branches of information and giving that training which experience may show to be the best fitted to develop these capacities. A knowledge of the elementary principles of mechanics and physics would do much to elevate the order of inventive work. The mass of our inventors have to fight their way through a perfect jungle of ignorances to achieve their results. A little real knowledge of those things which are commonly included under

the head of natural philosophy,—subjects we often pretend to teach in our schools, but really having no place in our education,— would be a step in this direction; so, too, would be the institution of museums such as the Museum of Arts and Trades at Paris. A comparatively limited amount of material in such collections would go a great way towards developing this sort of thought. Although a disbeliever in government education beyond those limits of learning which are necessary to the exercise of the simple duties of citizenship, I am inclined to advocate that form of aid to education which comes through museums illustrating the great industries. Experience seems to show that private or corporate munificence will not help much in the institution of such collections as our mechanics need. Yet if this work could be done by associations of mechanics, it would be a step forward of a safer kind than could be attained by government aid. There are cases where such work could be quite practicable. Certain existing associations — the Massachusetts Charitable Mechanics' Association, for instance — could readily lay the foundations of a museum that might secure to the people of a great city sufficient chance for this practical sight of machines. A little didactic teaching, with these collections for its basis, would give them a hold upon the people and enable them to do their work in an effective manner. The Russian exhibit at Philadelphia seemed to show that something had been done there to bring such training to the masses.

Work purporting to be done by students showed a considerable development of those faculties of mechanical experiment upon which the capacity for invention really turns.

It may be said that, inventors being a kind of poets in a way, — poets of hard facts, imaginers of things that have to go through the stern tests of experiment, — they are by nature born, not made. There can be no doubt that this is in a certain way true. But we do not turn incipient poets out to invent their whole machinery of expression; we give them a training when we can, and prefer that they should learn all that there is of poetry as a part of their education. Education only seeks to give some care to the bestowal of seed, so that wheat may not be sowed in swamps nor watercresses on high land. The inventor should have his possibilities offered to him at least as much as the students of other business pursuits.

At present there is an absolute want of provision for this class of workers, whose existence is not recognized in our system of education. We have mechanical teaching, but it is very rarely that we find any of the instruction given in the experimental way. Yet we have men fit for this work among us, — men whose methods are in themselves the perfection of the methods required by inventors of a high grade. Such men as Henry, Mayer, Pickering, Rood, Trowbridge, and many other investigators in science among us, are continually doing work of in-

venting which is of precisely the nature of that done by Corliss or Howe. Men of this stamp, or the men they can train, would be able to show the way of such work to scholars, and to start them on their possibilities.

The first aim should be, however, to secure the permanency of those rewards that make the investigative life of the inventor a possibility in a community where the spirit of pecuniary gain is as strong as it is with us. As soon as it comes to be recognized that there is the chance for a great career in this field, and that the opportunities it offers are not likely to be destroyed by hasty legislation, we may trust the teaching sense of our people to devise some training that will fit men to do their utmost in such work.

AMERICAN COMMUNISM.

It has been a fair subject of congratulation among our people that while the governments of continental Europe are being assailed at their very foundations by a creeping tide of communism, we have not yet to face this insidious danger. Our society is still so pliant that even the poorest of its elements is full of hope of advancement, and property in land is still so easily in the grasp of even those least eager for such possessions that none feel that it is irrevocably denied them. As long as these great goods of life are common to all it will be cheap praise of our people to say that communism has no place among us. The condition of things is, however, actually much less secure than this immunity from assaults on real and chattel property would seem to indicate. We have only to observe how readily a great party can be raised to assail any rights which are in the hands of a limited number, in order to see that there is a great body of essentially communistic ideas lying half shapen in the minds of our people. The reiterated assaults on the public credit made by the effort to pay something else than was stipulated in

the bond is but the most conspicuous of many instances which could be adduced. It is fortunate for us that this last manifestation of the desire to plunder the few for the profit of the many, which is the essence of communism, should have assailed the sense of national honor, and so insured its defeat, but whoever will consider the great army of voters who found the intensest motive for political action in this scheme will be forced to confess that communism has found a lodgment in our political system and will require careful watching in the future.

This watching must be the more careful from the fact that there is a point of attack in our system of property which is less defended by traditional right than any other. Real estate and chattel property have the traditional and inherited guards about them which have been accumulating for thousands of years; but within a century or two society has been forced in its own interests to the recognition of another class of possessions, namely, authors' rights, which, having as firm or an even firmer base in right than any other form of human possession, are yet naturally not mentioned in the Decalogue and not built into the sense of right through the uses of time. In every civilized community there is a class of men endowed with certain powers which lead them to the invention of things not known before. In the earlier states of society they were few, and its organization did not admit of the giving of great rewards for their services other than the power that might come from their inventions or the fame they

might bring in their train. Tradition tells us that this form of payment was generally posthumous; and we may well doubt if Homer found a tithe of the profit which has come to the least paid of his translators, or that he who brought the fire from the crossed sticks rubbed together was not repaid by the fate of Prometheus. All through the earlier ages of discovery and invention society studiously neglected this class of its workers, with the result that but a very small part of its force went into the work of ransacking the great storehouses of nature for their possible goods. New and useful inventions were held as secrets and done in a corner, to little profit either to the inventor or the community, often dying with the discoverer. Books waited for patrons, and crept about in manuscript copies, taking the frequent chances of destruction.

It is one of the great things that can be said of our English people that they were the first to see clearly the necessity of giving a legal shape to this valuable element in the store of human powers. Recognizing the fact that the author or discoverer is free to hold his new-found property as a secret to die with him, the law offered him the absolute protection of its shield for a time, on consideration that he would then abandon his results to the public and secure this public the knowledge of the means necessary to use the invention, by depositing a copy of the work or a model and description of the invention in a public storehouse designed for such uses. This arrange-

ment, which has become commonplace and of little evident meaning at our day, was in its time a well-considered adjustment of the difficult questions which beset the holding of rights of this description. It recognizes, in the first place, the essential property of the man who, having journeyed in the untrodden and unpossessed fields of nature, brings back some treasures which have never been in the hands of his race. It recognizes, also, the extreme difficulty of guarding such possessions sacred, — a difficulty which does not pertain to land or chattels, — and so proposes a middle course, — an absolute control of the given invention for a limited term of years, as an exchange for its vacation at a certain time in the future. This contract is based on the theory that any invention of value will, if secured to him even for a very limited time, sufficiently repay the inventor for his share in the labor of making it available for the use of his fellow-men. This theory of patent right is that which has been inherited by our system, and it is the contract between the inventor and the representatives of the people in every grant of letters-patent that is made.

It is thus seen that the legal protection given by our copyright patent laws has a somewhat especial sanctity, being, as it were, a safeguard, — a special contract in which the inventor or author has given up something of value in the possible secrecy which was in his possession for a guaranteed security for a given time. It is not easy to make a scale of sacredness in the obligations of a com-

munity to the properties it guards, but it is hardly too much to say that the obligation imposed upon society in regard to these contracts is greater than its obligation towards any other of its objects of protection in the way of property rights. Acres or chattels it is bound to guard, from the general obligation it has assumed, but these goods it found in existence at its origin, and it has made no conditions limiting the duration of their existence. A momentary trespass on this sort of property may be balanced by the essential permanency of the possession. But this other patented right has by the contract goodness but for a time; when its term is out it lapses into the common store of human goods. This brief exposition will serve to show that the protection guaranteed by the patent on invention or authorship is of a peculiarly obligatory nature, and will make it clear that its overthrow or permitted trespass on its bounds will be in its results utterly fatal to the sense of governmental obligation, subversive of the sense of social right, which it is the first duty of our time to maintain.

Although this is the actual position of the rights guaranteed by the government to this class of intellectual gains, it unfortunately appears very differently to the mass of our people. To them the patentee is the favorite of the law; he is one granted a dominion which extends to every workshop or, it may be, every home in the land; a gatherer of toll from the resources of nature, privileged to limit the action of other men in one part of the field

of human activity for half a generation. The prejudices of custom prevent their seeing that the owner of a tract of land may limit the field of human activity in a far more absolute way for perhaps a thousand years.

The absence of a traditional environment of sacredness about this newly bounded class of possessions makes it peculiarly suited to be the object of assaults from the communistic element in our society, and though there are many other strong arguments against the invasion of this class of rights, the peculiar danger which comes from the present rapid growth of communistic ideas among the dangerous uneducated and possibly more dangerous half-educated classes of our society makes it worth while to give this particular aspect of the limited titles to intellectual property a careful presentation before our people. If the proletariat spirit — that spirit which is, in fact, the return into man of the instinct of greed proper to the lower animals — overturns the protections guaranteed by the contracts of society to its inventors and authors, the results to the principle of property will be disastrous. There is no other position of defence which has any greater legal strength than this, though there are others which will command more interest and doubtless secure that final protection of arms to which all anxious minds apprehend the contest must in the end come. But while the greatest interests may perhaps secure for a long while to come the shelter of force to protect them from communism, there is no one who will doubt that this demon of our civilization

will win a fatal victory if he crushes any part of the property rights guaranteed by our laws.

The only measures of protection which can be taken against this danger are to be found in the quickening of the public conscience as to the sacredness of the obligations involved in all property guaranties. When we look about to see what teaching exists that now leads to the inculcation of legal and social duties, we perceive that this branch of our public education is pre-eminently characterized by its absence. Neither in the schools of our land nor at its firesides, in its pulpits or from its secular platforms, do we hear anything of this element of morality which inheres in our laws. Students of our society have begun to see that there is a fatal lack of moral sense in all our public actions. Men will come from decent homes wherein live the moralities which give decency to life, and in their public deeds will act entirely apart from those principles they hold in their home or church. They hold to the moralities of the home because they are urged thereto by the teachings of the family or of the church. The morality of the state has never been made the subject of any such teaching. Men have not heard certain public offences branded with the names which are given to misdeeds which come immediately between man and man. The result is that men decent on one side of their lives are wretchedly befouled in evil on the other side. Men who would be filled with horror if they were told they were thieves at heart will work unabashed for schemes of governmental

thieving. There are those who hold that morality is something that cannot be taught, and we will freely grant that it is not capable of acquisition after the fashion of the multiplication table; but let us suppose that for a century all our churches were shut, all books treating of morals destroyed, and the discussion of such questions in families inhibited by custom, who believes that our morals would not fall into decay? But this is the position of our public morals. Go through the homes and schools of our land, take the utterances of our press or our pulpits, or the debates in our legislatures, how seldom we hear the defence of the principles of duty which underlie the actions of government undertaken! In some great need, such as the defence of the public credit, or the duties of the state towards personal freedom, a moment's cry goes up, but continuous teaching — that teaching that becomes part of a man's organization, and so accomplishes the first condition of morals — is never found. A long lifetime ago our government exchanged the titles of citizens to reparation for property taken from them by a foreign government for a general gain to the state, and then quietly and without any general criticism refused to reimburse the exappropriated owners. Five years ago we took a sum from another government for a specific payment, and, finding that the debt was but half the money given in payment, we have pocketed the remainder. This is knavery; but there is no way to bring such things to the mind of the generations that come on in their succession, and so it is growing

to be a popular sort of stealing. In our ethics it is being written down that a theft from one is a crime, but that by general consent a theft from many is a part of the functions of those who constitute government. To meet this evil, by all odds the most menacing of the many that threaten our people, teaching of some sort that will seem to make the sense of a political shame seem like a personal thing is the first need. But how can we get this at work? This is a question which it will be hard to answer. It may be that in time we shall be able to make people feel the same interest in the physiology of the state that they take in the physiology of their bodies; that a time will come when they will see that knavery is a social disease of a very dangerous kind, requiring measures of remedy and of prevention. At best this degree of care for the state must be a thing of slow growth, and, to a certain extent, the fruit of that education which accumulates in the succession of generations. For the moment, the aim of those who see this disintegrative force at work in our state should be to limit its action, trusting to the healing force of nature to root it out in time. We must resist every effort to use the machinery of the state as an instrument of discriminating taxation, — crushing one interest for the benefit of another. We must see to it that the intellectual elements of our national life, especially those elements that reach the most laborious classes, are not made the objects of unjust discriminations. Especially will this attitude of defence be necessary in reference to what might be called the less evi-

dent elements of right and wrong, — those which, like the duty towards public creditors, foreign states, or the newly recognized possessions in intellectual property, which our own painful experience shows us to be always in danger.

It should be borne in mind that communism in directing its attack against the interests of intellectual property threatens the state with a peculiar danger, — one that is not readily recognized by people who have not attentively considered the peculiar conditions of intellectual culture. It must be noticed that while great intellectual works of a certain kind have doubtless been done by persons animated by purely unselfish considerations, yet profit of an immediate kind has been the motive of the greatest labors of all times. This is true of the most abstract forms of intellectual labor as well as in its more concrete shapes. Shakespeare, Scott, and Goldsmith may be cited as examples of men spurred to their best work mainly by the desire of gain. The first aim of a society should be so to shape its system that whenever a genius is born to it there should be a certainty of securing its fullest development. It matters relatively little whether the ordinary toil of an average man be a little above or a little below his possibilities; we are quite sure that the usual process of birth will replace him with as many as there is room for. But the man who can advance any of the great interests of the race bears the same proportion to the mass of men that the meteoric stone does to the pebbles of our fields. We do not know how to find him at will, and when chance sends

him to us we must take the latent good that is in him, or lose it perhaps forever. If a "mute inglorious Milton" goes to the dust, the state may have lost forever a possible glory and the great inspiration of a higher life. If a Watt or a Whitney dies unawakened to his work, the possible existence of future millions is buried in their graves. The rage of a communist revolution may overwhelm a city with ruin and shake the material foundations of a state, yet after all do little more permanent damage than fire or earthquake. The impulse to gain in all ordinary avocations is so strong that trade forgets the transitory danger and comes back to its usual ways. But the same amount of detriment applied to these hardly nourished seeds of genius will stifle them. It seems to me that this view of the matter should make it plain that the dangers arising from the communistic elements of our society are greatest when these classes attack the intellectual side of its work, for the double reason that the material interests thus assailed are the most precious and the most sensitive of all that society is called on to defend, while those who perceive the danger and who are strongly moved by natural sympathies to defend the position are but a small minority of our people.

As the attack on this class of interests must be made through the ways of legislation, we may fairly call on the law-makers of this country to consider the conditions of the growth of this class of possessions. They should see that intellectual property has been slowly growing into

recognition in our laws for some centuries past, and that this development of legal protection has been followed by an enormous increase in the proportion of human endeavor that has been given to the work of improving the physical and mental condition of men. So close is this connection between the development of the laws protecting mental property that it is out of the question to deny that they are connected as cause and effect. It is plain, therefore, that whatever tends to lower the protection given to intellectual property is so much taken from the forces which have been active in securing the advances of society during the last centuries.

DOES THE FOSTERING OF INVENTIVENESS PROFIT A STATE?

It has been well said that "it is the unexpected that always happens." Though this remark was especially applied to the contingencies of politics, it is sufficiently demonstrated by all the accidents of life to be the very first of its conditions. Nowhere is this more true than in the physical world with which each year of advancing civilization is constantly bringing us into more intimate contacts. No one can have an adequate idea of the inexhaustibleness of the novelty of the world, who has not been brought in contact with its fact side. The chemist and the physicist in their laboratories are in a perpetual wrestle with these infinite surprises of nature; they are incessantly at work bringing new combinations of machines and processes to meet the throng of new experiences. Each year sees there the invention of new contrivances, each often showing all the planning genius that has made the greatest of our economic inventions. We constantly see the purely scientific devices of one year become the trade implements of the next. The galvanometer is one day a scientific toy, the next a part of the means whereby

men can talk across the seas. The spectroscope is scarcely brought to bear on the problems of solar physics before it becomes an invaluable adjunct in the making of cheap steel. And so of a thousand other cases, and each year will multiply their number. Our laboratories are but nurseries for our factories of every description; very rapidly workshops are becoming only another sort of laboratories, with Mercury instead of Pallas for their presiding deity. It requires no far-seeing eye to discern that the whole course of modern improvement in manufacture is towards the closer connection of our process of production of every description with the physical world; our farms, shops, and factories must become more and more laboratories in their character. They must secure the same essential conditions of success that surround the chemist and the physicist in their workshops. The conditions of success in these laboratories of science all rest upon the inventiveness of the men who do their work; their life is one long training in mastering the spirits of difficulty that guard the secrets of nature. No one unfamiliar with these intellectual workshops can have any idea of the wonderful skill or invention that can be developed in the men who work within them. It is only perhaps the one invention in a hundred which these laboratories originate that ever finds its way into the arts, and yet these have revolutionized many of our processes in the arts. Millions are nourished by the crumbs that fall from the tables of these explorers. So far our factories have rested upon the traditions of the past; now

and henceforth, along with this adherence to tradition we must mingle incessant exploration as a condition of success. It is hardly too much to say that the essential condition of prosperity in the arts of any community in the future will be the amount of inventiveness it can develop and apply to its peculiar necessities. Granting this to be the case, — and none who know the condition of our modern economic arts will dispute it, — it is a self-evident proposition that the first of all questions in the structure of a state, considered from the point of view of its economic wealth, is the amount of inventiveness it can develop and apply to its work. Given two or more communities, of which one has a greater capacity to meet the array of difficulties that beset any advance in economic arts, and the single community will outstrip the other. Farther on in this discussion special instances will be presented exhibiting the truth of this proposition in a clear fashion.

With the proposition clearly before us that the advance of a community in the ways that lead to wealth is determined by the extent to which the inventive faculty is exercised among its people, the question arises, What can be done to extend its development through the institutions of an educational, a social, or a legislative nature? It is easier to suggest the need than it is to provide for its supply. The education of the elements of the imagination and judgment that is required in all inventive labor can only be secured by the practice of work requiring the activity of these qualities. Our schools are wanting in any extended

system to supply these needs. Something can be done by giving young men the especial training in laboratory work which experience proves to be an admirable means of developing those powers; but, as our educational institutions now exist, it is idle to suppose that a large enough part of our population can make the advance in experimental science that would be required in order to have them profit by the training it can give. It seems that we must trust to the training that the shops themselves may give, aided by the stimulus of great prizes procurable by those who attain to excellence in their special pursuits; with a fortune awaiting his success in solving some small problem of improvement in the machines of his daily craft, with access to certain teaching as to the principles of machines in books or in schools of mechanic arts, we may trust the naturally gifted operative to find his way to his training, — a training by no means perfect, but in a way suited to his needs. As far as we can give the foundation for an understanding of the elements of physics, dynamics, etc., in our intermediate and higher schools, it will be well; but we must trust to the training at the work itself, plus the stimulus of the prize, for most of the results we seek to obtain.

Fortunately there exists for us a practical experiment as to the relative value of training, and of the prize of large monetary gain in stimulating inventiveness. The republic of Switzerland, with the seemingly sagacious consideration that they might profit by using the inventions of their neighbors without paying an equivalent therefor,

long ago resolved that they would grant no patents within its territory. It appeared at first a profitable piece of sharp dealing to reserve the power of using all inventions for which others were taxed quite without payment therefor. Yet despite the remarkably advantageous position of Switzerland, the natural vigor and capacity of her people, and their admirable system of public education, there have been disadvantages connected with this plundering system that give us another proof that, in the long run, honesty is the best policy. All the while that Switzerland has been trusting to outside training for every invention she has applied in her manufactories, she has failed to train her own people in inventiveness; the result is, that Switzerland, of all civilized countries, is the most backward in the adaptation of every skilful appliance in every part of her economic life. One of the results gives a most surprising evidence of the preponderance of training over all the other advantages of the world. Despite Switzerland's cheap labor, low taxes, low interest, and central position, Americans, carrying their burden of debt, costly labor, high taxes, dear money, and remote position, are surpassing them in arts which have been their own for centuries. American watches, as good as their best, are sold at their doors for less money than they can make them. Our well-developed mechanical imagination has so organized the labor and the machines used in this branch of manufacture, that the advantages derived therefrom outbalance the vast advantages of the Swiss labor. Our labor is double or more,

our taxes double or more, our interest about double that of Switzerland, we have no traditional skill, nevertheless inventiveness conquers them all. Yet the inventiveness used in this work is but a very small part of our vast store of the priceless product of imaginative labor that has been created for us by our patent system. It is a work of generations to create such a training. It is questionable whether a state originating it at so late a date as Switzerland will have to do can ever overtake a country like this, where there is nearly a century of the stimulus in the blood of the people.

The experience of Switzerland shows plainly that it is not the untaxed use of the inventions that give the means of doing the difficult things in manufacture that is the great point gained by a system of patent law, for that country has had access to all such inventions at an even cheaper rate than other countries; it is rather the training that comes from the continued work of devising, the habit of meeting difficulties as they arise, the habit of never being content with the existing condition of any work while betterment is possible.

In weighing the influence of such a spirit on a people, we must not regard its action as limited to the shops of a country; a devising habit of mind will go much farther in its good work. We may confidently look for its action in all the other work of life, in education, and in the social conditions of life, as well as in manufactures. The abundant willingness of our people to make new and often

profitable essays in the way of government is a part of the same characteristic inventiveness, due mayhap in part to the very novelty of conditions to which the country is subjected, but still closely bound up with the more mechanical forms of the inventive spirit. This experimental spirit in social affairs, while it leads often to folly, will lead also to the exploring of the various possibilities of human relations which are the first condition of a wholesome advance. In favoring the elements of this inventiveness society fosters the active principles that make decay impossible through the ceaselessness of the activity they induce. A population leavened with those who have learned to feel that the future is always full of possibilities, and that evil may be met by an eager striving for better conditions, is best fitted to meet all the dangers that time brings to a state. There can be no doubt that the system of mechanical advance and the training that leads thereto is by all odds the most important agent in the creating of this spirit.

The most characteristic feature of our modern society is this very hopefulness of good beyond the temporary evil that may come. The possibilities of advance in any state may be increased by this element of enduring confidence in the future. Nothing is so calculated to develop this hopefulness as the continued, successful combat with the resistances of nature.

Leaving these considerations of a more abstract kind, which may seem to many rather overdrawn, let us consider

some seemingly more practical questions as to the utility of inventiveness to our own people.

The most important condition of our own society, considered from an economic point of view, is the formative stage of all our industries; in face of an earth of unexampled richness and variety of stores, and with a rapidly growing population, we are at the outset of innumerable enterprises, each full of perplexing conditions. Nothing can be done without the constant encountering of novelties of all sorts, which must be dealt with out of the experience gained by our inventive class in such work. It is manifest that if we can deal with these problems, overcoming the enormous frictions to which a new community is necessarily subjected, it must be through the exceeding inventiveness of our people. Other races have inherited their *plant* from preceding generations; their mines are open, their fields cleared, their rivers and roads made passable by generations that have gone before. If we are to compete with them we must do it by being able to make a day's work go farther than they manage to do. Now every worthy invention with an inventive hand to guide it is a contrivance for adding to the value of a day's labor, and in so far helps us to meet the tax that is imposed on us by our endless war with an unsubjugated nature. Take away this element of our life, or lessen its prodigious activity, and we shall find ourselves in hopeless disparity as compared with those who have inherited their outfit from a thousand years of continuous labor. This consideration alone

should guard us against rashly entering on any course of legislation that threatens to diminish the inventiveness of our people.

We see it urged by some assailants of protection to patents that the principle is contrary to the ideas of free trade; that the great laws of supply and demand in which men have learned to trust will help us here without the protection which is craved for this branch of labor. This notion is one of the clumsiest products of the half thinking of half-educated men. It is an utter confusion of thought to apply the idea of protection which is involved in a tariff or a monopoly to the fostering of invention by our system of rewards for success. Against a tariff it may fairly be urged that its very existence deprives the man who can do a certain work the cheapest of the natural right to profit by his advantages. Against a patent law no such objection will lie. No other man stands ready to do the work cheaper. By it society pays not for a protection, but for a new creation. That which is paid for is as much a new acquisition to the world as if it were dragged from the realms of space. There is nothing in common in these two cases of patents and tariffs, save what has been given to them in the misconception of utter unreasonableness.

Again, it is argued that inventors are naturally impelled to do their work, and would do it all the same, whether they were paid or not; but paying for their labor is like paying for gravitation or air or a running stream. There is no doubt that the impulse to inven-

tion is in many cases innate; so is the impulse to the law, or to the practice of medicine or trade. But we don't make lawyers' or doctors' fees uncollectable, because we find that people rather like to give gratuitous counsel or physic to their neighbors, as we should if we really believed that the work we want them to do would be done as well without pay. It will be well, moreover, for these speculative minds to consider what an invention means; it means the turning of the ways of men from old channels to new, always a difficult task. Few inventions of value can be put into the complicated framework of society without years of devoted toil and vast sums of money. Take a new invention that will revolutionize trade; grant that, when introduced, it will save, say, five million days' labor each year to this country. It will then have to overcome the inertia of a vast machinery, and the opposition of a great population, who are monetarily troubled by it. Experience shows that it will require from ten thousand to half a million dollars to give this seed a chance to take root and show its nature. Where are the philanthropists who will give their time and money to this work, if their pay is to be made in fine words? Or what system of governmental aid is to determine the machines or processes that are to be tried at the public cost? The very energy of the advance of our modern civilization adds to the difficulty of introducing new features into its mechanism of thought or action. Now and then there are men of Archimedean

genius, who bring such power to their work that they may succeed in making considerable revolutions by mere force of genius. Count Rumford and Benjamin Franklin, among our own countrymen, and near our own time, have shown a power to push novelties into general use, but both had the fame and place of political success to back their projects. Moreover, modern inventions are generally of a complicated nature, and demand far more continued labor in their projection and introduction than those of Franklin or Rumford. We have passed by the simple stage of our discoveries, when important changes can be made by the sporadic energy of great intellects finding their customary avocations in other fields. Men must now give their lives to the work of inventing, in case they are to attain any eminent success whatever, and their lives must be able and devoted, and as a condition thereto, must be well paid. When some other practicable means of payment is suggested, it will be full time for us to abandon the present system, which, with all its defects, certainly gives the necessary stimulus to insure the activity of the inventive faculties of our people.

It has been furthermore suggested that the ordinary stimulus of competition in trade would, of itself, lead to the employment of inventive mechanics on the part of great manufacturers, in order to get an advantage over their competitors. The experience of Switzerland should be a sufficient answer to this unlikely objection. Manufacturers there have not been found to do any such thing,

although pressed thereto by great needs, and supplied with every element of liberal-mindedness and ambition. Men are never willing to make roads for others to travel; it has not been found that men built railways for the pure enterprise of the thing, and it is ridiculous to talk of manufacturers building costly ways to new methods, when others could traverse them without cost.

In case the present patent system were abolished, there would doubtless be a vigorous method made to utilize the profits which are to be made from certain sorts of inventions around which a net of secrecy can be drawn. We would have again the mediæval system of men surrounding their processes with mystery, which was often made eternal by their death. But many inventions — such as the Westinghaus air-brake, for instance — must be operated in the open day, if used at all, and for these there would be no means of protection.

Driven from his last position, our advocate of the new method of getting something for nothing out of men's brains will perhaps say, How is it that scientific men are doing such wonderful things? They do not patent them, but make their works solely for the love of us their greedy fellow-men. Here, too, the reckoning is made without the host. Scientific men are paid, and in their way pretty well paid for their work, although the pay is not in money; besides their subsistence, there is the prize of reputation and of station in their class, which will spur men to any labors. But, unhappily, the bettering of some

economic engine does not draw any of these prizes. If our friends will engage to secure the organization of a society where the invention of the little devices that grow into great machines will secure the prizes won by Faraday and his peers, there will be a chance of dispensing with the money profit of inventions as a means of securing their production. But though we may imagine conditions of society where the invention of the thousand and one things that make up the whole of great machines should be rewarded by laurels, our present world pays them with money rather than praise, and is certain to pay in no rarer thing for a great while to come.

It is clear to the unprejudiced observer, that though our system of protecting inventions may have certain disadvantages, it has greatly served the general interests of the state. It has counterbalanced many disadvantages of conditions, many evils of misgovernment. It has retained the industries of the country in a profoundly elastic state, and has so enabled them to meet the astounding shocks to which they have been subjected. Reacting on our people in many ways, its results are perceptible in our system of education and of government. We may go yet further and say that the political hopefulness of our people is a part of that same spirit of confidence in themselves that is born of the conquering of physical evils by the willing and eager spirit.

INTERNATIONAL PROPERTY IN PATENTS AND COPYRIGHTS.

WITH most forms of human property, to have gained a possession in one civilized country is to retain it in all others by essentially an equal title. A man may hold his personal possessions wherever they may be carried and however widely separated from him. A stolen possession, though the theft be done in the bottom of the sea or in the Sahara, may be sued for in any state. The recognition of this extension of rights beyond the limits of states goes even farther than this. A man may be sued for damaging the character of a foreigner for slander, and thereby dispossessing him of the impalpable though precious possession of his good name. The principle of the boundlessness of rights and wrongs has been carried yet another step forward. Civilized states do not allow the malefactor to purge himself of his offences by flight, as of old, but render him up to the pursuing law, on the principle that justice should have neither scales nor sword limited by frontiers.

It is a part of this same desire to limit the sundering effects of state lines in the useful work of the world that has led to certain steps being taken towards a system of

international property in the results of intellectual labor. Most civilized states have arranged reciprocity treaties with their kindred governments for the granting of protection to a certain class of inventors for their improvements, without reference to the country where the advantage was obtained or the nationality of the intelligence that secured the result. While rejoicing at the extension of this principle of solidarity among the nations, the observer cannot fail to be struck with the fact that certain states have failed to make any advance on this road, and all have paused half-way in the natural course of legislation. I propose to examine the arguments for and against this system of international protection for the products of intellect, and to show something of the effects that may fairly be attributed to its action. The inquiry must concern both patent and copyright, for, though differing in name, these two rights do not in the least differ in nature. The bounds between them are laid in the one being in a mere matter of thought and the other a more concrete thing; but in truth there is no other than an arbitrary line between them. It is unreasonable to deem the principles of legislation suited to the one unsuited to the other.

Although there has been no formal assertion of the principles under which the existing laws giving a limited international validity to property in the products of mental labor, it is clear from the text of the laws and the discussions that have accompanied their adoption that sound ideas have prevailed in their making. It was because men

recognized the essential unity of their race in the struggle for the means of advancement, because they saw that by giving an exchange of patent privileges they were increasing the measure of rewards that inspired men to invention, that they took these first important steps towards making a system of international property in intellectual products. The fact was plain enough to be seen, by common consent in all intelligent legislatures, that the extension of this pioneering work into the unexplored fields of invention must be secured through some system of rewards. And just as great prizes of money were in other days fitly offered for means of finding the longitude at sea, for the discovery of short roads to the Indies, and for the attainment of any other end precious to the state, so in this act of widening the sphere of natural rewards for intellectual labor, legislators saw straight to the advancement of the public weal. This giving of property in invention is practically a method of repayment of public benefit in a better defined way than by governmental prizes or pensions. The arbitration determining the measure of profit to the race can in no way be made so sure and safe from prejudice or misjudgment as by putting it into the hands of the natural laws of trade. By widening the field from which the tribute comes that repays the explorer who has found some new advantage for humanity, the prize is made the greater and the more sure. It must often happen that the particular invention, be it book or machine or process of manufacture, is especially adapted to use in a

limited district, and that perhaps not the country where it has originated. By offering a prize of this description, one for which all men have a right to contend, a state enlists the intellect of humanity in its work of securing the utmost good to its life.

By far the most important result that can be anticipated from the extension of this principle of the international property in invention is the help it will give to the creation of distinct classes of men who will devote their lives to the work of intellectual production in its several different walks. If the makers of books and machines could have all the civilized world for their patron, there is no doubt that we could enlist more of the intellect of each generation in the works that most contribute to the advancement of the race.

The advance of humanity made in any one generation intimately depends on the amount of the mental force of that generation that is withdrawn from the field of ordinary activity, and given to those works that can be done but by the few, though when done are for the use of all mankind. It requires no great knowledge of the condition of intellectual labor to see that the possession of the natural powers is not in itself sufficient to insure the work they should bring to the world. Whether it be the plays of Shakespeare or the inventions of our mechanicians, we almost always find the existence of some strong inducement a condition precedent to the doing of great work. This inducement is generally and most effectively

the leading desire of the generation to which the men belong, — at times political or literary fame is the dominant impulse and the most effective incitement to great work. But in all times the readiest and most complete reward has been the gain that comes in the shape of money. At present our society is seriously unbalanced by the fact that the rewards of money of great value are almost necessarily limited to those branches of labor that are least intellectual in their nature. Trade, and that modern form of politics which has the unhappy qualities of trade without its redeeming features, command the first place in the minds of all who set the *main chance* high in their estimation. Whoever would give the capacities of a great mind to work of a specially intellectual nature must content himself with fewer chances of fortune than he would have if he gave himself to commercial pursuits. Of all commercial ventures books are, on the average, the least profitable, and machines are but little better sources of profit. The merchant or banker, who has created or at least given shape to capital through his skill, has the whole world open to his energies, his moneys will be safe when put into competition with those of neighboring states. The frontier has for him no limitations. But the maker of machines has narrow bounds set before his products; for him the half-shaped grace of the law has many hindrances, and to the maker of books the frontier has all the terrors of the Middle Ages. His only protection is the garb of the beggar, and every plunderer has him at his mercy. The

Rothschilds, or any other family, skilfully guarding their gains for a century or two, can readily become the taker of toll from every civilized state. Their capital will be guarded by the laws of all the nations that expect the least recognition from civilization. But should any succession of men manage to create utilities through the channels of invention of any kind, if they invented machines or books rather than dollars, they would be denied all claim even in their own country to more than a few years of use of their devices. Certain countries would be open to them with the same rigid limitation of their property to less than a lifetime, but in all they would find the mass of their fellow-men, though respecting the dollar-stamped embodiment of skill, and indeed giving it a sanctity, looking upon the limited tenure of their inventions with something more than coldness. If the unhappy inventor is a book-maker, he will find that he is even more an outcast than the Jews were in the last century. If he be a very prophet in religion or a pundit in learning, commanding the power to explore other worlds or to make this one better through the means of science, he has no rights that his fellow-men can be bound to respect beyond the narrow bounds of his own community, and even then only for the span of a score of years.

The result of this system is that we never find the son continuing the writings or the inventions of the father, and so founding a house, as is common in trade or banking. We have set a bar to the inheritance of property

that might give us successions of father and son founded on the products of the higher soil of intellectual labor, while we encourage the successors of enterprises directed in other ways. We do not ask the Rothschilds, or any other men who have made a great and profitable mechanism of trade, to divide their results every score of years with the public. Of course it is easy to trace differences between these two sorts of property, and we may be driven by a short line of considerations to conclude that it will not do to give the inventor of a thought, be it book or machine, a chance to take his place across the path of progress as an obstruction. Yet while there is not an identity between the rights to intellectual and real property, there is an essential analogy. There is just as much reason for making a book or a machine an absolute unlimited possession as there is for making land a thing to be controlled by one will for centuries, and there is furthermore a better argument for seeking to found the succession of families on the inheritances in the products of intellectual labor than there is for founding them on trade or banking.

The world is, however, not likely to create a new class of permanent property in these results of intellectual endeavor, and it would perhaps not profit us to consider how great the loss it has probably met in not offering the same inducement for generational successiveness in intellectual activity that is offered in the work of trade. As this increase of the remuneration that would

come from the permanency of property in the products of intellect cannot be expected in the present state of the public mind, we may at least urge the considerations heretofore adduced as an argument for extending the reward that may be brought to inventors by widening the field of their activity. By extending this field, we can hope to divert more and more of the efforts of our race from the ephemeral part of its work to those that will bear some permanent profit to man.

In considering this question, nations may fairly be asked to rise above the level of the narrow considerations of individual profit, and act with reference to those interests of the race that are in their common keeping. Yet in the present state of the public mind, that takes little interest in duties that are as seemingly remote as those that concern the welfare of men at large, it will be best to consider the immediate local effect of the stimulus that comes from increase of the prizes which can be won by the inventor. Besides the self-evident increase in the profit that arises from the increased numbers that come to pay tribute to the successful inventor, when his property is extended to include regions beyond his own state, there are other arguments to enforce the economy of this principle of international rights in intellectual property. Each state has in its work a succession of peculiar economic problems. The experience of one country throws light upon the work of all others. In each the conjunction of the man and the problem which

give the invention is but a chance. If when the chance happens, and the invention is made, there is an active pecuniary interest in bringing it into use in other lands, the advantages arising from it are rapidly diffused among men. If, on the other hand, there be no such immediate interest at work in giving it a wide extension, it may only slowly creep over the barriers of indifference which so often oppose the effective introduction of new means of working. Every one familiar with the history of inventions is aware that all our important economic inventions of every description have been opposed by the prejudices of men in the most vigorous fashion. It is perhaps the strongest argument for the economy of patents, that nothing but the prospect of large pecuniary reward would give us men to undergo the martyrdom which awaits the man who would overcome these barriers of prejudice.

The same sort of obstacle awaits the invention when it comes to be carried into a new community. At each stage there is a struggle for existence with the previous possessors of the field, and nothing but a money prize can be devised to secure the overcoming of the barriers of doubt, dread, and indolence that stand against it. The international system of property in invention which we are advocating will alone secure the energy required for this struggle with the dull conservatisms of routine. It has happened again and again that some of the industries of a state have gone down solely because the details of method of other regions

had gotten ahead in the race. This happens more rarely nowadays, since the secret system with inventions has gone out of vogue and men are interested in securing the widest use for their inventions. Then some closeted discovery could make a community rich; now the principle of an even chance, the best man to win, is greatly increased by the open system given by our patent laws. All that has been said in favor of widening the field for the profit of mechanical inventions applies with equal force to the case of books. It is desirable, however, to press this side of the matter before the attention of the public for several reasons. In the first place the international sense of interest in the case of books is much less active than in the case of inventions. The barrier of language, which is broken by not one in ten thousand of our people, cuts off much of the common interest in this class of mental work when done in other lands. A machine speaks a universal language, one that needs no translation to be plain to those who know its characters. Moreover, books, though no less real, are less evident agents of advance in material civilization than other inventions; though they may make revolutions, their changes are less shown in hard facts than those made by machines. The public eye sees railways and factories spring up beneath the hand of the inventor; the less palpable though more important machinery of civilization that is set in action by the unembodied thought of authors, the theories of life which underlie all being, and by making hopes make the great springs of life what they are to us,

are not so easily taken into the gratitude of states. All men see and affectionately dwell upon the great advances in the economies of life made in the century of mechanical invention that has just passed away. They behold the seas bridged, the lands shortened to a span, and the varied stores of nature made wonderfully subject to their wills. They are prepared to give some reward to the toil that has done these great things. But they have not risen to the contemplation of the vaster changes which have been written in men's minds in the same span of years. They do not perceive that while mechanical invention has helped them to subjugate the fields of the earth to their immediate needs other forms of intellectual discoveries have been subjugating the universe to their higher needs. The same century that has given us the great applications of the steam-engine, the telegraph, and the thousand other mechanical appliances of great use, has given an even greater advance to our understanding of our own relations to the universe. It has shown us that we ourselves are not the degenerate shame of a better life, as men believed before, but that we are the product of an infinite care working through the ages of a new discovered past and forward to an immeasurable future. Our bodies have been explored so that we can see how we are linked in indissoluble bonds to the mighty nature about us. Man is no longer a spurned degradation in the universe, but the very ark of its great covenants. It is impossible to frame words to show how far the foundations of our laws that are laid in

the understanding of ourselves have been bettered by this century of thought that is behind us. Those only can grasp the magnitude of the transitions who have given much thought thereto. Yet this work has had no recognition from the international laws such as has been given to other inventions. None of those men who have helped to build these new ways of thought have gained fortunes from their labors. Some who have shared in those labors have given the very highest powers thereto. Capacities and labor that would have achieved the greatest success in other fields have been given without reward to the service of the public in this work. I am far from believing that the spur of monetary gain is imperatively necessary to the doing of such work as this, but the history of intellectual labor shows clearly that the best work of which men are capable is helped by this additional element of inspiration; but for the commercial success their labors brought, we should probably not have had the work of Shakespeare or of Scott. When once well begun, this class of work takes such a hold upon the writer that the sufficient reward is in the doing, not in what comes of it. It is in part for other reasons that the world should pay well for this sort of success. With each generation these explorers of the so-called scientific fields have to be renewed, the recruits must come from the abler ranks of the youth of each generation. In looking over the possibilities of the several ways of life, and making his determination which to follow, the most disinterested of our youth must weigh the chances of pe-

cuniary success they severally offer. In science he sees indigence unredeemed by any great monetary prizes; in other walks there is equal fame, no greater labor, and the great goods that money brings, goods that each generation makes the more palpable and attractive. The result is, that the walks of little-paid learning claim far too few of those who have great possibilities for success in this class of labor. It has fallen to the writer of these lines to trace the operation of these social forces in the students who make their beginnings in science in the largest American University; for ten years he has seen graduates from its classes brought in face of this problem of labor and subsistence, again and again he has been forced to see men with an inborn fitness for doing the great work of science driven to work which the world could have spared, simply because the chance of a living in science was so very small. It is not too much to say that he has seen at least a score of those well fitted to advance the great interests of discovery have been forced into other paths by the unprofitableness of those which the world is most interested in keeping well filled with able workers.

It is by widening the field of profit which is open to those whose works are worthy of the attention of their fellow-men, that we can hope to secure worthy prizes for this class of labor. Nothing will do this so well as the institution of a system of international copyright, which will at once multiply several fold the number of those who will pay tribute to any worthy author. This object should be

particularly dear to all those who are seeking to elevate the level of American scholarship as well as of those who with broader sympathies are desirous of adding to the power of the men who are speaking for their Anglo-Saxon race. Reciprocity in copyright among the existing English-speaking peoples would give a population of eighty millions to support those authors who are doing its intellectual work. In another half-century this population will include double these numbers, and within the sight of those now living it is likely that two hundred millions of men will use this one language in their work of this world. Here is a patronage for our prophets to come that will give them honor in their own country, as well as that more substantial gain that the prophets of our modern day demand. We may reasonably hope that the stimulus which will be given to the thought of our race from this support of numbers will enable it to predominate in the intellectual work of the future. In fact, it is in this chance of lifting the character of the results that will come from the vast prospective increase of our numbers that we must find the principal consolation for the crowding of our population which it will bring. The English-speaking peoples of the century to come will be so numerous that we shall be sure of an efficient support of a great number of workers in its most difficult fields. The authors and writers of that day will be able to command a support that is denied to those of our own.

To bring the appeal for this extension of the copyright

nearer home to the immediate interests of our own people, we should consider the probable effect of extending the field of profit of our authors to the present English-speaking population. It is a truth that at the present time the making of books is by no means a remunerative operation in this country; save for the trashier productions, it is not possible to anticipate a sale that will prove reasonably remunerative. That the inventive talent in the larger sense exists among us, that our people are capable of the sustained mental effort involved in such work, is sufficiently proven by the records of American mechanical invention. In this part of the field of intellectual labor the rewards are perhaps tenfold as great as those received by authors. Not that the average reward is so much greater, but the prizes are far more numerous and of greater value. This, rather than the average reward, determines the number of those who enlist in the contest. Our community is as yet one that reads little that is not ephemeral in its nature, and as our utterly unreasonable refusal to enter into a copyright system with other nations cuts our authors off from the chance of purchasers in foreign lands, we thus put a bar on the development of this side of our national life. The result of this is in the highest degree fatal to the national reputation, as well as to the more precious interests of national character. All, or nearly all, the leading books of the higher thought of our race and time are written in Great Britain. There the rewards, social and pecuniary, that await able authorship are very great; here they are

pitiably small. Outside of the educational, professional, or purely imaginative works, there are not a dozen books in this country that are worth keeping in print, measured by their annual sales. Such writers as Lyell, Spencer, Darwin, Galton, and a host of others, who can find, if they care to, a field for a profitable exercise of their labors in their own land, would in this not yet be able to command the barest means of subsistence from their labors.

It is utterly idiotic to maintain the present system with the idea that it is a measure of protection to American authors, as it has been urged it is. As well protect a merchant by forbidding his most profitable customers to buy his wares as to shield our authors by clapping this extinguisher in the shape of a non-intercourse act upon their flickering lights. Invention of the mechanical sort has clearly profited by the free struggle with the wit of other lands; it thrives with us as it thrives nowhere else, because the field is large and the prizes many and great. We may make the same conditions for our authors by throwing open the gates of their prisons, and making them free to enter the lists with the scholarship and genius of other lands. Whoever knows the capacity of our people cannot doubt that with a fair field and no favor they will give a good account of themselves.

It is of the first importance that our people should come to see that they profit by whatever lifts the race, by whatever removes the limits that states have set to the development of genius in all lands, giving to the elect of our

race, those who can do its great deeds, a chance to live their most fruitful lives. If this can be so clearly seen that it becomes the law for legislative action, sweeping away the walls that have so hampered our intellectual labors, we can foresee a bright future for the higher work of invention among our people. To bring this result about it should be reiteratedly urged that inventions, however different their sorts, are of one general kind, and that the successful experiment of an international system of patents is direct evidence of the propriety of instituting a system of international copyrights.

The world has begun to learn that there is one economy that does not cramp but truly widens the field of human wealth, — the economy of training intelligence. It must be brought to see that the best results in the way of training this intelligence are secured by amply rewarding its work. Whatever is given to intelligence is not a dole from the public store; it is but a tithe of its own liberal giving. The world must pay for its genius as it pays for its other products with a high price. It cannot have diamonds for the price of grain. It cannot have the ablest services of the best of its people for the price of fag-work.

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