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(Illustrated articles are marked with an asterisk.)

PUBLICATION OF THE PATENT CLAIMS.

Our attention has been called to a paragraph, clipped from some unknown newspaper, which utters a complaint against the SCIENTIFIC AMERICAN, for omitting the publication of the patent claims. The intimation is thrown out that an effort is being made to induce some one to undertake their publication. What this effort consists of does not yet appear, but doubtless whenever it matures we shall know all about it, but of one thing we are perfectly assured from our own experience, namely, that such a publication can only be undertaken by the Patent Office with any hope of success, and there would be a loss unless one thousand subscribers could be obtained at ten dollars a year each. We have arrived at this conclusion by a careful calculation of the cost of paper, composition, labor, and material necessary for its printing and circulation.

The readers of the SCIENTIFIC AMERICAN are well aware, that, during the few years past, the claims of patents had become a serious burden upon its columns, and complaints were numerous that three or four pages each week were given up to claims, which in too many instances failed to convey an intelligible knowledge of the thing patented. After a thoughtful consideration of the whole subject, and not without some misgivings, we decided to test the matter, and in the issue of our annual prospectus in December last, we announced our determination to try the experiment of discontinuing the claims.

In taking this step we had no other motive than to enhance the value of the SCIENTIFIC AMERICAN to the greatest number of its readers, and at the present moment it does not appear that any considerable number are dissatisfied with the course we have taken. Up to this time we have not received over a dozen letters of complaint, and our circulation is much larger than it was last year at this time. We have also received several letters commending our action. This is about the way the matter stands at the present moment. The question of expense has had nothing to do with our action in this matter. We desire simply to make the SCIENTIFIC AMERICAN as valuable as possible to all its readers, and we stand ready at any moment to resume the publication of the claims whenever it is made to appear that any considerable number of our readers demand it.

LABOR AND CAPITAL NOT ANTAGONISTIC.

The mistakes frequently made in discussing the relations of capital and labor, and the false views of these relations entertained by many superficial observers and illogical thinkers upon the subject, arise in great part from a consideration of them under abnormal circumstances. The natural relations of capital and labor are interdependent. The interests of neither can suffer without injury to the other, unless the normal and healthy condition of society has been disturbed by a force sufficient to destroy harmony of interest between both. Capitalists may individually regard labor, in some instances, as something to be got at the lowest possible price without regard to the rights of the laborer. But such an opinion can only be entertained by a man of narrow and superficial views of affairs. Equally narrow and superficial is the view of the laborer who demands for his work all that he can get without regard to the real value of his services. It is not our purpose at this time to recapitulate what we have so often written upon this subject; but we can not pass unnoticed a statement like the following taken from the *Detroit Union*. That paper asserts that capital and labor are ever at variance. "Capital has the advantage, because able to close her door on the outside world, and live in luxury until the laborer, whose family cry for bread, humbles all the manhood in him, and like a whipped spaniel he returns to his master. This may not be slavery in name, but it is even worse than the meanest slave, shackled and bound. Winter is upon us, and already scores of men are thrown out of employment; perhaps they have been blest with health and strength through the busy season, and have saved enough to barely support their families through the winter, and come out in the spring as poor as they were the year before, one year older, and with no brighter prospects for the future."

It is true perhaps (and only so in a very limited sense) that capital sometimes shuts its doors while labor cries for bread. But this is only temporary and compulsory with capital invested in material and machinery to convert material into marketable wares.

A mill may be closed for three months and a large number of operatives thrown out of employ. In the majority of such cases there is more or less privation on the part of labor, but capital suffers also. It is safe to say that the loss of the latter is in such cases greater in proportion to its value than that of the former.

It must be borne in mind that the present organization of society recognizes the rights of individuals to the possession of property if lawfully obtained. Such recognition implies the right of protection from lawless encroachments, and against loss, so far as personal management can avail to avoid losses. And further, the present organization of society forbids that any interference with the management of capital by its possessors, should be tolerated so long as it is in every respect legal. If these conditions are no longer tolerable, the only way to remedy them is to re-organize society from the bottom. But again because laborers suffer during the winter season, for want of employment, is it fair to charge their privations to the account of capital? To all intents and purposes labor is a commodity which is amenable to the law of supply and demand like any other. The world as a whole or this country by itself has never seen the time when it had labor enough. If labor was properly distributed there would to-day be a greater demand than could be supplied. The trouble is that certain departments are glutted for help, while others have not nearly as much as is needed. This is the fault of labor and not of capital. Millions of fertile acres in this country await cultivation and offer comfortable homes and abundant food and clothing to any who will work them, but so long as people prefer the filth and squalor of crowded cities with precarious employment, and high prices to the comparative ease of country living, we cannot see that capital is to blame for their poverty. If labor, especially unskilled labor, would adopt the policy, of getting away from the great centers of trade, the large cities, instead of overcrowding them, we should hear less of suffering for want of work.

The article above referred to alludes to the sufferings of seamstresses in large towns; but very few of these if asked to leave their present occupations, and perform housework where they would have plenty of food and comfortable shelter, with wages ample to supply clothing, would accept the offer. This is proved by the fact, that, although there is a scarcity of such labor, and the country constantly sends to the cities for its supply, it cannot be obtained. How is capital to blame for this. So long as human nature feels the effects of Adam's fall, so long there will remain those who will not scruple to profit from the necessities of others. Nothing can justify such a course; neither can anything justify the folly that exposes itself to imposition, and chooses want rather than comfort.

Such articles as the one from which we have quoted, are to be deprecated. Without touching upon the fundamental principles of existing things, or suggesting anything practical toward the amelioration of the working classes, they foster discontent, blind repining at inevitable consequence, and a disregard of public order and individual rights.

BIRTH OF THE SOLAR SYSTEM.

An article under the above title appears in the *Atlantic* for February. It purports to enunciate a new theory of the origin of the earth, sun, and other heavenly bodies. We should not, perhaps, strictly say origin, as the theory of cosmical vortices held in common by La Place and other philosophers is retained, but with the difference that in the new theory the cosmical matter is considered to be intensely cold, and its precipitation toward, and concentration around the vortices to be the cause of heat, which increases with the size of the orb thus formed until the body becomes self-luminous, in short becomes a sun. Thus the earth is, according to this doctrine, an embryo sun in a meteoric vortex, constantly growing by the attraction of cosmical matter to itself and its temperature constantly rising. The sun is considered to be also in a meteoric vortex, and to have derived his light and heat from the precipitation of meteoric matter upon his surface.

This theory is absolutely startling in its audacity. It stands in its principal points, directly opposed to the opinions of the greatest philosophers of the past or of the present. The earth has hitherto been supposed a cooling body. The cosmical nebula of LaPlace was matter indefinitely expanded which, upon condensation, formed rotative concentric rings which, upon further contraction, became broken into fragments assuming the spherical form. The chemical geology of Dr. J. Sterry Hunt, and the old school of geology, are simply absurd if the new theory be true. Jupiter, hitherto considered by astronomers as very much colder than any of the interior planets, is by the author of this remarkable doctrine, regarded as being so hot that water, as water, cannot exist upon the surface, being entirely vaporized and floating in his atmosphere.

The sun is, by and by, to become so hot that it will be reconverted into cosmical matter, but when its matter becomes so intensely cold as it must be before it can again fall as meteoric matter upon the surfaces of other bodies, its heat will have disappeared. What will have become of the heat? The author gives us no satisfactory answer.

Comets are masses of cosmical matter. When approaching the sun, this theorist tells us they act as lenses collecting a beam of light, which becomes visible by reflection from the particles of meteoric dust everywhere distributed about the sun for many millions of miles in all directions. But he does not account for the cases where comets have projected a tail *toward* the sun instead of away from it. Are comets in such cases concave reflectors instead of lenses? Man "little man," destined to be gradually roasted, will have disappeared long before the earth becomes a sun, to be finally reduced to chaos, and reconsolidated and rejuvenated, for thus run the perpetual cycles of the universe.

But we have not space to note at length all the strong or the weak points of this theory, among the latter of which not the least prominent is that man is merely an incident of creation, not its crowning work.

Evidently written, however, by a daring and speculative mind, and throwing down the gage of battle to all the systems hitherto accepted, and appearing in a periodical read by most thinkers in this country and many abroad, this "new theory" cannot fail to attract great attention and will probably give rise to much discussion.

THE INTRODUCTION OF STEAM FIRE ENGINES.

Steam power for extinguishing fires was in use in manufacturing establishments many years before it was employed on portable machines. Every factory of any pretensions had its steam-driven pump with hose and other attachments calculated to reach every portion of the establishment. About the year 1829 or 1830, Capt. Ericsson, then of the firm of Braithwaithe & Ericsson, London, Eng., built and exhibited a portable steam fire engine. In 1842 or 1843 he produced a similar engine in New York city and it was tested, but never brought into regular service. The writer remembers a great objection urged against its use that it burst any hose that could be made, which showed that the fault of want of success did not lie with the machine.

So far as we are informed, the credit of overcoming prejudice and successfully introducing the steamer in cities and large towns belongs to Miles Greenwood when mayor of Cincinnati, Ohio. Mr. Greenwood, being a man of great tenacity of purpose and a thorough mechanic, and having, moreover, the confidence of his fellow citizens, succeeded where only failure awaited others; and in consequence Cincinnati was the first city to adopt the steamer as a permanent portion of its fire department force.

The reasons why this most efficient agent—steam—was not sooner utilized for the protection of property from fires, may be summed up in one word, prejudice, prejudice born of ignorance. Fire and steam careering through the streets instead of inducing confidence and a feeling of security, inspired terror or created apprehension. Our municipal authorities, too, are not generally engineers or mechanics—and—the steamer does not vote.

The metropolitan fire deparment of New York city numbers 34 steamers of about 50 H. P. each, equal to 185 men, or in the aggregate 6,290 men, while the actual number of men employed even adding the 12 hook and ladder companies is only about 550: thus relieving 5,740 men from the labors, dangers, and exposure of the fireman, and allowing them to become producers rather than merely protectors of property. The time is past to question either the superior efficiency or the economic advantages of the steamer over the hand engine. As well might we return to the old hand press and the spinning wheel, print our newspaper editions of 100,000 daily and clothe the teeming millions by hand labor, as to discard the powerful agency of steam in the protection of our property from fires.

WHY THE RIGHT RATHER THAN THE LEFT?

It is somewhat attractive to attempt to trace, through the convolutions of custom and the traditional usages of men, the reason for every day habits that seem so natural as not to deserve notice, much less investigation; but, as nothing is created without an object, so we may assume that there is a reason for those of the habits of our kind which, being general, escape notice or criticism, but which, if isolated by the practice of individuals only, would arouse attention and awaken inquiry. Among these habits none are more marked or provocative of investigation than the habit of preferring the right hand or side to the left. In meeting an obstacle in walking it is easier to turn to the right than the left; in ascending staircases we prefer to take the right side, although that side may not have a rail for the hand, to assist the riser; we test the weight of an object by taking it in the right hand, and if we attempt the test with the left we find the result, as felt by the muscles, to be very different from that by the right hand trial. So in a hundred ways we always show our preference of the right over the left. It is not enough to account for this preference to say that general custom and personal habit make it imperative. To be sure, civilized and enlightened peoples, generally, are careful to instruct their children to use the right hand rather than the left, but this may be because manual instruments for performing all descriptions of work are constructed with a view to be used by the right hand. It is possible, however, that what may be considered the cause is only a result of some organic law that demands this sacrifice of