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Scientific American.

POTTERS' MACHINERY-AN OPENING FOR INVENTORS. feet deep, 80 feet high in the interior, and was surmounted Why it is that potters are not inventors, and that the by a lofty clock tower. The building, with the land and means, methods, and appliances of potters have failed to foundations, cost about \$2,000,000. The loss by the fire exchallenge the ingenuity of men not engaged in that indus- ceeded \$900,000.

CONSCIENTIOUS WORKERS.

- ---

The tendency of our times is to disregard old maxims. of the United States Patent Office show less than fifty pa-1 It is true, many of them, based on the experience of other tents connected with the manufacture of pottery, less than people under very different conditions, are not applicable half the number applying to potters' machinery. That the in our day. "Haste makes waste" may be true in the associated potters of the United States are imperfectly workshop, but the business man knows that "time is aware of the need of inventors in their trade and of the pos-smooney," and it pays to be in a hurry when the market

The good old maxim that "whatever is worth doing is convention. But the stipulation against patenting which worth doing well," is too often forgotten. "That is good they make in their offers of rewards for invention justifies enough for him, or for the money," is a poor excuse for a our use of the word imperfectly in describing their sense of man to sacrifice his good name, and still worse to induce need. They offer (1) a reward of five hundred dollars to him to acquire careless habits. It has been said that while any person who may invent and submit to them any new American workmen are better paid, better fed, better cauand useful machinery of importance and applicability in cated, and, we may add, better behaved, than those of any other country, they can beat the world in slighting their fifty dollars to any person who may invent any essential and work and cheating their customers and employers. The useful improvement to or upon any machinery now in use shoemaker, who turns out one or two pairs of boots a week by potters, "provided that these inventions or improvements, for a customer, takes an honest pride in his work, and feels are free from all patents obtained or to be obtained from the and knows that he is to be held personally responsible for every stitch he puts in. In a large factory, where the division of labor should make every man an expert in his own be. Still it is evident that the United States Potters' Asso- branch, the workman often loses his identity and responsiciation require an absolute surrender by the inventor of any bility. He knows the customer cannot fall back on him, property rights in his invention before the offered prize is | however imperfect his work. If it is only covered up so as to conceal it from the eye of his foreman he is safe. Probeither the associated potters do not believe that an invention ably this is doing much to encourage careless work. It is of essential use in their industry could be worth more than well known that ready-made clothing, boots, dresses, underclothing, everything made in large quantities, is far cheaper than custom work, but alas! it is very often not as good.

There are many people in every land who like to be humbugged, while others have an equally strong passion for cheap wares, whether poor or good, and some one must inclined to think that the association might be benefited by | supply this demand. The producers of such goods employ a careful study on the part of its members of the influence poor workmen at correspondingly poor wages, because they of patented inventions upon the progress of other arts, and must make their profits out of their workmen. Five and of the value of such inventions both to the manufacturers ten cent stores are lowering the standard of production as well as the scale of wages.

It never pays to be a poor workman. If you are a young ware Reporter remarks that "whatever causes may be to man, aim to do honest work, and, although your present blame for it, it is an established fact that pottery is behind employer may not be willing to pay you any more for a the age in the matter of labor-saving machinery, the same well-made coat or a neatly-finished boot than he would for hand processes being now employed as were in vogue a botch, don't be discouraged. If you are a carpenter, thousands of years ago. While every other industry has make the best joint you can; if you are a machinist, see benefited largely by the inventive genius of modern times, that every bolt and rivet is as firm as if your life depended the potter plods on in much the same way as did his fore on its properly fulfilling its duties. How carefully the fathers in the art. This state of affairs is largely due, pro- aeronaut examines his balloon, the tight rope performer his bably, to the conservatism of the potters themselves, who rope before he trusts his life to it. Would a shipbuilder seem very generally to go on the principle that 'what was take passage on a vessel of his own building if he knew good enough for their fathers is good enough for them,' and that he had willfully neglected or slighted any essential part partly to the fact that the attention of inventors has never of her hull? Yet many a young mechanic has destroyed been publicly called to the needs of the industry in this his own future and committed moral suicide by sending regard. Once let it become known among inventors that forth a poor piece of work. The old surgical professor's machinery of improved form is needed, and from all the caution to a young medical student is not inapt here. Said

work is a failure, and the man becomes a cripple, you may Though the anti-patent stipulation is likely to prevent any be sure he will always come limping along just at the eager competition for the prizes referred to, the offer of them wrong time, when you are surrounded by your clients and may be beneficial in calling the attention of inventors to the friends. He is a walking advertisement of your incapa-

calculated to improve, facilitate, or cheapen the process of tion. There are names that will sell almost anything. Why do Burt's shees bring a better price than these of other The associated potters appointed Messrs. Thomas C. makers? Why does Squibb's ether bring a higher price Smith, Greenpoint, N. Y., John Moses, Trenton, N. J., and than that of any one else ? Why do Merk's chemicals have M. Tempest, Cincinnati, Ohie, a committee to investigate their own price list? Because they are known to be hon-

The path to fame by honest merit is a slow and tedious one. A manufacturer who is so careful about his products that he has to put a higher price on them than his less conscientious neighbor can sell for, may be repaid at first by In the recent burning of the Manhattan Market, one of small sales and smaller profits. It takes a long time to the most conspicuous and costly buildings in New York, we build up a reputation by excellence, but once acquired it is

It is much the same with the workman as with the manufacturer. If every stroke he strikes is solid work, conscien-In this case the blunder was not so apparent as the com- tiously performed, he will acquire a reputation, limited as mon one of setting a wooden spire over a stone church, or a it may be, that is sure to pay in the end. We would not tinder box, in the shape of a mansard roof, over a granite conceal or deny the fact that some men labor under pecuwarehouse; yet the blunder was there, and the ruin of a har disadvantages. All men are not born equal, either menbuilding which cost \$1,400,000 is the result. tally or physically. One is naturally skillful in one direc-The building was considered practically if not absolutely tion, another is expert in many things. One man may do fireproof. The floor was of concrete, the walls were of his level best, and yet he will not turn out as good a piece brick and glass, the rafters were iron trusses, and the roof of work as his more skillful brother who only half trues. was covered with slate. The stall fixtures were of wood; Let him not be discouraged because he is handicapped in but the stalls were so widely spaced that there would have the race, and may not be able to reach the top of the ladder. been no great danger of injury to the main building through There is room for honest workmen everywhere; even retheir burning, even when re-enforced by the pile of empty spectable mediocrity pays better than brilliancy coupled barrels in which the fire began, had the roof been con- with trickery. structed as it should have been in a building of that char-The native American is distinguished by his ingenuity, acter. Unfortunately the vast and lofty arch of the roof and with half a chance he makes his mark everywhere. Yet was lined with wood for convenience in fastening the slates, he sometimes loses the race in competition with less able and, though the quantity of wood was relatively small, it men of other lands, because their careful training and early was large enough to insure the destruction of the building, drill in their profession, their long and severe apprentice •therwise fireproof against fire. ship, has more then compensated for the want of natural

try, it is hard to say. The fact is manifest, however, that there is no other industry which has been so little benefited by invention during the past two hundred years. The records sibility of inaugurating improvements in their industry, is shows signs of a change. evident from the resolution adopted by them at their recent their art and business; and (2) a reward of two hundred and inventer or any other person."

The meaning of this provision is not so clear as it might awarded. From this it is safe to infer one of two things: five hundred dellars; or that an inventor capable of producing new and useful machinery, applicable in an art substantially unimproved for two hundred years, yet employing millions of capital, is likely to hold his labor and his property rights at a curiously low figure. In either case we are who use them and to their patentees.

Speaking of the premiums offered, the Pottery and Glassdevices likely to be offered something can certainly be he, " If you are ever called to set a broken leg, and your selected to suit the different purposes."

field so long left fallow. The pottery business is rapidly city." increasing in importance in this country, and any invention. Every manufacturer knows the value of a good reputamanufacturing cannot fail to become a valuable property.

and test any inventions that may be offered, and to award 'estly prepared. the prizes. To them all communications relating to the matter should be addressed.

BURNING OF A SUPPOSED FIREPROOF BUILDING.

have another illustration of the fatal mistake of putting into like the pearl of great price. a would-be fireproof building just enough wood to cause its destruction.

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The building was erected in 1871, and occupied the block tact and ingenuity.

bounded by Thirty-fourth and Thirty-fifth streets, and Perseverance will not conquer all things, but it goes a Eleventh and Twelfth avenues. It was 800 feet long, 200 long way toward success. While luck seems to favor the

few, most men have to carve out their own success by hard labor, in which a full determination to do everything to the that another trade was not chosen. If it is an honest one, stick to it and it will pay.

- ..-THE PHOTOPHONE.

sound transmission by light, which led to the invention of one death to 142,253 tons of coal raised in 1874, and in 1878, improvement in the physical health and strength of our the photophone by Professor Bell, have already been described at length in the SCIENTIFIC AMERICAN (page 176, current volume), and in the SUPPLEMENT (No. 246), only a sions come from the carelessness of miners, who will not on "The Changes in American Society;" and Frederick brief reference to the fundamental principles of the inven- hesitate to open a safety-lamp surrounded by fire damp to Law Olmstead one on "Public Parks," in which he called

tion will be needed to make clear the annexed diagram, which illustrates the manner in which articulate speech is transmitted by means of a beam of light, without any visible or tangible connection between the transmitting and receiving stations.

A beam of light from any source is concentrated on the diaphragm, A, by the lens, B, and the diaphragm, which is capable of reflecting the light, is placed in such a position in relation to the lens, B, as to project the light along a line joining the axes of the lens, C, and the parabolic reflector, D. The lens, C, renders the divergent rays of light parallel, and the parabolic reflector concentrates the light upon the selenium cell. E.

The selenium forms a part of an electrical circuit, which includes the battery, F, and receiving telephone, G. A sound made in the vicinity of the transmitting instru-

ment vibrates the diaphragm, A, and undulates the beam of light a pipe. The peril from the falling of roofing and slate of America together. The next meeting of the Association variations in the intensity of the light concentrated on the of the total; and of these the public hears the least because selenium by the parabolic reflector changes the electrical they are so common. These are too often the result of forconductivity of the selenium and renders the electric cur- getfulness, rashness, or neglect. And again, employes are rent undulatory. This current affects the receiving tele more at fault than employers. In fact, carelessness and nephone in the same way as it would be affected in an ordi- glect are common among miners to a degree which seems nary telephonic circuit, and the sounds made in the trans- scarcely possible. mitting instrument are reproduced in the telephone.

principle is substantially the same in all the forms made playful, and social training for children, and as clearly the known to the public. Professor Bell, in his recent lecture defects and dangers of the Kindergarten system as develbefore the American Society for the Advancement of Sci- oped by Froebel and carried out in this country. The charence, said that about fifty different forms of apparatus had acteristic differences between American and German chilbeen devised. The distance through which the "photo- dren, from geographical and social causes, were well insisted phone" will work successfully has not yet been determined, upon, but no reference was made to the narrow range and but it is believed that the extreme will be limited only by purely artificial cast of Froebel's mind as exemplified in the the difficulty of adjusting the instruments at widely separated stations.

In the course of his experiments with a perforated disk suitable for American children. interrupter, Professor Bell sought to ascertain the nature of the rays that affect selenium. For this purpose he and women, was treated by Miss E. J. Simcox, of the Lonplaced in the path of an intermittent beam various absorb- don School Board, and the co-education of the sexes was ing substances. When a solution of alum, or bisulphide of afterward discussed with some feeling. Another aspect of carbon, is employed, the loudness of the sound produced by education was considered by President J. M. Gregory, of the intermittent beam is very slightly diminished; but a so- the Illinois State University, in a paper on American newslution of iodine in bisulphide of carbon cuts off most, but papers. Mr. Gregory took a generous and hopeful view not all, of the audible effect. Even an apparently opaque of the influence of newspapers, regarding them as the best sheet of hard rubber does not entirely do this. When the index of American life and the fairest representation of sheet of hard rubber was held near the disk interrupter, the the people. The best brain of the country speaks through Haven, chairman; Theodore J. Woolsey, New Haven, rotation of the disk interrupted what was then an invisible the newspapers. They are the people's libraries-the cyclobeam, which passed over a space of about twelve feet be- pedia of the millions. fore it reached the lens which finally concentrated it upon the selenium cell. A faint but perfectly perceptible musical tone was heard from the telephone connected with the Health. The regulation of medical practice by statute law selenium. This could be interrupted at will by placing the hand in the path of the invisible beam. It would be premature, says Professor Bell, without further experiments, to speculate too much concerning the nature of these invisible rays; but it is difficult to believe that they can be bent rays, as the effect is produced through two sheets of hard rubber containing between them a saturated solution of alum. Although effects are produced as above shown by forms of Baltimore, Professor Nichols, of Boston, and others. Secradiant energy which are invisible, the apparatus for the production and reproduction of sound in this way has been rating the negative testimony of those who had not been named the "photophone," because an ordinary beam of light contains the rays which are operative.

THE SOCIAL SCIENCE ASSOCIATION.

very best of one's ability counts for more than is generally sociation began in Saratoga, N. Y., Sept. 5. The papers which the associated charities ask cordial co-operation. supposed. Above all things, don't waste time in regretting read related chiefly to education and sanitary affairs. The Almsgiving, which saps manhood, self-respect, and self-rereport of the Committee on Casualties in Mining, read by liance, is a curse. "The Care and Saving of Neglected Mr. J. D. Weeks, of Pittsburg, showed that "in Pennsyl- Children" was considered by Miss - Hollowell, and the vania, one man was killed last year for each 105,700 tons of "Volunteer System of Charity," by Mrs. F. B. Lockwood. anthracite raised, a greater mortality than obtained in Eng- Mr. G. B. Bartlett submitted a paper on "The Recreations one death to 255,000 tons raised. While some accidents are people to the increase in holidays and the attention given to unavoidable, there is no doubt that a great majority of explo-, athletic sports. Mrs. Julia Ward Howe contributed a paper

clothing if naked; second, a long, steady, patient pull by a The annual meeting of the American Social Science As- wise, strong hand up into solid land. This is the work in As the remarkable series of investigations in relation to lish mines. In Ohio the figures, confessedly imperfect, give of the People," in which he attributed most of the recent

> ttention to the fact that twenty-five ears ago we had no parks which might not better have been called something else than a park, whether so designated or not. Since then a class of works so-called has been undertaken which to begin with are at least spacious and have possibilities of parklike qualities. On twenty of these now in progress over \$40,000,000 have been expended —well nigh \$50,000,000-and this does not tell the whole cost. Considering that in the towns making this outlay the necessity of a park was little felt, it manifests a remarkable pro gress of public demand. While in the first half of the century only one public park was laid out in Europe, since 1850 as many parks have been laid out in the large towns of Europe as with us, and the area has been larger there. What has been secured for London alone is of greater extent than all the town parks

BELL'S PHOTOPHONE.

A report on Kindergarten schools by W. T. Harris, of St. We have described but a single form of apparatus, as the Louis, recognized very clearly the advantages of positive.

Education in England, particularly as developed for girls

The sanitary renovation and salvation of Memphis was discussed by Dr. A. F. Lincoln, of the National Board of was considered by Dr. E. W. Cushing, of Boston; and the economic aspects of the treatment of the insane, by Dr. Walter Channing, of the same city.

The question of adulteration of foods, medicines, etc., was brought prominently before the meeting by Mr. George T. Angell, whose sweeping assertions were disputed by Professor S. W. Johnson, of New Haven, Professor Remsen, of retary Sanborn, on the contrary, stood up for Mr. Angell, able to discover many or frequent adulterations as of less weight than that of men who had found such adulterations.

The proceedings of the second day's meeting embraced

light projected through the lens, C, and the consequent is greater, however, than any other, being about 40 per cent. will be held in Saratoga in September, 1881. The officers for the year are:

President-Francis Wayland, Yale College.

Vice Presidents-Benjamin Pierce, Cambridge, Mass.; Theodore D. Wolsey, New Haven; Martin B. Anderson, Rochester; Mrs. Caroline H. Dall, District of Columbia; Thomas C. Amory, Boston; Henry B. Baker, Lansing, Mich.; Thomas M. Post, St. Louis; J. W. Hoyt, Chevenne; Rufus King, Cincinnati; W. H. Ruffner, Richmond; W. L. Trenholm, Charleston; Isaac Sherman, New York; Henry Villard, New York; Maria Mitchell, Poughkeepsie; Nathan Allen, Lowell; Mrs. J. E. Lodge, Boston.

General Secret 17y-F. B. Sanborn, Concord.

Treasurer-F. J. Kingsbury, Watertown, Conn.

Directors-Dorman B. Eaton, New York; T. W. Higginson, Cambridge; Horace White, New York; J. W. Dickinmatter and method of his teaching. His spirit was true and son, Newton, Mass.; Anson P. Stokes, New York; Jonas admirable, but his system rigidly applied is anything but M. Libby, New York; Carroll D. Wright, Boston; G. J. Riche, Philadelphia.

Department of Education-W. T. Harris, Concord, Mass., chairman; Emily Tarbott, Boston, secretary.

Health Department-D. F. Lincoln, Boston, chairman; E. W. Cushing, Boston, secretary.

Finance Department-David A. Wells, Connecticut, chair man; Hamilton A. Hill, Boston, secretary.

Department of Social Economy-W. B. Rogers, Boston, chairman; Walter Channing, Boston, secretary.

Department of Jurisprudence-Francis Wayland, New secretary; corresponding members, Moncure D. Conway and Edith Simcox, England.

The Course of a Lightning Flash.

Prof. Tait, of Edinburgh, insists that when people think they see a lightning flash goupward or downward they must be mistaken. The duration of a lightning flash is less than the millionth part of a second, and the eye cannot possibly follow movements of such extraordinary rapidity. The origin of the mistake seems, he says, to be a subjective one, viz., that the central parts of the retina are more sensitive, by practice, than the rest, and therefore that the portion of the flash which is seen directly affects the brain sooner than the rest. Hence a spectator looking toward either end of a flash very naturally fancies that end to be its starting point.

***** Shades for Electric Lights.

A French inventor, M. Clémandot, has devised a shade for reducing the glare of electric lights, which he claims to be much more economical than ground glass globes. Hemakes his lantern of glass tubes filled with finely spun glass threads or glass wool. By reflection from the glass threads the light is given the desired diffusion, with a loss of illuminating power not exceeding 15 per cent, against 30 or 40 per cent with opal or ground glass. The natural blueness of the electric light can be corrected by tinting the glass tubes or the inclosed wool.

Arrival Home of the Anthracite.

The little steamer Anthracite, worked on the Perkins high pressure system, arrived at Falmouth, England, on the 14th of September, having made the voyage from Philadelphia in twenty-three days. She had on board at starting twentyfive tons of coal. Having thus twice crossed the Atlantic successfully, this vessel seems to have well demonstrated the practical value of the new system. The reports of the machinery trials of this steamer, which took place a few weeks ago at the United States Navy Yard, Brooklyn, have not yet been made public.

Phosphorescent Lighting.

Dr. Phipson takes sulphide of barium, or some other substance which is rendered phosphorescent by the solar rays, and incloses it in a Geissler tube, through which he passes a constant electric current of a feeble but regular intensity. He claims to obtain in this manner a uniform and agreeable light, at a cost lower than that of gas.-Les Mondes.

the reading of the following papers: "The Socialist Laws of Germany," by H. W. Farnham; "Modern Legislation Touching Marital Rights," by Henry Hitchcock; "Libel and its Legal Remedy," by E. L. Godkin; "Pensions in a Republic," by F. J. Kingsbury; "Laws Regarding Dissec tion and Grave Robbery," by Edward M. Hartwell; and 'Indeterminate Sentences for Crime," by Z. R. Brockway, Superintendent of the Elmira Reformatory.

In the first paper and the third and last day, Rev. D. O. Kellogg read a paper on "The Principle and Advantage of Association in Charities." In the subsequent discussion Robert T. Paine maintained that charity must do four things-relieve worthy need promptly, fittingly, and tenderly; prevent unwise alms to the unworthy; raise into independence every needy person, where this is possible, and make sure that no children grow up to he paupers. Relief, detection, elevation, and prevention are all essential parts of a complete plan. Families or persons who have fallen into Bridge disaster has been fished up and repaired, and is now want usually need, first, relief-food if hungry, fuel if cold, drawing trains on the Eduburgh and Glasgow line.

Loss of Melbourne Exhibits.

By the wreck of the ship Eric the Red, on the southwest coast of Australia, 150 cases of goods for the American ex hibit at the Melbourne World's Fair were lost. As the Ex-hibition opens October 1, the exhibits cannot be replaced.

THE locomotive of the train that was wrecked in the Tay