

Imponderable Agents.—No. 1.
[Second Series.]

LIGHT.—Theory, in Science, is better, even when wrong, than facts without any arrangement: for, as Bacon has said in his own peculiar manner, "Truth is more easily evolved from error than from confusion." Thus premising, we will proceed to present a number of articles, of which this is the first, on "Light," "Heat," and "Electricity;" our attention having been more immediately directed to these questions by the series of articles which have recently appeared in our columns, on the "Imponderables." In a scientific sense, "light" is a term employed to denote that "substance," or "action," or "quality," of matter by which we are enabled to perceive and distinguish objects without hearing, feeling, tasting, or smelling. In a certain sense, Light is a matter of pure hypothesis, hence it becomes us to receive with caution the terms used by writers in referring to it: we can speak of Light as "reflected," "conveyed," "evolved," and "absorbed," and yet these terms are merely convenient modes of describing facts, and not really explanations of them; for all these terms are just as applicable to a "force," an "action," or a "motion," as to a substance. A "motion," may vary in intensity, and be treated like an arithmetical quantity, and may be propagated from place to place, and yet who would be so blinded to common observation as to say that "motion in itself is a substance?"

Light has been considered by Sir Isaac Newton as a distinct substance in itself, or else his language means nothing. Descartes' theory is, that Light is an action, or rather the quality of an action, namely, the property of the motions of a subtle "ether" pervading all space. The Cartesian theory embraces Light as a substance and a quality, and there is no room in philosophy for any other intelligent opinions respecting it. Euler, the ablest exponent of the Cartesian theory, is termed by Sir David Brewster—and justly we think—"the profoundest philosopher that ever wrote." In the articles which have appeared in our columns, both the Newtonian and Cartesian theories have been condemned, and a new one claimed. We will state the three, in order to discover what is new and what is old.

1. **DESCARTIAN THEORY.**—"All bodies and space are filled with a very light and very elastic "ether," much lighter than air, composed of small globules, the vibrations (motions) of which eliminate light, the different colors are the result of different vibrations."

2. **NEW CLAIMED THEORY.**—"In Nature there is an element existing in a form exceedingly more rare than the lightest fluids, which may be called an etheroid (etherform); it may be called "lumenism" (lightism). Light is lumenism in motion; the different colors in the spectrum are caused by the different motions of its particles."

NEWTONIAN THEORY.—"Light is composed of emanations, the particles of which are sent with great velocity from luminous bodies—such as the sun—to distant places; these particles are also possessed of inertia, and endowed with attractive and repulsive properties."

We do not know how many pens have been worn out by philosophers writing against the undulatory theory, on the one hand, and the theory of emanations on the other: but there is no difference between the two in essence; the only difference consists in the words employed by the reviewers of both theories, in darkening their own ideas, and the ideas of their respective champions. Both of these theories have been condemned in the articles which have appeared in our columns; if both are wrong, what place must we assign for the new claimed theory.

It is well known to philosophers how Leibnitz and Maclaurin, and their followers, disputed for thirty years about the true method of estimating the force of moving bodies, and to the no small disgrace of great mathematicians, the controversy was dropped not ended. It was at last discovered by D'Alembert that both were right, and that they had been hammering for years at one another with mere terms. The same may be truly said of the two theories of Light—the Cartesian and Newtonian—they

are identical, and we think we shall be able to show this clearly.

Euler adopted the theory of Descartes because his strong common sense could not allow him to adopt any other. This, as we have said, supposes all space filled with an elastic subtle fluid, the motions of which produce what we term "light." Well, what are Newton's emanations? "Fine particles of matter."—These particles in the aggregate must form a subtle elastic fluid—an ether—etheroids. What difference is there between this and Descartes' fluid? None. Again: if Newton's emanations are always being given off from the Sun and other luminous bodies, throughout all space, these emanations must fill all space. Is there any difference between this part of the theory and that of Descartes? None. What kind of a motion will be given to an elastic fluid, by a mechanical action impressed upon it? A vibratory motion. What difference is there, then, between the theory of emanations and that of undulations? None at all, excepting that Newton had not a clear idea of it, inasmuch as he considered that these emanations were shot from luminous bodies to distant places, in straight lines, with inconceivable rapidity, which, if it were true, would make our earth a sun in itself at some distant day.

By any view which we can take of the question, the Emanations of Newton must form an elastic fluid, and its motion must be vibratory—undulatory—the real Cartesian theory. We have a fine example of this in our atmosphere; the breath of the tiniest insect that floats within it, produces undulations; it is the same with water; the smallest pebble thrown into the sleeping ocean will produce undulations that will gently ripple the yellow sands at a thousand miles distance.

(To be Continued.)

President's Message and Inventors.

If we mistake not, a President of the United States has for the first time condescended to notice the inventors and men of genius of our country in his annual message. The following gratifying paragraph appears in President Pierce's first message to Congress, and although brief it is full of truth and should attract proper attention. "I commend," he says, "to your favorable consideration the men of genius of our country, who, by their inventions and discoveries in science and art, have contributed largely to the improvements of the age, without, in many instances, securing for themselves any adequate reward. For many interesting details upon this subject, I refer you to the appropriate reports, and especially urge upon your early attention the apparently slight, but really important modifications of existing laws therein suggested."

We copy from the Report of the Secretary of the Interior, the following, reserving our comments until next week:—

"The Commissioner of Patents, who communicates directly to Congress, will, at an early day, report the operations of his Bureau. By his indefatigable and unremitting exertions, system has been restored, and the business of his office is now conducted with much order and regularity.

The number of applications is constantly increasing, and the force, though augmented by the act of 1853, is still insufficient to bring up the old, and dispatch with promptitude the new business. As the public is so deeply interested in the speedy examination of the applications for patents, and the fund for this purpose is ample, every facility for dispatch should be afforded.

No complaint is heard against the integrity, skill, or competency of those discharging the important duties of the Bureau, but the delays incident to the smallness of the operative force in the office, are vexatious and embarrassing. Since the present Commissioner took charge of the Bureau, the number of applications examined, and patents issued, have greatly increased. Still from four to six months, and in many cases a longer period unavoidably elapses, after the application is presented, before final action can be obtained. This is a severe trial to the patience of the inventor, and often a serious loss to him, as well as the public.

The law requires the models and specimens

of unpatented inventions, to be preserved and arranged in suitable cases. Some of these are useful, as well to the inventors, desirous of ascertaining whether their inventions have been anticipated, as to the Examiners, in the discharge of their duties. But there are many that are worthless and unfit for any purpose. In some instances they represent contrivances altogether unpatentable; in others they are merely duplicates of models previously deposited. Where application is made for a patent for a design merely, the practice, under existing laws, has been to allow the applicant to deposit as his model a specimen of the article, on which his design has been placed, in its full size. Accordingly, a vast number of stoves and other cumbersome articles have accumulated to such an extent as to render it impossible to comply with the law requiring them to be arranged in cases.

As space is of so much value and importance to this Bureau, these defects in the law should be remedied, and a more enlarged discretion given to the Commissioner, there being no danger of its abuse.

Appeals from the decision of the Commissioner may be taken to the Chief Justice, or either of the Assistant Judges of the Circuit Court of the District of Columbia. It is optional with the applicant to which of them he will take his appeal, and the adverse party cannot have it decided by any of the others, although the judge to whom the appeal was made, may be unable, from absence, age, or other infirmity, to hear the case. The object of the appellant is to enable him to interfere with impunity upon the right of the appellee, and the law as it now stands, affords him this opportunity. As such cases have occurred and may again arise, the evil should be remedied."

"The Indian and Land Bureaus must be removed, and the only question appears to be whether the west wing of the Patent Office building shall be fitted up for the temporary accommodation of these Bureaus, or they be placed in rented buildings, not fire-proof, thus exposing to imminent peril papers of immense value to the General Government, the States, and private individuals. The building may be finished within a year, and until a suitable structure can be erected for this department, it will not be required of the Patent Office. Some opposition has been made heretofore to a somewhat similar proposition, but this, it is presumed, was based on the erroneous supposition that the cost of the entire structure had been defrayed out of the patent fund. The amount thus far expended and appropriated, is \$1,367,750, of which \$1,048,750 has been paid out of the treasury, and only \$319,000 out of the Patent fund. Such being the fact, there is no reason why a portion of it should not be temporarily used as proposed, until needed by the Patent Office. If this should even somewhat incommode that office, it would be of small moment in comparison with the evils that might result from withholding it from the Bureaus. Skillful artisans are of opinion that the necessary improvements can be easily made, without interfering with or injuring the original design. Unless Congress by express enactments otherwise determine, I intend to direct the completion of the West wing, so as to accommodate these Bureaus, and secure the public archives.

Within a few years the Patent Office will need the main building and the two wings for its exclusive use. In the mean time, a structure should be erected for this Department, and as it consumes much time to complete such a building, sound policy should induce its immediate commencement. One sufficiently large and commodious, and entirely separated from the other Department, can be constructed in a plain and substantial manner, for \$250,000, and in the most approved style, with all the modern improvements, for less than half a million. Surely, at this time, there can be no more proper or profitable application of the public moneys. The considerations enjoining it are strong and apparent, and, it seems to me, cannot fail to convince every one, who reflects upon the subject, of its absolute necessity."

The Humboldt.

This noble American steamship belonging to the New York and Bremen Line, was wrecked

last week on the coast of Nova Scotia, about 12 miles from Halifax, while on her way into that port for fuel. All the passengers were saved, and some of the cargo.

Early Manufactures of New England.

Fire arms were manufactured in large quantities in colonial times. Hon. Hugh Orr, of Bridgewater, about 1748, made 500 stand of arms for the province of Massachusetts Bay, which were deposited in Castle William; nearly all, however, were carried off by the British when they evacuated the town of Boston. Mr. Orr was a pioneer in many articles of manufacture in the old colony, particularly of iron. He erected the first trip hammer known in this part of the country. By his exertions and experiments, scythes and axes were first introduced, and for several years he was the only edge-tool maker in New England.

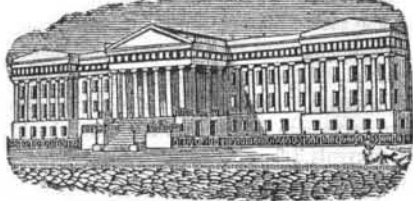
Powder was an article of much anxiety in regard to its manufacture. We find even as early as 1639, a record that Edward Rawson, who represented Newbury in the General Court that year, was granted by the colony "500 acres at Pecoit so as hee go on with the business of Powder if the salt Peter come." But he did not succeed, as in 1748 he is granted 500 acres to indemnify for his losses. "In 1643 the General Court made an order about preparing houses for saltpeter that there might be powder made in the colony, but as yet it has not gone on."

In 1775 Gov. Richard Penn, who was in England charged with a petition for redress from the Continental Congress, stated "that the Pennsylvanians perfectly understood the making of gunpowder, and also the manufacture of small arms." Probably the first powder mill erected in this part of the country was at Andover. It was built by Hon. Samuel Phillips, Jr., in 1776, and some remains of it are still to be seen. The colony supplied him with saltpeter and sulphur, and he was to receive eight pence per pound for manufacturing.

The resolve under which the contract was made, is dated June 8, 1776, and requires him to give bonds for the faithful performance of the contract; also, he was to cause to be published all the discoveries he might make relative to the construction of the mill and the manufacturing of powder. During the year 1776, that mill turned out 30,000 pounds of powder. In 1778 the mill was blown up, and after that time the manufacture was given up, and that of paper substituted by the same gentleman. Subsequently, about 1794, a smaller powder mill was erected, which was blown or burned down in 1796. This ended the manufacture in Andover.

Although but little had been done in manufacturing woolen and cotton articles previous to the Revolution, yet each family in the country supplied in a great measure their own wants. A woolen factory was erected at Ipswich, in 1792, and some blankets made, but, being a losing business, it was continued only a few years, and a cotton factory exhibited similar results.

[The above is from the "Boston Transcript," and relates mostly to fire arms and powder. By the Report of the Commissioner of Patents for 1852, we learn that the first cold cut nail in the world was made in America. This was done in 1777 by Jeremiah Wilkinson, of Cumberland, R. I., who is still living at a very advanced age. During the revolution he followed the business of making cards by hand, and finding great difficulty in obtaining a supply of English tacks to nail them on, he tried the experiment of cutting some with a pair of large shears, from the plate of an old chest lock, then heading them in a smith's vice. Finding this plan to succeed very well for his wants, he afterwards made all the tacks he wanted from sheets of iron. Subsequently he made larger nails, such as those used for fastening laths and shingles. This veteran inventor also made pins and darning needles of wire drawn by himself. He is a Quaker, and followed the peaceable trade of fighting iron, while others of his countrymen were fighting their foes. He, however, has not labored in vain for his country, as he laid the foundation for vast improvements in cutting nails by machinery, which is exclusively an American invention.]



[Reported Officially for the Scientific American.]

LIST OF PATENT CLAIMS

Issued from the United States Patent Office FOR THE WEEK ENDING DECEMBER 6, 1853.

INDICATING ELECTRO-MAGNETIC TELEGRAPHS—By John Davis, of New Bedford, Mass.: The improvements that I claim consist in operating the electro-magnetic telegraph by means of the index or escapewheel, slider and impeller, as set forth, and thereby spelling intelligence by pointing out the letters composing the words of the communication on a similar contrivance at the distant office to which the intelligence is sent by telegraph, disclaiming any right to other methods of telegraphing.

ARRANGEMENT OF SCREW CUTTING DIES IN THE DIE STOCK—By Simon Goodfellow, of New Orleans, La.: I claim the arrangement of the circular dies, having threaded scores or recesses in their peripheries of various depths, or sizes in the die stock, as described.

PEN HOLDERS—By E. W. Hanson, of Spring Garden, Pa.: I claim the peculiar mode in which I construct and apply thumb and finger rests to pen holders, viz.: I claim the projecting part of the thumb and finger rests of an oblong or parallelogramic form, so that they shall cross the thumb and finger respectively when held for use, whether the rest be fixed or made adjustable.

SPARK BURNER AND WATER HEATER FOR LOCOMOTIVES—By David Matthew, of Philadelphia, Pa.: I claim the arrangement and application of the two concentric pipes, the curved plate rings, the pipes, I I I, the furnace grate, the cover, and pipes, K K K K, forming a combined apparatus in the smoke box for burning the sparks and heating the feed water, as described.

SOAP INGREDIENTS—By Ira F. Payson, of New York City: I claim the use of sal ammoniac as an ingredient of my soap, in combination with the other ingredients, the effect of which is to retain a sufficient amount of moisture to prevent drying up, and at the same time not enough to cause it to become damp by exposure to damp air.

VALVE ARRANGEMENT FOR STEAM HAMMERS—By James Watt, of South Boston, Mass.: I claim, first, the revolving valve rod, the barrel, and the adjustable screw stop constructed, arranged, and operating, as described, by which I am enabled at any instant to admit the steam beneath the piston during any portion of the fall of the hammer, without altering its effective force and length of the stroke.

Second, I claim, in connection with the above the arrangement for throttling the steam on its way from beneath the piston, by which means I am enabled to regulate the intensity of the blow of the hammer to any degree of nicety, so to hold the same suspended above the anvil, as set forth.

CLEANING MACHINE CARDS—By George Wellman, of Lowell, Mass.: I claim, in combination with a series of top cards in a carding engine, not only a mechanism for raising one or more of such top cards, and holding the same upwards, and afterwards depressing the same back into place, but a mechanism for setting on, and cleansing such top card or cards, when or while so elevated, not meaning to claim either the mechanism for moving the top card or cards, or that for cleansing it or them, in their separate combination with the series of top cards, but to lay claim to both in their joint combination, and with the series of top cards, as described.

And in combination with the series of top cards and mechanism for raising and cleaning a top card and restoring it to its seat, I claim the mechanism for moving the raising and cleaning mechanism in succession from one top card to the other, and whether from one card to the next one throughout the series, or from one to another of them to the next but one, or in any other order, as specified.

I claim, also, the combination of the grooved block (or the grooves and circular arcs), the arm with its stud (or the equivalent of said arm and stud), and the notched wheel as applied to the shafts and made to operate together, as specified.

OVERSHOT WATER WHEELS—By J. E. Whitmore, of Joliet, Ill.: I claim the construction of the buckets with the covers, operating as specified.

I claim, the levers, springs, and bolt rods, as described, in combination with the cams or their equivalents, for closing and opening the buckets, as set forth.

RINGING FIXED BELLS—By Alfred Carson, of New York City, ante-dated June 6, 1853: I am aware that stationary bells have been rung from the inside, by vibrating the clapper; this I do not claim. But I claim the device described, as applied to the working of the clapper of a bell hung in the usual manner, as set forth.

REPLACING CARS UPON RAILROAD TRACKS—By L. B. Flinders, of Dunkirk, N. Y.: I claim replacing rail cars and locomotives upon the track, or replacing the car wheels upon the rails, as described, viz.: by means of flanges, having inclined bottoms, and secured or attached to the rails, when designed to be used by the lips or projections on the sides of the flanges, said lips or projections clasping or fitting over the rails. The flange being provided with a movable guide, which directs or guides the wheels upon the rails, and which guide, by being movable, will act upon the wheels, the flange being adjustable to either side of the rails.

[This very useful device is described on page 152, Vol. 8, Sci. Am.]

ILLUMINATING CLOCKS—By James Glenn, of New York City: I claim the construction of two circular dial plates having the figures of time cut through them in such a manner that, being made to revolve by means of clock-work and by means of a light and two magnifying lenses, the time is represented on a plate of ground glass in front in white light, which may be perceived to a greater distance and more distinctly than by any other method at present in use, whether used with or without a magnifying lens.

SHOWER SPRINGS—By Ira Warren, of Boston, Mass.: I claim as a new and useful surgical instrument for the treatment of diseases of the air passages of the throat and nose, a syringe constructed of the form and materials described, as set forth.

CUTTERS FOR PLANING MOULDINGS—By R. M. Evans, of Gifford, N. H. (assignor to himself and Asa Weeks, of South Boston, Mass.): I do not claim making the cutters of shapes suited to the different parts of the particle to be turned either straight or curved, and securing them to a cutter wheel.

But I claim making the cutting irons of moulding planes or turning tools of thin sections in the manner described, which, after being set to a pattern and confined in a clamp, may be brought to an exact edge by filing or grinding, as set forth.

CONDENSERS FOR STILLS—By Carl E. Werner, of New Castle, Ill.: I claim the construction of the condenser, consisting of an outer upright cylinder, with its upper chime projecting above the head, so as to form a circular trough, and an inner refrigerating cylinder, traversed by vertical tubes, which connect the vaporspaces above and below, the whole being situated above and discharging the condensed fluid back into the rectifier.

The ladies of Manchester, N. H., it is said, have contributed a stone to the Washington Monument, with the inscription, "From the Home of Stark."

Reaping and Mowing Machines.

MESSEURS, EDITORS—I have read your article in No. 9 of the present volume with much interest, and must come to a different conclusion from yourselves; I draw my conclusions from experience, as I have tried and helped try nearly all of the cutting parts now used in the reapers of the present day. In the first place you say the sickles require a reel; and that they will not cut green straw without choking. Now I can assure you that I have cut as green straw as ever grew, with a sickle, without clogging or choking, and also have cut with a sickle without a reel; and if grain is cut when it is green it will not shell unless the reel revolves too rapidly. I have cut perfectly ripe grain without having it shell. You say also that sickles will not cut the Eastern grasses, but may cut the coarse grass of our prairies; your idea of our prairie grass is not correct if you suppose that it cuts easier than timothy or clover,—the kind of grass which we cut for hay throughout the West, or nearly all of the West, is much harder to cut than either clover or timothy—(a sample I enclose for your examination); in some localities coarse grass may be cut, which grows in the ravines or low bottoms, but this is unfit for hay, and is not generally cut.

You say that Ketchum has prevented his mowing machines from choking by punching elongated apertures through the blades of his knives. Now, I will state that he has not successfully prevented his machines from choking by this device. We have some of Ketchum's improved machines here, and find that our upland prairie grass will choke them as often, if not oftener, than some other machines which cut with a sickle. We have had several of Ketchum's improved sickles at our shop this summer to mend, having been broken by the knives choking with our fine grass; the grass clogs in between each section on the sickle bar as well as between the fingers, often clogging so tight as to tear off a sickle bar one inch by three-eighths of an inch. I find also that a plain finger or guard tooth is just as good as any other, if the sickle or cutting part is made as it should be.

You have no hesitation in saying that Ketchum's is the best machine for cutting grass. I also have no hesitation in saying that there are other machines better for cutting grass than Ketchum's, and that they will cut the different kinds of grass better than Ketchum's:—Rugg's of Ottawa, and Danforth's, and one or two more. The best kind of knife that we have yet found is one invented by Bronson Murray, I believe, of Ottawa, Ill.; it will cut all kinds of grain and grass without clogging or choking, and has been thoroughly tried during the past season, and has cut in fields with Ketchum's, and has been much preferred. The sickle referred to, has a sickle edge behind and before, and is a different angle from either of the others; it is made in sections about fourteen inches long, and is riveted on a bar about a quarter of an inch thick and three-fourths wide; this form of sickle not only prevents clogging but prevents fine grass from getting in between the sections when they are made like Ketchum's or Hussey's, or McCormick's. I agree with you that machines for farmers' use should be made as simple as possible, because in the harvest field farmers generally have from six to ten hands, and one hour lost in mending a machine is almost or quite one day's work lost for one man.

JAMES M. THOMAS.

Wyoming, Ill., 29th Nov., 1853.

Since the publication of our article on reapers, we have received many communications from the East and from the West in relation to the matter. Some have disagreed with us and others have emphatically endorsed our statements. All our correspondents, however, have fallen into the error of supposing that we speak from theoretical considerations only, but we beg leave to assure them that they are entirely mistaken. We have "tried and helped try nearly all" the prominent machines before the public, and probably not one of our correspondents has had more, if as much practical experience in the matter as ourselves, and we still unhesitatingly assert that in the East sickles will not cut grass without choking. We have no interest in endorsing Ketchum's machine except as we believe

it to be the best for the purpose that has ever been in use here; but, as we said in our article, it is not what a machine should be, because it will not cut both grass and grain, and we hope yet to be the medium of presenting to the public one that will do this successfully. Our correspondent expressly states that the Western grasses are harder to cut than those of the East, and this is the very point. It is the soft grasses that choke these machines. A hard grass, in the composition of which silex largely enters, as it does in the specimen sent us, is brittle and is much more easily broken by the sickle or other means than those in which a less proportion of this substance is found. The Eastern grasses are tough, and are not readily snapped between the fingers, while even the leaves of the specimen sent us break readily.

As to the reel, unless it is used with the sickle, the grain will be pressed forward, and thus fall away from the apron instead of upon it, unless V-shaped sickles are used like those described by our correspondent. The reason is, the angle in a V-shaped knife or sickle is such as to press against the guard tooth, while in the other case it presses forward, and sickles having a large angle with the guard tooth will not saw as their principle requires.

Interesting Patent Case.

As briefly noticed by us last week, Judge Nelson, in this city, granted an injunction restraining Anson G. Phelps and others from manufacturing Car Springs of Vulcanized India Rubber, as being an infringement of Goodyear's patent. The following is an abstract of the charge of the Judge:—

This is a motion for an injunction against the defendants for an alleged infringement of Goodyear's patent, "for a new and useful improvement in india rubber fabrics." The plaintiffs, the New England Car Spring Company, are the assignees of Goodyear for the exclusive right to use the improvement or invention in the manufacture of india rubber springs for railroad cars, locomotives, and tenders. The first patent was issued to Goodyear, June 15, 1844, and was afterwards surrendered and re-issued December 25, 1849, on an amended specification. The bill sets forth a suit in the Circuit Court for the district of New Jersey, between Goodyear and Day, one of the defendants, and that after a hearing in that court, involving the validity of this re-issued patent, a decree was rendered in the September Term, 1852, in favor of the complainant, holding that Goodyear was the first and original inventor of the improvement claimed, and that the letters patent were valid in all other respects. The bill further charges that after the hearing of the case referred to in New Jersey, and while under the advisement of the Court, the defendants, Phelps, W. E. and D. S. Dodge, Pratt and Davis, combined with H. Day, with a knowledge of the facts respecting the suit in Jersey, and that it involved the validity of Goodyear's patent, to infringe the same, and commenced manufacturing car springs out of india rubber, mixed or compounded in some form with sulphur, and cured or vulcanized by a high degree of artificial heat in violation of the patent. In addition to the case of Goodyear against Day, decided in the Circuit Court of the United States, at the September term in New Jersey, already referred to, the opinion of that Court has been furnished on a suit of these plaintiffs against the Central Railroad of New Jersey, in which an injunction was granted, and in which the principal objections were presented and over-ruled, that are now relied on before me.—They were:—First—That the complainants are not the proper parties to the suit. Second—That the rubber used in the defendants car springs was made by a process in which steam is the chief agent, and is, therefore, no infringement of complainants patent; and Third—That Goodyear's patent is for a process of curing rubber, and not for the product or manufacture, and consequently the product is no infringement. These several questions were very fully considered by the learned Judges of the Circuit Court in New Jersey, and the grounds of their decision stated at large, and I need only say, in disposing of this case, at this stage of it, that, in my judgment, they are such

as well warranted the granting of the preliminary injunction. The originality of the invention was then most thoroughly examined by the respective parties, as is shown by the seven large volumes of proofs then taken, and to which I have referred. A point has been made that the defendants are not liable for the infringement charged, as the only participation alleged in the same is as stockholders of an incorporated company, which company is engaged in manufacturing and selling the patented article. However that may be, it appears that the defendants are either Directors of the Company, who have the management and superintendence of the business, and under whose direction the articles are manufactured and sold, or are the agents of the same, concerned in conducting the business. On this ground, I am of opinion they are responsible and properly made defendants. Injunction ordered. E. N. Dickerson and James T. Brady, for complainants. George Gifford and Francis B. Cutting for defendants.

Recent Foreign Inventions.

MANUFACTURE OF STARCH—Edward Tucker of Belfast, Ireland, patentee.—This invention relates to the application and use of certain salts (both alone and in combination with mineral acids), for the more speedy and effective separation of pure starch from the glutinous and other foreign matters with which the starch itself is originally combined, as well as to the neutralizing or counteracting of the injurious effects of the vegetable acids generated in the process of starch-making, and the increase in the amount of good starch from a given quantity of wheat or other grain. By the same means, any pure water is rendered suitable for starch-making, although such water may be ill adapted for this purpose in its natural state. In carrying this invention into effect, the patentee submits the wheaten meal, or reduced grain, to the usual process of fermentation, and washes it, so as to separate the bran from the rest of the materials forming the substance to be treated. The starching liquor is then run into a vat and allowed to remain for about 36 hours, for precipitation. The supernatant liquor is next run off, or removed, and the precipitate is broken up. A solution of sulphate of soda, or Glauber's salt, in boiling water, is prepared, in the proportion of about 13 lbs. of the salt to one ton of the wheat, or other grain under treatment; and after cooling down this solution, it is poured into the precipitated starch; and the vat being filled up with water, the entire contents are thoroughly mixed, and intimately incorporated by stirring. The mass is then allowed to stand for 24 or 30 hours perfectly quiescent. In the subsequent process, technically known as the "fine shift," when the water and slimes are removed, another solution of the same salt is employed, but in much smaller proportions; about 3 lbs. weight only being applied to one ton of wheat. At this stage, in combination with the sulphate of soda, a portion of sulphuric acid is used, in the proportion of about one quart of the acid to the produce of 4 tons of wheat. The acid, in a diluted state, is poured gradually into the vat, which is then nearly filled up with fresh water; and the whole contents are thoroughly mixed by agitation. When the starch has been precipitated, it is finished, and prepared for sale, and used in the ordinary manner. The patentee remarks, that he has found sulphate of magnesia, muriate of soda, and other salts and acids, available for a similar purpose. This general process renders all pure water suitable for manufacturing starch, however hard and unsuitable it may have been originally. The pure starch is also better separated from the glutinous constituent of the grain; whilst the manufactured starch is superior in purity, sweetness, strength, fineness of texture, and whiteness, as compared with all starch made in the usual way; and the yield is greatly increased.

This is an interesting invention for our starch manufacturers.—[Lonon Journal.]

We see it stated in a number of our exchanges that large deposits of cannel coal have been discovered in Western, Pa. When are we to have cheap gas in this city. We hope the time is not far distant when it will be so cheap as to be used in every family.